Vanguard Village I+II

City of Binghamton, Broome County, New York

Remedial Action Work Plan

NY BCP Site Number: C704063

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CERTIFICATIONS

I, Daniel Bellucci, certify that I am currently a NYS registered professional engineer and that this Remedial Action Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and Green Remediation (DER-31).

099470	October ##, 2026	
NYS Professional Engineer Number	Date	Signature

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EXECUTIVE SUMMARY

The Metro Group Properties, Inc. (the Volunteer) has established this plan to remediate the property known as "Vanguard Village I+II", 1181, 185, and 187 Clinton Street, 7 Hudson Street, and 34 Jarvis Street, City of Binghamton, Broome County, New York (the "site"). A Remedial Investigation (RI) was completed by Gallagher Bassett Technical Services (GBTS) in accordance with a New York State Department of Environmental Conservation (NYSDEC)-approved Remedial Investigation Work Plan (RIWP; March 2026) and the results were documented in a Remedial Investigation Report (RIR; July 2026); all resulting findings and data were compiled and evaluated in order to develop this Remedial Action Work Plan (RAWP) in accordance with the requirements of the NYSDEC Brownfield Cleanup Program (BCP). The remedial action described in this document achieves the remedial objectives, complies with applicable environmental standards, criteria and guidance (SCG) and conforms to applicable laws and regulations.

Site Description and Physical Setting

The Site consists of the 4.79-acre property located at 181, 185, and 187 Clinton Street, 7 Hudson Street, and 34 Jarvis Street, City of Binghamton, Broome County, New York (five contiguous City tax lots: Section 160.22, Block 1, Lots 1 through 5). The property is located in a developed urban area generally comprised of residential and commercial uses. The Site is an irregular parcel, which has approximately 241 feet of frontage on the eastern side of Jarvis Street, 434 feet of frontage on the southern side of Clinton Street, and 430 feet of frontage on the western side of Hudson Street. The property is a vacant, former industrial site generally containing remnant concrete building slabs and paved areas. Adjoining properties include a filling station to the west (across Jarvis Street), railroad tracks to the south, and residential and/or commercial use to the north and east. Figure 1 shows the Site location, Figure 2 shows Site features and adjoining properties, and Figure 3 shows surrounding area uses. All RAWP figures show the BCP Site boundaries.

Summary of Proposed Redevelopment Plan

Development plans include construction of two, new five-story residential buildings, with several small commercial spaces fronting Clinton Street and associated infrastructure (parking lots and landscaping). The proposed development is consistent with existing zoning.

The project will result in the excavation and removal of poor-quality urban fill (including subsurface debris) and contaminated soils as regulated waste, and the proper closure (removal) of any on-Site storage tanks. Based on known environmental conditions, the project is expected to be managed as a combined Track 2 and Track 4 Restricted-Residential Use (RRU) property.

Site History and Areas of Concern

Site history and environmental conditions prior to implementation of the RI are summarized in the RIR, inclusive of the results of multiple previous environmental reports. Historical property uses (documented as early as the 1880s) included a sleigh and wagon manufacturer (until the 1930s), printer and book manufacturer (Vail Ballou Co.; 1910s to 1990s), filling station (1940s and 1950s), numerous small commercial operations including automotive repair, and residential uses. A historical filling station and several historical industrial sites were identified at adjoining properties. The former Vail-Ballou manufacturing facility (on Lot 2, extending to adjoining properties to the east) was demolished in stages in the mid to late 1990s, while other structures were demolished between 2018 and 2019 (foundation remains are present at several areas).

Subsurface investigations documented contamination by petroleum (in a manhole on the southeast corner of the Site), and metals (arsenic, barium, lead, and mercury) and polycyclic aromatic hydrocarbons (PAHs) in soil; these findings were considered to be consistent with impacts from poor-quality fill, demolition debris, and/or from debris materials historically dumped on the Site. Contamination in soil was reported above NYSDEC RRU Soil Cleanup Objectives (SCOs). Limited groundwater sampling documented low-level impacts by acetone and chloroform. Three underground storage tanks (USTs; 275-gallon fuel oil, and 1,000-gallon naphtha and gasoline tanks) were removed at the northwestern portion of Lot 2 circa 2000 (no significant contamination conditions were identified). The RIWP identified documented soil contamination by metals, and potential groundwater and vapor contamination, as two distinct Areas of Concern (AOC).

Summary of Remedial Investigation

The RI fieldwork was conducted by GBTS in March and April 2026, including: extension of twenty-six (26) soil borings (“SB” series); installation of seven (7) permanent groundwater monitoring wells (“GMW” series) and fourteen (14) soil vapor implants (“SV” series); and collection and laboratory analysis of soil, groundwater and soil vapor samples.

Soil and water samples were analyzed for full 6 NYCRR Part 375-6.8 parameters (inclusive of Target Compound List [TCL] and Target Analyte List [TAL] analytes) and per- and polyfluoroalkyl substances (PFAS; NYSDEC target list), and soil vapor was analyzed for volatile organic compounds (VOCs).

All fieldwork activities, sample submission, and laboratory results (maximum values noted), are presented below. Data are reported in parts per million (ppm) for soil and parts per billion (ppb) for groundwater (note: PFAS, only, reported in ppb and parts per trillion [ppt], respectively), and in micrograms per cubic meter ($\mu g/m^3$) for vapor.

Summary of Environmental Findings

1. The local area has overall gentle easterly downward slopes towards the Chenango River, with site surface elevations ranging from 855 to 860 feet above mean sea level (amsl).
2. Groundwater depths in monitoring wells (below the top of the stick-up PVC casing, approximately 3 feet above grade) correspond to approximate elevations ranging from 827.13 feet amsl at GMW-07 to 836.27 feet amsl at MW-06. Direction of groundwater appears to be toward the center of the site, with overall southerly flow toward the Susquehanna River (approximately 1.1 miles South). Flow rate was not determined.
3. Bedrock was not encountered during the RI (maximum boring depth of 50 feet).
4. Fill materials (containing fragmentary debris) were observed at borings across the site from 5 to 23 feet below ground surface (bgs). Underlying native materials were generally comprised of glacial till.
5. No significant odors, staining, or other evidence of a release was observed in site media, and field evidence of contamination was limited to low-level photoionization detector (PID) readings recorded at several monitoring wells and vapor sampling locations (maximum readings below 5 ppm).
6. A total of twenty-six (26) mechanized borings were extended during the RI and from four to six samples were generally collected from each location (124 samples plus duplicates). Surface (upper 2 inches) and near surface soils were collected at all locations. The majority of borings were extended to 25 to 30 feet bgs, with seven extended to 45 to 50 feet bgs.

Soil samples were analyzed for TCL VOCs and semi-volatile organic compounds (SVOCs) plus tentatively identified compounds (TICs), TAL metals including Cr^{+6} and cyanide (CN), PFAS, pesticides, herbicides, and polychlorinated biphenyls (PCBs). Laboratory results were compared to Part 375 UU and RRU SCOs, and to NYSDEC PFAS guidance values (GVs).

PAHs and metals were detected above RRU SCOs in upper fill soils, primarily at the surface, but two samples with elevated PAHs and three samples with elevated metals have been identified between 4 and 18 feet bgs. PAH impacts included: phenanthrene (48 ppm, RRU SCO 4.9 ppm), benzo(b)fluoranthene (35 ppm, RRU SCO 1.4 ppm), and benzo(a)-anthracene (32 ppm; RRU SCO 1.4 ppm). Metals impacts included: arsenic (139 ppm, RRU SCO 16 ppm); barium (434 ppm, RRU SCO 410 ppm); chromium (hexavalent; 1.51 ppm, RRU SCO 1 ppm), copper (470 ppm, RRU SCO 280 ppm), lead (26,200 ppm, RRU SCO 400 ppm), and mercury (3.25 ppm, RRU SCO 0.3 ppm). Additional metals were reported above UU SCOs in site soils. The duplicate for a sample at 6 to 8 feet bgs (SB-12) was reported with elevated cyanide (5.61 ppm, UU SCO 2.3 ppm).

Multiple locations in upper fill soils exceeded UU SCOs for pesticides (DDT and breakdown products, and alpha chlordane). No herbicides were detected. Three samples (depths from the surface to 20 feet bgs) contained elevated PCBs (0.31 ppm, UU SCO 0.1 ppm) and one additional sample in upper soil contained a low level of PCBs. No VOCs were reported above RRU SCOs and detections above UU SCOs were limited to marginally elevated acetone (a common laboratory cross-contaminant; 0.031 to 0.1 ppm, UU SCO 0.03 ppm) in four samples at various depths (no other significant levels of VOCs were detected).

VOC and SVOC TICS were found at various depths, with VOC TICs reported in twenty-seven (27) samples (0.005 to 0.674 ppm) and SVOC TICs in fifty-three (53) samples (0.005 to 86.9 ppm). All total TICs reported above 5 ppm occur in the upper 3 feet of fill, with the highest concentrations generally reported in surface soil.

The PFAS perfluorooctanesulfonic acid (PFOS) was reported above the UU GV but well below the RRU GV in three (3) samples, with two in the upper 2 feet and one at 5 to 7 feet bgs (3.85 ppb, UU GV 0.88 ppb). A total of forty-four (44) samples contained one or more other PFAS (all individual detections reported at less than 1 ppb), and/or PFOS or perfluorooctanoic acid (PFOA) below UU guidance.

Significant soil contamination is limited to the upper layer of urban fill materials (primarily within the top 2 feet). Site soils contain SVOCs, metals, cyanide, pesticides, PCBs, and PFAS (PFOS and PFOA) above UU SCOs or UU GVs, and multiple locations have PAHs and/or metals exceeding RRU SCOs.

7. Groundwater samples from seven (7) monitoring wells were analyzed for TCL VOCs and SVOCs plus TICs, TAL metals plus Cr^{+6} and CN, pesticides, herbicides, PCBs, and PFAS. Laboratory results were compared to NYSDEC Ambient Water Quality Standards (AWQS) and Water Quality Guidance Values (WQGV; PFAS only).

   No VOCs were reported above AWQS. GMW-02 and GMW-03 contained low levels of tetrachloroethylene (PCE; 0.87 to 1.6 ppb, AWQS 5 ppb) with a low level of the breakdown product trichloroethylene (TCE; 0.75 ppb, AWQS 5 ppb) reported in GMW-02, and all wells with exception of GMW-06 contained low levels of chloroform (0.37 to 2.2 ppb, AWQS 7 ppb). Acetone, a possible laboratory cross-contaminant, was reported at a low level in GMW-07.

   One or more PAHs were reported above AWQS in wells GMW-01 to GMW-05, including benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene (0.02 to 0.04 ppb, AWQS 0.002 all analytes). A trace level of phenanthrene was reported in GMW-07.

   No VOC TICs were reported and SVOC TICs were limited to an unknown hydrocarbon (7.1 ppb) reported in GMW-06.

   Multiple total and dissolved metals were reported in all groundwater samples, with elevated levels of total iron (1,180 ppb, AWQS 300 ppb), total and dissolved manganese (586 ppb, AWQS 300 ppb), and/or total and dissolved sodium (184,000 ppb, AWQS 20,000 ppb) reported in all wells. Elevated dissolved selenium (22 ppb, AWQS 10 ppm) reported in GMW-06 although selenium was not detected in soil. No pesticides, herbicides, or PCBs were detected. It is noted that heavy metals reported above RRU SCOs in soil (arsenic, barium, hexavalent chromium, copper, lead, and mercury) are either non-detect or present well below AWQS in groundwater.

   Elevated PFOS (3.93 to 6.93 ppt, WQGV 2.7 ppt) and PFOA (8.39 to 11.2 ppt, WQGV 6.7 ppt) were reported in GMW-01, GMW-02, and GMW-05. Multiple other PFAS were found at low levels in all wells except GMW-06, with a maximum individual value of 9.75 ppt (GMW-01).

Current data do not show any significant soil source areas for the trace to low levels of chlorinated VOCs (CVOCs) found in groundwater. Groundwater has not been impacted by pesticides or PCBs, which are present above UU SCOs in soil, or by herbicides. Elevated SVOCs and PFAS in groundwater may be related to poor-quality on-Site soil/fill and/or be representative of off-Site groundwater quality. There are no documented contaminant plumes identified at the Site.

8. Fourteen (14) vapor samples were analyzed during the RI for VOCs and results were compared to environmental investigation findings as a whole (New York does not have any standards, criteria or guidance [SCG] for volatile chemicals in subsurface vapors). Multiple VOCs were detected at all locations, including trace to low levels of petroleum constituents, CVOCs, and non-chlorinated solvents. VOCs were generally reported below 50 µg/m^3 with limited exceptions (e.g., propylene 605 µg/m^3, isopropyl alcohol 190 µg/m^3 and ethanol 144 µg/m^3). Low levels of PCE were reported in all samples (2.37 to 15.9 µg/m^3), and 1,1,1-TCA (17.1 µg/m^3) and chloroform (6.9 µg/m^3) were each reported at single locations. No PCE breakdown products were found in any samples. Low-level vapor contamination, typical of urban settings, has been identified at the Site, potentially due to on-site fill materials, historical commercial/industrial uses, and/or poor-quality local groundwater. Data are not likely indicative of a significant on-Site source area (e.g., grossly-contaminated soil), and do not indicate a likely threat of off-Site vapor migration to adjoining or nearby properties.

Qualitative Human Health Exposure Assessment

The qualitative exposure assessment provided in the RIR identified potential completed routes of exposure to construction and remediation workers, as well as trespassers (during construction), through inhalation, ingestion and/or dermal contact of organic and inorganic compounds in surface and subsurface soils and through direct contact and/or ingestion for groundwater during excavation and/or dewatering activities (primary concerns are PAHs, metals, and/or PFAS above SCG), potential inhalation of VOC vapor, and dust and runoff exposure to off-site receptors and the public adjacent to the site.

There are no potential environmental impacts through groundwater to surface water discharge.

The Health and Safety Plan for Site Remediation (HASP) and the Community Air Monitoring Plan (CAMP) prepared for the site identify such exposures and provide instructions for on-site workers

and the nearby community to minimize potential exposures during remediation and construction activities. Although the potential exists for subsurface soil contamination to be present after the completion of remediation and site redevelopment activities, all potential exposure pathways are expected to be mitigated as all surface soils will be removed and access to remaining subsurface soils will be limited by paved areas, building foundations and a 2-foot clean cover in landscaped areas.

No known private wells exist within a ½-mile radius of the site, consistent with the urban nature of the City of Binghamton.

Fish and Wildlife Assessment

Based on RI fieldwork observations and laboratory results, and a review of DER-10 requirements, the RIR concluded that an on-site and off-site qualitative fish and wildlife resource exposure assessment (identification of impacts to fish and wildlife resources from site contaminants of ecological concern) is not required for the site (there are no ecological resources present on or in the vicinity of the site, which is the location of multiple former buildings and is in a well-developed urban setting).

Summary of the Remedy

Based on known environmental conditions and physical constraints on construction activities, the Volunteer expects to complete a combined Track 2 and Track 4 Restricted-Residential Use cleanup requiring institutional and engineering controls. The proposed remedial action plan achieves all the remedial action goals established for the project. The plan is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants and uses standard methods that are well established in the industry.

The proposed remedial action will consist of:

1. A remedial program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial action. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy in accordance with DER-31. The core green remediation components are as follows:
    - Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;

- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and,
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the development at this site, any future on-site buildings shall be constructed (at a minimum) to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) and will utilize a 20-mil or thicker vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction. This vapor barrier will also function as an Engineering Control, as defined in 6 NYCRR Part 375-1.2(p), and will be formally identified and managed as such under Section 6.1.3 of this RAWP.

As part of the remedial program, to evaluate the remedy with respect to green and sustainable remediation principles, an EFA will be completed using an accepted calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™ (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial program, as appropriate. The project will include detailed requirements to achieve Vanguard Village I+II and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial program.

Additionally, the remedial program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

The Site is located within a Disadvantaged Community (DAC; an area designated by the Climate Justice Working Group that faces significant socioeconomic and environmental challenges). The remedial program includes provisions to minimize greenhouse gas emissions and associated impacts to the community, including ensuring trucks and other construction vehicles are not idling and are equipped with emissions-control technologies. The designated travel routes for construction vehicles will be optimized to eliminate, or reduce as much as practicable, the travel of trucks within the local area and travel on highways will be prioritized. Disposal facilities and facilities providing backfill materials will be selected based on their proximity to the site and closer facilities will be prioritized to minimize greenhouse gas emissions. A stormwater management system will reduce site-specific impacts on municipal facilities and minimize local flooding impacts.

2. Performance of all required BCP Public Participation activities according to an approved Public Participation Plan.
3. Performance of a Community Air Monitoring Program for particulates and volatile organic compounds.
4. Selection of generic (Track 2) and site-specific (Track 4) Restricted-Residential Use SCOs (protection of public health) for soils to remain at the site.
5. Site preparation, including setup of site security, equipment mobilization, utility mark-outs, and marking/staking of excavation areas, as well as site demolition activities comprising support of excavation (SOE), and the excavation and removal of historic building slabs, foundations, and associated industrial debris, together with SOE required for excavation of “hot spot” areas.
6. Completion of a Waste Characterization Study prior to excavation. Waste characterization soil samples will be collected at a frequency dictated by the disposal facility.

7. Removal of any underground storage tanks encountered during construction activities in compliance with applicable local, State and Federal laws and regulations.
8. Removal of approximately 20,563 cy of soil exceeding applicable RRU SCOS:

Cleanup Track	Areal Extent (sq. feet)	Depth (feet)	Volume (cy)	Total Volume (cy)
Track 2	~143,149	3	~15,905	**~20,563**
Track 2	~900	6	~100	
Track 4	~59,276	2	~4,391	
Track 4	~900	7	~167	

9. Screening of excavated soil for indications of contamination by visual means, odor, and monitoring with a PID, and on-site segregation of excavated media (as needed).
10. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of RRU SCOs.
11. Management of excavated materials including temporarily stockpiling and segregating in accordance with defined material types and to prevent co-mingling of contaminated material and non-contaminated materials.
12. Transportation and off-site disposal of all soil material at licensed or permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-site.
13. Import of materials to be used for backfill in compliance with this plan and in accordance with applicable laws and regulations. If determined acceptable for re-use by the NYSDEC, existing fill soils that meet applicable SCOs may be relocated on the site for development.
14. Engineering controls implemented following soil removal will include:
    a. Installation of a composite cover system over all Track 4 areas of the site where remaining soils exceed the generic Track 2 RRU SCOs but satisfy the applicable site-specific SCOs, in compliance with 6 NYCRR Part 375-3.2(e) and 375-3.8(e)(4)(iii), consisting of the new building slabs and pavement and/or a NYSDEC-approved clean soil cover (minimum 2-feet thick) at exterior locations;
    b. Installation and continuous operation of an active sub-slab depressurization system at the new buildings to address potential soil vapor intrusion, and post-remediation sampling to document system efficacy; and,

c. Installation of a minimum 20-mil thick vapor barrier/waterproofing membrane vapor barrier at new buildings to address potential soil vapor intrusion exposure pathways.

15. Performance of all activities required for the remedial action, including acquisition of required permits and attainment of pretreatment requirements, in compliance with applicable laws and regulations.
16. Based on the depth to groundwater, dewatering of excavations is not likely to be required. If implemented, however, all activities will be in compliance with city, state, and federal laws and regulations. Extracted groundwater will either be containerized for off-site licensed or permitted disposal or will discharged to the local wastewater system in compliance with all municipal requirements, including pre-treatment if warranted.
17. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
18. Submission of a Final Engineering Report that describes the remedial activities, certifies that the remedial requirements have been achieved, defines site boundaries, lists any changes from this RAWP, and describes all Engineering Controls and Institutional Controls to be implemented at the site.
19. Submission of an approved Site Management Plan in the FER for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of Engineering Controls and Institutional Controls, and reporting at a specified frequency.
20. Recording of an environmental easement that includes a listing of institutional controls. Institutional controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without NYSDEC approval. The environmental easement will include a listing of engineering controls and a requirement that management of these controls must be in compliance with an approved SMP.

REMEDIAL ACTION WORK PLAN

1 INTRODUCTION

The Metro Group Properties, Inc. (Metro) entered into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) in February 2026 to investigate and remediate a 1.16-acre property known as "Vanguard Village I+II" in the City of Binghamton, Broome County, New York (the "site"). Metro is a Volunteer in the Brownfield Cleanup Program (BCP). Restricted-Residential Use (RRU) is proposed for the property. When completed, the site will contain two, new five-story residential buildings with street-level commercial spaces. Refer to the BCP application for additional details.

This Remedial Action Work Plan (RAWP) summarizes the nature and extent of contamination as determined from data gathered during the Remedial Investigation (RI), performed in March and April 2026, and provides an evaluation of an Unrestricted Use (UU; NYSDEC Track 1) cleanup and other applicable Remedial Action alternatives, and associated costs. The preferred remedy is consistent with requirements in NYSDEC DER-10 and DER-31, and complies with all applicable standards, criteria and guidance (SCG), as well as all applicable Federal, State and local laws, regulations and requirements. The NYSDEC and New York State Department of Health (NYSDOH) have determined that this site does not pose a significant threat to human health and the environment. The RI for this site did not identify fish and wildlife resources.

1.1 Site Location and Description

The site, in the City of Binghamton at 181, 185, and 187 Clinton Street, 7 Hudson Street, and 34 Jarvis Street (tax-lot parcels: Section 12, Block 4, Lots 4.1, 10, and 2.1, respectively), is an irregular 4.79-acre parcel with approximately 241 feet of frontage on the eastern side of Jarvis Street, 434 feet on the southern side of Clinton Street, and 430 feet on the western side of Hudson Street. The property is a vacant, former industrial site generally containing remnant concrete building slabs and degraded paved areas. Figure 1 shows the site location and Figure 2 shows site features.

1.2 Description of Surrounding Property

The site is located within a densely developed urban setting. Adjoining properties include a filling station to the west (across Jarvis Street), railroad tracks to the south, and residential and/or

commercial uses to the north and east. Subsurface infrastructure typically associated with urban development, including utility lines and piping for sewers and stormwater systems, is present in adjoining and surrounding area roadways. Land use within a half-mile radius is primarily residential (single- and multifamily buildings) and commercial (including manufacturing), with typical urban community services and municipal properties. Figure 2 shows adjoining properties and Figure 3 shows surrounding area uses.

1.3 Proposed Redevelopment Plan

The Remedial Action to be performed under the RAWP is intended to make the site protective of human health and the environment consistent with the contemplated end use. The proposed redevelopment plan and end use is described here to provide the basis for this assessment. However, the Remedial Action contemplated under this RAWP may be implemented independent of the proposed redevelopment plan.

Development plans (see Appendix A) include construction of two, new five-story residential buildings, with several commercial spaces fronting Clinton Street, and associated infrastructure (parking lots and landscaping). The proposed use is consistent with existing zoning for the property (*Neighborhood Commercial* and *Light & Medium Industrial*) that permit the planned mixed-use (residential/commercial) buildings.

Construction excavations include removal of material from the site that has been determined to be structurally unsuitable, as well as remaining foundation components from former buildings and paved areas. Due to variable site topography and the anticipated depths for new footings, maximum construction excavation depths will generally range from between 4 feet below ground surface (bgs) to up to 15 feet bgs. Excavation is not likely to extend below the groundwater table. Up to approximately 45,000 cubic yards (cy) of soil will be removed for construction purposes (additional soil may be removed if found to be unstable or otherwise unacceptable for development reasons), with at least 20,563 cy removed for remediation purposes. Figure 4 shows the construction excavation plan for site development.

The project will result in the excavation and removal of contaminated soils, as well as potential subsurface debris, as regulated waste. Based on known environmental conditions, the project is expected to be managed as a combined Track 2 and Track 4 Restricted-Residential Use property.

2 REMEDIAL INVESTIGATION FINDINGS

The site was investigated in accordance with a NYSDEC-approved Remedial Investigation Work Plan (RIWP). The RI was conducted in March and April 2026 and the results were documented in a Remedial Investigation Report (RIR).

2.1 Site History

Site history and environmental conditions prior to implementation of the RI are summarized in the RIWP, inclusive of the results of multiple previous environmental reports. Historical property uses (documented as early as the 1880s) included a sleigh and wagon manufacturer (until the 1930s), printer and book manufacturer (Vail Ballou Co.; 1910s to 1990s), filling station (1940s and 1950s), numerous small commercial operations including automotive repair, and residential uses. A historical filling station and several historical industrial sites were identified at adjoining properties. The former Vail-Ballou manufacturing facility (on Lot 2, extending to adjoining properties to the east) was demolished in stages in the mid to late 1990s, while other structures were demolished between 2018 and 2019 (foundation remains are present at several areas).

Subsurface investigations documented contamination by petroleum (in a manhole on the southeast corner of the Site), and metals (arsenic, barium, lead, and mercury) and polycyclic aromatic hydrocarbons (PAHs) in soil; these findings were considered to be consistent with impacts from poor-quality fill, demolition debris, and/or from debris materials historically dumped on the Site. Contamination in soil was reported above NYSDEC RRU Soil Cleanup Objectives (SCOs). Limited groundwater sampling documented low-level impacts by acetone and chloroform.

Three underground storage tanks (USTs; 275-gallon fuel oil, and 1,000-gallon naphtha and gasoline tanks) were removed at the northwestern portion of Lot 2 circa 2000 (no significant contamination conditions were identified).

The RIWP identified documented soil contamination by metals, and potential groundwater and vapor contamination, as two distinct Areas of Concern (AOC).

2.2 Summary of Remedial Investigation

2.2.1 Relevant Documents

Relevant environmental documents developed for the site include the RIWP (March 2026) and RIR (July 2026), issued by Gallagher Bassett Technical Services (GBTS).

2.2.2 RI Scope of Work

The following work was performed during the RI:

1. Conducted an inspection to identify Areas of Concern and physical obstructions, including a geophysical survey to identify underground features;
2. Advanced twenty-six (26) mechanized borings (SB-01 to SB-26, and SB-17A), and collected a total of one hundred twenty-four (124) soil samples (generally between four and six samples from each boring) plus duplicates;
3. Installed and sampled seven (7) permanent site monitoring wells (GMW-01 to GMW-07), and measured depth to groundwater; and,
4. Installed and sampled fourteen (14) soil vapor probes (SV-01 to SV-14).

Relevant analytical results from soil, groundwater, and soil vapor samples are shown on Figures 5 to 7 and complete data are provided in Tables 1 to 14. Data are reported in parts per million (ppm) for soil and parts per billion (ppb) for groundwater (per- and polyfluoroalkyl substances [PFAS] only, reported in ppb and parts per trillion [ppt], respectively), and in micrograms per cubic meter ($\mu g/m^3$) for vapor.

2.2.3 Best Management Practices

The RI employed Best Management Practices (BMPs) to minimize environmental impacts. The core goals were to reduce total energy use, air pollutants/greenhouse gas emissions, water use, and waste, and additionally to preserve and protect water quality, material resources, and land and ecosystem services. To achieve these ends the following BMPs were implemented:

- Advance project planning was conducted to minimize the number of mobilizations to the site by environmental fieldwork personnel and related subcontractors, and the number of media samples requiring collection, transportation, and laboratory analysis;
- Remote communication was used as practical to minimize on-site meetings, reducing the impacts associated with transportation of site personnel (energy use, pollution, etc.);

- Fieldwork utilized minimally invasive technologies, such as locating utilities and clearing boring locations with ground penetrating radar, direct push borings verses extension of test pits, and use of direct-reading instruments to screen for volatile compounds;
- Permanent monitoring wells were installed to allow for future reuse if warranted; and,
- Boring spoils were used (where appropriate) to close abandoned borings and complete permanent wells, minimizing the need to use imported backfill materials.

2.3 Significant Threat

The NYSDEC and NYSDOH have determined that this site does not pose a significant threat to human health and the environment.

2.4 Site Geology and Hydrogeology

Site geological and hydrogeological conditions, documented in the RIR, are summarized below:

1. The site is located in an area with overall gentle downward slopes to the east, towards the Chenango River, with approximate surface elevations ranging from 855 to 860 feet above mean sea level (amsl).
2. Groundwater depths (DTW; measured from the top of the stick-up PVC well casing [approximately 3 feet above grade for MW-01 to MW-07]) and groundwater elevations are provided in the table below. Direction of groundwater appears to be toward the center of the site, with overall southerly flow toward the Susquehanna River (approximately 1.1 miles South). Flow rate was not determined.

Well ID	Casing Elevation	DTW	Elevation
GMW-01	853.28	20.81	832.47
GMW-02	854.20	20.59	833.61
GMW-03	855.79	24.49	831.30
GMW-04	852.16	22.37	829.79
GMW-05	855.21	23.18	832.03
GMW-06	859.92	23.65	836.27
GMW-07	855.66	28.53	827.13
Data in feet (elevations based on NAVD88 and reported to nearest hundredth of a foot).			

3. Bedrock was not encountered during the RI (maximum boring depth of 50 feet).
4. Fill materials (containing fragmentary debris) were observed at borings across the site from 5 to 23 feet bgs. Underlying native materials were generally comprised of glacial till.

2.5 Contamination Conditions

2.5.1 Conceptual Model of Site Contamination

The Site is covered to variable depths by a layer of urban fill materials, which may include material sourced from off-Site, impacted locations. Site soils contain volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, pesticides, polychlorinated biphenyls (PCBs) above UU SCOs and PFAS (perfluorooctanesulfonic acid [PFOS]) above UU guidance values (GVs), and multiple locations have PAHs and/or metals exceeding RRU SCOs, primarily at the surface and in upper fill soils, with limited impacts at deeper intervals within the fill.

Groundwater at multiple wells has elevated PAHs and PFAS, which may be related to exceedances of these analyte classes in surface and upper soils, and/or be from an off-Site source. Metals above AWQS (typical of well-developed urban settings) are present in groundwater throughout the Site. There are no documented contaminant plumes identified at the Site (groundwater flow is toward the center of the site, with southerly off-site flow).

VOC impacts in vapor are minimal, are considered to be typical of conditions seen in urban and commercial settings, and do not appear to be related to an on-Site source area.

Overall, the RI findings are consistent with conditions seen at urban locations where buildings have been demolished and poor-quality fill is present, resulting in:

- PAHs and metals above Restricted-Use SCOs in soil;
- General soil contamination above Unrestricted Use criteria (including PFAS); and,
- Poor-quality groundwater and vapor conditions with no obvious/definitive identified source areas (the potential exists, however, for on-site contributions from fill materials).

Areas of concern are limited to elevated PAHs and metals in soil and low-grade VOC levels in vapor, which represent risks of potential exposure and soil vapor intrusion (SVI) into any new on-Site buildings, respectively. Groundwater contamination is not present at levels that appear likely to require a response action. Existing data indicate that significant amounts of hazardous waste have not been disposed at the Site.

2.5.2 Description of Areas of Concern

AOC 1: Site-wide Soil Contamination – The site contains urban fill, typically from 5 to 23 feet bgs, with exceedances of RRU SCOs for PAHs and metals, and SVOCs, metals, cyanide, pesticides, PCBs, and PFAS (PFOS) above UU SCOs. No known releases are associated with these conditions.

AOC 2: Groundwater Contamination – Elevated metals, PAHs, and PFAS (perfluorooctanoic acid [PFOA] and PFOS) are documented in site groundwater. Elevated SVOCs and PFAS in groundwater may be related to poor-quality on-Site soil/fill and/or be representative of off-Site, local-area groundwater.

AOC 3: Soil Vapor Contamination – Low-level vapor contamination, typical of urban settings, has been identified at the Site, potentially due to site fill materials, historical commercial/industrial uses, and/or poor-quality local groundwater. Data are not likely indicative of a significant on-Site source area (e.g., grossly-contaminated soil), and do not indicate a likely threat of off-Site vapor migration to adjoining or nearby properties.

2.5.3 Identification of Standards, Criteria and Guidance

The following standards, criteria, and guidance were referenced during the RI:

- 6 NYCRR Part 182 – Endangered and Threatened Species of Fish and Wildlife
- 6 NYCRR Part 371 – Identification and Listing of Hazardous Wastes
- 6 NYCRR Part 375 – Environmental Remediation Programs;
- 6 NYCRR Part 608 – Use and Protection of Waters
- 6 NYCRR Part 661 – Tidal Wetlands – Land Use Regulations
- 6 NYCRR Part 663 – Freshwater Wetlands Maps and Classification
- 6 NYCRR Parts 700-706 – Water Quality Standards
- 29 CFR Part 1910.120 – Hazardous Waste Operations and Emergency Response
- NYSDEC DER-10 – Technical Guidance for Site Investigation and Remediation;
- NYSDEC DER-31 – Green Remediation (2010)
- NYSDEC Ambient – Water Quality Standards and Guidance Values – TOGS 1.1.1;
- NYSDEC CP-51 – Soil Cleanup Guidance (October 2010)
- NYSDOH Generic Community Air Monitoring Plan
- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York
- NYSDEC SPOTS #14 – Site Assessments at Bulk Storage Facilities
- NYSDEC Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites

2.5.4 Soil Contamination

Soil samples were analyzed for Target Compound List (TCL) VOCs and SVOCs plus tentatively identified compounds (TICs), Target Analyte List (TAL) metals including Cr^{+6} and cyanide (CN), PFAS (NYSDEC target list), pesticides, herbicides, and PCBs. Results were compared to UU and RRU SCOs and UU and RRU GVs (PFAS only).

One hundred twenty-four (124) samples (plus duplicates) from twenty-six (26) soil borings (SB-01 to SB-25, and SB-17A) were submitted to the laboratory. Four to six samples were typically collected, including surface material (upper 2 inches) at all locations, subsurface fill materials, and from underlying native glacial till. Submission of samples during the RI is summarized below, and relevant results are discussed in the text as warranted (note: unless otherwise indicated, results represent maximum reported values).

PAHs and metals were detected above RRU SCOs in upper fill soils, primarily at the surface, but two samples with elevated PAHs and three samples with elevated metals have been identified between 4 and 18 feet bgs. PAH impacts included: phenanthrene (48 ppm, RRU SCO 4.9 ppm), benzo(b)fluoranthene (35 ppm, RRU SCO 1.4 ppm), and benzo(a)-anthracene (32 ppm; RRU SCO 1.4 ppm). Metals impacts included: arsenic (139 ppm, RRU SCO 16 ppm); barium (434 ppm, RRU SCO 410 ppm); chromium (hexavalent; 1.51 ppm, RRU SCO 1 ppm), copper (470 ppm, RRU SCO 280 ppm), lead (26,200 ppm, RRU SCO 400 ppm), and mercury (3.25 ppm, RRU SCO 0.3 ppm). Additional metals were reported above UU SCOs in site soils. The duplicate for a sample at 6 to 8 feet bgs (SB-12) was reported with elevated cyanide (5.61 ppm, UU SCO 2.3 ppm).

Multiple locations in upper fill soils exceeded UU SCOs for pesticides (DDT and breakdown products, and alpha chlordane). No herbicides were detected. Three samples (depths from the surface to 20 feet bgs) contained elevated PCBs (0.31 ppm, UU SCO 0.1 ppm) and one additional sample in upper soil contained a low level of PCBs. No VOCs were reported above RRU SCOs and detections above UU SCOs were limited to marginally elevated acetone (a common laboratory cross-contaminant; 0.031 to 0.1 ppm, UU SCO 0.03 ppm) in four samples at various depths (no other significant levels of VOCs were detected). VOC and SVOC TICS were found at various depths, with VOC TICs reported in twenty-seven (27) samples (0.005 to 0.674 ppm) and SVOC TICs in fifty-three (53) samples (0.005 to 86.9 ppm). All total TICs reported above 5 ppm occur in the upper 3 feet of fill, with the highest concentrations generally reported in surface soil.

PFOS was reported above the UU GV but well below the RRU GV in three (3) samples, with two in the upper 2 feet and one at 5 to 7 feet bgs (3.85 ppb, UU GV 0.88 ppb). A total of forty-four (44) samples contained one or more other PFAS (all individual detections reported at less than 1 ppb), and/or PFOS or PFOA below UU guidance.

Significant soil contamination is limited to the upper layer of urban fill materials (primarily within the top 2 feet). Site soils contain SVOCs, metals, cyanide, pesticides, PCBs, and PFAS (PFOS) above UU SCOs or UU GVs, and multiple locations have PAHs and/or metals exceeding RRU SCOs.

Tables 1 through 7 provide laboratory results for soil, and Figure 5 is a spider map showing the location and summarizing exceedances of RRU SCOs.

2.5.5 Groundwater Contamination

Groundwater samples from seven (7) monitoring wells were analyzed for TCL VOCs and SVOCs plus TICs, TAL metals plus Cr^{+6} and CN, PFAS (NYSDEC target list), pesticides, herbicides, and PCBs. Results were compared to NYSDEC Ambient Water Quality Standards and Guidance Values (AWQS) and Water Quality Guidance Values (WQGV; PFAS only).

No VOCs were reported above AWQS. GMW-02 and GMW-03 contained low levels of tetrachloroethylene (PCE; 0.87 to 1.6 ppb, AWQS 5 ppb) with a low level of the breakdown product trichloroethylene (TCE; 0.75 ppb, AWQS 5 ppb) additionally reported in GMW-02, and all wells with exception of GMW-06 contained low levels of chloroform (0.37 to 2.2 ppb, AWQS 7 ppb). Acetone, a possible laboratory cross-contaminant, was reported at a low level in GMW-07. One or more PAHs were reported above AWQS in wells GMW-01 to GMW-05, including benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene (0.02 to 0.04 ppb, AWQS 0.002 all analytes). A trace level of phenanthrene was reported in GMW-07. No VOC TICs were reported and SVOC TICs were limited to an unknown hydrocarbon (7.1 ppb) in GMW-06.

Multiple total and dissolved metals were reported in all groundwater samples, with elevated levels of total iron (1,180 ppb, AWQS 300 ppb), total and dissolved manganese (586 ppb, AWQS 300 ppb), and/or total and dissolved sodium (184,000 ppb, AWQS 20,000 ppb) reported in all wells. Elevated dissolved selenium (22 ppb, AWQS 10 ppm) reported in GMW-06 although selenium was not detected in soil. No pesticides, herbicides, or PCBs were detected.

It is noted that heavy metals reported above RRU SCOs in soil (arsenic, barium, hexavalent chromium, copper, lead, and mercury) are either non-detect or present well below AWQS in groundwater.

Elevated PFOS (3.93 to 6.93 ppt, WQGV 2.7 ppt) and PFOA (8.39 to 11.2 ppt, WQGV 6.7 ppt) were reported in GMW-01, GMW-02, and GMW-05. Multiple other PFAS were found at low levels in all wells except GMW-06, with a maximum individual value of 9.75 ppt (GMW-01).

Current data do not show any significant soil source areas for the trace to low levels of chlorinated VOCs (CVOCs) found in groundwater. Groundwater has not been impacted by pesticides or PCBs, which are present above UU SCOs in soil, or by herbicides. Elevated SVOCs and PFAS in groundwater may be related to poor-quality on-Site soil/fill and/or be representative of off-Site, local-area groundwater. There are no documented contaminant plumes identified at the Site (groundwater flow is toward the center of the site, with overall southerly flow toward the Susquehanna River).

Tables 8 through 13 provide laboratory results for groundwater, and Figure 6 is a spider map showing the location and summarizing exceedances of applicable SCG for groundwater.

2.5.6 Soil Vapor Contamination

A vapor survey was completed to determine contamination conditions in the soil vadose zone. Fourteen (14) soil vapor samples were analyzed during the RI for VOCs (USEPA Method TO-15) and results were compared to environmental investigation findings as a whole (New York does not have any standards, criteria or guidance values for volatile chemicals in subsurface vapors).

Multiple VOCs were detected at all locations, including trace to low levels of petroleum constituents, CVOCs, and non-chlorinated solvents. VOCs were generally reported below 50 µg/m^3 with limited exceptions (e.g., propylene 605 µg/m^3, isopropyl alcohol 190 µg/m^3 and ethanol 144 µg/m^3).

Low levels of PCE were reported in all samples (2.37 to 15.9 µg/m^3), and 1,1,1-TCA (17.1 µg/m^3) and chloroform (6.9 µg/m^3) were each reported at single locations. No PCE breakdown products were found in any samples.

Low-level vapor contamination, typical of urban settings, has been identified at the Site, potentially due to on-site fill materials, historical commercial/industrial uses, and/or poor-quality local groundwater. Data are not likely indicative of a significant on-Site source area (e.g., grossly-contaminated soil), and do not indicate a likely threat of off-Site vapor migration to adjoining or nearby properties.

RI soil vapor results are provided in Table 14 and Figure 7.

2.6 Environmental and Public Health Assessments

2.6.1 Qualitative Human Health Exposure Assessment

An exposure assessment was conducted to qualitatively assess the potential impacts of known environmental contaminants associated with the site on human health, with attention to all possible exposure pathways (i.e. ingestion, inhalation and direct contact). Both current (existing conditions) and future use (proposed restricted-residential use) scenarios were considered. Contaminants were assessed relative to specific impacted media.

The primary contaminants of concern at the site are SVOCs (PAHs) and metals exceeding RRU SCOs, metals and PFAS in groundwater, and VOCs in vapor. On-site workers (or trespassers) present during remediation and/or future development activities are the most likely receptor population.

The following section evaluates the elements associated with exposure pathways and describes how each of these elements pertains to the site. For all media, the implementation of a Health and Safety Plan for Site Remediation (HASP) and the Community Air Monitoring Plan (CAMP) will mitigate possible impacts to on-site, off-site and nearby community receptor populations. Any development activities that involve disturbance, exposure or contact with contaminated media (soil, soil vapor or groundwater) will require monitoring and mitigation plans to address potential direct contact with media, dust generation and contaminant migration.

Soil

Direct contact, ingestion and/or inhalation (of particulate matter) are the primary exposure pathways for contaminated soils, including surface and subsurface soils.

People can come into contact with surface or subsurface soil if they trespass, participate in ground-intrusive work at the site or are exposed to dust generated during construction activities that disturb contaminated surface soil.

Outside of excavation activities, inclusive of potential soil run-off following disturbance of contaminated soil during remediation, there are no other likely significant exposures to contaminated surface or subsurface soil, either on the site or at off-site areas.

All surface soils are expected to be removed and disposed off-site as part of remediation and site development activities, and all exposure pathways (direct contact, ingestion or inhalation) for surface soil will be mitigated as a result.

The potential exists for contamination to be present in the subsurface after the completion of remediation and site development activities. All potential exposure pathways (direct contact, ingestion or inhalation) will likely be mitigated as subsurface soils would have been remediated and/or access to subsurface soils would be limited by paved areas and building foundations.

Based on election of a combined Track 2 and Track 4 RRU remedy for the site, the implementation of institutional controls will further eliminate potential direct contact with any contaminated soil once construction is complete.

Groundwater

Groundwater has been documented from approximately 0.4 to 19 feet below the surface. Should groundwater be encountered, direct contact and/or ingestion are the primary exposure pathways for people that participate in ground-intrusive work at the site.

Direct Contact

People can come into contact if they participate in ground-intrusive work at the site. The potential for contact is generally a concern for work conducted at depths near or below the seasonally high local groundwater elevation. Any dissolved contaminants in groundwater downgradient of the site are anticipated to diminish as a result of site remediation.

Ingestion

Impacted groundwater is not being used for drinking water (or any other purposes) at the site or at off-site areas, as the area is served by the public water supply. Based on available information, no known private wells exist within a ½-mile radius of the site, consistent with the urban nature of the City of Binghamton.

Soil Vapor

Potential exposure pathways include vapor intrusion within any new site structures and at off-site properties, and direct contact and/or inhalation of contaminated soil vapor generated during soil excavation or remedial construction.

A CAMP would be implemented at the site (and as required, at off-site areas) to monitor air quality and minimize potential exposures to vapors for both construction works and the public. The potential for on-site and off-site exposure to soil vapor is expected to decrease after soils have been remediated. Based on documented levels of PCE in vapor, a vapor control measure will be required at the new site buildings.

2.6.2 Fish and Wildlife Remedial Impact Analysis

The groundwater chemistry and surface water discharge pathway was evaluated. Based on existing data and distance to surface water, there are no expected impacts to surface water from contaminants migrating beneath the site. No relevant fish and wildlife resources were identified.

2.7 Interim Remedial Action

No Interim Remedial Measures (IRMs) have been performed at the site.

2.8 Remedial Action Objectives

The Remedial Action Objectives (RAOs) identified for the site are:

RAOs	RAOs for Public Health Protection	RAOs for Environmental Protection
Soil	• Prevent ingestion / direct contact with contaminated soil • Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil	• Prevent migration of contaminants that would result in groundwater contamination
Groundwater	• Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards • Prevent contact with, or inhalation of volatiles, from contaminated groundwater	• Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable
Vapor	• Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at the site.	

3 DESCRIPTION OF REMEDIAL ACTION PLAN

This section includes a description of the remedial alternatives and provides a comparison and evaluation of the alternatives in terms of required threshold and balancing criteria.

As required, a Track 1 Unrestricted Use scenario is evaluated for the remedial action. In comparison, a combined Track 2 and Track 4 Restricted-Residential Use scenario is evaluated.

The goal of the remedy selection process is to select a remedy that is protective of human health and the environment taking into consideration the current, intended and reasonably anticipated future use of the property. The remedy selection process begins by establishing RAOs for media in which chemical constituents were found in exceedance of applicable standards, criteria and guidance values.

Remedial alternatives are then developed and evaluated based on the following nine criteria and sustainability:

Threshold Criteria

- Protection of human health and the environment;

Balancing Criteria

- Compliance with SCGs;
- Short-term effectiveness and impacts;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume of contaminated material;
- Implementability;
- Cost effectiveness;
- Community acceptance;
- Land Use; and,
- Green and Sustainable Remediation (GSR; including climate resiliency)

3.1 Summary of Remedial Alternatives

3.1.1 Common Remediation Components

All proposed remedial alternatives share the following core components:

Green and Sustainable Remediation (GSR)

A remedial program will be implemented to provide details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial action, inclusive of DER-31 (Green Remediation) requirements and performance of an environmental footprint analysis (EFA) using SEFA (Spreadsheets for Environmental Footprint Analysis [USEPA]), SiteWise™ (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and fully documented. Best Management Practices will be utilized to reduce energy and water usage, minimize waste, reduce air and water pollution, and protect land and ecosystems during all phases of remediation, and a climate change vulnerability assessment will be performed to evaluate the impact of climate change on the project site and the proposed remedy.

Evaluation of Vapor Impacts

A sub-slab depressurization system (SSDS) and vapor barrier will be implemented as Engineering Controls (ECs) to mitigate potential vapor intrusion into the new on-site structures, and will be subject to applicable Institutional Controls (ICs).

The efficacy of the SSDS will be determined by post-remediation sampling of sub-slab vapor and indoor air prior to building occupancy. If post-remediation investigation demonstrates that vapor intrusion is not present at levels of concern and active mitigation is no longer required, the SSDS may be converted to passive operation or be decommissioned, as appropriate.

The system may be removed from active use only after a proposal for system conversion is submitted to the NYSDEC and NYSDOH for review, and system conversion is explicitly approved by NYSDEC and NYSDOH (see Section 7 for details regarding modification or termination of required ECs).

3.1.2 Proposed Remedial Alternatives

Alternative 1: Site meets Track 1 Unrestricted Use SCOs (see Table 15), with short-term vapor controls as needed, consisting of the following:

1. Selection of NYSDEC 6NYCRR Part 375 Unrestricted Use (Track 1) SCOs.
2. Removal of all site soil exceeding Track 1 UU SCOs and confirmation that Track 1 UU SCOs have been achieved with post-excavation confirmatory sampling. A Track 1 remedy may employ short-term ECs and ICs for the remediation of media other than soil (not to exceed a duration of five years). For the purpose of this alternatives analysis, Alternative 1 (meeting Track 1 SCOs) is defined by the following actions:
    a. Excavation of the entire site to multiple depths (requiring engineered support of excavation [SOE]), resulting in the disposal of all material above bedrock containing contaminants above UU SCOs, estimated at approximately 30,728 cy;

Areal Extent (sq. feet)	Depth (feet)	Volume (cy)
~187,126	2 to 9	~14,494
~15,300	20 to 48	~16,234
	Total Volume	**~30,728**

    b. Restoration of the site to the elevation necessary for site redevelopment (if required) through importation of approved clean materials.
3. Removal of any USTs (or other subsurface features that could serve as a source of contamination or require demolition) during site remediation and construction.
4. Installation and continuous operation of an active SSDS at new buildings as a short-term EC and post-remediation investigation to document SVI conditions.
5. If ECs for soil vapor are determined by NYSDEC and NYSDOH to be unnecessary when the Certificate of Completion (CoC) is issued, the Volunteer will receive a Track 1 CoC; the presence of any active ECs at that time, however, will alternatively result in a Track 2 CoC. The volunteer may petition NYSDEC for a modification to the CoC at any time up until five years after issuance. If the volunteer demonstrates that the remedial objectives for soil vapor have been achieved and the applicable institutional or engineering controls are no longer necessary, then a modified Track 1 CoC will be issued (the cleanup would be considered Track 2 until the date that it is successfully modified to Track 1).

Alternative 2: Site meets Restricted-Residential Use SCOs, apportioned into Track 2 and Track 4 cleanup areas, with permanent Engineering Controls for soil at Track 4 areas, and short- or long-term controls for other media as needed, consisting of the following:

1. Selection of NYSDEC 6NYCRR Part 375 generic (Track 2) Restricted-Residential Use SCOs, with identification of site-specific SCOs applicable to Track 4 areas.
2. Excavation of the entire site to 2 feet bgs, with two limited deeper excavations, resulting in removal of all soils exceeding either Track 2 or Track 4 RRU SCOs (at least approximately 20,563 cy of soil are anticipated to be removed for remediation purposes):

Cleanup Track	Areal Extent (sq. feet)	Depth (feet)	Volume (cy)	Total Volume (cy)
Track 2	~143,149	3	~15,905	**~20,563**
Track 2	~900	6	~100	
Track 4	~59,276	2	~4,391	
Track 4	~900	7	~167	

3. Confirmation that applicable SCOs have been achieved with post-excavation confirmatory sampling.
4. Restoration of the site to the elevation necessary for site redevelopment (if required) through importation of approved clean materials.
5. Removal of any USTs (or other subsurface features that could serve as a source of contamination or require demolition) during site remediation and construction.
6. Placement of a composite cover system over all portions of the site where remaining soils exceed the generic Track 2 RRU SCOs but satisfy the applicable site-specific SCOs, in compliance with 6 NYCRR Part 375-3.2(e) and 375-3.8(e)(4)(iii), consisting of the new building slabs and pavement and/or a NYSDEC-approved clean soil cover (minimum 2-feet thick) at exterior locations (the majority of these areas are proposed paved parking lots). Existing fill soils suitable for on-Site reuse and meeting all RAWP requirements may be reused in areas beneath the composite cover.
7. Installation and continuous operation of an active SSDS at new buildings as a EC and post-remediation investigation to document SVI conditions.
8. Installation of a minimum 20-mil thick vapor barrier/waterproofing membrane beneath new building foundations to address potential soil vapor intrusion exposure pathways.

9. Establishment of use restrictions including: prohibitions on the use of site groundwater; prohibitions of restricted site uses, such as farming or vegetable gardening, to prevent future exposure pathways; and prohibition of a higher level of land use without NYSDEC approval.
10. Establishment of an approved Site Management Plan (SMP) to ensure the long-term management of all ECs and ICs including the performance of periodic inspections and certification that the controls are performing as they were intended.
11. Recording of an environmental easement registered with the county clerk memorializing all ECs and ICs, and the SMP.

3.1.3 Evaluation of Threshold Criteria

The threshold criterion is an evaluation of the remedy's ability to protect public health and the environment, and an assessment of how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through removal, treatment, and implementation of engineering controls or institutional controls. Protection of public health and the environment must be achieved for all approved remedial actions.

Alternative 1 would be more protective of human health and the environment by removing all soil exceeding Track 1 Unrestricted Use SCOs, thus eliminating the potential for direct contact with contaminated soil once construction is complete and eliminating the risk of contaminants leaching into groundwater from the site.

Alternative 2 would achieve comparable protections of human health and the environment by removing all soil exceeding applicable Track 2 or Track 4 Restricted-Residential Use SCOs across the site, and by use of a cover system at Track 4 areas.

For both Alternatives, potential exposure to contaminated soil, groundwater, or vapor during construction would be minimized by implementing the HASP, Soil/Materials Management Plan (SoMP), and CAMP. Potential contact with any contaminated groundwater would be prevented as its use is prohibited by City laws and regulations. Both alternatives include an EC for vapor that is protective after completion of site construction. Implementing ICs including a SMP would ensure that cover systems are maintained, vapor control systems are operational, and that inappropriate site uses are prevented, ensuring that the remedy remains protective of public health in the future.

3.1.4 Evaluation of Balancing Criteria

Compliance with Standards, Criteria and Guidance

This evaluation criterion assesses the ability of the alternative for conformance with SCGs that are applicable, relevant and appropriate. Conformance with the appropriate standards for remediation of contaminated soil is an important criterion in evaluating the remedial alternatives for the BCP site. Presently, in New York State 6 NYCRR Part 375 establishes the primary SCGs associated with remediation of contaminated soil at sites that are in the BCP (a comprehensive list of SCGs that are applicable, relevant and appropriate for evaluating the alternatives for remediation of this BCP are provided in Section 4.1.1).

If proposing remediation pursuant to a Track other than Track 1, Part 375 requires evaluation of at least one remedial alternative pursuant to Track I and one other alternative developed by the applicant for the proposed use of the BCP site. The proposed remedial alternatives have been prepared in conformance with this requirement.

Alternative 1 would achieve compliance with the remedial goals, chemical-specific SCGs, and RAOs for soil through removal of soil to achieve Track 1 UU SCOs. Alternative 2 would achieve compliance through removal of soil to achieve either Track 2 or Track 4 RRU SCOs, with an EC for soil exceeding Track 2 SCOs, and include an environmental easement prohibiting any higher use of the site and a SMP to ensure proper maintenance of ECs and compliance with ICs.

Health and safety measures contained in the HASP and CAMP will be implemented during site redevelopment under this RAWP. For both Alternatives, focused attention on means and methods employed during the remedial action would ensure that handling and management of contaminated material would be in compliance with applicable SCGs. These measures will protect on-site workers and the surrounding community from exposure to site-related contaminants. Both alternatives include ECs for vapor that will be evaluated for effectiveness in compliance with applicable SCG.

Short-Term Effectiveness and Impacts

This evaluation criterion assesses the effects of the alternative during the construction and implementation phase until remedial action objectives are met. Under this criterion, alternatives are evaluated with respect to their short-term effects during the remedial action on public health

and the environment during implementation of the remedial action, including protection of the community, protection of onsite workers and environmental impacts.

Both Alternatives have similar short-term effectiveness during their implementation, as each requires excavation of historical urban fill material. Each alternative would result in short-term dust generation impacts associated with excavation, handling, load out of materials, and truck traffic. Short-term impacts could potentially be higher for Alternative 1 since the excavation of greater amounts of soil and fill is expected. However, focused attention to means and methods during a Track 1 removal action, including community air monitoring and appropriate truck routing, would minimize the overall impact of these activities.

An additional short-term adverse impact and risk to the community associated with each remedial alternative is increased truck traffic. Truck traffic would be routed on the most direct course using major thoroughfares where possible and flag persons would be used to protect pedestrians at site entrances and exits. The number of total truck trips, both export and import of materials, is expected to be greater for Alternative 1.

The potential adverse impact to the community, workers and the environment for each alternative would be minimized through implementation of control plans (including the HASP, CAMP, and SoMP) during soil disturbance activities and would minimize release of contaminants into the environment. Each alternative provides short-term effectiveness in protecting the surrounding community by decreasing the risk of contact with contaminants. Construction workers operating under appropriate management procedures and the HASP would be protected from on-site contaminants by using personal protective equipment (PPE), which would be worn consistent with the documented risks within the respective work zones. There are no expected significant impacts for implementation of the EC for vapor as system installation will occur during site construction and be subject to control plans (operation of engineering controls under the SMP is considered to be a de minimis concern).

Long-Term Effectiveness and Permanence

This evaluation criterion addresses the results of a remedial action in terms of its permanence and the quantity and nature of waste and residual contamination at the site after response objectives have been met, such as permanence of the remedial alternative, magnitude of remaining contamination, adequacy of controls including the adequacy and suitability of ECs and

ICs that may be used to manage remaining contamination, assessment of ECs and ICs that are designed to eliminate exposures to contaminants, and long-term reliability of ECs.

Alternative 1 would achieve long-term effectiveness and permanence related to on-site contamination through removal of soil to achieve Track 1 UU SCOs. Alternative 2 would achieve compliance through removal of soil to achieve either Track 2 or Track 4 RRU SCOs. Alternative 2 would impose institutional controls, including an environmental easement prohibiting any higher use of the site, and a SMP would ensure proper maintenance of the ECs and compliance with ICs.

Reduction of Toxicity, Mobility, or Volume of Contaminated Material

This evaluation criterion assesses the remedial alternative's use of remedial technologies that permanently and significantly reduce toxicity, mobility, or volume of contaminants as their principal element. The following is the hierarchy of source removal and control measures that are to be used to remediate a site, ranked from most preferable to least preferable: removal and/or treatment, containment, elimination of exposure and treatment of source at the point of exposure. It is preferred to use removal or treatment to eliminate contaminants at a site, reduce the total mass of toxic contaminants, cause irreversible reduction in contaminants mobility, or reduce of total volume of contaminated media.

Alternative 1 would permanently eliminate the toxicity, mobility, and volume of contaminants from on-site soil by removing all soil in excess of Track 1 UU SCOs. Alternative 2 would remove impacted soils in excess of area-specific RRU SCOs and will achieve the lowest of the three applicable contaminant specific soil cleanup objectives for all soils above bedrock (in accordance with Part 375 section 6.4 through 6.6) except as otherwise specified in part 375-3.8€(2)(iii) as applicable for soils at a depth greater than 15 feet (e.g. soils below 15 feet may not represent a source of contamination). This Alternative would leave contaminated material, all of which would be inaccessible in areas of the installed cover system, and which would be practically inaccessible in Track 2 areas where foundations and pavement serve as an informal but functional cover. The implementation of institutional controls and SMP will protect on-site residents, workers and the near-by community from exposure to site-related contaminants. For both Alternatives, soil removal and engineering controls will reduce toxicity, mobility, and/or volume of contaminants.

Implementability

This evaluation criterion addresses the technical and administrative feasibility of implementing an alternative and the availability of various services and materials required during its implementation, including technical feasibility of construction and operation, reliability of the selected technology, ease of undertaking remedial action, monitoring considerations, administrative feasibility (e.g. obtaining permits for remedial activities), and availability of services and materials. The techniques, materials and equipment to implement each Alternative are readily available and have been proven to be effective in remediating the contaminants present on the site. They use standard equipment and technologies that are well established in the industry. The reliability of each remedy is also high. Neither Alternative 1 nor Alternative 2 have meaningful implementability issues.

Cost Effectiveness

This evaluation criterion addresses the cost of alternatives, including capital costs (construction costs, equipment costs, and disposal costs, engineering expenses, etc.) and site management costs (costs incurred after remedial construction is complete) necessary to ensure the continued effectiveness of a remedial action. Short-term costs for Alternative 1 are higher than for Alternative 2 since an additional volume of soil must be removed. For comparison, approximately 30,728 cy of material would require removal to achieve Alternative 1, while approximately 20,563 cy of soil would require removal to meet Alternative 2. Long-term costs for Alternative 2 are higher than Alternative 1 since implementation of a SMP is required as part of Alternative 2. Cost estimates for each Remedial Alternative are included as Appendix B.

Community Acceptance

This evaluation criterion addresses community opinion and support for the remedial action (observations here will be supplemented by public comment received on the RAWP). This RAWP will be subject to a public review under the NYSDEC BCP and will provide the opportunity for detailed public input on the remedial alternatives and the selected remedy. Public comments will be considered by NYSDEC prior to approval of this plan. Under all alternatives, the overall goals of the remedial program, to protect public health and the environment and eliminate potential contaminant exposures, have been broadly supported by citizens in the City of Binghamton and in other Broome County communities.

Land Use

This evaluation criterion addresses the proposed use of the property. This evaluation has considered reasonably anticipated future uses of the site and takes into account: current use and historical and/or recent development patterns; applicable zoning laws and maps; New York Department of State's Brownfield Opportunity Areas (BOA) pursuant to section 970-r of the general municipal law; applicable land use plans; proximity to real property currently used for residential use, and to commercial, industrial, agricultural, and/or recreational areas; environmental justice impacts, Federal or State land use designations; population growth patterns and projections; accessibility to existing infrastructure; proximity of the site to important cultural resources and natural resources, potential vulnerability of groundwater to contamination that might emanate from the site, proximity to flood plains, geography and geology; current institutional controls applicable to the site; and disproportionate burden impacts to the DAC in which the site is located.

The proposed development is consistent with existing zoning (*Neighborhood Commercial* and *Light & Medium Industrial*), which permits mixed residential and commercial uses.

The current, intended, and reasonably anticipated future land use of the site and its surroundings are compatible with the selected remedy of soil remediation with an EC for vapor. The proposed future use of the site includes new construction for residential and commercial uses, consistent with overall uses in the neighborhood. All proposed Alternatives are protective of public health and the environment for these planned uses. The proposed use is consistent with recent development patterns. The surrounding area is urban and predominantly consists of commercial and residential buildings, in zoning districts designated for residential and commercial uses. The planned development would remediate a contaminated parcel and provide modern residential structures with street-level commercial facilities. The proposed development would clean up the property and make it safer, create new employment opportunities, living space for city residents and associated societal benefits to the community, and other economic benefits from land revitalization.

Temporary short-term project impacts will be mitigated through site management controls and truck traffic controls during remediation activities.

The site is not in close proximity to important cultural resources, including federal or state historic or heritage sites or Native American religious sites, natural resources, waterways, wildlife refuges, wetlands, or critical habitats of endangered or threatened species.

The site is located in an urban area and not in proximity to fish or wildlife and neither alternative would result in any potential exposure pathways of contaminant migration affecting fish or wildlife. The remedial action is also protective of groundwater natural resources. The site does not lie in a Federal Emergency Management Agency (FEMA)-designated flood plain. Each alternative is equally protective of natural and cultural resources. Improvements in the current environmental condition of the property achieved by each considered Alternative are consistent with the City's goals for cleanup of contaminated land.

Green and Sustainable Remediation

Both proposed Alternatives were evaluated with respect to green and sustainable remediation principles and an environmental footprint analysis was completed using USEPA's SEFA (Spreadsheets for Environmental Footprint Analysis), a NYSDEC-accepted EFA calculator. SEFA inputs included metrics for greenhouse gas (GHG) emissions, total energy usage, water consumption, electrical usage, onsite and offsite emissions of nitrous oxide (NOx), sulfur oxides (SOx), particulate matter under 10 microns (PM10), and hazardous air pollutants (HAPs). Both site preparation and the direct implementation remedy were evaluated.

The evaluation of site preparation was limited to impacts from initial waste characterization efforts and associated disposal of investigation-derived waste (IDW). Evaluation of the remedial action was based on excavation and off-site disposal of contaminated soil (estimated at 30,728 cy for Alternative 1 and 20,563 cy for Alternative 2), associated support of excavation, installation of required imported backfill, and collection of confirmatory endpoint soil samples. Alternative 2 was estimated to require between 2 months to complete (weekends and holidays were excluded from the calculations). Alternative 1 was estimated to require a minimum of 1 additional month.

A comparison of the SEFA calculator output (see table below) shows the Track 1 environmental impact to be significantly higher than the combined Track 2 and Track 4 alternative due to the increased excavation volume requiring additional time and resource consumption.

Alternative 1, Track 1 Cleanup		Alternative 2, Track 2/Track4 Cleanup	
EFA Component	**Result**	**EFA Component**	**Result**
GHG emissions	654.7	GHG emissions	441.7
Total energy used	8,092.3	Total energy used	5,466.6
Water consumed	86,000	Water consumed	56,000
Electricity used	-	Electricity used	-
On-site NOx emissions	0.5481	On-site NOx emissions	0.3633
On-site SOx emissions	0.0007	On-site SOx emissions	0.0005
On-site particulate <PM10	0.0489	On-site particulate <PM10	0.0324
On-site HAPs emissions	0.0002	On-site HAPs emissions	0.0001
Total NOx emissions	3.8626	Total NOx emissions	2.6205
Total SOx emissions	0.8449	Total SOx emissions	0.6241
Total PM10 emissions	0.2387	Total PM10 emissions	0.1686
Total HAPs emissions	0.0928	Total HAPs emissions	0.0687

Notes: GHG, NOx, SOx, PM10, and HAPs in metric tons; total energy used in million British thermal units (MMBTU); water consumed in gallons; and electricity used in megawatt hours (MWH)

Appendix I provides documentation for the SEFA EFA.

3.2 Selection of the Preferred Remedy

The preferred remedy for the site is Alternative 2, where a combined Track 2 and Track 4 cleanup is achieved. Data generated during the RI and previous investigations document that soil contamination above RRU SCOs is primarily located at the surface and in upper fill soils, with limited impacts at deeper intervals within the fill. Although this readily accessible material will be removed during construction, several areas with deeper contamination are present at the site, including locations near adjoining structures and roadways, which could be damaged by remedial excavations to achieve Track 2 RRU SCOs, and where the anticipated cost for required support of excavation is considered excessive; the site, therefore, has been apportioned into both Track 2 excavation areas and Track 4 excavation areas protected by a cover system as an EC. A SMP will be utilized to manage all remaining soil under the RRU remedy and potential soil vapor intrusion will be addressed through an active SSDS and vapor barrier membrane. These actions are considered protective of the health of both construction workers and future site residents. ICs

will be implemented to further prevent any potential exposures to residual contamination, and a SMP would ensure maintenance of the ECs and compliance with ICs.

Use restrictions will be imposed on the site (e.g., the use of groundwater from the site; prohibitions of restricted site uses, such as farming or vegetable gardening, to prevent future exposure pathways; and prohibition of a higher level of land use without NYSDEC approval) and the property would receive an environmental easement registered with the Broome County Clerk memorializing these ICs.

The following land use factor evaluation examines whether the selected alternative is acceptable based on the following criteria (below) as required by Article 27, Title 14 of the Environmental Conservation Law 27-1415.

Zoning

The site is located in *Neighborhood Commercial* and *Light & Medium Industrial* districts, which permit the proposed use, consistent with applicable zoning laws. The implementation of Alternative 2 and the proposed final use are consistent with recent development in the surrounding area.

Applicable Community Master Plans or Land Use Plans

Implementation of Alternative 2 is consistent with: historical and recent development patterns; applicable zoning laws and maps; NYS Department of State's Brownfield Opportunity Areas (BOA) pursuant to section 970-r of the general municipal law; applicable land use plans; and proximity to real property currently used for residential use, and to commercial, industrial, and recreational areas. The current, intended, and reasonably anticipated future land use of the site and surroundings are compatible with Alternative 2. The proposed future use of the site includes the construction of on-site residential buildings with street-level commercial space, consistent with existing uses in the immediate area and nearby urban neighborhood.

Surrounding Property Uses

The site is located within a densely developed urban setting with adjoining residential and commercial uses, and nearby residential, commercial, and public uses; the final use and the proposed remedial action are consistent with these surrounding property uses. No significant environmental receptors (daycare facilities, schools, etc.) having a likely potential to be impacted by Site contamination and/or remediation have been identified within a half mile of the Site.

Impacts to adjoining/nearby properties during implementation of Alternative 2 will be minimized through strict adherence to local regulations governing construction activities, and implementation of site-specific plans (see Section 4.1, Governing Documents), including Health and Safety and Community Air Monitoring Plans.

Land Use Designations

There are no applicable federal or state land use designations.

Public Participation

This RAWP will be subject to a public review under the NYSDEC BCP and will provide the opportunity for detailed public input on the remedial alternatives and the selected remedy. This public comment will be considered by NYSDEC prior to approval of this plan. The project Public Participation Plan is provided in Appendix C. Observations here will be supplemented by public comment received on the RAWP. Under Alternative 2, the overall goals of the remedial program, to protect public health and the environment and eliminate potential contaminant exposures, have been broadly supported by citizens in the City of Binghamton.

Environmental Justice Concerns

Implementation of Alternative 2 would clean up the property and make it safer, create new employment opportunities, living space for future city residents and associated societal benefits to the community, and other economic benefits from land revitalization.

Population growth patterns

Implementation of Alternative 2 and the proposed use is compliant with the property's zoning and is consistent with recent development patterns.

Accessibility to Existing Infrastructure

The site has ready access to City infrastructure including roads, mass transit and public utilities. Implementation of Alternative 2 is compatible with current and future access and utilization of existing infrastructure.

Proximity to Cultural Resources

The site is not in close proximity to important cultural resources, including federal or state historic or heritage sites or Native American religious sites. Implementation of Alternative 2 would not negatively impact any important cultural resources.

Proximity to Natural Resources

The site is located in an urban area and is not near significant natural resources. Implementation of Alternative 2 would not result in any potential exposure pathways of contaminant migration affecting fish or wildlife.

Off-Site Groundwater Impacts

Alternative 2 is protective of groundwater natural resources. There are no known uses of groundwater in the vicinity of the site.

Proximity to Floodplains

The site does not lie in a Federal Emergency Management Agency (FEMA)-designated flood plain. Implementation of Alternative 2 would not introduce a receptor sensitive to flooding into an area susceptible to flooding.

Geography and Geology of the Site

Site geography and geology is described in Section 2.4; implementation of Alternative 2 is consistent with these site conditions.

Current Institutional Controls

The site is not currently encumbered with any institutional controls.

3.3 Summary of Selected Remedial Actions

Based on known environmental conditions and physical constraints on construction activities, the Volunteer expects to complete a combined Track 2 and Track 4 Restricted-Residential Use cleanup with residual contamination that requires Institutional Controls for Soil and Institutional and Engineering controls for soil vapor. The proposed remedial action plan achieves all of the remedial action goals established for the project. The plan is effective in both the short-term and

long-term and reduces mobility, toxicity and volume of contaminants and uses standard methods that are well established in the industry.

The proposed remedial action will consist of:

1. A remedial program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial action. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The core green remediation components are as follows:

    - Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
    - Reducing direct and indirect greenhouse gases and other emissions;
    - Increasing energy efficiency and minimizing use of non-renewable energy;
    - Conserving and efficiently managing resources and materials;
    - Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
    - Maximizing habitat value and creating habitat when possible;
    - Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
    - Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and,
    - Additionally, to incorporate green remediation principles and techniques to the extent feasible in the development at this site, any future on-site buildings shall be constructed (at a minimum) to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) and will utilize a 20-mil or thicker vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction. This vapor barrier will also function as an Engineering Control, as defined in 6 NYCRR Part 375-1.2(p), and will be formally identified and managed as such under Section 6.1.3 of this RAWP.

    As part of the remedial program, to evaluate the remedy with respect to green and sustainable remediation principles, an EFA will be completed using an accepted calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™

(available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool.

Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial program, as appropriate. The project will include detailed requirements to achieve Vanguard Village I+II and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial program.

Additionally, the remedial program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

The Site is located within a Disadvantaged Community (DAC; an area designated by the Climate Justice Working Group that faces significant socioeconomic and environmental challenges). The remedial program includes provisions to minimize greenhouse gas emissions and associated impacts to the community, including ensuring trucks and other construction vehicles are not idling and are equipped with emissions-control technologies. The designated travel routes for construction vehicles will be optimized to eliminate, or reduce as much as practicable, the travel of trucks within the local area and travel on highways will be prioritized. Disposal facilities and facilities providing backfill materials will be selected based on their proximity to the site and closer facilities will be prioritized to minimize greenhouse gas emissions. A stormwater management system will reduce site-specific impacts on municipal facilities and minimize local flooding impacts.

2. Performance of all required BCP Public Participation activities according to an approved Public Participation Plan.

3. Performance of a Community Air Monitoring Program for particulates and volatile organic compounds.
4. Selection of generic (Track 2) and site-specific (Track 4) Restricted-Residential Use SCOs (protection of public health) for soils to remain at the site.
5. Site preparation, including setup of site security, equipment mobilization, utility mark-outs, and marking/staking of excavation areas, as well as site demolition activities comprising support of excavation, and the excavation and removal of historic building slabs, foundations, and associated industrial debris, together with SOE required for excavation of "hot spot" areas.
6. Completion of a Waste Characterization Study prior to excavation. Waste characterization soil samples will be collected at a frequency dictated by the disposal facility.
7. Removal of any underground storage tanks encountered during construction activities in compliance with applicable local, State and Federal laws and regulations.
8. Removal of approximately 20,563 cy of soil exceeding applicable RRU SCOS:

Cleanup Track	Areal Extent (sq. feet)	Depth (feet)	Volume (cy)	Total Volume (cy)
Track 2	~143,149	3	~15,905	**~20,563**
Track 2	~900	6	~100	
Track 4	~59,276	2	~4,391	
Track 4	~900	7	~167	

9. Screening of excavated soil for indications of contamination by visual means, odor, and monitoring with a PID, and on-site segregation of excavated media (as needed).
10. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of RRU SCOs.
11. Management of excavated materials including temporarily stockpiling and segregating in accordance with defined material types and to prevent co-mingling of contaminated material and non-contaminated materials.
12. Transportation and off-site disposal of all soil material at licensed or permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-site.

13. Import of materials to be used for backfill in compliance with this plan and in accordance with applicable laws and regulations. If determined acceptable for re-use by the NYSDEC, existing fill soils that meet applicable SCOs may be relocated on the site for development.
14. Engineering controls (ECs) implemented following soil removal will include:
    a. Installation of a composite cover system over all Track 4 areas of the site where remaining soils exceed the generic Track 2 RRU SCOs but satisfy the applicable site-specific SCOs, in compliance with 6 NYCRR Part 375-3.2(e) and 375-3.8(e)(4)(iii), consisting of the new building slabs and pavement and/or a NYSDEC-approved clean soil cover (minimum 2-feet thick) at exterior locations;
    b. Installation and continuous operation of an active sub-slab depressurization system at the new buildings to address potential soil vapor intrusion, and post-remediation sampling to document system efficacy. The SSDS will consist of sub-slab venting, associated vent stacks and fans for activation; and,
    c. Installation of a minimum 20-mil thick vapor barrier/waterproofing membrane beneath new building foundations to address potential soil vapor intrusion exposure pathways.
15. Performance of all activities required for the remedial action, including acquisition of required permits and attainment of pretreatment requirements, in compliance with applicable laws and regulations.
16. Based on the depth to groundwater, dewatering of excavations is not likely to be required. If implemented, however, all activities will be in compliance with city, state, and federal laws and regulations. Extracted groundwater will either be containerized for off-site licensed or permitted disposal or will discharged to the local wastewater system in compliance with all municipal requirements, including pre-treatment if warranted.
17. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
18. Submission of a Final Engineering Report that describes the remedial activities, certifies that the remedial requirements have been achieved, defines site boundaries, lists any changes from this RAWP, and describes all Engineering Controls and Institutional Controls (ICs) to be implemented at the site.

19. Submission of an approved Site Management Plan in the FER for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of ECs and ICs, and reporting at a specified frequency.
20. Recording of an environmental easement that includes a listing of institutional controls. Institutional controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without NYSDEC approval. The environmental easement will include a listing of engineering controls and a requirement that management of these controls must be in compliance with an approved SMP.

4 REMEDIAL ACTION PROGRAM

4.1 Governing Documents

All remedial work performed under this plan will be in full compliance with the governing documents described in this section of the RAWP.

4.1.1 Standards, Criteria and Guidance

Principal SCGs applicable to remedial program implementation include the following (additional regulations and guidance will be referenced as warranted during program implementation):

- 6 NYCRR Part 360 and Part 364 Solid Waste Management Requirements
- 6 NYCRR Part 364 Waste Transporter Permits
- 6 NYCRR Part 371, Identification and Listing of Hazardous Wastes
- 6 NYCRR Part 372, Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities
- 6 NYCRR Subpart 374-1, Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
- 6 NYCRR Part 375, Environmental Remediation, Subparts 375-1 (Remedial Program Requirements), 375-3 (Brownfield Cleanup Program), and 375-6 (Soil Cleanup Objectives)
- 6 NYCRR Part 376, Land Disposal Restrictions
- 6 NYCRR Part 608, Use and Protection of Waters
- 6 NYCRR Parts 700-706, Water Quality Standards
- 6 NYCRR Part 750 State Pollutant Discharge Elimination System (SPDES) Permits
- 10 NYCRR Part 67, Lead
- 29 CFR Part 1910.120, Hazardous Waste Operations and Emergency Response
- NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs (April 2023)
- NYSDEC CP-51 Soil Cleanup Guidance (October 2010)
- NYSDEC DER-2, Making Changes to Selected Remedies (May 2008)
- NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation (May 2010)
- NYSDEC DER-23, Citizen Participation Handbook for Remedial Programs (January 2010)
- NYSDEC DER-31, Green Remediation (September 2010)
- NYSDEC TAGM 3028, "Contained In" Criteria for Environmental Media (August 1997)
- NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values, (June 2004)
- NYSDOH Generic Community Air Monitoring Plan (May 2010)
- USEPA OSWER Directive 9200.4-17, Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites (November 1997)

4.1.2 Public Participation Plan

A Public Participation Plan, including an overview of the BCP program, background of the site, a summary of the investigative findings for the site, and public participation activities is provided in Appendix C.

A certification of mailing will be sent by the Volunteer to the NYSDEC project manager following the distribution of all Fact Sheets and notices that includes: (1) certification that the Fact Sheets were mailed, (2) the date they were mailed; (3) a copy of the Fact Sheet, (4) a list of recipients (contact list); and (5) a statement that the repository contains all applicable project documents.

No changes will be made to approved Fact Sheets authorized for release by NYSDEC without written consent of the NYSDEC. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

A document repository has been established at the following location and contains all applicable project documents:

Broome County Public Library
185 Court Street, Binghamton, NY 13901
Josias Bartram, Library Director
josias.bartram@broomecountyny.gov
(607) 778-6407

4.1.3 Health and Safety Plan for Site Remediation (HASP)

All remedial work performed under this plan will be in full compliance with regulatory requirements, including site and worker safety requirements mandated by Federal OSHA. The Volunteer and associated parties preparing the remedial documents submitted to the State and those performing the construction work, are completely responsible for the preparation of an appropriate Health and Safety Plan and for the appropriate performance of work according to that plan and applicable laws. The HASP and requirements defined in this Remedial Action Work Plan pertain to all remedial and invasive work performed at the site until the issuance of a Certificate of Completion. A copy of the HASP is provided as Appendix D.

The site-specific HASP will be reviewed with site personnel and appropriate sub-contractors prior to the initiation of fieldwork. All proposed work will be performed in “Level D” PPE unless field conditions warrant additional protection.

The Site Safety Coordinator will be Erick Salazar of GBTS unless otherwise specified and approved by the NYSDEC. A resume will be provided to NYSDEC prior to the start of remedial construction.

Confined space entry will comply with all OSHA requirements to address the potential risk posed by combustible and toxic gasses. Potential confined spaces on this project include utility trenches and other excavation areas.

4.1.4 Community Air Monitoring Plan (CAMP)

The CAMP (provided in Appendix E) will be initiated during all ground intrusive activities, and during any other fieldwork that is reasonably likely to generate significant dust or vapors from known or suspected contaminated soils. Ground intrusive activities include, but are not limited to soil/waste excavation and handling, test pit excavation or trenching, and the installation of soil borings or monitoring wells. The implementation of the CAMP will document the presence or absence of VOCs and dust in the air surrounding the work zone, which may migrate off-site due to fieldwork activities. This plan provides guidance on the need for implementing more stringent dust and emission controls based on air quality data.

Mitigation measures may include reducing the surface area of contaminated soil being disturbed at one time, watering exposed soils to reduce fugitive dust and odors, or stopping excavation activities. Dust suppression will be conducted during construction activities that will disturb on-site soils and may include misting, reduction in soil movement, or cessation of excavation.

Real-time air monitoring for VOCs and particulate levels at the perimeter of the exclusion zone or work area will be performed. Periodic monitoring for VOCs will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection, for instance, will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence. Exceedances of action levels observed during performance of the CAMP will be reported to the NYSDEC Project Manager and included in the Daily Report.

VOC Monitoring, Response Levels, and Actions

VOCs will be monitored at the upwind and downwind perimeters of the immediate work area (i.e., the exclusion zone) on a continuous basis during invasive work. Upwind concentrations will be measured at the start of each workday and continuously thereafter to establish background conditions. Monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 ppm above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.

If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or occupied structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shut down.

All 15-minute readings must be recorded and be available for NYSDEC personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a

period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter (µg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed and work will continue provided that downwind PM-10 particulate levels do not exceed 150 µg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 µg/m^3 above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 µg/m^3 of the upwind level and in preventing visible dust migration.

All readings will be recorded and will be available for NYSDEC personnel to review.

4.1.5 Quality Assurance Project Plan (QAPP)

A QAPP, detailing procedures necessary to generate data of sufficient quality and quantity to represent successful performance of the Remedial Action, is provided as Appendix F. The QAPP includes a Sampling and Analysis Plan (SAP), detailing sampling and analysis of all media (confirmatory and/or endpoint samples, waste characterization samples, fill and soil cover samples, etc.), and which identifies methods for sample collection and handling.

4.1.6 Soil/Materials Management Plan (SoMP)

All soil removal will follow the SoMP plan as specified in Section 5.4, below. The SoMP includes detailed plans for managing all soils/materials that are disturbed at the site, including excavation, handling, storage, transport and disposal, and includes all controls that will be applied to these efforts to assure effective, nuisance-free performance in compliance with all applicable Federal, State and local laws and regulations. All contaminant source removal areas will be surveyed at the completion of excavation. This information will be provided on maps in the FER.

4.1.7 Storm-Water Pollution Prevention Plan (SWPPP)

The Volunteer is responsible for ensuring that a Storm Water Pollution Prevention Plan will be prepared for the site prior to demolition and soil removal activities. The plan will address

requirements of New York State Storm-Water Management Regulations including physical methods to control and/or divert surface water flows and to limit the potential for erosion and migration of site soils, via wind or water, and will accommodate construction sequencing and staging areas. The erosion and sediment controls will be in conformance with requirements in the New York State Guidelines for Urban Erosion and Sediment Control. A SWPPP, inclusive of an Erosion and Sediment Control Plan (ESCP), is provided in Appendix G.

4.1.8 Contractors Site Operations Plan (SOP)

The Remedial Engineer has reviewed all plans and submittals for this remedial project (including those listed above and contractor and sub-contractor document submittals) and confirms that they are in compliance with this RAWP. The Remedial Engineer is responsible to ensure that all later document submittals for this remedial project, including contractor and sub-contractor document submittals, are in compliance with this RAWP. All remedial documents will be submitted to NYSDEC and NYSDOH in a timely manner and prior to the start of work.

4.1.9 Remedial Design in Compliance with DER-31

A remedial design program will be implemented in accordance with NYSDEC DER-31 Green Remediation to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program.

Green and Sustainable Remediation Components

GSR principles and techniques will be employed as feasible in the design, implementation, and site management of the remedy in general conformance with per DER-31. The major remediation components are as follows:

- Considering environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, and increasing recycling and reuse of materials that would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;

- Fostering green and healthy communities and working landscapes that support balancing ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and,
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the development at this site, any future on-site buildings shall be constructed (at a minimum) to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) and will utilize a 20-mil or thicker vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

An EFA performed for each proposed remedial alternative is provided in in Appendix I.

Best Management Practices

Best Management Practices in the context of GSR are specific actions to reduce energy and water usage, minimize waste, reduce air and water pollution, and protect land and ecosystems during all phases of remediation.

BMPs will be implemented during the remedial action in consultation with NYSDEC and in general conformance with NYSDEC *Green and Sustainable Remediation and Climate Resiliency Fact Sheet* (June 2023) and USEPA *Green Remediation Best Management Practices: Site Investigation and Environmental Monitoring* (September 2016). Examples of BMPs for remediation at the site are:

- Advance project planning to a) minimize mobilizations to the site by fieldwork personnel and related subcontractors, and b) avoid unnecessary/redundant media sampling and the associated impacts from collection, transportation, and laboratory analysis;
- Remote communication as practical to minimize on-site meetings, reducing the impacts associated with transportation of site personnel (energy use, pollution, etc.);
- Use of minimally invasive fieldwork technologies, such as direct-reading instruments;
- Use of existing on-site construction equipment as possible rather than mobilization of specialized off-site equipment (e.g., additional waste-characterization samples collected via an on-site excavator verses use of mechanized boring equipment brought to the site);
- Combining waste streams (where both practical and acceptable to the disposal facilities) to minimize both on-site handling and transportation costs; and,

- Optimization of any required Engineering Controls, including proper initial design, pilot testing, selection of correctly sized and energy efficient equipment, and periodic maintenance to ensure effective ongoing operation.

4.2 General Remedial Construction Information

4.2.1 Project Organization

Principal personnel who will participate in the remedial action include the Professional Engineer (PE), Daniel Bellucci and the Qualified Environmental Professional (QEP), Erick Salazar, CHMM. NYSDEC will be notified of any change to principal personnel. Resumes of key personnel are provided in the QAPP.

4.2.2 Remedial Engineer and Qualified Environmental Professional

Remedial Engineer

The Remedial Engineer (RE) for this project will be Daniel Bellucci of Bellucci Engineering, PLLC, a registered professional engineer licensed by the State of New York (NYS Professional Engineer Number 099470), who has contracted directly with The Metro Group Properties, Inc. (Volunteer) to provide all engineering services under the BCP. The Remedial Engineer will have primary direct responsibility for implementation of the remedial program for "Vanguard Village I+II" BCP site (No. C704063).

The Remedial Engineer will: certify in the FER that the remedial activities were observed by qualified environmental professionals under their supervision and that the remediation requirements set forth in the RAWP and any other relevant provisions of ECL 27-1419 have been achieved in full conformance with that Plan; coordinate the work of other contractors and subcontractors involved in all aspects of remedial construction, including soil excavation, stockpiling, characterization, removal and disposal, air monitoring, emergency spill response, import of backfill, and management of waste transport and disposal; be responsible for all appropriate communication with NYSDEC and NYSDOH; review all pre-remedial plans submitted by contractors for compliance with this RAWP and will certify compliance in the FER; and, certify the FER in accordance with NYSDEC DER-10 Section 1.5(b)4.

Qualified Environmental Professional

The Qualified Environmental Professional (QEP) for this project will be Erick Salazar, CHMM of GBTS (which has contracted with the Volunteer to provide applicable environmental remediation services under the direct supervision of the Remedial Engineer). The QEP will oversee environmental remedial activities on the site, document the proper removal of contaminated soils, collect waste characterization as well as site integrity samples, inspect and certify the proper importation of approval fill soils, and assist the Remedial Engineer in the preparation of documents including the FER, the SMP, and periodic status reports.

4.2.3 Remedial Action Construction Schedule

A schedule for performance of the remedial work is provided in Section 10.

4.2.4 Work Hours

The hours for operation of remedial construction will be from 7 a.m. to 5 p.m. These hours conform to City of Binghamton requirements or to specific variances issued by applicable City agencies (NYSDEC will be notified by the Volunteer of any variances). No remedial work will be conducted on weekend days (Saturday or Sunday) unless expressly permitted by NYSDEC. NYSDEC reserves the right to deny alternate remedial construction hours.

4.2.5 Site Security

The site will be secured at a minimum with a six-foot fence and locking gates to protect the public during all construction activities.

4.2.6 Traffic Control

Traffic control will be provided by the contractor during equipment entrance and egress from the site. Trucks will follow the approved truck route in Section 5.4.4. Drivers of trucks leaving the site with excavated soil will be instructed to proceed without stopping in the vicinity of the site to prevent neighborhood impacts.

4.2.7 Contingency Plan

If unknown conditions are encountered during sub-grade removal (e.g., discovery of unidentified UST), the Contingency Plan (provided in Section 5.5) and all applicable NYSDEC guidelines will be followed to address the condition(s).

4.2.8 Worker Training and Monitoring

The Volunteer is responsible for ensuring that all site contractors provide their workers with applicable training (i.e. HAZWOPER, site safety training and medical monitoring, as necessary).

4.2.9 Agency Approvals

The Volunteer has addressed all SEQRA requirements. All permits or government approvals required for remedial construction have been, or will be, obtained prior to the start of remedial construction. Acceptance of this RAWP by NYSDEC does not constitute satisfaction of these requirements and will not be a substitute for any required permit.

The site has zoning designations (*Neighborhood Commercial* and *Light & Medium Industrial*) that permit the planned mixed-use (residential/commercial) buildings, and the proposed use is consistent with applicable zoning laws. A Certificate of Completion will not be issued for the project unless conformance with zoning designation is demonstrated.

4.2.10 Pre-Construction Meeting with NYSDEC

A pre-construction meeting among NYSDEC, the Volunteer, the RE and QEP, and the General Contractor will take place prior to the start of remedial construction activities.

4.2.11 Emergency Contact Information

An emergency contact list with names and telephone numbers that will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency is below.

Table: Emergency Contact Information

Emergency Agencies	Phone Numbers
EMERGENCY	911
Guthrie Lourdes Hospital 169 Riverside Drive, Binghamton, NY 13905	(607) 763-6311 or 911
City of Binghamton - Police Department 38 Hawley Street Binghamton, NY 13901	(607) 723-5321 or 911
City of Binghamton - Fire Department	(607) 772-7016 or 911
City of Binghamton – City Hall 38 Hawley Street Binghamton, NY 13901	(607) 772-7021
City of Binghamton - Department of Water & Sewer	(607) 772-7210 (7020 – after hours)
Site Health and Safety Officer, Erick Salazar - GBTS	(845) 867-4716
Remedial Engineer, Daniel Bellucci, PE	(845) 803-4347
Construction Manager	TBD

4.3 Site Preparation

4.3.1 Agency Notification and Mobilization

Notifications

The NYSDEC will be notified in writing at least five (5) business days prior to the initiation of any of the on-site work and during the course of the fieldwork. Changes to fieldwork scheduling will be provided via email. All applicable local agencies will also be notified prior to the initiation of site work. NYSDEC will have the opportunity to participate in all remediation project status meetings (adequate notice of these meetings will be provided).

Prior to the implementation of any ground intrusive activities, a request for a complete utility mark-out of the site will be submitted in conformance with New York State Department of Labor regulations. Confirmation of underground utility locations will be secured, and a field check of the utility mark-out will be conducted prior to the initiation of work. Site utilities will be protected (as necessary) by the contractor or Volunteer.

Prior to the implementation of any ground intrusive activities, the boundary between portions of the site proposed for Track 2 and Track 4 cleanup will be surveyed and marked in the field using stakes and orange snow fence (or equivalent). Prevention of cross-contamination of Track 2 areas by Track 4 soils will be achieved by sequencing remedial excavations and endpoint sampling such that the Track 2 grids adjoining the Track 4 boundary will be addressed after Track 4 cover has been installed. If that sequencing cannot be achieved because of the exigencies of construction, decontamination measures will be implemented (see Section 4.3.7 below) and special attention to means and methods of excavation will be employed, in order to prevent cross-contamination and comingling of Track 2 areas with Track 4 soils. After the completion of remedial excavations and end point sampling the lateral extent of the Track 4 area will be surveyed for the Environmental Easement.

Site Mobilization

Mobilization will be conducted as necessary for each phase of work at the site. Mobilization includes field personnel orientation, equipment mobilization (including securing all sampling equipment needed for the field investigation), marking/staking sampling locations and utility mark-outs. Each field team member will attend an orientation meeting to become familiar with the general operation of the site, health and safety requirements, and field procedures. Site

mobilization will be conducted in a manner such that erosion and sedimentation control, utility marker and easement layout, and other site preparation tasks are fully instituted before construction begins.

4.3.2 Erosion and Sedimentation Controls

This section describes preventative measures that will be taken to protect the site from soil erosion and sedimentation during remedial activities. A final SWPPP, inclusive of an ESCP, reflecting final site development plans and any approved modifications to the scope of remedial work, will be submitted to the NYSDEC for review and approval prior to the start of construction (preliminary plans are provided in Appendix G). The final ESCP will include these elements:

- A location map including the proximity of the site to relevant off-site features;
- An Existing Conditions Site Plan;
- A grading plan and construction timetable including finished elevations and addressing the sequencing of the project; and,
- The location and type of all erosion and sediment control measures (e.g., silt fence, hay bales, stabilized construction entrance, etc.) and sequencing of the measures, if needed.

The remediation will occur in such a way as to permit on-site stormwater to remain on the site.

4.3.3 Stabilized Construction Entrance(s)

Steps will be taken to ensure that trucks departing the site will not track soil, fill or debris off-site. Such actions may include use of cleaned asphalt or concrete roads or use of stone or other aggregate-based egress paths between the truck inspection station and the property exit. Measures will be taken to ensure that adjacent roadways will be kept clean of project related soils, fill and debris. Construction entrances are proposed for Clinton, Hudson, and Jarvis Streets.

4.3.4 Utility Marker and Easements Layout

The Volunteer and its contractors are solely responsible for the identification of utilities that might be affected by work under the RAWP and implementation of all required, appropriate, or necessary health and safety measures during performance of work under this RAWP. The Volunteer and its contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. The Volunteer and its contractors must obtain any local, State or Federal permits or approvals pertinent to such work that may be required to perform work

under this RAWP. Approval of this RAWP by NYSDEC does not constitute satisfaction of these requirements.

The presence of utilities and easements on the site has been investigated by the Remedial Engineer. It has been determined that no risk or impediment to the planned work under this Remedial Action Work Plan is posed by utilities or easements on the site.

4.3.5 Sheeting and Shoring

Appropriate management of structural stability of on-site or off-site structures during on-site activities including excavation is the sole responsibility of the Volunteer and its contractors. The Volunteer and its contractors are solely responsible for safe execution of all work performed under this Plan. The Volunteer and its contractors must obtain any local, State or Federal permits or approvals that may be required to perform work under this Plan. The Volunteer and its contractors are solely responsible for the implementation of all required, appropriate, or necessary health and safety measures during performance of work under the approved Plan.

4.3.6 Equipment and Material Staging

Equipment and materials will be stored and staged in a manner that complies with applicable laws and regulations. Specific site areas will be designated for the staging of equipment and materials. Staging areas will be located and managed such that: a) non-contaminated materials do not contact or become intermixed with contaminated materials; and b) the likelihood of worker and/or visitor exposures to contaminated media is minimized.

4.3.7 Decontamination Area

Decontamination of field equipment will be conducted to prevent site cross-contamination, minimize the potential for off-site contamination and to reduce exposures to contaminated media. All decontamination activities will be documented in field logbooks.

Trucks and other heavy equipment remaining on-site will be brushed to remove easily accessible gross accumulations of soil at the end of each workday, and prior to moving between excavation areas or moving toward the site exit. A dedicated decontamination area will be provided as part of the erosion and sedimentation control for vehicles exiting the site and will be designed such that there is continuity between the equipment wash area and the clean egress path. Heavy equipment will be brushed and sprayed with high-pressure water and/or steam to remove soil adhering to surfaces (including wheels and vehicle undercarriages), prior to exiting the site.

Decontamination of non-disposable equipment will be conducted on a decontamination line setup on plastic sheeting, proceeding from dirty to clean. All items (disassembled as needed) will be washed/brushed thoroughly in an Alconox (or similar) solution, then rinsed with clean water (and/or nitric acid and methanol, as appropriate) per established USEPA decontamination protocols. All down-hole gauging and pumping equipment will be allowed to run fully submerged in both soapy and clean water. Rinse blanks will be collected as per the requirements of the QAPP.

Equipment known or suspected to be impacted by petroleum or solvents, grossly contaminated media, or materials subject to conditions specified in the Contingency Plan (Section 5.5), will be decontaminated on an engineered pad designed to capture and contain wash water (to be containerized and characterized prior to off-site disposal at a permitted facility.

Any fluids or solids generated from decontamination activities will be properly disposed.

Based on known conditions, rinse water generated during other decontamination activities will be allowed to infiltrate into on-site soils, either directly to the surface (for minor quantities of water that are not likely to exhibit sheet flow) or to the subsurface via engineered discharge pits.

4.3.8 Site Fencing

Site fencing (6 feet minimum with locking gate) will be installed as needed.

4.3.9 Demobilization

Demobilization will include:

- Restoration of temporarily disturbed locations (e.g., access and storage areas);
- Removal of sediment from erosion control measures and truck wash areas, and disposal of materials in accordance with applicable laws and regulations;
- Equipment decontamination; and,
- General refuse disposal.

Equipment will be decontaminated and demobilized at the completion of all field activities. Investigation equipment and large equipment (e.g., soil excavators) will be washed at the truck inspection station as necessary. In addition, all investigation and remediation derived waste will be appropriately disposed.

4.3.10 Well Decommissioning

Any monitoring wells located within construction areas will be properly decommissioned according to technical guidance provided in NYSDEC CP-43: Groundwater Monitoring Well Decommissioning Policy. The well casing will be exposed to a depth corresponding to the depth of planned excavation in the immediate vicinity of the well, the exposed casing will be cut off at the level of the excavation floor and the remaining subsurface portion of the casing will be grouted in-place, as per CP-43 Section 6.0.

4.3.11 Site Demolition and Support of Excavation

Site demolition activities will be performed as part of remedial site preparation and will include support of excavation as necessary to safely excavate historic building slabs, foundations, and associated industrial debris identified during the RI, as well as SOE required for excavation of "hot spot" areas (e.g., localized deeper excavations required to achieve Track 2 or 4 RRU SCOs, such as the excavation areas identified at Grid K10 [SB-19] and Grid P8 [SB-17]). These activities are integral to, and will be documented as part of, the remedial action described in this RAWP.

4.4 Reporting

All daily and monthly Reports will be included in the FER.

4.4.1 Daily Reports

Daily reports will be submitted to NYSDEC and NYSDOH Project Managers by noon of the next business day after the end of the reporting period, and will include:

- An update of progress made during the reporting day;
- Locations of work and quantities of material imported and exported from the site;
- References to alpha-numeric map for site activities;
- A summary of any and all complaints with relevant details (names, phone numbers);
- A summary of CAMP finding, including excursions; and,
- An explanation of notable site conditions.

Daily reports are not intended to be the mode of communication for notification to the NYSDEC of emergencies (accident, spill), requests for changes to the RAWP or other sensitive or time critical information. However, such conditions must also be included in the daily reports.

Emergency conditions and changes to the RAWP will be addressed directly to NYSDEC Project Manager via personal communication.

Daily Reports will include a description of daily activities keyed to an alpha-numeric map for the site that identifies work areas. These reports will include a summary of air sampling results, odor and dust problems and corrective actions, and all complaints received from the public.

Figure 8 shows a predefined alpha-numeric grid for use in identifying all locations described in reports submitted to NYSDEC.

The NYSDEC assigned project number will appear on all reports.

4.4.2 Monthly Reports

Monthly reports prepared in accordance with DER-10 Section 5.7(b) will be submitted to NYSDEC and NYSDOH Project Managers within one week following the end of the month of the reporting period.

Reports will include, at a minimum:

- Activities relative to the site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (i.e. tons of material exported and imported, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- Sampling results received following internal data review and validation, as applicable; and,
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays.

4.4.3 Other Reporting

Representative photographs of all remedial program elements, in acceptable quality, will be submitted to NYSDEC in digital (JPEG) format. Photographs will include the site as a whole, each contaminant source area, and site structures, and will be taken before, during, and after remediation. Photographs will be included in the daily reports as needed, and a comprehensive chronological collection will be included in the FER.

Job-site record keeping for all remedial work will be appropriately documented. These records will be maintained on-site at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.

4.4.4 Complaint Management Plan

All complaints from citizens will be promptly reported to NYSDEC. Complaints will be addressed, and outcomes will also be reported to NYSDEC in daily reports. Notices to NYSDEC will include the nature of the complaint, the party providing the complaint, and the actions taken to resolve any problems.

Any public complaints regarding nuisances or other site conditions will be handled as follows:

- Information from the person making the complaint (name, phone number, address, etc.) will be obtained, if possible, so follow-up can be completed.
- The nature of the complaint, date, time, and weather conditions will be noted.
- The complaint will be addressed by on-site personnel.
- The person logging the complaint will be re-contacted (if contact information was provided), so that the resolution of the complaint can be documented.
- In the event that the complaint cannot be resolved, the NYSDEC project manager will be contacted in writing.

4.4.5 Deviations from the Remedial Action Work Plan

All changes to the RAWP will be reported to the NYSDEC Project Manager and will be documented in daily reports and reported in the FER.

The process to be followed if there are any deviations from the RAWP will include a request for approval for the change from NYSDEC noting the following:

- Reasons for deviating from the approved RAWP;
- Effect of the deviations on overall remedy; and,
- Determination that the remedial action with the deviation(s) is protective of public health and the environment.

Notification will be provided to NYSDEC by telephone for conditions requiring immediate action (e.g., conditions judged to be a danger to on-site personnel or the surrounding community).

5 DETAILS OF PROPOSED REMEDIAL ACTIONS

5.1 Removal of Contaminated Materials

5.1.1 Removal of Underground Storage Tanks

The site has historically contained USTs and additional unknown tanks may still be present; any USTs encountered at the site will be excavated, cleaned, and disposed off-site at a permitted facility in accordance with DER-10, Section 5.5 (fieldwork protocols are discussed in Section 5.5.1). Tank removal will be sequenced to allow for efficient and safe remedial construction activities, with priority given to avoiding any actions likely to result in a release.

5.1.2 Excavation of Contaminated Soil/Fill Materials

All soils that exceed applicable RRU SCOs[1] (anticipated to be approximately 20,563 cy) will be removed as provided below and shown on Figure 10:

Cleanup Track	Areal Extent (sq. feet)	Depth (feet)	Volume (cy)	Total Volume (cy)
Track 2	~143,149	3	~15,905	**~20,563**
Track 2	~900	6	~100	
Track 4	~59,276	2	~4,391	
Track 4	~900	7	~167	

Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that applicable RRU SCOs for the site have been achieved. If confirmation sampling indicates that RRU SCOs were not achieved at the stated remedial depth, the Volunteer must notify NYSDEC, submit the sample results, and in consultation with NYSDEC determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that RRU SCOs for the site have been achieved.

Waste characterization sampling will be completed for contaminated site material to ensure the proper handling and disposal of excavated material (such sampling will be performed exclusively for the purpose of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state, and local laws, rules, and regulations and facility-specific permits).

[1] For the purposes of the described proposed remedial actions, the terms *Soil Cleanup Objectives* and *SCOs* are defined to be inclusive of the NYSDEC Guidance Values (GVs) established for PFAS (PFOS and PFOA, only).

Remedial construction will include excavation and removal of any USTs, fuel dispensers, underground piping or other structures potentially associated with a source of contamination.

Figure 10 shows proposed remedial excavations to achieve a combined Track 2 and Track 4 cleanup.

No fill material will be re-used without approval by the NYSDEC and no on-site fill material will be used to regrade areas below the static water level.

5.1.3 Soil Cleanup Objectives

The Soil Cleanup Objectives for the site are defined in 6 NYCRR Part 375, Table 6.8(b), Protection of Public Health, with the following site-specific SCOs applicable for Track 4 areas:

Contaminant	Site-Specific SCO
Total SVOCs	100 ppm
lead	1,000 ppm
mercury	1 ppm

SCOs are presented in Tables 1 through 7, which also show exceedances of both Unrestricted and Restricted-Residential SCOs for all soil at the site. Figure 5 is a spider map that shows exceedances of RRU SCOs.

5.2 Remedial Performance Evaluation

5.2.1 Confirmatory Sampling Locations

The remedy requires that all soils that exceed the RRU SCOs in Track 2 areas, and soils exceeding the site-specific RRU SCOs in Track 4 areas, will be excavated and transported off-site for disposal. Confirmatory endpoint sampling is required at all remedial excavation areas.

Remedial excavations with a minimum base area of 900 sf will be performed as described below and in Section 5.2.2 – Confirmatory Sampling Frequency. At least one confirmatory base sample will be collected from each 900 sf excavation area and confirmatory wall samples will be collected at a frequency of at least one sample for every 30 linear feet of wall. Based on the results of initial endpoint sampling efforts, excavation areas may be extended vertically and/or horizontally in order to achieve required site cleanup objectives.

The surface area (in square feet), depth (in feet), and volume (in cubic yards) for each remedial excavation area are as follows:

Cleanup Track	Areal Extent (sq. feet)	Depth (feet)	Volume (cy)	Total Volume (cy)
Track 2	~143,149	3	~15,905	**~20,563**
Track 2	~900	6	~100	
Track 4	~59,276	2	~4,391	
Track 4	~900	7	~167	

A total of 234 confirmatory endpoint samples are proposed as excavation areas, including base and wall samples, as shown below (note: no samples are proposed at excavation walls that extend to the BCP boundary limits as those samples would represent off-site conditions).

Excavation Areas	Depth (feet)	Number of Base Samples	Number of Wall Samples
Site-wide	varies	224	0
Track 2 additional excavation (Grid K10 (SB-19))	6 feet	1	4
Track 4 additional excavation (Grid P8 (SB-17))	7 feet	1	4

If previously unknown contamination source areas are encountered (e.g., grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(v), underground drainage structures, or storage tanks, etc.), additional excavation and off-site disposal of the source areas as well as confirmation sampling will be required.

5.2.2 Confirmatory Sampling Frequency

Discrete confirmatory soil samples will be collected (at a minimum) from each 30 linear feet of wall (at least one sample per wall) and from every 900 square feet of excavation floor (at least one sample per floor) in excavation areas (the final number and location of samples will be determined in consultation with NYSDEC). All confirmatory samples will be analyzed for Part 375 parameters (TCL VOCs and TCL SVOCs, TAL metals with Cr^{+6}, pesticides, herbicides, PCBs, and cyanide) and PFAS. Based on RI data and site conditions, the Volunteer may request that a portion of the confirmatory samples be analyzed for a reduced list of parameters.

5.2.3 Confirmatory Sampling Methodology

Underlying and surrounding soils will be visually inspected and screened with the PID after soil excavation. Soil samples will be collected using dedicated, disposable plastic trowels and latex gloves (collection for PFAS will follow methodology as specified in the QAPP).

Samples will be placed in laboratory-supplied containers, properly stored in coolers, and transported to a NYSDOH-certified laboratory within 48 hours under chain of custody procedures.

5.2.4 Reporting of Results

All data will be provided to the NYSDEC within 72 hours of receipt. Any recommendations for additional testing will be reviewed with the NYSDEC prior to commencing this fieldwork.

5.2.5 QA/QC

Quality Assurance / Quality Control protocols are fully specified in the QAPP (Appendix F). QA/QC methodology includes the following:

- One duplicate sample for every 20 samples collected will be submitted to the approved laboratory for analysis of the same parameters.
- Samples will be appropriately packaged, placed in coolers and transferred under proper Chain of Custody to the analytical laboratory. Samples will be containerized in appropriate laboratory provided glassware and shipped in plastic coolers. Samples will be preserved through the use of ice to maintain a temperature of 4° C.
- Dedicated disposable sampling materials will be used for the collection of soil samples, eliminating the need to prepare equipment (rinsate) blanks. However, if non-disposable equipment is used (stainless steel scoop, etc.) field rinsate blanks will be prepared at the rate of one for every twenty samples collected.

5.2.6 Data Usability Summary Reports

Complete laboratory data packages will be provided to an independent, third-party data validator. A summary of the findings in the Data Usability Summary Reports (DUSRs) will be provided in the FER.

5.2.7 Reporting of Confirmatory Data in FER

Chemical analysis of confirmatory and contingency samples will be conducted by a NYSDOH ELAP certified laboratory. The FER will provide all confirmatory sample results and exceedances of SCOs. All data submitted as part of the FER will be in an electronic data deliverable format that complies with the NYSDEC Electronic Data Warehouse Standards.

5.3 Estimated Material Removal Quantities

The estimated quantity of soil to be removed from the site is up to approximately 45,000 cy of soil for construction purposes (additional soil may be removed if found to be unstable or otherwise unacceptable for development reasons), with at least 20,563 cy of this material removed for remediation purposes.

5.4 Soil/Materials Management Plan

5.4.1 Soil Screening Methods

Soil screening and assessment will be performed by a qualified environmental professional or experienced field technician under the direction of the Remedial Engineer during all remedial and development excavations into known or potentially contaminated material. Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during the remedy and during development phase, such as excavations for foundations and utility work, prior to issuance of the Certificate of Completion.

Grossly contaminated soil will be identified by the presence of: non-aqueous phase liquids (NAPL); visual indications of staining, discoloration or the presence of other obvious signs of contamination; noticeable odors associated with petroleum, solvents or other chemicals; and/or elevated PID readings compared to background levels.

Soil screening will be used to establish excavation endpoints by: 1) establishing the absence of soil exhibiting significant field evidence of contamination (grossly contaminated media) or debris materials likely to be associated with contaminants of concern (e.g., urban fill); and 2) identifying the presence of non-disturbed native soils. The use of direct-reading hand-held screening devices (e.g., PID) will be employed, as appropriate, to determine likely excavation boundaries; final endpoints, however, will only be established through laboratory analysis of confirmatory samples.

All primary contaminant sources (including but not limited to tanks and/or petroleum spill areas) identified during Site Characterization, Remedial Investigation, and Remedial Action will be surveyed by a surveyor licensed to practice in the State of New York. This information will be provided on maps in the FER.

Screening will be performed by qualified environmental professionals. Resumes will be provided for all personnel responsible for field screening (i.e. those representing the Remedial Engineer) of invasive work for unknown contaminant sources during remediation and development work.

5.4.2 Stockpile Methods

All stockpile activities will be compliant with applicable laws and regulations. Stockpile areas will be appropriately graded to control run-off and will be located in areas not subject to flooding or excessive sheet flow during storm events. Material to be stockpiled will be placed within an area designed and constructed to contain the materials from all sides and prevent runoff and dispersion. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible.

Excavated soil from known and/or suspected areas of contamination (e.g., petroleum spill areas, drains, etc.) will be stockpiled separately and will be segregated from clean soil and construction materials. Stockpiles will be used only when necessary and will be removed as soon as practicable. Excavated soils will be stockpiled on, at minimum, double layers of 8-mil minimum sheeting. Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected daily. Results of inspections will be recorded in a logbook maintained at the site and available for inspection by NYSDEC.

Soil stockpiles will be continuously encircled with silt fences. Hay bales (or equivalent) will be used as needed near catch basins, surface waters and other discharge points.

Water will be available on-site at suitable supply and pressure for use in dust control.

5.4.3 Materials Excavation and Load Out

The Remedial Engineer or a qualified environmental professional under his/her supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The Volunteer and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site has been investigated by the Remedial Engineer. It has been determined that no risk or impediment to the planned work under this Remedial Action Work Plan is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site. The on-site Qualified Environmental Professional under the Remedial Engineer's directive will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the remedial construction is complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site sediment tracking.

The on-site Qualified Environmental Professional under the Remedial Engineer's directive will be responsible for ensuring that all egress points for truck and equipment transport from the site will be clean of dirt and other materials derived from the site during site remediation and development. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site -derived materials.

The Volunteer and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations and bridge footings).

The on-site Qualified Environmental Professional under the Remedial Engineer's directive will ensure that site development activities will not interfere with, or otherwise impair or compromise, remedial activities proposed in this Remedial Action Work Plan.

Each spill area or other significant site condition to be remediated (e.g., unknown USTs) will be removed and end-point remedial performance sampling completed before excavations related to site development commence proximal to the impacted area.

Development-related grading cuts and fills will not be performed without NYSDEC approval and will not interfere with, or otherwise impair or compromise, the performance of remediation required by this plan.

Mechanical processing of historical fill and contaminated soil on-site is prohibited.

5.4.4 Materials Transport Off-Site

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Final truck transport routes will be determined based on the selected disposal facilities. All trucks will follow established NYS DOT Truck Routes, as available. At this time, it is expected that trucks will proceed east on Clinton Street to US 11 and then north to Interstate Highways I-81 or I-86. All trucks loaded with site materials will exit the vicinity of the site using only this approved truck route, which is the most appropriate approach and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) prohibiting off-site queuing of trucks; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport; and (g) community input. The approved truck route is provided in Figure 12.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site (as available) in order to minimize off-site disturbance (off-site queuing will be minimized).

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used. All trucks will be washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

5.4.5 Materials Disposal Off-Site

Waste disposal locations, to be established at a later date, will be reported to the NYSDEC Project Manager prior to the start of remedial excavation. The total quantity of material expected to be disposed off-site is anticipated to be up to approximately 45,000 cy for construction purposes (additional soil may be removed if found to be unstable or otherwise unacceptable for development reasons), with at least 20,563 cy of this material removed for remediation purposes.

Several separate disposal facilities may be secured (as warranted), based on the expected composition of known contaminated soils. Information from the disposal facilities will be sent to the NYSDEC before the initiation of soil removal at the site.

All soil/solid waste excavated and removed from the site will be treated as contaminated and regulated material and will be disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil from this site is proposed for unregulated disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated off-site management of materials from this site is prohibited without formal NYSDEC approval.

Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the site conforms with all applicable laws: (1) a letter from the Remedial Engineer or BCP Volunteer to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported (including Site Characterization data); and (2) a letter from all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material. These documents will be included in the FER.

Non-hazardous historical fill and contaminated soils taken off-site will be handled in accordance with 6NYCRR Part 360. Historical fill and contaminated soils from the site are prohibited from being disposed at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities).

Soils that are contaminated but non-hazardous and are being removed from the site are considered by the Division of Materials Management (DMM) in NYSDEC to be Construction and Demolition (C/D) materials with contamination not typical of virgin soils. These soils may be sent to a permitted Part 360 landfill. They may be sent to a permitted C/D processing facility without permit modifications only upon prior notification of NYSDEC Region 3 DMM. This material is prohibited from being sent or redirected to a Part 360-16 Registration Facility. In this case, as

dictated by DMM, special procedures will include, at a minimum, a letter to the C/D facility that provides a detailed explanation that the material is derived from a DER remediation site, that the soil material is contaminated and that it must not be redirected to on-site or off-site Soil Recycling Facilities. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported.

The FER will include an accounting of the destination of all material removed from the site during this Remedial Action, including excavated soil, contaminated soil, historical fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. This information will also be presented in a tabular form in the FER.

Bill of Lading system or equivalent will be used for off-site movement of non-hazardous wastes and contaminated soils. This information will be reported in the FER.

Hazardous wastes derived from on-site will be stored, transported, and disposed of in full compliance with applicable local, State, and Federal regulations.

Appropriately licensed haulers will be used for material removed from this site and will be in full compliance with all applicable local, State and Federal regulations.

Waste characterization will be performed for off-site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the FER. All data available for soil/material to be disposed at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

5.4.6 Materials Reuse On-Site

Soil and fill that is derived from the property that meets the soil cleanup objectives established in this plan may be reused on-site. “Reuse on-site” means material that is excavated during the remedy or development, does not leave the property, and is relocated within the same property and on comparable soil material, and addressed pursuant to engineering controls. The on-site Qualified Environmental Professional under the Remedial Engineer’s directive will ensure that procedures defined for materials reuse in this RAWP are followed and that unacceptable material will not remain on-site.

On-site soils and urban fill determined by the NYSDEC to be acceptable for on-site re-use will not be placed below the static water level.

Concrete crushing or processing on-site is prohibited.

Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site is prohibited for reuse on-site.

Contaminated on-site material, including historical fill and contaminated soil, removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. This will be expressed in the final SMP.

5.4.7 Fluids Management

Based on the depth to groundwater, dewatering of excavations is not likely to be required at the site. Should dewatering be required, all work will be completed consistent with applicable local, State, and Federal regulations rules and regulations. All liquids to be removed from the site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. A City permit will be obtained for any liquids discharged into the municipal sewer system.

Discharge of water generated during remedial construction to surface waters (i.e. a local pond, stream or river) is prohibited without a SPDES permit. No such discharge is anticipated for this project.

5.4.8 Demarcation

Demarcation of remaining soil is required in Track 4 areas since residual contamination exceeding RRU SCOs will be present. After the completion of soil removal and any other invasive remedial activities and prior to backfilling, the top of the residual soil/fill will be defined by one of three methods: (1) Placement of a demarcation layer consisting of orange plastic fencing or equivalent on the surface of residual soil to provide an observable reference layer. A description or map of the approximate depth of the demarcation layer will be provided in the FER; or (2) a land survey of the top elevation of residual soil before the placement of cover soils, pavement and associated sub-soils, or other materials or structures; or, (3) all materials beneath the approved cover will be considered impacted and subject to site management after the remedy is complete (for this option, clean cover material comprised of soil must be underlain by a demarcation layer). Demarcation may be established by one or any combination of these three methods. As

appropriate, a map showing the method of demarcation for the site and all associated documentation will be presented in the FER. This demarcation will constitute the top of the 'Residuals Management Zone', the zone that requires adherence to special conditions for disturbance of contaminated residual soils defined in the SMP.

5.4.9 Backfill from Off-Site Sources

Importation of gravel and subgrade aggregate for construction purposes (e.g., to be used under foundation components), or any other materials for required backfill, will be from a NYSDEC-approved source/facility (a properly completed soil import/reuse form will be submitted to the NYSDEC project manager for approval prior to importing material). The RE/QEP will ensure that the material does not include any prohibited material (e.g., solid waste) and does not exhibit field evidence of contamination. No other backfill materials are anticipated.

The FER will include the following certification by the Remedial Engineer: "I certify that all import of soils from off-site, including source evaluation, approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan".

Should contingency conditions during construction require importation of additional materials, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil, complete the backfilling of excavations, and/or establish design grades. All imported soils will meet NYSDEC approved backfill quality objectives for this site, which are the lower of the protection of groundwater or the protection of public health soil cleanup objectives for Restricted-Residential Use as set forth in Table 375-6.8(b) of 6 NYCRR Part 375. Non-compliant soils will not be imported onto the site without prior approval by NYSDEC. Nothing in the approved Remedial Action Work Plan or its approval by NYSDEC should be construed as an approval for this purpose.

Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Nothing in this Remedial Action Work Plan should be construed as an approval for this purpose.

Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers.

5.4.10 Stormwater Pollution Prevention

A final SWPPP, inclusive of an ESCP that conforms to the requirements of the NYSDEC Division of Water guidelines and NYS regulations, will be developed by the Contractor and approved by the RE. This plan will be provided to the NYSDEC prior to any remedial or development construction activities (preliminary plans are provided in Appendix G).

Silt fencing or hay bales will be installed around the entire perimeter of the remedial construction area and be inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the RAWP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

5.4.11 Community Air Monitoring Plan

The CAMP will be implemented during all ground intrusive activities. Any CAMP exceedances will be reported to NYSDEC and NYSDOH Project Managers and included in the Daily Report.

5.4.12 Odor, Dust and Nuisance Control Plan

Suppression of odors, dust and other nuisance conditions will be conducted during all invasive work performed during construction activities. The FER will include the following certification by the Remedial Engineer: “I certify that all invasive work during the remediation and all invasive development work were conducted in accordance with dust and odor suppression methodology defined in the Remedial Action Work Plan.”

Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-site. Specific odor control methods to be used on a routine basis will include minimizing the generation of vapors

and/or odors. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted, and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Volunteer's Remedial Engineer, who is responsible for certifying the FER.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods. Where odor nuisances have developed during remedial work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering excavation and handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

Dust Control Plan

A dust suppression plan that addresses dust management during invasive on-site work, will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck or other equivalent equipment for road wetting capable of spraying water directly onto off-road areas including excavations and stockpiles (water will be available on-site at suitable supply and pressure for use in dust control if a dedicated water truck is not utilized).
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, non-vegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water spraying.
- Materials will be hauled in properly tarped containers or vehicles, which will travel at restricted speeds while on-site.
- All reasonable attempts will be made to keep visible and/or fugitive dust to a minimum and adhere to particulate emissions limits identified in the CAMP.

Other Nuisances

A plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work and will conform, at a minimum, to City noise control standards.

5.5 Contingency Plan

This contingency plan is developed for the remedial construction to address the discovery of unknown structures or contaminated media during excavation. Identification of unknown contamination source areas during site work will be promptly communicated to NYSDEC's Project Manager.

Petroleum spills will be reported to the NYSDEC Spill Hotline. These findings will be included in the daily report.

If previously unidentified contaminant sources are found during on-site remedial excavation or development-related excavation, sampling will be performed on contaminated source material and surrounding soils and reported to NYSDEC. Chemical analytical testing will be performed for TCL volatiles and semi-volatiles, pesticides/PCBs, and TAL metals, as appropriate.

This section describes actions that must occur upon the discovery of previously unknown contaminated material(s), USTs, demolition debris or other unknown unidentifiable material that requires special handling.

On-site personnel should be prepared to respond appropriately if the following previously unknown materials are encountered (if encountered, this material could result in a recommendation from the Remedial Engineer/QEP for an immediate, temporary shutdown of construction activities):

- Previously unknown tanks (including drums) containing a liquid product that is not likely to be water and is likely to present a threat to worker health or safety;
- Previously unknown demolition debris, which could contain significant quantities of asbestos, the disturbance of which is determined, based on field observations, to violate or likely to violate Federal, State, or local asbestos regulations; and,
- Material which cannot be readily identified.

5.5.1 Procedures for Encountered Underground Storage Tanks

The procedures outlined in this Section will be adhered to if any unknown tanks are encountered during the remedial action.

Closure of any encountered USTs at the site will be in accordance with the requirements of DER-10, Section 5.5. Any encountered, previously unknown USTs will be visually inspected to determine if liquids are present in the tank. Significant quantities of liquid remaining in the tanks will be drummed on the site or removed by a properly licensed disposal company and the particular product (e.g., fuel oil, diesel, etc.) will be identified prior to off-site disposal at a permitted facility. Manifests of liquid waste management will be maintained by the RE/QEP and will be included in the FER. All encountered USTs will be disposed of pursuant to applicable Petroleum Bulk Storage (PBS) and hazardous waste regulations. The tanks and all ancillary piping will be removed from the ground and inspected for evidence of failure. A photographic record of the tanks will be generated, and evidence of tank failure will be noted. The tanks will be purged of petroleum/chemical vapors, properly stenciled as scrap metal, and transported to a metal recycling facility for destruction. A record of tank destruction will be secured by the RE/QEP and will be included in the FER.

Any surrounding soil exhibiting petroleum contamination will be excavated until “clean” soils (soils not exhibiting field evidence of petroleum contamination) are encountered. Confirmatory soil samples will be collected from the base and from the walls of the tank grave and will be analyzed for both VOCs and SVOCs per CP-51 guidelines (soil sampling may be waived by NYSDEC based on encountered conditions and/or other relevant circumstances).

5.5.2 Procedures for Encountered Demolition Debris

To the extent practical, all clearly identifiable material suspected of containing asbestos will be removed from the waste stream and handled separately (if encountered). The RE will recommend that asbestos material visible in the waste stream be separated and analyzed to determine the percent of asbestos present. All applicable Federal, State and local asbestos handling regulations will be followed.

Depending on the amount of asbestos material identified in the waste stream, the RE may recommend to the Volunteer’s Representative that a licensed and accredited asbestos inspector be retained to manage the handling and disposition of asbestos material. Approval to retain an asbestos inspector will be made by the Volunteer’s Representative. Samples will be collected by

a properly licensed asbestos inspector and submitted to a NYSDOH ELAP- certified laboratory for analysis, depending on the amount and type of material encountered.

Minor amounts of asbestos may be removed from the waste stream and disposed of in accordance with applicable State and local asbestos remediation requirements. An asbestos abatement firm will be retained to properly handle and remove minor amounts of asbestos. The presence of significant quantities of asbestos will result in a temporary shutdown of the site.

5.5.3 Procedures for Encountered Unknown Material

Material which cannot be readily identified but which is considered, based on field observations, to be material that needs further investigation before disposal will be properly stockpiled (as per the SoMP) in an area separate from all other stockpiled material.

5.5.4 Screening and Laboratory Analysis

Unknown material will be screened with a PID, and all recorded levels will be documented. Samples will be collected and analyzed to identify the compounds present and to assist in determining appropriate disposal practices. Until determined by laboratory analysis otherwise, this material will be considered a hazardous substance. Specific materials known to require sampling and analysis prior to final disposition include all building components and debris containing painted surfaces and/or caulk. A plan to describe the handling and disposal of such materials will be submitted to NYSDEC for review and approval.

If previously unknown underground tanks or other previously unidentified contaminant sources are found during on-site remedial excavation or development related construction, sampling will be performed on product, sediment, and surrounding soils, etc. Chemical analytical work will be for full scan parameters (TAL metals, TCL volatiles and semi-volatiles, TCL pesticides, and PCBs). These analyses will not be limited to CP-51 petroleum list parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval.

6 MANAGEMENT OF RESIDUAL CONTAMINATION

The selected remedy is intended to achieve a combined Track 2 and Track 4 Restricted-Residential Use cleanup with residual contaminated soil and soil vapor remaining beneath the site after the remedy is complete; Engineering and Institutional Controls are therefore required to protect human health and the environment. Long-term management of EC/ICs and of residual contamination will be executed under a site-specific Site Management Plan to be developed and included in the FER.

Engineering Controls

ECs will be implemented to protect public health and the environment by appropriately managing residual contamination. The Controlled Property (the site) will have up to three primary EC systems:

- Cover system at Track 4 areas (Section 6.1.1);
- Sub-slab depressurization system (Section 6.1.2); and,
- Vapor barrier beneath new building foundations (Section 6.1.3).

All ECs will be designed, installed, and implemented in accordance with applicable GSR practices.

The FER will report residual contamination on the site in tabular and map form, including all exceedances of SCOs, and document all applicable GSR metrics, including an EFA.

Institutional Controls

Imposition of ICs, in the form of an environmental easement for the controlled property, will be required (see Section 6.2). These ICS will:

- Require the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- Allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- Restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH; and,
- Require compliance with the NYSDEC-approved Site Management Plan.

6.1 ENGINEERING CONTROLS

The remedial action requires the use of Engineering Controls as described below (Section 7 provides a discussion on requirements for terminating ECs).

6.1.1 Cover System

A cover system for soil is required for all areas achieving a Track 4 cleanup to allow for future Restricted-Residential use of the site.

Where a soil cover is to be used it will be a minimum of two (2) feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the RRU SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

All concrete foundation components of a cover system and any exterior pavement will have a minimum thickness of four (4) inches. Imported clean soil (or similar materials, e.g., gravel) at exterior areas will have a minimum thickness of two (2) feet. As part of site development, foundation components and any paved areas will be underlain by imported, clean stone subbase. The construction of a cover system will comply with the requirements for: a) demarcation as specified in Section 5.4.8; and b) importation of backfill from off-site sources as specified in Section 5.4.9. Maintenance of this cover system will be detailed in the SMP.

Green remediation BMPs for the design and installation of the cover system include:

- Development modifications (as possible) to use existing planned building foundations and paved areas as the main cover system component in place of bulk cover materials;
- Preferential use of existing uncontaminated on-site materials, or local sources for imported materials, to minimize impacts from transportation;
- Use of approved recycled materials where applicable, such as backfill, asphalt, and components for demarcation, drainage, and similar uses;
- Careful consideration of cover design to ensure durability and minimize impacts from climate change, including low-impact strategies for managing stormwater;

- As applicable, use of diverse native, drought-resistant plants and long-term natural soil amendments to minimize maintenance and preserve ecosystem services;

6.1.2 Sub-Slab Depressurization System

A SSDS will be installed at the new site buildings as an engineering control to mitigate potential vapor intrusion into the new on-site structures (see Figure 11). The SSDS will consist of sub-slab venting, associated vent stacks and fans for activation. A formal specification for the SSDS that is signed and stamped by a professional engineer will be provided to NYSDEC and NYSDOH for review and approval prior to system installation (a preliminary, certified design is provided in Appendix H). The system design will include permanent vapor sample ports to allow for post-construction and on-going documentation of appropriate negative pressures beneath the slab. As-built drawings will be provided in the FER and operation and maintenance (O&M) of the SSDS will be detailed in the SMP.

Green remediation BMPs for the design and installation of the SSDS include:

- Careful evaluation of site conditions and building plans in order to design an efficient system (limits piping runs and related materials, and labor for installation);
- Proper penetrations and sealing of the vapor barrier;
- Proper fan sizing to depressurize system components with minimal energy use; and,
- Use of telemetry (where applicable) for system monitoring.

The efficacy of the SSDS will be determined by post-remediation sampling to verify depressurization of the entire building slab and that indoor air concentrations are within expected background ranges. The sampling program will include collection of indoor air analytical samples after the building envelope is complete with air handling systems in place and operating, prior to building occupancy.

6.1.3 Vapor Barrier

A minimum 20-mil thick vapor barrier/waterproofing membrane will be installed beneath the slab of each new on-site building, as identified in Section 4.1.9. In addition to its function as a green remediation and energy-efficiency measure, this vapor barrier constitutes an Engineering Control as defined in 6 NYCRR Part 375-1.2(p), which expressly identifies “vapor barriers” among the physical barriers employed to contain, stabilize, or restrict the migration of contamination and to eliminate potential soil vapor intrusion exposure pathways. The vapor barrier will be

installed, inspected, and maintained in conjunction with the SSDS, and will be subject to the same operation and maintenance requirements and periodic institutional/engineering control certification obligations set forth in the SMP and in accordance with 6 NYCRR Part 375-1.8(h)(3). As-built documentation of the vapor barrier installation will be provided in the FER.

6.2 INSTITUTIONAL CONTROLS

A combined Track 2 and Track 4 remedial action is proposed, and institutional controls are therefore required. Institutional controls will be incorporated in this remedial action to manage residual soil and other media and render the site protective of public health and the environment. A site-specific Environmental Easement will be recorded with Broome County to provide an enforceable means of ensuring the continual and proper management of residual contamination and protection of public health and the environment in perpetuity or until released in writing by NYSDEC. It requires that the grantor of the Environmental Easement and the grantor's successors and assigns adhere to all institutional controls placed on this site by this NYSDEC-approved remedy.

The Environmental Easement would provide restrictions on site usage and mandate operation, maintenance, monitoring and reporting measures for all institutional and engineering controls. A SMP would be prepared describing appropriate methods and procedures to ensure compliance with all institutional and engineering controls required by the Environmental Easement. Once the SMP has been approved by the NYSDEC, compliance with the SMP is required by the grantor of the Environmental Easement and grantor's successors and assigns.

ENVIRONMENTAL EASEMENT

An Environmental Easement, as defined in Article 71 Title 36 of the Environmental Conservation Law, is required when residual contamination is left on-site after the Remedial Action is complete. An Environmental Easement approved by NYSDEC will be filed and recorded with the Broome County Clerk. The Environmental Easement would be submitted as part of the FER.

The Environmental Easement renders the site a Controlled Property. The Environmental Easement must be recorded with Broome County before the Certificate of Completion can be issued by NYSDEC. A series of institutional controls would be required under the proposed remedy to prevent future exposure to residual contamination by controlling disturbances of the subsurface soil and restricting the use of the site to Restricted-Residential Use only. These

institutional controls are requirements or restrictions placed on the site that are listed in, and required by, the Environmental Easement.

The Controlled Property (site) would also have a series of institutional controls in the form of site restrictions and requirements. The site restrictions that apply to the Controlled Property may include:

- Vegetable gardens and farming on the Controlled Property are prohibited;
- Use of groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for intended purpose;
- All future activities on the Controlled Property that will disturb residual contaminated material are prohibited unless they are conducted in accordance with the soil management provisions in the SMP;
- The Controlled Property may be used for Restricted-Residential Use, provided the long-term engineering and institutional controls included in the SMP are employed;
- The Controlled Property may not be used for a higher level of use, such as Unrestricted Use without an amendment or extinguishment of this Environmental Easement;
- Grantor agrees to submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow. This annual statement must be certified by an expert that the NYSDEC finds acceptable.

7 COMPLETION OF REMEDIATION/TERMINATION OF REMEDIAL SYSTEMS

No remedial systems will be discontinued without written approval by NYSDEC and NYSDOH. While a proposal to discontinue a specific system may be submitted any time based on confirmatory data that justifies such request, all systems will remain in place and operational until specific permission to discontinue use is granted in writing by NYSDEC and NYSDOH. All sampling/monitoring activities will be conducted in accordance with the SMP Monitoring Plan.

7.1 Composite Cover System

A composite cover system is required at all areas achieving a Track 4 cleanup. The composite cover prevents exposures to remaining soil exceeding the RRU SCOs and is therefore a permanent control, which may not be terminated without removal of remaining contaminated materials or implementation of an alternative NYSDEC-approved remedy. The quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

7.2 Sub-Slab Depressurization System

The active SSDS will operate continuously in order to minimize potential soil vapor intrusion into on-site structures, and the integrity of this system will be documented at defined, regular intervals as specified in the SMP.

The final installation and operation of the SSDS is dependent on the construction schedule and may be deferred until after contaminated soil has been removed and the NYSDEC Certificate of Completion has been issued; under those circumstances, and prior to building occupancy, the final installation and operation of the SSDS will be completed in accordance with the SMP and documented in a separate submission to NYSDEC and NYSDOH, inclusive of a SVI evaluation.

In order to either shut down the SSDS (permanently remove components), or convert the system from active to passive use, a proposal providing all available pre- and post-remedial information must be submitted to NYSDEC and NYSDOH for review. If these Agencies concur that a shutdown or conversion may be considered, a Work Plan inclusive of appropriate SVI sampling would then be submitted for review and approval prior to any system modifications.

8 FINAL ENGINEERING REPORT

A Final Engineering Report will be submitted to NYSDEC following implementation of the Remedial Action defined in this RAWP.

8.1 FER Elements

The FER, to be prepared in conformance with DER-10, will document that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The FER will provide/include:

- Comprehensive accounts of the locations and characteristics of all material removed from the site including the surveyed map(s) of all sources;
- As-built drawings for all constructed elements, calculation and manufacturer documentation for treatment systems, certifications, manifests, bills of lading as well as the complete SMP;
- Descriptions of the changes in the Remedial Action from the elements provided in the RAWP and associated design documents;
- Tabular summaries of all performance evaluation sampling results and all material characterization results and other sampling, and chemical analysis performed as part of the Remedial Action;
- Test results demonstrating that all mitigation and remedial systems are functioning properly;
- Written and photographic documentation of all remedial work performed under this remedy; and,
- itemized tabular description of actual costs incurred during all aspects of the Remedial Action.

Where determined to be necessary by NYSDEC, a Financial Assurance Plan will be required to ensure the sufficiency of revenue to perform long-term operations, maintenance and monitoring tasks defined in the Site Management Plan and Environmental Easement. This determination will be made by NYSDEC in the context of the FER review.

The FER will provide a thorough summary of all residual contamination left on the site after the remedy is complete. Residual contamination includes all contamination that exceeds the Track 1 Unrestricted Use SCO in 6NYCRR Part 375-6. A table that shows exceedances from Track 1 Unrestricted SCOs for all soil/fill remaining at the site after the Remedial Action and a map that shows the location and summarizes exceedances from Track 1 Unrestricted SCOs for all soil/fill remaining at the site after the Remedial Action will be included in the FER.

The FER will provide a thorough summary of all residual contamination that exceeds the SCOs defined for the site in the RAWP and must provide an explanation for why the material was not removed as part of the Remedial Action. A table that shows residual contamination in excess of site SCOs and a map that shows residual contamination in excess of site SCOs will be included in the FER.

The FER will include an accounting of the destination of all material removed from the site, including excavated contaminated soil, historic fill, solid waste, hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. It will provide an accounting of the origin and chemical quality of all material imported onto the site.

The FER must include a discussion of Vanguard Village I+II remediation practices/technologies employed throughout the remedial program, including a final environmental footprint analysis using a DER accepted model, and any tracking methods used through the construction including restoration activities.

Before approval of a FER and issuance of a COC, all project reports must be submitted in digital form on electronic media (PDF).

8.2 Site Management Plan

A Site Management Plan is required, which includes an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure that the Engineering Controls (cover system, SSDS, and vapor barrier membrane; Section 6.1) and Institutional Controls (environmental easement; Section 6.2) remain in place and are effective. This plan includes, but may not be limited to:

- An Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- Descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- A provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including a provision for implementing actions recommended to address exposures related to SVI. Samples will be taken outside, sub-slab and co-located indoor locations, and in the basement/cellar and crawl spaces. DEC suggests adding sub-slab sampling ports during construction;
- A provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Section 6.1 will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives;
- Provisions for the management and inspection of the identified engineering controls; and,
- The steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

Implementation of the SMP will be the last phase of remediation and begins with the approval of the FER and issuance of the Certificate of Completion for the Remedial Action. The SMP is submitted as part of the FER but would be written in a manner that allows its removal and use as a complete and independent document. Site Management continues in perpetuity or until released in writing by NYSDEC. The property owner is responsible to ensure that all site management responsibilities defined in the Environmental Easement and the SMP are performed.

The SMP is intended to provide a detailed description of the procedures required to manage residual contamination left in place at the site following completion of the Remedial Action in accordance with the BCA with the NYSDEC. This includes (as appropriate following completion of the final remedy):

1. Development, implementation, and management of all engineering and institutional controls;
2. Development and implementation of monitoring systems and a Monitoring Plan;

3. Development of a plan to operate and maintain any treatment, collection, containment, or recovery systems (including, where appropriate, preparation of an O&M Manual);
4. Submittal of Site Management Reports, performance of inspections and certification of results, and demonstration of proper communication of site information to NYSDEC; and,
5. Defining criteria for termination of treatment system operation.

To address these needs, this SMP would include the following plans (as warranted): Monitoring Plan for the implementation of site monitoring; Operation and Maintenance Plan for vapor interceptor systems; and Site Management Reporting Plan for submittal of data, information, recommendations, and certifications to NYSDEC.

The SMP will be prepared in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation and the guidelines provided by NYSDEC.

Site management activities, reporting, and EC/IC certification would be scheduled on a certification period basis. The certification period would be annually for the first three years; modifications to this frequency may be proposed in that third year. The SMP would be based on a calendar year and due for submission to NYSDEC by March 1 of the year following the reporting period.

No exclusions for handling of residual contaminated soils would be provided in the SMP. All handling of residual contaminated material would be subject to provisions contained in the SMP.

8.3 Certifications

The following certification will appear in front of the Executive Summary of the FER. The certification will be appropriately signed and stamped by the Remedial Engineer, Daniel Bellucci, who is a Professional Engineer registered in New York State. The certification will include the following statements (in *italics*) as required by DER-10 Section 1.5(b)4:

> *I Daniel Bellucci certify that I am currently a NYS registered professional engineer, I had primary direct responsibility for the implementation of the subject construction program, and I certify that the Remedial Work Plan was implemented and that all construction activities were completed in substantial conformance with the DER-approved Remedial Work Plan.*

If the Remedial Action Work Plan identifies time frames to be achieved by the remedial program, the certification must include:

The data submitted to DER demonstrates that the remediation requirements set forth in the Remedial Work Plan and all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established in the work plan.

If the remedial program requires ICs or ECs, the certification must include:

All use restrictions, institutional controls, engineering controls and/or any operation and maintenance requirements applicable to the site are contained in an environmental easement created and recorded pursuant to ECL 71-3605 and that any affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

If the remedial program requires applicable SMP, the certification must include:

A Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of any engineering controls employed at the site including the proper maintenance of any remaining monitoring wells, and that such plan has been approved by DER.

If the remedial program requires financial assurance, the certification must include:

Any financial assurance mechanisms required by DEC pursuant to Environmental Conservation Law have been executed.

9 SCHEDULE

Site preparation and soil excavation will commence in March 2027. Currently, a seven-month soil excavation period is anticipated. If the schedule for remediation and development activities changes, it will be updated and submitted to NYSDEC.

The current project schedule is presented below:

Fieldwork/Deliverables Timeline	Date
Remedial Investigation Report (RIR):	
NYSDEC Approval of RIR	September 2026
Remedial Action Work Plan (RAWP):	
Submission of RAWP	July 2026
Public Comment Period for RAWP	October 7 to November 21, 2026
NYSDEC and NYSDOH Issue RAWP Comments	July to September 2026
Submission of Revised RAWP	October 2026
Decision Document	December 2026
Implementation of RAWP	December 2026 to August 2028
Site Management Plan (SMP):	
Submission	August 2028
NYSDEC and NYSDOH Issue Comments	October 2028
Submission of Revised Document	November 2028
Department Approval	December 2028
Final Engineering Report (FER):	
Submission	September 2028
NYSDEC and NYSDOH Issue Comments	October 2028
Submission of Revised Document	November 2028
Department Approval	December 2028
Certification of Completion (COC):	
Receive COC	December 2028

Note: The installation and operation of the SSDS will be documented in the FER to the extent that the proposed site structures are completed at the time of issuance of the COC; if the structures have not been completed the existing status of the SSDS will be documented in the FER (e.g., installation of sub-slab piping) and the final installation and operation of the SSDS will be completed in accordance with the SMP and documented in a separate submission to NYSDEC and NYSDOH, inclusive of a SVI evaluation.

FIGURES

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All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

0 50 100 200

SCALE IN FEET

Figure 1: Site Location Map

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

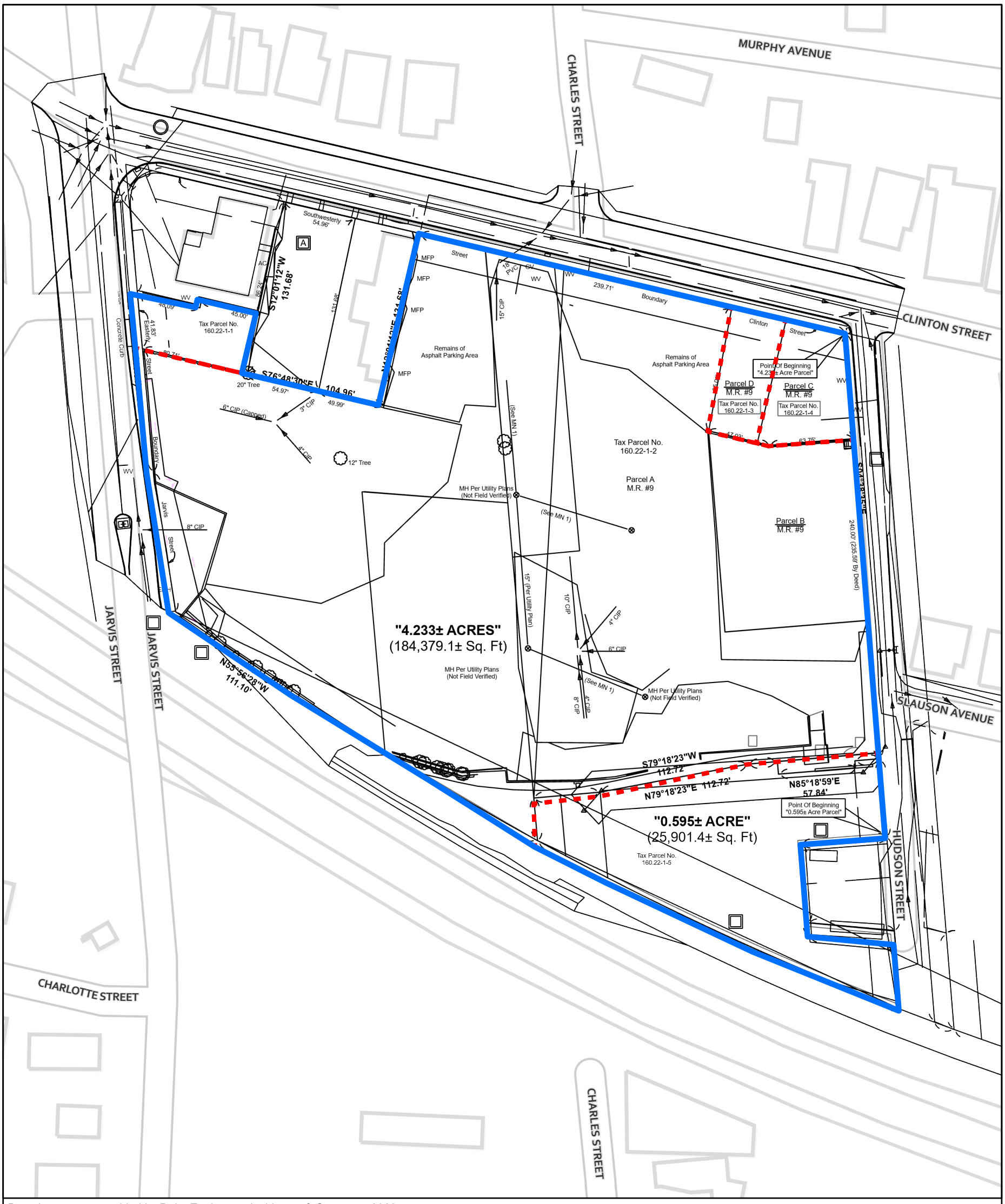
- BCP Site Boundary
- Tax Lot Lines

File: 23003-0060

October 2026

Scale as shown

GALLAGHER BASSETT | TECHNICAL SERVICES



Based on survey provided by Delta Engineers, Architects, & Surveyors 2023.
All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

0 50 100 200

SCALE IN FEET

Figure 2: Site Map

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

- BCP Site Boundary
- Lot Lines

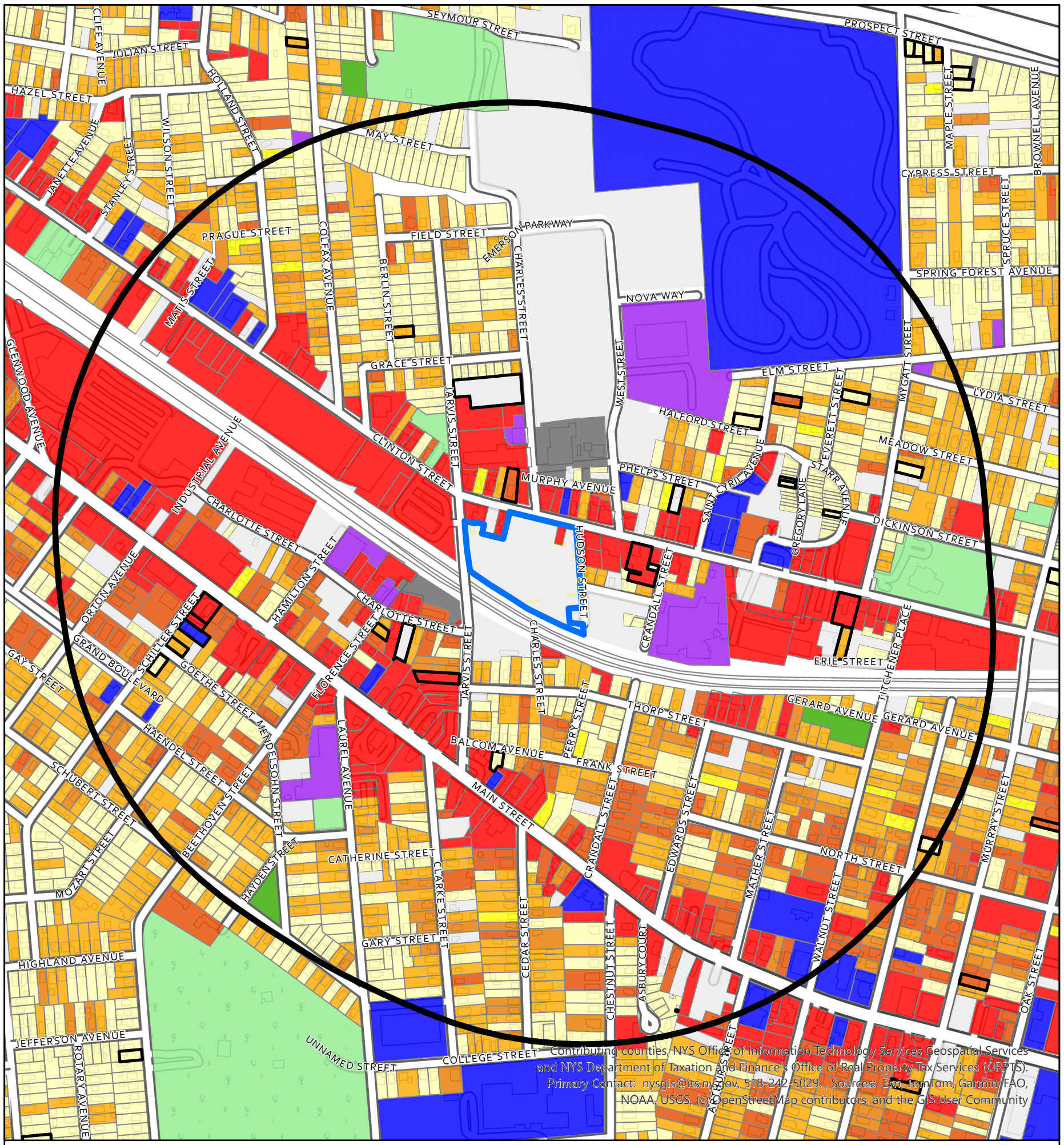
N

File: 23003-0060

October 2026

Scale as shown

GALLAGHER BASSETT | TECHNICAL SERVICES



- City-owned Properties
- Residential
- One family
- Two family
- Three family
- Apartments
- Commercial
- Vacant Land
- Recreation and Entertainment
- Community Services
- Industrial
- Public Utilities
- Conservation Lands and Public Parks

N

All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

0 500 1,000 2,000

SCALE IN FEET

Figure 3: Surrounding Land Use

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

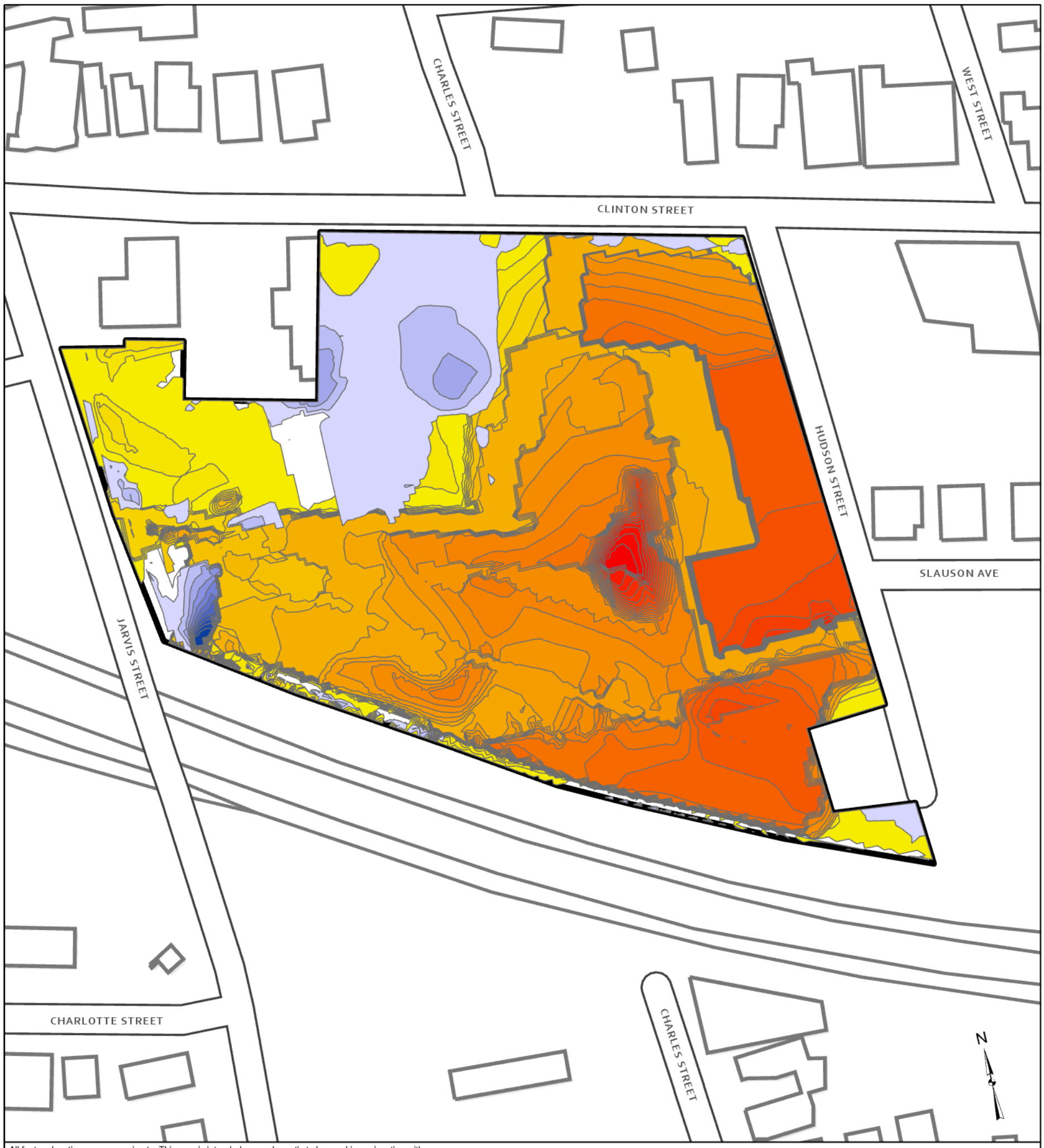
- 1/2 mile radus
- BCP Site Boundary

File: 23003-0060

October 2026

Scale as shown

GALLAGHER BASSETT | TECHNICAL SERVICES



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Approximate proposed excavation below ground surface in feet

0 → -13.5

Approximate proposed fill heights above ground surface in feet

.5 → 5.5

Figure 4: Proposed Construction Excavation Plan

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

- BCP Site Boundary
- Lot Lines

0 25 50 100
SCALE IN FEET

File: 23003-0060

July 2026

Scale as shown

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SB-04	
2026-03-31	
Metals (6010/7473)	**0-2**
Mercury	0.335

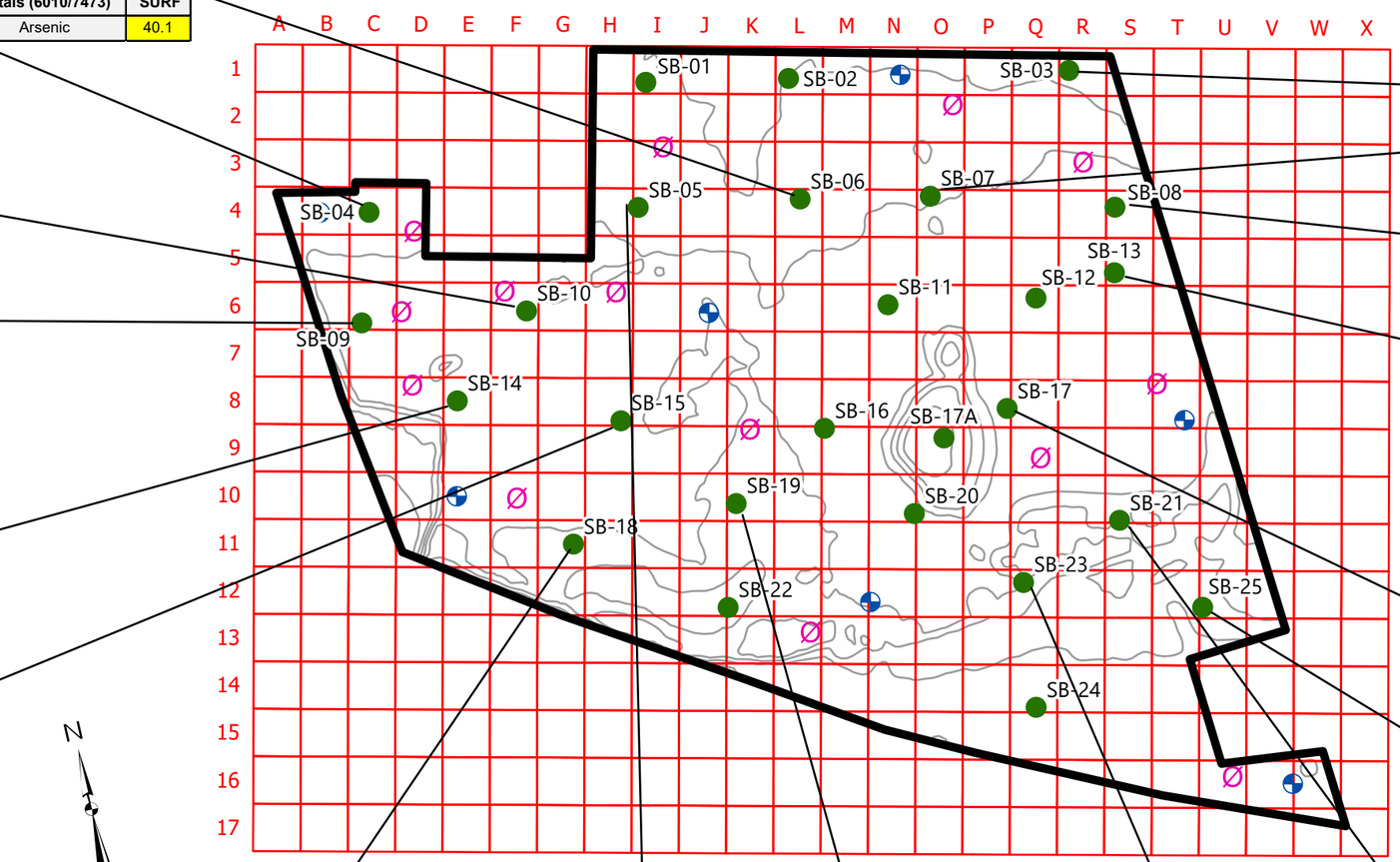
SB-06	
2026-04-01	
Metals (6010/7473)	**SURF**
Arsenic	40.1

SB-10	
2026-04-02	
SVOCs (8270)	**SURF**
benzo(a)anthracene	2.4
benzo(a)pyrene	2.9
benzo(b)fluoranthene	4.2
dibenzo(a,h)anthracene	0.43
indeno(1,2,3-cd)pyrene	2.1
Metals (6010/7473)	**0-2**
Mercury	0.624

SB-09	
2026-04-02	
Metals (6010/7473)	**SURF**
Chromium (hexavalent)	1.51
Metals (6010/7473)	**0-1**
Chromium (hexavalent)	1.43

SB-14	
2026-04-03	
Metals (6010/7473)	**SURF**
Arsenic	27.4
Lead	26,200

SB-15	
2026-04-03	
SVOCs (8270)	**SURF**
benzo(a)anthracene	32
benzo(a)pyrene	28
benzo(b)fluoranthene	35
benzo(g,h,i)perylene	12
benzo(k)fluoranthene	11
chrysene	30
dibenzo(a,h)anthracene	4.5
indeno(1,2,3-cd)pyrene	15
phenanthrene	48
Metals (6010/7473)	**SURF**
Barium	434
SVOCs (8270)	**0-2**
benzo(a)anthracene	5.5
benzo(a)pyrene	4.4
benzo(b)fluoranthene	6.2
chrysene	5.2
dibenzo(a,h)anthracene	0.81
indeno(1,2,3-cd)pyrene	2.6
phenanthrene	8.7



SB-03	
2026-03-31	
Metals (6010/7473)	**SURF**
Arsenic	139
Metals (6010/7473)	**0-2**
Arsenic	17.6

SB-07	
2026-04-01	
SVOCs (8270)	**16-18**
benzo(a)pyrene	1.3
benzo(b)fluoranthene	1.8

SB-08	
2026-04-01	
SVOCs (8270)	**SURF**
benzo(a)anthracene	6.6
benzo(a)pyrene	4.9
benzo(b)fluoranthene	10
chrysene	5.7
dibenzo(a,h)anthracene	1.1
indeno(1,2,3-cd)pyrene	3.5
phenanthrene	6.9
SVOCs (8270)	**0-2**
benzo(a)anthracene	2.6
benzo(a)pyrene	1.9
benzo(b)fluoranthene	3.1
dibenzo(a,h)anthracene	0.36

SB-13	
2026-04-03	
Metals (6010/7473)	**7-9**
Lead	473
Mercury	0.41

SB-17	
2026-04-06	
SVOCs (8270)	**SURF**
benzo(a)anthracene	2.8
benzo(a)pyrene	3
benzo(b)fluoranthene	4
dibenzo(a,h)anthracene	0.55
indeno(1,2,3-cd)pyrene	2.1
Metals (6010/7473)	**SURF**
Mercury	0.654
SVOCs (8270)	**5-7**
benzo(a)anthracene	16
benzo(a)pyrene	18
benzo(b)fluoranthene	25
benzo(g,h,i)perylene	9.8
benzo(k)fluoranthene	7.9
chrysene	6.8
dibenzo(a,h)anthracene	3.2
indeno(1,2,3-cd)pyrene	11
phenanthrene	15
Metals (6010/7473)	**5-7**
Lead	2,850
Mercury	3.25

SB-18	
2026-04-06	
Metals (6010/7473)	**0-1**
Mercury	0.65

SB-05	
2026-04-01	
SVOCs (8270)	**0-1**
benzo(a)anthracene	5.7
benzo(a)pyrene	4.9
benzo(b)fluoranthene	7.5
chrysene	5.3
dibenzo(a,h)anthracene	0.82
indeno(1,2,3-cd)pyrene	3.5
phenanthrene	11
Metals (6010/7473)	**1-2**
Lead	706

SB-19	
2026-04-07	
Metals (6010/7473)	**SURF**
Lead	419
Mercury	0.494
Metals (6010/7473)	**4-5**
Arsenic	24.8

SB-23	
2026-04-07	
SVOCs (8270)	**2-3**
benzo(a)anthracene	9.4
benzo(a)pyrene	10
benzo(b)fluoranthene	14
benzo(g,h,i)perylene	5.4
chrysene	8.5
dibenzo(a,h)anthracene	1.4
indeno(1,2,3-cd)pyrene	5.8
phenanthrene	13

SB-21	
2026-04-07	
Metals (6010/7473)	**SURF**
Copper	470
Mercury	0.516
Metals (6010/7473)	**0-2**
Copper	387
Mercury	0.604

SB-25	
2026-04-08	
Metals (6010/7473)	**SURF**
Lead	758
Mercury	0.4
Metals (6010/7473)	**0-1**
Lead	820
Metals (6010/7473)	**1-2**
Lead	1,260
Mercury	1.74

Figure 5: Soil Contamination Exceeding RRU SCOs

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

- soil sample location
- soil vapor location
- monitoring well location
- BCP Site Boundary

All data mg/Kg (ppm)
value > RRU SCO

SVOCs (8270)	RRU SCO	SVOCs (8270)	RRU SCO	Metals (6010/7473)	RRU SCO
benzo(a)anthracene	1.4	dibenzo(a,h)anthracene	0.33	Arsenic	16
benzo(a)pyrene	1	phenanthrene	4.9	Barium	410
benzo(b)fluoranthene	1.4	dibenzofuran	18	Chromium (hexavalent)	1
benzo(g,h,i)perylene	4.9	indeno(1,2,3-cd)pyrene	1.4	Copper	280
benzo(k)fluoranthene	4.9	phenol	100	Lead	400
chrysene	4.9			Mercury	0.3

File: 23003-0060

October 2026

Scale as shown

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GMW-01-20260428	
2026-04-28	
SVOCs (8270)	
benzo(b)fluoranthene	0.04
benzo(k)fluoranthene	0.04
indeno(1,2,3-cd)pyrene	0.02
Total Metals (6010/7473)	
Sodium	184,000
Dissolved Metals (6010/7473)	
Sodium	174,000
PFAS (1633)	
Perfluorooctanesulfonic Acid (PFOS)	3.93
Perfluorooctanoic acid (PFOA)	11.2

GMW-02-20260428	
2026-04-28	
SVOCs (8270)	
benzo(b)fluoranthene	0.03
benzo(k)fluoranthene	0.02
indeno(1,2,3-cd)pyrene	0.02
Total Metals (6010/7473)	
Sodium	177,000
Dissolved Metals (6010/7473)	
Sodium	168,000
PFAS (1633)	
Perfluorooctanesulfonic Acid (PFOS)	4.84
Perfluorooctanoic acid (PFOA)	8.39

GMW-04-20260428	
2026-04-28	
SVOCs (8270)	
benzo(b)fluoranthene	0.02
indeno(1,2,3-cd)pyrene	0.02
Total Metals (6010/7473)	
Sodium	137,000
Dissolved Metals (6010/7473)	
Sodium	131,000

GMW-06-20260429	
2026-04-29	
Total Metals (6010/7473)	
Iron	420
Dissolved Metals (6010/7473)	
Selenium	22

GMW-03-20260428		DUP-20260428	
2026-04-28		2026-04-28	
SVOCs (8270)		**Total Metals (6010/7473)**	
benzo(b)fluoranthene	0.03	Manganese	509
benzo(k)fluoranthene	0.02	Sodium	72,000
indeno(1,2,3-cd)pyrene	0.02	**Dissolved Metals (6010/7473)**	
Total Metals (6010/7473)		Manganese	500
Manganese	586	Sodium	67,600
Sodium	69,100		
Dissolved Metals (6010/7473)			
Manganese	577		
Sodium	62,500		

GMW-05-20260429	
2026-04-29	
SVOCs (8270)	
indeno(1,2,3-cd)pyrene	0.02
Total Metals (6010/7473)	
Sodium	105,000
Dissolved Metals (6010/7473)	
Sodium	95,800
PFAS (1633)	
Perfluorooctanesulfonic Acid (PFOS)	6.53
Perfluorooctanoic acid (PFOA)	10

GMW-07-20260429	
2026-04-29	
Total Metals (6010/7473)	
Iron	1,180

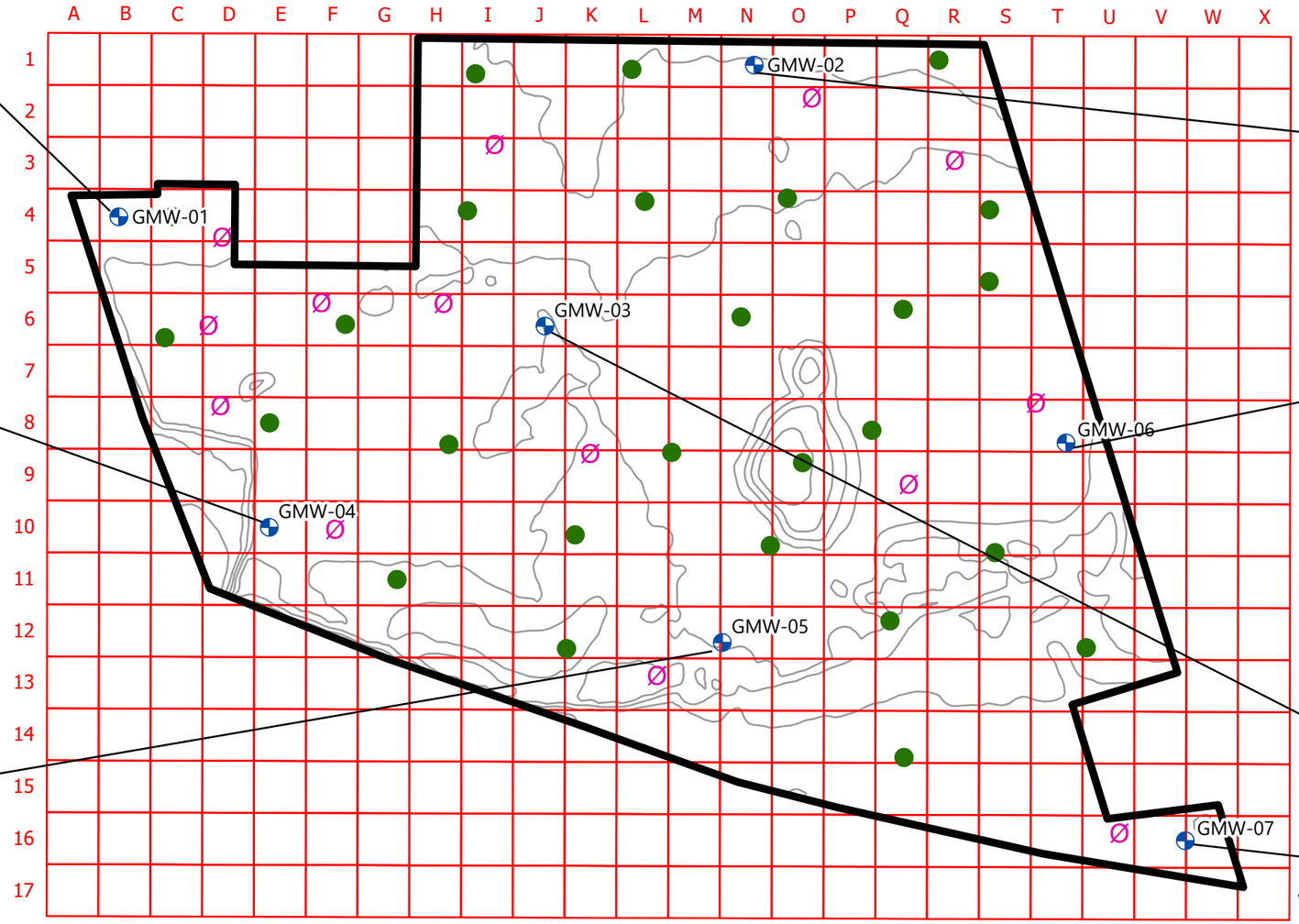

Figure 6: Groundwater Contamination Exceeding SCGs

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

- soil sample location
- soil vapor location
- monitoring well location
- BCP Site Boundary

Data in ng/L (parts per trillion, ppt)	Analyte Above Guidance
PFAS	Guidance
Perfluorooctanesulfonic Acid (PFOS)	2.7
Perfluorooctanoic Acid (PFOA)	6.7

Data in in µg/L (ppb)	Analyte Above AWQS
TAL Metals	**AWQS**
Iron	300
Manganese	300
Selenium	10
Sodium	20,000
SVOCs	**AWQS**
boenzo(b)fluoranthene	0.002
boenzo(k)fluoranthene	0.002
indeno(1,2,3-cd)pyrene	0.002

File: 23003-0060

October 2026

Scale as shown

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SV-02	
2026-04-01	
VOCs TO-15	
4-methyl-2-pentanone (MIBK)	7.29
acetone	79.5
chloroform	4.98
cyclohexane	4.99
ethanol	44.3
ethylbenzene	4.99
heptane	5
hexane	17.2
isopropyl alcohol	5.01
isopropylbenzene	5.01
m,p-xylene	7.98
methyl ethyl ketone	7.75
o-xylene	4.99
propylene	5.01
tetrachloroethene (PCE)	15.9
tetrahydrofuran	19
toluene	6.36

SV-01	
2026-04-01	
VOCs TO-15	
acetone	27.5
chloroform	6.49
ethanol	40.5
m,p-xylene	5.21
propylene	28.4
tetrachloroethene (PCE)	5.96

SV-03	
2026-04-01	
VOCs TO-15	
4-methyl-2-pentanone (MIBK)	9.42
acetone	77.2
ethanol	144
hexane	10.7
isopropyl alcohol	5.01
m,p-xylene	5.47
tetrachloroethene (PCE)	3.73
tetrahydrofuran	6.45
toluene	5.69

SV-04	
2026-04-01	
VOCs TO-15	
acetone	49.4
ethanol	38.2
hexane	11.7
isopropyl alcohol	190
m,p-xylene	6.99
propylene	23.6
tetrachloroethene (PCE)	3.8
tetrahydrofuran	11.2

SV-05	
2026-04-01	
VOCs TO-15	
acetone	37.7
ethanol	36.3
hexane	17.9
m,p-xylene	6.42
tetrachloroethene (PCE)	5.35
tetrahydrofuran	17.9
toluene	5.16

SV-12	
2026-04-01	
VOCs TO-15	
4-methyl-2-pentanone (MIBK)	7.94
acetone	24
ethanol	47.5
heptane	5.08
hexane	13
tetrachloroethene (PCE)	2.37

SV-07	
2026-04-01	
VOCs TO-15	
acetone	24.9
ethanol	36.7
hexane	16.7
m,p-xylene	6.81
tetrachloroethene (PCE)	11.4
tetrahydrofuran	14.2
toluene	5.88

SV-11	
2026-04-01	
VOCs TO-15	
1,1,1-trichloroethane (TCA)	17.1
4-methyl-2-pentanone (MIBK)	5.49
acetone	29
ethanol	50.3
hexane	7.33
m,p-xylene	6.81
tetrachloroethene (PCE)	7.05
tetrahydrofuran	5.92
toluene	5.76

SV-10	
2026-04-01	
VOCs TO-15	
acetone	65.5
ethanol	36.2
heptane	5.24
hexane	25.5
m,p-xylene	6.21
propylene	605
tetrachloroethene (PCE)	3.46
tetrahydrofuran	13.3
toluene	5.31

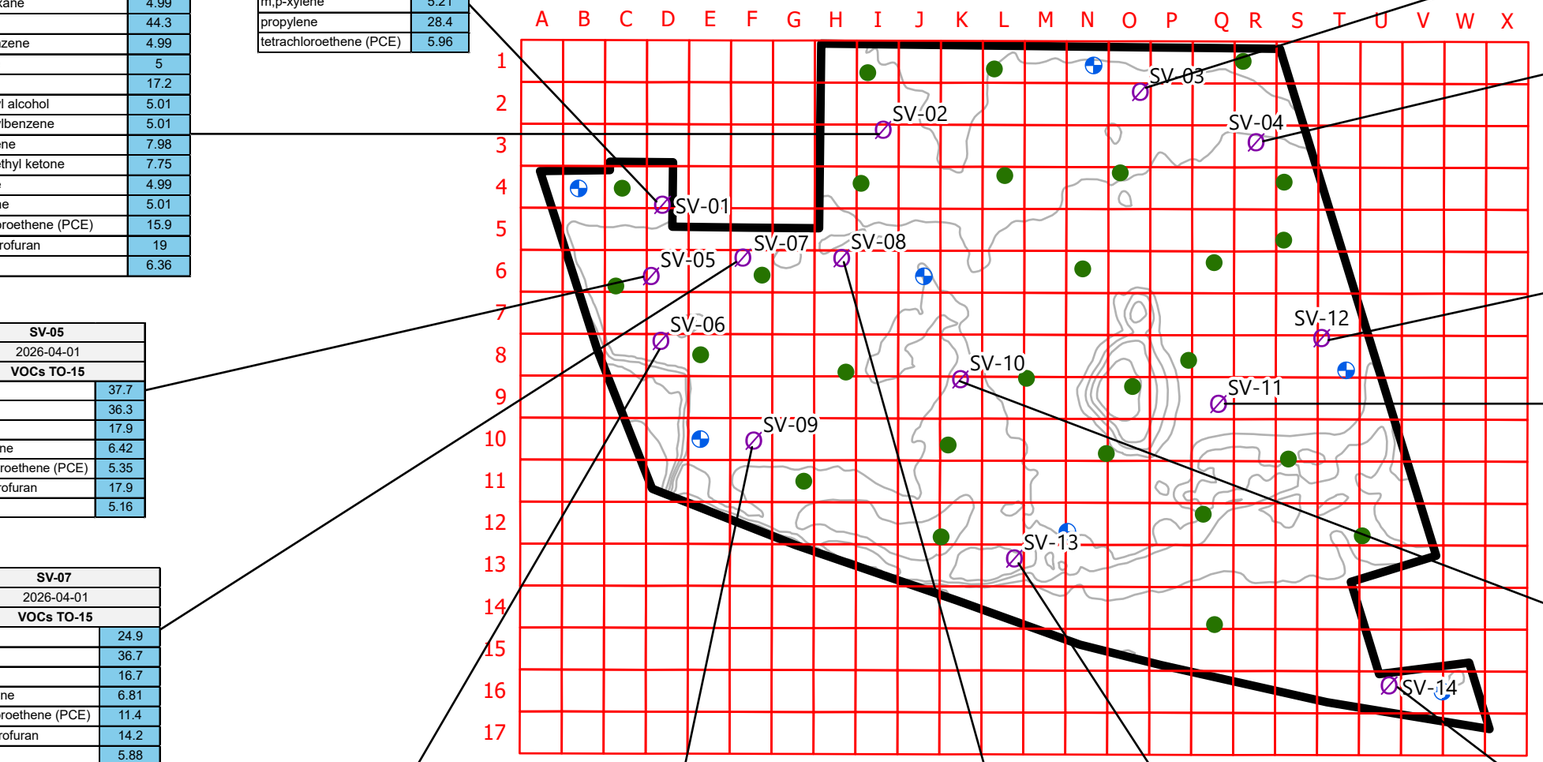
SV-06	
2026-04-01	
VOCs TO-15	
4-methyl-2-pentanone (MIBK)	5.2
acetone	44.2
ethanol	63.6
ethylbenzene	7.72
heptane	6.8
hexane	23.7
m,p-xylene	36.6
o-xylene	11.1
propylene	19.3
tetrachloroethene (PCE)	6.44
tetrahydrofuran	18.4
toluene	8.17

SV-09	
2026-04-01	
VOCs TO-15	
acetone	53.9
ethanol	77.4
hexane	17.5
m,p-xylene	7.51
tetrachloroethene (PCE)	3.66
tetrahydrofuran	18.2
toluene	7.16

SV-08	
2026-04-01	
VOCs TO-15	
2-hexanone (MBK)	11.2
4-methyl-2-pentanone (MIBK)	6.92
acetone	52.2
ethanol	49.3
heptane	9.26
hexane	22.4
m,p-xylene	10.6
propylene	20
tetrachloroethene (PCE)	3.9
tetrahydrofuran	17.7
toluene	19.8

SV-13	
2026-04-01	
VOCs TO-15	
acetone	33.7
ethanol	44.6
hexane	11.5
m,p-xylene	5.47
tetrachloroethene (PCE)	5.19
tetrahydrofuran	14.5

SV-14	
2026-04-01	
VOCs TO-15	
4-isopropyltoluene	7.3
acetone	30.6
cyclohexane	6.33
ethanol	53.5
heptane	5.65
hexane	19.1
m,p-xylene	5.86
tetrachloroethene (PCE)	3.9
tetrahydrofuran	13.2



N

0 100 200

SCALE IN FEET

Figure 7: Vapor Contamination

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

- soil vapor location
- monitoring well location
- soil sample location
- BCP Site Boundary

All data in µg/m³
Detected concentrations

File: 23003-0060

October 2026

Scale as shown

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Figure 8: Alpha-Numeric Grid

Vanguard Village I + II - BCP Site No. C704063

City of Binghamton

Broome County, NY

Legend:

- BCP Site Boundary
- Lot Lines
- 30 x 30 grid = 900 square feet

File: 23003-0060

July 2026

Scale as shown

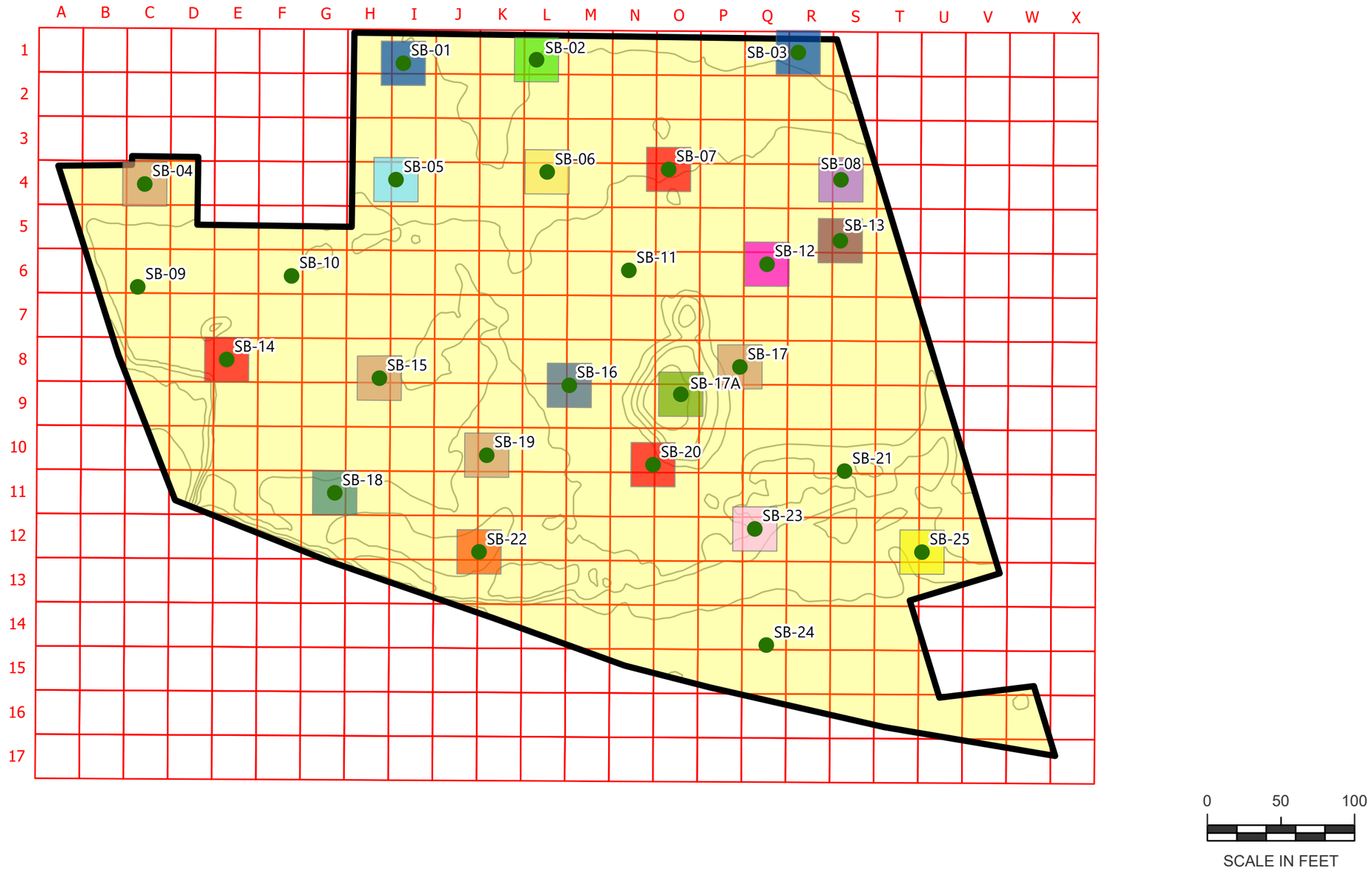


Figure 9: Proposed Track 1 Remedial Excavation Map

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

- 3' bsg
- 7' bsg
- 8' bsg
- 9' bsg
- 20' bsg
- 22' bsg
- 23' bsg
- 24' bsg
- 25' bsg
- 27' bsg
- 28' bsg
- 35' bsg
- 45' bsg
- 47' bsg
- 48' bsg
- 2' bsg for entire site
- soil sample location

File: 23003-0060

October 2026

Scale as shown

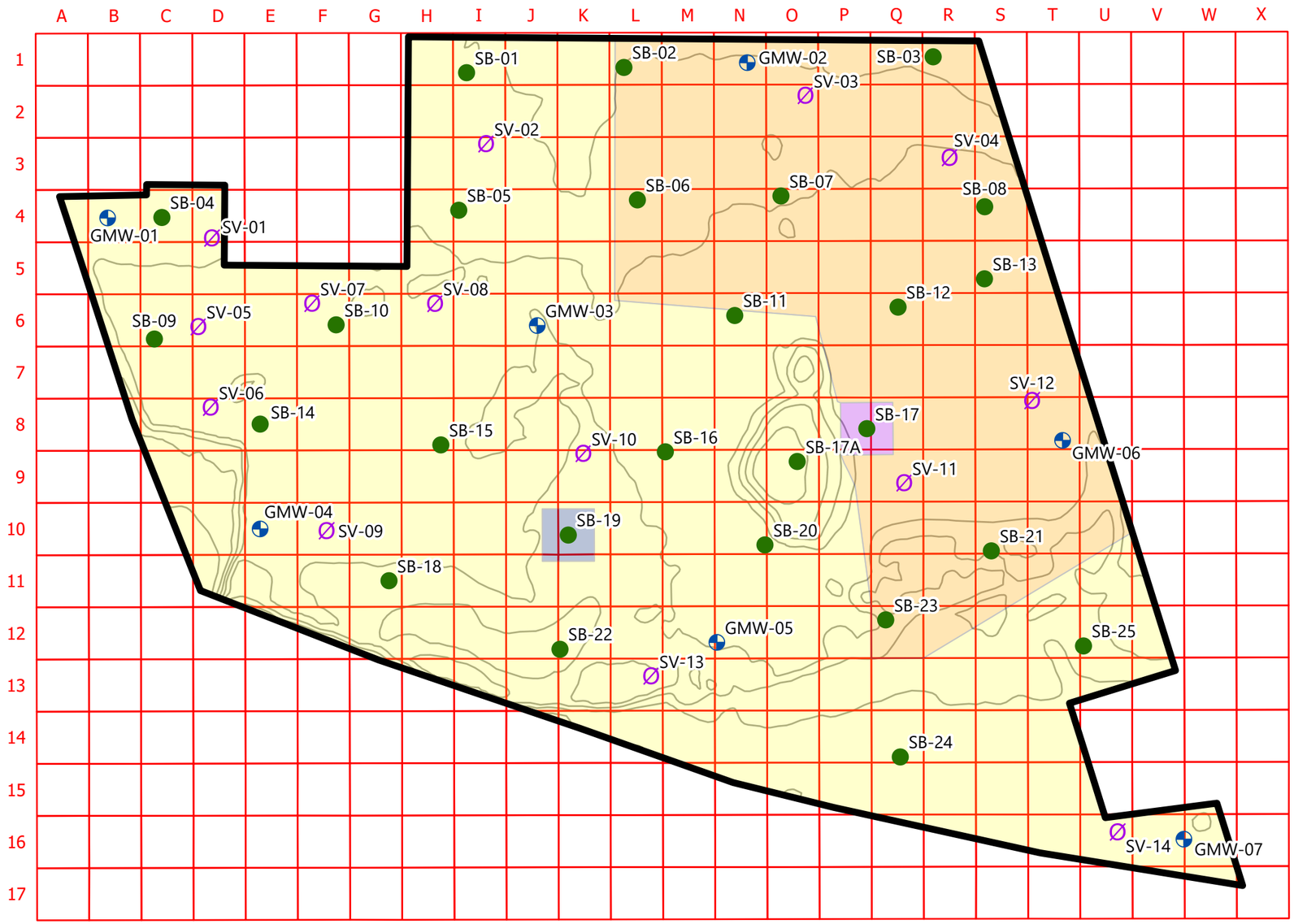


Figure 10: Proposed Combined Track 2 and 4 Remedial Excavation

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

- Soil Sample Location
- Monitoring Well Location
- Soil Vapor Location
- BCP Site Boundary
- Track 4 - Excavate to 7'
- Track 4 - Excavate to 2'
- Track 2 - Excavate to 6'
- Track 2 - Excavate to 3'

0 50 100
SCALE IN FEET

File: 23003-0060
October 2026
Scale as shown

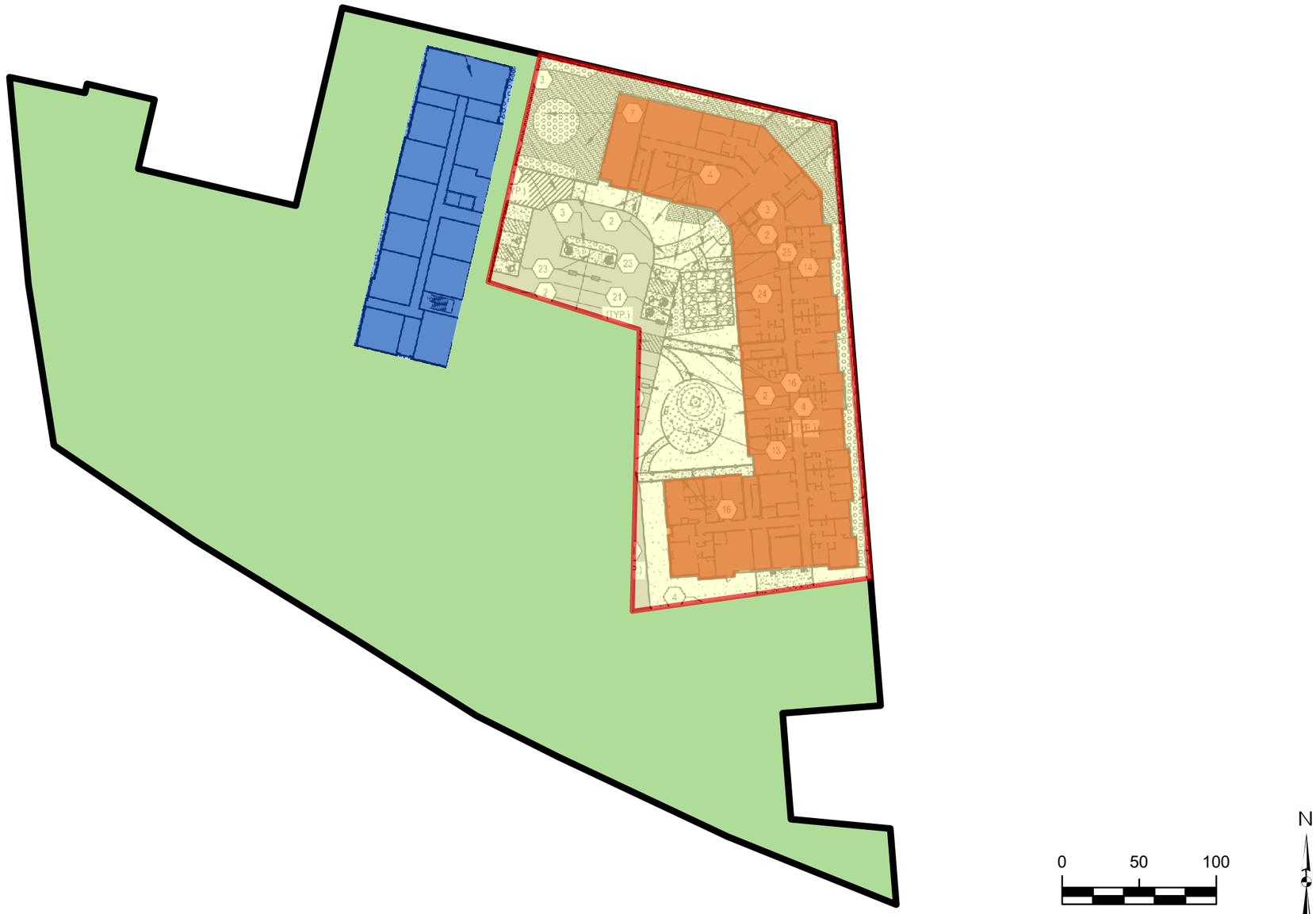


Figure 11: Proposed Engineering Controls

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

- Track 4 Area Subject to Engineering Controls
- Track 2 Area
- Track 4 - Exterior Cover
- Track 2 - SSDS and Vapor Barrier
- Track 4 - SSDS, Vapor Barrier, and Building Foundation
- BCP Site Boundary

File: 23003-0060

October 2026

Scale as shown

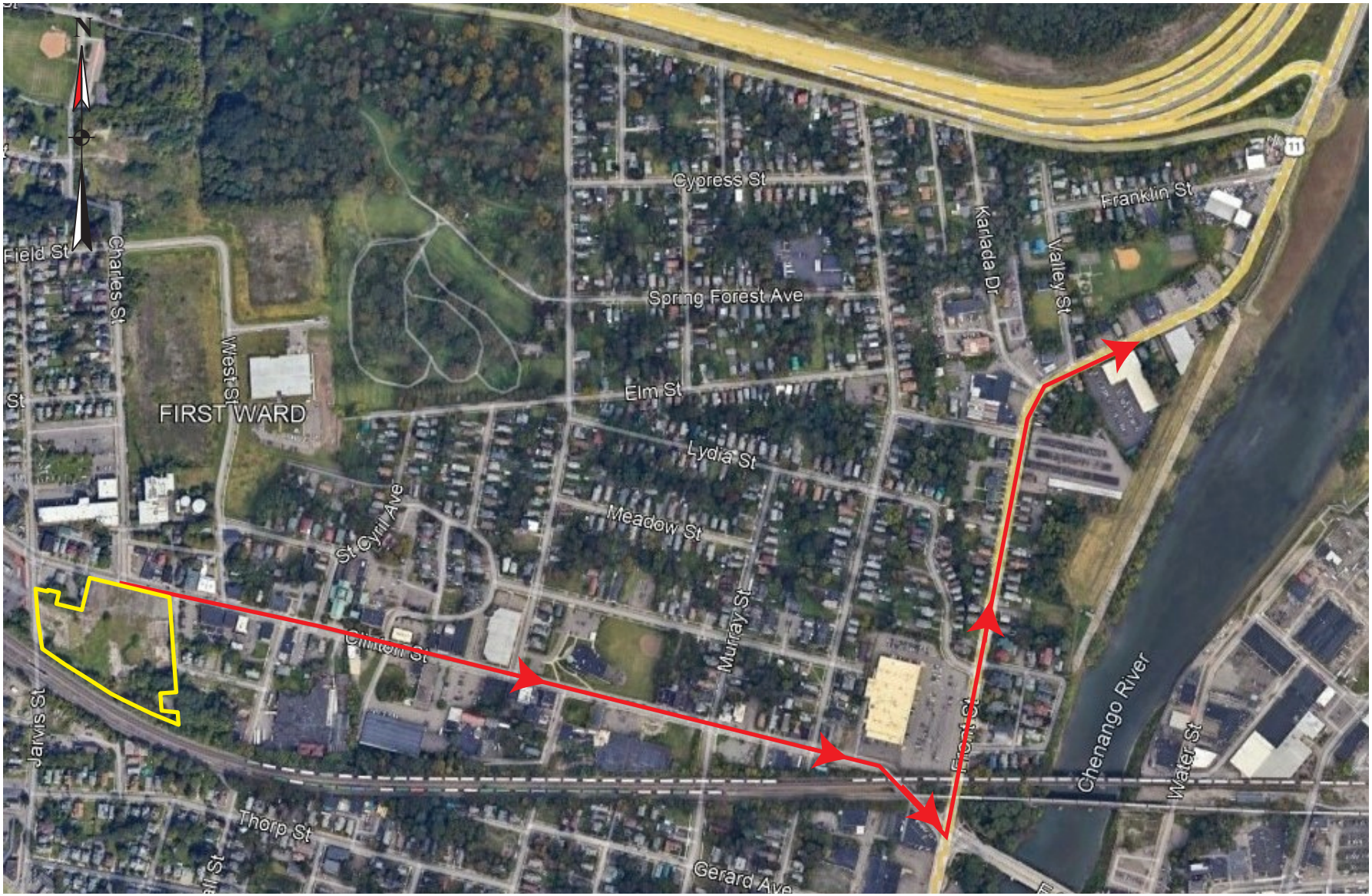


Figure 12: Truck Route Map

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

BCP Site Boundary

Truck route

File: 23003-0060

October 2026

TABLES

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-01 SURF			SB-01 0-2			SB-01 10-12			SB-01 20-22			SB-01 43-45		
U= Not Detected ≥ value			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,1,2-trichloroethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,1-dichloroethane	0.27	47		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,1-dichloroethylene	0.24	0.98		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,2,3-Trichlorobenzene	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,2,3-Trichloropropane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,2,4-Trichlorobenzene	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,2,4-Trimethylbenzene	5.9	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,2-Dibromo-3-chloropropane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,2-dibromoethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,2-dichlorobenzene	1.1	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,2-dichloroethane	0.02	5.8		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,2-dichloropropane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,3,5-trimethylbenzene	3.1	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,3-dichlorobenzene	2.6	38		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,4-dichlorobenzene	1.8	24		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
1,4-dioxane	0.1	5.7		0.081	U	1	0.08	U	1	0.086	U	1	0.087	U	1	0.096	U	1
2-butanone (MEK)	0.1	100		0.032	U	1	0.032	U	1	0.034	U	1	0.035	U	1	0.038	U	1
2-hexanone (MBK)	NA	NA		0.027	U	1	0.027	U	1	0.029	U	1	0.029	U	1	0.032	U	1
4-methyl-2-pentanone	NA	NA		0.027	U	1	0.027	U	1	0.029	U	1	0.029	U	1	0.032	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
acrylonitrile	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
benzene	0.06	3.7		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
bromochloromethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
bromodichloromethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
Bromoform	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
bromomethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
carbon disulfide	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
carbon tetrachloride	0.76	7.1		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
chlorobenzene	4.5	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
chloroethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
chloroform	0.37	24		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.001	J	1	0.0064	U	1
chloromethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
cis-1,3-dichloropropylene	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
cyclohexane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
dibromochloromethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
dibromomethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
dichlorodifluoromethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
ethyl benzene	1	76		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
hexachlorobutadiene	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
isopropylbenzene	2.3	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
methyl acetate	NA	NA		0.054	U	1	0.053	U	1	0.057	U	1	0.058	U	1	0.064	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.011	U	1	0.011	U	1	0.011	U	1	0.012	U	1	0.013	U	1
methylcyclohexane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
methylene chloride	0.05	81		0.027	U	1	0.027	U	1	0.029	U	1	0.029	U	1	0.032	U	1
n-butylbenzene	18	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
n-propylbenzene	5	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
o-xylene	0.26	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
p- & m- xylenes	0.26	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
p-isopropyltoluene	10	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
sec-butylbenzene	25	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
styrene	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
tert-butyl alcohol	NA	NA		0.054	U	1	0.053	U	1	0.057	U	1	0.058	U	1	0.064	U	1
tert-butylbenzene	11	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
tetrachloroethylene (PCE)	1.3	18		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.004	J	1	0.0064	U	1
toluene	0.7	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
trans-1,3-dichloropropylene	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
trichloroethylene (TCE)	0.47	6.4		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
trichlorofluoromethane	NA	NA		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
vinyl chloride (VC)	0.03	0.48		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1
xylenes, total	0.26	100		0.0054	U	1	0.0053	U	1	0.0057	U	1	0.0058	U	1	0.0064	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			**Sample**	**SB-02 SURF**			**SB-02 0-5**			**SB-02 18-20**			**SB-02 20-25**			**SB-02 46-48**		
U= Not Detected ≥ value			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
1,1,1-trichloroethane (TCA)	0.68	100		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
1,1,2,2-tetrachloroethane	NA	NA		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
1,1,2-trichloroethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
1,1-dichloroethane	0.27	47		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
1,1-dichloroethylene	0.24	0.98		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
1,2,3-Trichlorobenzene	NA	NA		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
1,2,3-Trichloropropane	NA	NA		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
1,2,4-Trichlorobenzene	NA	NA		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
1,2,4-Trimethylbenzene	5.9	100		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
1,2-Dibromo-3-chloropropane	NA	NA		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
1,2-dibromoethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
1,2-dichlorobenzene	1.1	100		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
1,2-dichloroethane	0.02	5.8		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
1,2-dichloropropane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
1,3,5-trimethylbenzene	3.1	100		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
1,3-dichlorobenzene	2.6	38		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
1,4-dichlorobenzene	1.8	24		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
1,4-dioxane	0.1	5.7		0.084	*U*	*1*	0.082	*U*	*1*	0.077	*LU*	*1*	0.083	*U*	*1*	0.065	*U*	*1*
2-butanone (MEK)	0.1	100		0.034	*U*	*1*	0.033	*U*	*1*	0.031	*LU*	*1*	0.033	*U*	*1*	0.026	*U*	*1*
2-hexanone (MBK)	NA	NA		0.028	*U*	*1*	0.027	*U*	*1*	0.026	*LU*	*1*	0.028	*U*	*1*	0.022	*U*	*1*
4-methyl-2-pentanone	NA	NA		0.028	*U*	*1*	0.027	*U*	*1*	0.026	*LU*	*1*	0.028	*U*	*1*	0.022	*U*	*1*
acetone	0.03	100		0.03	*U*	*1*	0.03	*U*	*1*	0.03	*LU*	*1*	0.03	*U*	*1*	0.03	*U*	*1*
acrolein	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
acrylonitrile	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
benzene	0.06	3.7		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
bromochloromethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
bromodichloromethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
Bromoform	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
bromomethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
carbon disulfide	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
carbon tetrachloride	0.76	7.1		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
chlorobenzene	4.5	100		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
chloroethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
chloroform	0.37	24		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
chloromethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
cis-1,3-dichloropropylene	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
cyclohexane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
dibromochloromethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
dibromomethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
dichlorodifluoromethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
ethyl benzene	1	76		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
hexachlorobutadiene	NA	NA		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
isopropylbenzene	2.3	100		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
methyl acetate	NA	NA		0.056	*U*	*1*	0.054	*U*	*1*	0.052	*LU*	*1*	0.056	*U*	*1*	0.043	*U*	*1*
methyl tert-butyl ether (MTBE)	0.1	100		0.011	*U*	*1*	0.011	*U*	*1*	0.01	*LU*	*1*	0.011	*U*	*1*	0.0087	*U*	*1*
methylcyclohexane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
methylene chloride	0.05	81		0.028	*U*	*1*	0.027	*U*	*1*	0.026	*LU*	*1*	0.028	*U*	*1*	0.022	*U*	*1*
n-butylbenzene	18	100		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
n-propylbenzene	5	100		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
o-xylene	0.26	100		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
p- & m- xylenes	0.26	100		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
p-isopropyltoluene	10	NA		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
sec-butylbenzene	25	100		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
styrene	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
tert-butyl alcohol	NA	NA		0.056	*U*	*1*	0.054	*U*	*1*	0.052	*LU*	*1*	0.056	*U*	*1*	0.043	*U*	*1*
tert-butylbenzene	11	100		0.32	*U*	*50*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.22	*U*	*50*
tetrachloroethylene (PCE)	1.3	18		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0016	*JL*	*1*	0.0047	*J*	*1*	0.062	*J*	*50*
toluene	0.7	100		0.0015	*J*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
trans-1,3-dichloropropylene	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
trichloroethylene (TCE)	0.47	6.4		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0017	*J*	*1*	0.0043	*U*	*1*
trichlorofluoromethane	NA	NA		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
vinyl chloride (VC)	0.03	0.48		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*LU*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*
xylenes, total	0.26	100		0.0056	*U*	*1*	0.0054	*U*	*1*	0.0052	*U*	*1*	0.0056	*U*	*1*	0.0043	*U*	*1*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-03 SURF			SB-03 0-2			SB-03 18-20			SB-03 20-22			SB-04 SURF		
U= Not Detected ≥ value			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,1,2-trichloroethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,1-dichloroethane	0.27	47		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,1-dichloroethylene	0.24	0.98		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,2,3-Trichlorobenzene	NA	NA		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,2,3-Trichloropropane	NA	NA		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,2,4-Trichlorobenzene	NA	NA		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,2,4-Trimethylbenzene	5.9	100		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,2-Dibromo-3-chloropropane	NA	NA		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,2-dibromoethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,2-dichlorobenzene	1.1	100		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,2-dichloroethane	0.02	5.8		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,2-dichloropropane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,3,5-trimethylbenzene	3.1	100		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,3-dichlorobenzene	2.6	38		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,4-dichlorobenzene	1.8	24		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
1,4-dioxane	0.1	5.7		0.083	U	1	0.06	U	1	0.073	U	1	0.089	U	1	0.091	U	1
2-butanone (MEK)	0.1	100		0.033	U	1	0.024	U	1	0.029	U	1	0.036	U	1	0.036	U	1
2-hexanone (MBK)	NA	NA		0.028	U	1	0.02	U	1	0.024	U	1	0.03	U	1	0.03	U	1
4-methyl-2-pentanone	NA	NA		0.028	U	1	0.02	U	1	0.024	U	1	0.03	U	1	0.03	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
acrylonitrile	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
benzene	0.06	3.7		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
bromochloromethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
bromodichloromethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
Bromoform	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
bromomethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
carbon disulfide	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
carbon tetrachloride	0.76	7.1		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
chlorobenzene	4.5	100		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
chloroethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
chloroform	0.37	24		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
chloromethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
cis-1,3-dichloropropylene	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
cyclohexane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
dibromochloromethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
dibromomethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
dichlorodifluoromethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
ethyl benzene	1	76		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
hexachlorobutadiene	NA	NA		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
isopropylbenzene	2.3	100		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
methyl acetate	NA	NA		0.056	U	1	0.04	U	1	0.049	U	1	0.059	U	1	0.061	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.011	U	1	0.008	U	1	0.0098	U	1	0.012	U	1	0.012	U	1
methylcyclohexane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
methylene chloride	0.05	81		0.028	U	1	0.02	U	1	0.024	U	1	0.03	U	1	0.03	U	1
n-butylbenzene	18	100		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
n-propylbenzene	5	100		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
o-xylene	0.26	100		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
p- & m- xylenes	0.26	100		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
p-isopropyltoluene	10	NA		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
sec-butylbenzene	25	100		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
styrene	NA	NA		0.0021	J	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
tert-butyl alcohol	NA	NA		0.056	U	1	0.04	U	1	0.049	U	1	0.059	U	1	0.061	U	1
tert-butylbenzene	11	100		0.31	U	50	0.29	U	50	0.0049	U	1	0.0059	U	1	0.0061	U	1
tetrachloroethylene (PCE)	1.3	18		0.0056	U	1	0.004	U	1	0.0013	J	1	0.0038	J	1	0.0061	U	1
toluene	0.7	100		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
trans-1,3-dichloropropylene	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
trichloroethylene (TCE)	0.47	6.4		0.0056	U	1	0.004	U	1	0.001	J	1	0.00063	J	1	0.0061	U	1
trichlorofluoromethane	NA	NA		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
vinyl chloride (VC)	0.03	0.48		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1
xylenes, total	0.26	100		0.0056	U	1	0.004	U	1	0.0049	U	1	0.0059	U	1	0.0061	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			**Sample**	**SB-04 0-2**			**SB-04 21-23**			**SB-04 23-25**			**DUP-20260401**			**SB-05 SURF**		
U= Not Detected ≥ value			Date	2026-03-31			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
1,1,2-trichloroethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
1,1-dichloroethane	0.27	47		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
1,1-dichloroethylene	0.24	0.98		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
1,2,3-Trichlorobenzene	NA	NA		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
1,2,3-Trichloropropane	NA	NA		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
1,2,4-Trichlorobenzene	NA	NA		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
1,2,4-Trimethylbenzene	5.9	100		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
1,2-Dibromo-3-chloropropane	NA	NA		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
1,2-dibromoethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
1,2-dichlorobenzene	1.1	100		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
1,2-dichloroethane	0.02	5.8		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
1,2-dichloropropane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
1,3,5-trimethylbenzene	3.1	100		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
1,3-dichlorobenzene	2.6	38		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
1,4-dichlorobenzene	1.8	24		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
1,4-dioxane	0.1	5.7		0.1	U	1	0.083	U	1	0.083	U	1	0.073	U	1	0.093	U	1
2-butanone (MEK)	0.1	100		0.041	U	1	0.033	U	1	0.033	U	1	0.029	U	1	0.037	U	1
2-hexanone (MBK)	NA	NA		0.034	U	1	0.028	U	1	0.028	U	1	0.024	U	1	0.031	U	1
4-methyl-2-pentanone	NA	NA		0.034	U	1	0.028	U	1	0.028	U	1	0.024	U	1	0.031	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
acrylonitrile	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
benzene	0.06	3.7		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
bromochloromethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
bromodichloromethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
Bromoform	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
bromomethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
carbon disulfide	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
carbon tetrachloride	0.76	7.1		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
chlorobenzene	4.5	100		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
chloroethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
chloroform	0.37	24		0.052	J	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
chloromethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
cis-1,3-dichloropropylene	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
cyclohexane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
dibromochloromethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
dibromomethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
dichlorodifluoromethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
ethyl benzene	1	76		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
hexachlorobutadiene	NA	NA		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
isopropylbenzene	2.3	100		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
methyl acetate	NA	NA		0.069	U	1	0.056	U	1	0.056	U	1	0.048	U	1	0.062	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.014	U	1	0.011	U	1	0.011	U	1	0.0097	U	1	0.012	U	1
methylcyclohexane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
methylene chloride	0.05	81		0.034	U	1	0.028	U	1	0.028	U	1	0.024	U	1	0.031	U	1
n-butylbenzene	18	100		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
n-propylbenzene	5	100		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
o-xylene	0.26	100		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
p- & m- xylenes	0.26	100		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
p-isopropyltoluene	10	NA		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
sec-butylbenzene	25	100		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
styrene	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
tert-butyl alcohol	NA	NA		0.069	U	1	0.056	U	1	0.056	U	1	0.048	U	1	0.062	U	1
tert-butylbenzene	11	100		0.39	U	50	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.45	U	50
tetrachloroethylene (PCE)	1.3	18		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
toluene	0.7	100		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
trans-1,3-dichloropropylene	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
trichloroethylene (TCE)	0.47	6.4		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
trichlorofluoromethane	NA	NA		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
vinyl chloride (VC)	0.03	0.48		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1
xylenes, total	0.26	100		0.0069	U	1	0.0056	U	1	0.0056	U	1	0.0048	U	1	0.0062	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-05 0-1			SB-05 1-2			SB-05 10-12			SB-05 22-24			SB-06 SURF		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,1,2-trichloroethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,1-dichloroethane	0.27	47		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,1-dichloroethylene	0.24	0.98		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,2,3-Trichlorobenzene	NA	NA		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,2,3-Trichloropropane	NA	NA		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,2,4-Trichlorobenzene	NA	NA		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,2,4-Trimethylbenzene	5.9	100		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,2-Dibromo-3-chloropropane	NA	NA		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,2-dibromoethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,2-dichlorobenzene	1.1	100		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,2-dichloroethane	0.02	5.8		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,2-dichloropropane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,3,5-trimethylbenzene	3.1	100		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,3-dichlorobenzene	2.6	38		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,4-dichlorobenzene	1.8	24		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
1,4-dioxane	0.1	5.7		0.096	U	1	0.1	U	1	0.076	U	1	0.072	U	1	0.072	U	1
2-butanone (MEK)	0.1	100		0.038	U	1	0.042	U	1	0.03	U	1	0.029	U	1	0.029	U	1
2-hexanone (MBK)	NA	NA		0.032	U	1	0.035	U	1	0.025	U	1	0.024	U	1	0.024	U	1
4-methyl-2-pentanone	NA	NA		0.032	U	1	0.035	U	1	0.025	U	1	0.024	U	1	0.024	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
acrylonitrile	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
benzene	0.06	3.7		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
bromochloromethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
bromodichloromethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
Bromoform	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
bromomethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
carbon disulfide	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
carbon tetrachloride	0.76	7.1		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
chlorobenzene	4.5	100		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
chloroethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
chloroform	0.37	24		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
chloromethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
cis-1,3-dichloropropylene	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
cyclohexane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
dibromochloromethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
dibromomethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
dichlorodifluoromethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
ethyl benzene	1	76		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
hexachlorobutadiene	NA	NA		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
isopropylbenzene	2.3	100		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
methyl acetate	NA	NA		0.064	U	1	0.07	U	1	0.051	U	1	0.048	U	1	0.048	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.013	U	1	0.014	U	1	0.01	U	1	0.0096	U	1	0.0097	U	1
methylcyclohexane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
methylene chloride	0.05	81		0.032	U	1	0.035	U	1	0.025	U	1	0.024	U	1	0.024	U	1
n-butylbenzene	18	100		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
n-propylbenzene	5	100		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
o-xylene	0.26	100		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
p- & m- xylenes	0.26	100		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
p-isopropyltoluene	10	NA		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
sec-butylbenzene	25	100		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
styrene	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
tert-butyl alcohol	NA	NA		0.064	U	1	0.07	U	1	0.051	U	1	0.048	U	1	0.048	U	1
tert-butylbenzene	11	100		0.38	U	50	0.44	U	50	0.0051	U	1	0.0048	U	1	0.0048	U	1
tetrachloroethylene (PCE)	1.3	18		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
toluene	0.7	100		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
trans-1,3-dichloropropylene	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
trichloroethylene (TCE)	0.47	6.4		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
trichlorofluoromethane	NA	NA		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
vinyl chloride (VC)	0.03	0.48		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1
xylenes, total	0.26	100		0.0064	U	1	0.007	U	1	0.0051	U	1	0.0048	U	1	0.0048	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-06 0-2			SB-06 16-18			SB-06 18-20			SB-07 SURF			SB-07 0-1		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
1,1,2-trichloroethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
1,1-dichloroethane	0.27	47		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
1,1-dichloroethylene	0.24	0.98		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
1,2,3-Trichlorobenzene	NA	NA		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
1,2,3-Trichloropropane	NA	NA		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
1,2,4-Trichlorobenzene	NA	NA		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
1,2,4-Trimethylbenzene	5.9	100		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
1,2-Dibromo-3-chloropropane	NA	NA		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
1,2-dibromoethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
1,2-dichlorobenzene	1.1	100		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
1,2-dichloroethane	0.02	5.8		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
1,2-dichloropropane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
1,3,5-trimethylbenzene	3.1	100		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
1,3-dichlorobenzene	2.6	38		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
1,4-dichlorobenzene	1.8	24		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
1,4-dioxane	0.1	5.7		0.07	U	1	0.063	U	1	0.071	U	1	0.067	U	1	0.074	U	1
2-butanone (MEK)	0.1	100		0.028	U	1	0.025	U	1	0.028	U	1	0.027	U	1	0.03	U	1
2-hexanone (MBK)	NA	NA		0.023	U	1	0.021	U	1	0.024	U	1	0.022	U	1	0.025	U	1
4-methyl-2-pentanone	NA	NA		0.023	U	1	0.021	U	1	0.024	U	1	0.022	U	1	0.025	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
acrylonitrile	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
benzene	0.06	3.7		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
bromochloromethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
bromodichloromethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
Bromoform	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
bromomethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
carbon disulfide	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
carbon tetrachloride	0.76	7.1		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
chlorobenzene	4.5	100		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
chloroethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
chloroform	0.37	24		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
chloromethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
cis-1,3-dichloropropylene	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
cyclohexane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
dibromochloromethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
dibromomethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
dichlorodifluoromethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
ethyl benzene	1	76		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
hexachlorobutadiene	NA	NA		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
isopropylbenzene	2.3	100		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
methyl acetate	NA	NA		0.047	U	1	0.042	U	1	0.047	U	1	0.045	U	1	0.049	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.0093	U	1	0.0084	U	1	0.0095	U	1	0.009	U	1	0.0099	U	1
methylcyclohexane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
methylene chloride	0.05	81		0.023	U	1	0.021	U	1	0.024	U	1	0.022	U	1	0.025	U	1
n-butylbenzene	18	100		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
n-propylbenzene	5	100		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
o-xylene	0.26	100		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
p- & m- xylenes	0.26	100		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
p-isopropyltoluene	10	NA		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
sec-butylbenzene	25	100		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
styrene	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
tert-butyl alcohol	NA	NA		0.047	U	1	0.042	U	1	0.047	U	1	0.045	U	1	0.049	U	1
tert-butylbenzene	11	100		0.33	U	50	0.0042	U	1	0.0047	U	1	0.32	U	50	0.0049	U	1
tetrachloroethylene (PCE)	1.3	18		0.0047	U	1	0.0016	J	1	0.001	J	1	0.0045	U	1	0.0049	U	1
toluene	0.7	100		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
trans-1,3-dichloropropylene	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
trichloroethylene (TCE)	0.47	6.4		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
trichlorofluoromethane	NA	NA		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
vinyl chloride (VC)	0.03	0.48		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1
xylenes, total	0.26	100		0.0047	U	1	0.0042	U	1	0.0047	U	1	0.0045	U	1	0.0049	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-07 1-2			SB-07 16-18			SB-07 21-23			SB-08 SURF			SB-08 0-2		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
1,1,2-trichloroethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
1,1-dichloroethane	0.27	47		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
1,1-dichloroethylene	0.24	0.98		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
1,2,3-Trichlorobenzene	NA	NA		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
1,2,3-Trichloropropane	NA	NA		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
1,2,4-Trichlorobenzene	NA	NA		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
1,2,4-Trimethylbenzene	5.9	100		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
1,2-Dibromo-3-chloropropane	NA	NA		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
1,2-dibromoethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
1,2-dichlorobenzene	1.1	100		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
1,2-dichloroethane	0.02	5.8		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
1,2-dichloropropane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
1,3,5-trimethylbenzene	3.1	100		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
1,3-dichlorobenzene	2.6	38		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
1,4-dichlorobenzene	1.8	24		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
1,4-dioxane	0.1	5.7		0.064	U	1	0.067	U	1	0.067	U	1	0.089	U	1	0.09	U	1
2-butanone (MEK)	0.1	100		0.026	U	1	0.027	U	1	0.027	U	1	0.036	U	1	0.036	U	1
2-hexanone (MBK)	NA	NA		0.021	U	1	0.022	U	1	0.022	U	1	0.03	U	1	0.03	U	1
4-methyl-2-pentanone	NA	NA		0.021	U	1	0.022	U	1	0.022	U	1	0.03	U	1	0.03	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
acrylonitrile	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
benzene	0.06	3.7		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
bromochloromethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
bromodichloromethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
Bromoform	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
bromomethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
carbon disulfide	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
carbon tetrachloride	0.76	7.1		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
chlorobenzene	4.5	100		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
chloroethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
chloroform	0.37	24		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
chloromethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
cis-1,3-dichloropropylene	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
cyclohexane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
dibromochloromethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
dibromomethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
dichlorodifluoromethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
ethyl benzene	1	76		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
hexachlorobutadiene	NA	NA		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
isopropylbenzene	2.3	100		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
methyl acetate	NA	NA		0.043	U	1	0.044	U	1	0.044	U	1	0.059	U	1	0.06	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.0086	U	1	0.0089	U	1	0.0089	U	1	0.012	U	1	0.012	U	1
methylcyclohexane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
methylene chloride	0.05	81		0.021	U	1	0.022	U	1	0.022	U	1	0.03	U	1	0.03	U	1
n-butylbenzene	18	100		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
n-propylbenzene	5	100		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
o-xylene	0.26	100		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
p- & m- xylenes	0.26	100		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
p-isopropyltoluene	10	NA		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
sec-butylbenzene	25	100		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
styrene	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
tert-butyl alcohol	NA	NA		0.043	U	1	0.044	U	1	0.044	U	1	0.059	U	1	0.06	U	1
tert-butylbenzene	11	100		0.0043	U	1	0.33	U	50	0.0044	U	1	0.0059	U	1	0.006	U	1
tetrachloroethylene (PCE)	1.3	18		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
toluene	0.7	100		0.00044	J	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
trans-1,3-dichloropropylene	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
trichloroethylene (TCE)	0.47	6.4		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
trichlorofluoromethane	NA	NA		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
vinyl chloride (VC)	0.03	0.48		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1
xylenes, total	0.26	100		0.0043	U	1	0.0044	U	1	0.0044	U	1	0.0059	U	1	0.006	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			**Sample**	**SB-08 20-22**			**SB-08 26-28**			**SB-09 SURF**			**SB-09 0-1**			**SB-09 1-2**		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-02			2026-04-02			2026-04-02		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
1,1,2-trichloroethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
1,1-dichloroethane	0.27	47		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
1,1-dichloroethylene	0.24	0.98		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
1,2,3-Trichlorobenzene	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
1,2,3-Trichloropropane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
1,2,4-Trichlorobenzene	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
1,2,4-Trimethylbenzene	5.9	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
1,2-Dibromo-3-chloropropane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
1,2-dibromoethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
1,2-dichlorobenzene	1.1	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
1,2-dichloroethane	0.02	5.8		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
1,2-dichloropropane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
1,3,5-trimethylbenzene	3.1	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
1,3-dichlorobenzene	2.6	38		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
1,4-dichlorobenzene	1.8	24		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
1,4-dioxane	0.1	5.7		0.081	U	1	0.07	U	1	NA			0.072	U	1	0.078	U	1
2-butanone (MEK)	0.1	100		0.032	U	1	0.028	U	1	0.035	U	1	0.029	U	1	0.031	U	1
2-hexanone (MBK)	NA	NA		0.027	U	1	0.023	U	1	0.029	U	1	0.024	U	1	0.026	U	1
4-methyl-2-pentanone	NA	NA		0.027	U	1	0.023	U	1	0.029	U	1	0.024	U	1	0.026	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
acrylonitrile	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
benzene	0.06	3.7		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
bromochloromethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
bromodichloromethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
Bromoform	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
bromomethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
carbon disulfide	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
carbon tetrachloride	0.76	7.1		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
chlorobenzene	4.5	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
chloroethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
chloroform	0.37	24		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
chloromethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
cis-1,3-dichloropropylene	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
cyclohexane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
dibromochloromethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
dibromomethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
dichlorodifluoromethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
ethyl benzene	1	76		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
hexachlorobutadiene	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
isopropylbenzene	2.3	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
methyl acetate	NA	NA		0.054	U	1	0.047	U	1	0.059	U	1	0.048	U	1	0.052	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.011	U	1	0.0093	U	1	0.012	U	1	0.0096	U	1	0.01	U	1
methylcyclohexane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
methylene chloride	0.05	81		0.027	U	1	0.023	U	1	0.029	U	1	0.024	U	1	0.026	U	1
n-butylbenzene	18	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
n-propylbenzene	5	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
o-xylene	0.26	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
p- & m- xylenes	0.26	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
p-isopropyltoluene	10	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
sec-butylbenzene	25	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
styrene	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
tert-butyl alcohol	NA	NA		0.054	U	1	0.047	U	1	0.059	U	1	0.048	U	1	0.052	U	1
tert-butylbenzene	11	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.32	U	50
tetrachloroethylene (PCE)	1.3	18		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
toluene	0.7	100		0.0054	U	1	0.0047	U	1	0.0012	J	1	0.0048	U	1	0.0052	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
trans-1,3-dichloropropylene	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
trichloroethylene (TCE)	0.47	6.4		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
trichlorofluoromethane	NA	NA		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
vinyl chloride (VC)	0.03	0.48		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1
xylenes, total	0.26	100		0.0054	U	1	0.0047	U	1	0.0059	U	1	0.0048	U	1	0.0052	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-09 6-8			SB-09 25-27			SB-09 42-44			SB-10 SURF			SB-10 0-2		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,1,2-trichloroethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,1-dichloroethane	0.27	47		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,1-dichloroethylene	0.24	0.98		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,2,3-Trichlorobenzene	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,2,3-Trichloropropane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,2,4-Trichlorobenzene	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,2,4-Trimethylbenzene	5.9	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,2-Dibromo-3-chloropropane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,2-dibromoethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,2-dichlorobenzene	1.1	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,2-dichloroethane	0.02	5.8		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,2-dichloropropane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,3,5-trimethylbenzene	3.1	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,3-dichlorobenzene	2.6	38		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,4-dichlorobenzene	1.8	24		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
1,4-dioxane	0.1	5.7		0.068	U	1	0.062	U	1	0.05	U	1	0.072	U	1	0.074	U	1
2-butanone (MEK)	0.1	100		0.027	U	1	0.025	U	1	0.02	U	1	0.029	U	1	0.03	U	1
2-hexanone (MBK)	NA	NA		0.023	U	1	0.021	U	1	0.017	U	1	0.024	U	1	0.025	U	1
4-methyl-2-pentanone	NA	NA		0.023	U	1	0.021	U	1	0.017	U	1	0.024	U	1	0.025	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.04	S	1	0.03	U	1
acrolein	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
acrylonitrile	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
benzene	0.06	3.7		0.0045	U	1	0.0041	U	1	0.00035	J	1	0.0048	U	1	0.0049	U	1
bromochloromethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
bromodichloromethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
Bromoform	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
bromomethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
carbon disulfide	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
carbon tetrachloride	0.76	7.1		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
chlorobenzene	4.5	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
chloroethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
chloroform	0.37	24		0.0045	U	1	0.00081	J	1	0.00089	J	1	0.0048	U	1	0.0049	U	1
chloromethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
cis-1,3-dichloropropylene	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
cyclohexane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
dibromochloromethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
dibromomethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
dichlorodifluoromethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
ethyl benzene	1	76		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
hexachlorobutadiene	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
isopropylbenzene	2.3	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
methyl acetate	NA	NA		0.045	U	1	0.041	U	1	0.033	U	1	0.048	U	1	0.049	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.0091	U	1	0.0083	U	1	0.0067	U	1	0.0097	U	1	0.0099	U	1
methylcyclohexane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
methylene chloride	0.05	81		0.023	U	1	0.021	U	1	0.017	U	1	0.024	U	1	0.025	U	1
n-butylbenzene	18	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
n-propylbenzene	5	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
o-xylene	0.26	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
p- & m- xylenes	0.26	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.001	J	1	0.0049	U	1
p-isopropyltoluene	10	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
sec-butylbenzene	25	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
styrene	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
tert-butyl alcohol	NA	NA		0.045	U	1	0.041	U	1	0.033	U	1	0.048	U	1	0.049	U	1
tert-butylbenzene	11	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
tetrachloroethylene (PCE)	1.3	18		0.0045	U	1	0.0041	U	1	0.00073	J	1	0.0048	U	1	0.0049	U	1
toluene	0.7	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0099		1	0.0049	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
trans-1,3-dichloropropylene	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
trichloroethylene (TCE)	0.47	6.4		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
trichlorofluoromethane	NA	NA		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
vinyl chloride (VC)	0.03	0.48		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1
xylenes, total	0.26	100		0.0045	U	1	0.0041	U	1	0.0033	U	1	0.0048	U	1	0.0049	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-10 18-20			SB-10 23-25			SB-11 SURF			SB-11 0-2			SB-11 9-11		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
1,1,2-trichloroethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
1,1-dichloroethane	0.27	47		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
1,1-dichloroethylene	0.24	0.98		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
1,2,3-Trichlorobenzene	NA	NA		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
1,2,3-Trichloropropane	NA	NA		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
1,2,4-Trichlorobenzene	NA	NA		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
1,2,4-Trimethylbenzene	5.9	100		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
1,2-Dibromo-3-chloropropane	NA	NA		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
1,2-dibromoethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
1,2-dichlorobenzene	1.1	100		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
1,2-dichloroethane	0.02	5.8		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
1,2-dichloropropane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
1,3,5-trimethylbenzene	3.1	100		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
1,3-dichlorobenzene	2.6	38		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
1,4-dichlorobenzene	1.8	24		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
1,4-dioxane	0.1	5.7		0.071	U	1	0.055	U	1	0.074	U	1	0.075	U	1	0.068	U	1
2-butanone (MEK)	0.1	100		0.028	U	1	0.022	U	1	0.03	U	1	0.03	U	1	0.027	U	1
2-hexanone (MBK)	NA	NA		0.024	U	1	0.018	U	1	0.025	U	1	0.025	U	1	0.023	U	1
4-methyl-2-pentanone	NA	NA		0.024	U	1	0.018	U	1	0.025	U	1	0.025	U	1	0.023	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
acrylonitrile	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
benzene	0.06	3.7		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
bromochloromethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
bromodichloromethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
Bromoform	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
bromomethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
carbon disulfide	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
carbon tetrachloride	0.76	7.1		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
chlorobenzene	4.5	100		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
chloroethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
chloroform	0.37	24		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
chloromethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
cis-1,3-dichloropropylene	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
cyclohexane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
dibromochloromethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
dibromomethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
dichlorodifluoromethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
ethyl benzene	1	76		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
hexachlorobutadiene	NA	NA		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
isopropylbenzene	2.3	100		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
methyl acetate	NA	NA		0.047	U	1	0.037	U	1	0.049	U	1	0.05	U	1	0.045	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.0095	U	1	0.0074	U	1	0.0099	U	1	0.01	U	1	0.0091	U	1
methylcyclohexane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
methylene chloride	0.05	81		0.024	U	1	0.018	U	1	0.025	U	1	0.025	U	1	0.023	U	1
n-butylbenzene	18	100		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
n-propylbenzene	5	100		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
o-xylene	0.26	100		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
p- & m- xylenes	0.26	100		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
p-isopropyltoluene	10	NA		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
sec-butylbenzene	25	100		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
styrene	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
tert-butyl alcohol	NA	NA		0.047	U	1	0.037	U	1	0.049	U	1	0.05	U	1	0.045	U	1
tert-butylbenzene	11	100		0.25	U	50	0.0037	U	1	0.29	U	50	0.28	U	50	0.28	U	50
tetrachloroethylene (PCE)	1.3	18		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
toluene	0.7	100		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
trans-1,3-dichloropropylene	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
trichloroethylene (TCE)	0.47	6.4		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
trichlorofluoromethane	NA	NA		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
vinyl chloride (VC)	0.03	0.48		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1
xylenes, total	0.26	100		0.0047	U	1	0.0037	U	1	0.0049	U	1	0.005	U	1	0.0045	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-11 20-22			SB-12 SURF			SB-12 0-1			SB-12 1-2			SB-12 6-8		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
1,1,2-trichloroethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
1,1-dichloroethane	0.27	47		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
1,1-dichloroethylene	0.24	0.98		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
1,2,3-Trichlorobenzene	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
1,2,3-Trichloropropane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
1,2,4-Trichlorobenzene	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
1,2,4-Trimethylbenzene	5.9	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
1,2-Dibromo-3-chloropropane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
1,2-dibromoethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
1,2-dichlorobenzene	1.1	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
1,2-dichloroethane	0.02	5.8		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
1,2-dichloropropane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
1,3,5-trimethylbenzene	3.1	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
1,3-dichlorobenzene	2.6	38		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
1,4-dichlorobenzene	1.8	24		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
1,4-dioxane	0.1	5.7		0.061	U	1	0.078	U	1	0.068	U	1	NA			0.1	U	1
2-butanone (MEK)	0.1	100		0.024	U	1	0.031	U	1	0.027	U	1	0.024	U	1	0.043	U	1
2-hexanone (MBK)	NA	NA		0.02	U	1	0.026	U	1	0.023	U	1	0.02	U	1	0.036	U	1
4-methyl-2-pentanone	NA	NA		0.02	U	1	0.026	U	1	0.023	U	1	0.02	U	1	0.036	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
acrylonitrile	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
benzene	0.06	3.7		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
bromochloromethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
bromodichloromethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
Bromoform	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
bromomethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
carbon disulfide	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
carbon tetrachloride	0.76	7.1		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
chlorobenzene	4.5	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
chloroethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
chloroform	0.37	24		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
chloromethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
cis-1,3-dichloropropylene	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
cyclohexane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
dibromochloromethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
dibromomethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
dichlorodifluoromethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
ethyl benzene	1	76		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
hexachlorobutadiene	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
isopropylbenzene	2.3	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
methyl acetate	NA	NA		0.041	U	1	0.052	U	1	0.046	U	1	0.04	U	1	0.072	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.0081	U	1	0.01	U	1	0.0091	U	1	0.008	U	1	0.014	U	1
methylcyclohexane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
methylene chloride	0.05	81		0.02	U	1	0.026	U	1	0.023	U	1	0.02	U	1	0.036	U	1
n-butylbenzene	18	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
n-propylbenzene	5	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
o-xylene	0.26	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
p- & m- xylenes	0.26	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
p-isopropyltoluene	10	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
sec-butylbenzene	25	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
styrene	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
tert-butyl alcohol	NA	NA		0.041	U	1	0.052	U	1	0.046	U	1	0.04	U	1	0.072	U	1
tert-butylbenzene	11	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.31	U	50
tetrachloroethylene (PCE)	1.3	18		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.12	J	50
toluene	0.7	100		0.0041	U	1	0.00072	J	1	0.0046	U	1	0.004	U	1	0.0072	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
trans-1,3-dichloropropylene	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
trichloroethylene (TCE)	0.47	6.4		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
trichlorofluoromethane	NA	NA		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
vinyl chloride (VC)	0.03	0.48		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1
xylenes, total	0.26	100		0.0041	U	1	0.0052	U	1	0.0046	U	1	0.004	U	1	0.0072	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	DUP-20260402			SB-12 22-24			SB-12 43-45			SB-13 SURF			SB-13 0-2		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-03			2026-04-03		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
1,1,2-trichloroethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
1,1-dichloroethane	0.27	47		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
1,1-dichloroethylene	0.24	0.98		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
1,2,3-Trichlorobenzene	NA	NA		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
1,2,3-Trichloropropane	NA	NA		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
1,2,4-Trichlorobenzene	NA	NA		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
1,2,4-Trimethylbenzene	5.9	100		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
1,2-Dibromo-3-chloropropane	NA	NA		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
1,2-dibromoethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
1,2-dichlorobenzene	1.1	100		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
1,2-dichloroethane	0.02	5.8		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
1,2-dichloropropane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
1,3,5-trimethylbenzene	3.1	100		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
1,3-dichlorobenzene	2.6	38		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
1,4-dichlorobenzene	1.8	24		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
1,4-dioxane	0.1	5.7		0.071	U	1	0.061	U	1	0.061	U	1	0.1	U	1	0.077	U	1
2-butanone (MEK)	0.1	100		0.029	U	1	0.024	U	1	0.025	U	1	0.051	U	1	0.031	U	1
2-hexanone (MBK)	NA	NA		0.024	U	1	0.02	U	1	0.02	U	1	0.042	U	1	0.026	U	1
4-methyl-2-pentanone	NA	NA		0.024	U	1	0.02	U	1	0.02	U	1	0.042	U	1	0.026	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
acrylonitrile	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
benzene	0.06	3.7		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
bromochloromethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
bromodichloromethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
Bromoform	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
bromomethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
carbon disulfide	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
carbon tetrachloride	0.76	7.1		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
chlorobenzene	4.5	100		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
chloroethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
chloroform	0.37	24		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
chloromethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
cis-1,3-dichloropropylene	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
cyclohexane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
dibromochloromethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
dibromomethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
dichlorodifluoromethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
ethyl benzene	1	76		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
hexachlorobutadiene	NA	NA		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
isopropylbenzene	2.3	100		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
methyl acetate	NA	NA		0.048	U	1	0.041	U	1	0.041	U	1	0.084	U	1	0.051	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.0095	U	1	0.0081	U	1	0.0082	U	1	0.017	U	1	0.01	U	1
methylcyclohexane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
methylene chloride	0.05	81		0.024	U	1	0.02	U	1	0.02	U	1	0.042	U	1	0.026	U	1
n-butylbenzene	18	100		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
n-propylbenzene	5	100		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
o-xylene	0.26	100		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
p- & m- xylenes	0.26	100		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
p-isopropyltoluene	10	NA		0.35	U	50	0.0041	U	1	0.0041	U	1	0.5		50	0.0051	U	1
sec-butylbenzene	25	100		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
styrene	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
tert-butyl alcohol	NA	NA		0.048	U	1	0.041	U	1	0.041	U	1	0.084	U	1	0.051	U	1
tert-butylbenzene	11	100		0.35	U	50	0.0041	U	1	0.0041	U	1	0.49	U	50	0.0051	U	1
tetrachloroethylene (PCE)	1.3	18		0.16		50	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
toluene	0.7	100		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
trans-1,3-dichloropropylene	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
trichloroethylene (TCE)	0.47	6.4		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
trichlorofluoromethane	NA	NA		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
vinyl chloride (VC)	0.03	0.48		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1
xylenes, total	0.26	100		0.0048	U	1	0.0041	U	1	0.0041	U	1	0.0084	U	1	0.0051	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-13 7-9			SB-13 20-22			SB-13 22-23			SB-13 23-25			SB-14 SURF		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,1,2-trichloroethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,1-dichloroethane	0.27	47		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,1-dichloroethylene	0.24	0.98		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,2,3-Trichlorobenzene	NA	NA		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,2,3-Trichloropropane	NA	NA		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,2,4-Trichlorobenzene	NA	NA		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,2,4-Trimethylbenzene	5.9	100		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,2-Dibromo-3-chloropropane	NA	NA		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,2-dibromoethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,2-dichlorobenzene	1.1	100		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,2-dichloroethane	0.02	5.8		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,2-dichloropropane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,3,5-trimethylbenzene	3.1	100		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,3-dichlorobenzene	2.6	38		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,4-dichlorobenzene	1.8	24		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
1,4-dioxane	0.1	5.7		0.087	U	1	0.076	U	1	0.077	U	1	0.07	U	1	0.1	U	1
2-butanone (MEK)	0.1	100		0.035	U	1	0.03	U	1	0.031	U	1	0.028	U	1	0.043	U	1
2-hexanone (MBK)	NA	NA		0.029	U	1	0.025	U	1	0.026	U	1	0.023	U	1	0.035	U	1
4-methyl-2-pentanone	NA	NA		0.029	U	1	0.025	U	1	0.026	U	1	0.023	U	1	0.035	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
acrylonitrile	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
benzene	0.06	3.7		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
bromochloromethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
bromodichloromethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
Bromoform	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
bromomethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
carbon disulfide	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
carbon tetrachloride	0.76	7.1		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
chlorobenzene	4.5	100		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
chloroethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
chloroform	0.37	24		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
chloromethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
cis-1,3-dichloropropylene	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
cyclohexane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
dibromochloromethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
dibromomethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
dichlorodifluoromethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
ethyl benzene	1	76		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
hexachlorobutadiene	NA	NA		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
isopropylbenzene	2.3	100		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
methyl acetate	NA	NA		0.058	U	1	0.051	U	1	0.052	U	1	0.047	U	1	0.071	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.012	U	1	0.01	U	1	0.01	U	1	0.0094	U	1	0.014	U	1
methylcyclohexane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
methylene chloride	0.05	81		0.029	U	1	0.025	U	1	0.026	U	1	0.023	U	1	0.035	U	1
n-butylbenzene	18	100		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
n-propylbenzene	5	100		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
o-xylene	0.26	100		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
p- & m- xylenes	0.26	100		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
p-isopropyltoluene	10	NA		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
sec-butylbenzene	25	100		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
styrene	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
tert-butyl alcohol	NA	NA		0.058	U	1	0.051	U	1	0.052	U	1	0.047	U	1	0.071	U	1
tert-butylbenzene	11	100		0.38	U	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
tetrachloroethylene (PCE)	1.3	18		0.11	J	50	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
toluene	0.7	100		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
trans-1,3-dichloropropylene	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
trichloroethylene (TCE)	0.47	6.4		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
trichlorofluoromethane	NA	NA		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
vinyl chloride (VC)	0.03	0.48		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1
xylenes, total	0.26	100		0.0058	U	1	0.0051	U	1	0.0052	U	1	0.0047	U	1	0.0071	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-14 0-2			SB-14 21-23			DUP-20260403			SB-14 23-25			SB-15 SURF		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
1,1,2-trichloroethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
1,1-dichloroethane	0.27	47		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
1,1-dichloroethylene	0.24	0.98		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
1,2,3-Trichlorobenzene	NA	NA		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
1,2,3-Trichloropropane	NA	NA		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
1,2,4-Trichlorobenzene	NA	NA		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
1,2,4-Trimethylbenzene	5.9	100		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
1,2-Dibromo-3-chloropropane	NA	NA		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
1,2-dibromoethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
1,2-dichlorobenzene	1.1	100		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
1,2-dichloroethane	0.02	5.8		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
1,2-dichloropropane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
1,3,5-trimethylbenzene	3.1	100		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
1,3-dichlorobenzene	2.6	38		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
1,4-dichlorobenzene	1.8	24		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
1,4-dioxane	0.1	5.7		0.087	U	1	0.063	U	1	0.063	U	1	0.086	U	1	0.098	U	1
2-butanone (MEK)	0.1	100		0.035	U	1	0.025	U	1	0.025	U	1	0.034	U	1	0.039	U	1
2-hexanone (MBK)	NA	NA		0.029	U	1	0.021	U	1	0.021	U	1	0.029	U	1	0.033	U	1
4-methyl-2-pentanone	NA	NA		0.029	U	1	0.021	U	1	0.021	U	1	0.029	U	1	0.033	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
acrylonitrile	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
benzene	0.06	3.7		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
bromochloromethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
bromodichloromethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
Bromoform	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
bromomethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
carbon disulfide	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
carbon tetrachloride	0.76	7.1		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
chlorobenzene	4.5	100		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
chloroethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
chloroform	0.37	24		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
chloromethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
cis-1,3-dichloropropylene	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
cyclohexane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
dibromochloromethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
dibromomethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
dichlorodifluoromethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
ethyl benzene	1	76		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.054	J	50
hexachlorobutadiene	NA	NA		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
isopropylbenzene	2.3	100		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
methyl acetate	NA	NA		0.058	U	1	0.042	U	1	0.042	U	1	0.057	U	1	0.065	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.012	U	1	0.0084	U	1	0.0084	U	1	0.011	U	1	0.013	U	1
methylcyclohexane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
methylene chloride	0.05	81		0.029	U	1	0.021	U	1	0.021	U	1	0.029	U	1	0.033	U	1
n-butylbenzene	18	100		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
n-propylbenzene	5	100		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
o-xylene	0.26	100		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
p- & m- xylenes	0.26	100		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
p-isopropyltoluene	10	NA		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
sec-butylbenzene	25	100		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
styrene	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
tert-butyl alcohol	NA	NA		0.058	U	1	0.042	U	1	0.042	U	1	0.057	U	1	0.065	U	1
tert-butylbenzene	11	100		0.39	U	50	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.48	U	50
tetrachloroethylene (PCE)	1.3	18		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
toluene	0.7	100		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
trans-1,3-dichloropropylene	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
trichloroethylene (TCE)	0.47	6.4		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
trichlorofluoromethane	NA	NA		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
vinyl chloride (VC)	0.03	0.48		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1
xylenes, total	0.26	100		0.0058	U	1	0.0042	U	1	0.0042	U	1	0.0057	U	1	0.0065	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-15 0-2			SB-15 11-13			SB-15 22-24			SB-15 24-25			SB-16 SURF		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,1,1-trichloroethane (TCA)	0.68	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,1,2,2-tetrachloroethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,1,2-trichloroethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,1-dichloroethane	0.27	47		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,1-dichloroethylene	0.24	0.98		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,2,3-Trichlorobenzene	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,2,3-Trichloropropane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,2,4-Trichlorobenzene	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,2,4-Trimethylbenzene	5.9	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,2-Dibromo-3-chloropropane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,2-dibromoethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,2-dichlorobenzene	1.1	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,2-dichloroethane	0.02	5.8		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,2-dichloropropane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,3,5-trimethylbenzene	3.1	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,3-dichlorobenzene	2.6	38		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,4-dichlorobenzene	1.8	24		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
1,4-dioxane	0.1	5.7		0.072	*U*	*1*	0.071	*U*	*1*	0.069	*U*	*1*	0.075	*U*	*1*	0.076	*U*	*1*
2-butanone (MEK)	0.1	100		0.029	*U*	*1*	0.028	*U*	*1*	0.027	*U*	*1*	0.03	*U*	*1*	0.03	*U*	*1*
2-hexanone (MBK)	NA	NA		0.024	*U*	*1*	0.024	*U*	*1*	0.023	*U*	*1*	0.025	*U*	*1*	0.025	*U*	*1*
4-methyl-2-pentanone	NA	NA		0.024	*U*	*1*	0.024	*U*	*1*	0.023	*U*	*1*	0.025	*U*	*1*	0.025	*U*	*1*
acetone	0.03	100		0.03	*U*	*1*	0.03	*U*	*1*	0.03	*U*	*1*	0.03	*U*	*1*	0.013	*JS*	*1*
acrolein	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
acrylonitrile	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
benzene	0.06	3.7		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
bromochloromethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
bromodichloromethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
Bromoform	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
bromomethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
carbon disulfide	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
carbon tetrachloride	0.76	7.1		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
chlorobenzene	4.5	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
chloroethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
chloroform	0.37	24		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
chloromethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
cis-1,3-dichloropropylene	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
cyclohexane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
dibromochloromethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
dibromomethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
dichlorodifluoromethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
ethyl benzene	1	76		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
hexachlorobutadiene	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
isopropylbenzene	2.3	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
methyl acetate	NA	NA		0.048	*U*	*1*	0.047	*U*	*1*	0.046	*U*	*1*	0.05	*U*	*1*	0.051	*U*	*1*
methyl tert-butyl ether (MTBE)	0.1	100		0.0097	*U*	*1*	0.0095	*U*	*1*	0.0092	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*
methylcyclohexane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
methylene chloride	0.05	81		0.024	*U*	*1*	0.024	*U*	*1*	0.023	*U*	*1*	0.025	*U*	*1*	0.025	*U*	*1*
n-butylbenzene	18	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
n-propylbenzene	5	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
o-xylene	0.26	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
p- & m- xylenes	0.26	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
p-isopropyltoluene	10	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
sec-butylbenzene	25	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
styrene	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
tert-butyl alcohol	NA	NA		0.048	*U*	*1*	0.047	*U*	*1*	0.046	*U*	*1*	0.05	*U*	*1*	0.051	*U*	*1*
tert-butylbenzene	11	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
tetrachloroethylene (PCE)	1.3	18		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
toluene	0.7	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
trans-1,3-dichloropropylene	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
trichloroethylene (TCE)	0.47	6.4		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
trichlorofluoromethane	NA	NA		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
vinyl chloride (VC)	0.03	0.48		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*
xylenes, total	0.26	100		0.0048	*U*	*1*	0.0047	*U*	*1*	0.0046	*U*	*1*	0.005	*U*	*1*	0.0051	*U*	*1*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-16 0-1			SB-16 1-2			SB-16 18-20			SB-16 23-25			SB-16 43-45		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-06		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,1,1-trichloroethane (TCA)	0.68	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,1,2,2-tetrachloroethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,1,2-trichloroethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,1-dichloroethane	0.27	47		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,1-dichloroethylene	0.24	0.98		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,2,3-Trichlorobenzene	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,2,3-Trichloropropane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,2,4-Trichlorobenzene	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,2,4-Trimethylbenzene	5.9	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,2-Dibromo-3-chloropropane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,2-dibromoethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,2-dichlorobenzene	1.1	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,2-dichloroethane	0.02	5.8		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,2-dichloropropane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,3,5-trimethylbenzene	3.1	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,3-dichlorobenzene	2.6	38		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,4-dichlorobenzene	1.8	24		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
1,4-dioxane	0.1	5.7		0.069	*U*	*1*	0.089	*U*	*1*	0.061	*U*	*1*	0.077	*U*	*1*	0.062	*U*	*1*
2-butanone (MEK)	0.1	100		0.027	*U*	*1*	0.036	*U*	*1*	0.025	*U*	*1*	0.031	*U*	*1*	0.025	*U*	*1*
2-hexanone (MBK)	NA	NA		0.023	*U*	*1*	0.03	*U*	*1*	0.02	*U*	*1*	0.026	*U*	*1*	0.021	*U*	*1*
4-methyl-2-pentanone	NA	NA		0.023	*U*	*1*	0.03	*U*	*1*	0.02	*U*	*1*	0.026	*U*	*1*	0.021	*U*	*1*
acetone	0.03	100		0.03	*S*	*1*	0.013	*JS*	*1*	0.03	*U*	*1*	0.03	*U*	*1*	0.03	*U*	*1*
acrolein	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
acrylonitrile	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
benzene	0.06	3.7		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
bromochloromethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
bromodichloromethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
Bromoform	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
bromomethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
carbon disulfide	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
carbon tetrachloride	0.76	7.1		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
chlorobenzene	4.5	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
chloroethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
chloroform	0.37	24		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
chloromethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
cis-1,3-dichloropropylene	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
cyclohexane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
dibromochloromethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
dibromomethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
dichlorodifluoromethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
ethyl benzene	1	76		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
hexachlorobutadiene	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
isopropylbenzene	2.3	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
methyl acetate	NA	NA		0.046	*U*	*1*	0.06	*U*	*1*	0.041	*U*	*1*	0.051	*U*	*1*	0.041	*U*	*1*
methyl tert-butyl ether (MTBE)	0.1	100		0.0091	*U*	*1*	0.012	*U*	*1*	0.0082	*U*	*1*	0.01	*U*	*1*	0.0083	*U*	*1*
methylcyclohexane	NA	NA		0.0013	*J*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
methylene chloride	0.05	81		0.023	*U*	*1*	0.03	*U*	*1*	0.02	*U*	*1*	0.026	*U*	*1*	0.021	*U*	*1*
n-butylbenzene	18	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
n-propylbenzene	5	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
o-xylene	0.26	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
p- & m- xylenes	0.26	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
p-isopropyltoluene	10	NA		0.00064	*J*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
sec-butylbenzene	25	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
styrene	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
tert-butyl alcohol	NA	NA		0.046	*U*	*1*	0.06	*U*	*1*	0.041	*U*	*1*	0.051	*U*	*1*	0.041	*U*	*1*
tert-butylbenzene	11	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
tetrachloroethylene (PCE)	1.3	18		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
toluene	0.7	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0005	*J*	*1*
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
trans-1,3-dichloropropylene	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
trichloroethylene (TCE)	0.47	6.4		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
trichlorofluoromethane	NA	NA		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
vinyl chloride (VC)	0.03	0.48		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*
xylenes, total	0.26	100		0.0046	*U*	*1*	0.006	*U*	*1*	0.0041	*U*	*1*	0.0051	*U*	*1*	0.0041	*U*	*1*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-17 SURF			SB-17 5-7			SB-17 23-25			SB-17A SURF			SB-17A 0-1		
U= Not Detected ≥ value			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-06		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,1,2-trichloroethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,1-dichloroethane	0.27	47		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,1-dichloroethylene	0.24	0.98		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,2,3-Trichlorobenzene	NA	NA		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,2,3-Trichloropropane	NA	NA		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,2,4-Trichlorobenzene	NA	NA		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,2,4-Trimethylbenzene	5.9	100		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,2-Dibromo-3-chloropropane	NA	NA		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,2-dibromoethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,2-dichlorobenzene	1.1	100		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,2-dichloroethane	0.02	5.8		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,2-dichloropropane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,3,5-trimethylbenzene	3.1	100		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,3-dichlorobenzene	2.6	38		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,4-dichlorobenzene	1.8	24		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
1,4-dioxane	0.1	5.7		0.1	U	1	0.073	U	1	0.058	U	1	0.077	U	1	0.079	U	1
2-butanone (MEK)	0.1	100		0.0099	J	1	0.0054	J	1	0.023	U	1	0.031	U	1	0.032	U	1
2-hexanone (MBK)	NA	NA		0.04	U	1	0.024	U	1	0.019	U	1	0.026	U	1	0.026	U	1
4-methyl-2-pentanone	NA	NA		0.04	U	1	0.024	U	1	0.019	U	1	0.026	U	1	0.026	U	1
acetone	0.03	100		0.09	S	1	0.027	JS	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
acrylonitrile	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
benzene	0.06	3.7		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
bromochloromethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
bromodichloromethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
Bromoform	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
bromomethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
carbon disulfide	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
carbon tetrachloride	0.76	7.1		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
chlorobenzene	4.5	100		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
chloroethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
chloroform	0.37	24		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
chloromethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
cis-1,3-dichloropropylene	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
cyclohexane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
dibromochloromethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
dibromomethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
dichlorodifluoromethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
ethyl benzene	1	76		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
hexachlorobutadiene	NA	NA		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
isopropylbenzene	2.3	100		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
methyl acetate	NA	NA		17		200	0.049	U	1	0.039	U	1	0.051	U	1	0.053	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.016	U	1	0.0098	U	1	0.0077	U	1	0.01	U	1	0.011	U	1
methylcyclohexane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
methylene chloride	0.05	81		0.04	U	1	0.024	U	1	0.019	U	1	0.026	U	1	0.026	U	1
n-butylbenzene	18	100		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
n-propylbenzene	5	100		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
o-xylene	0.26	100		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
p- & m- xylenes	0.26	100		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
p-isopropyltoluene	10	NA		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
sec-butylbenzene	25	100		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
styrene	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
tert-butyl alcohol	NA	NA		0.08	U	1	0.049	U	1	0.039	U	1	0.051	U	1	0.053	U	1
tert-butylbenzene	11	100		0.56	U	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
tetrachloroethylene (PCE)	1.3	18		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
toluene	0.7	100		0.098	J	50	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
trans-1,3-dichloropropylene	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
trichloroethylene (TCE)	0.47	6.4		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
trichlorofluoromethane	NA	NA		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
vinyl chloride (VC)	0.03	0.48		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1
xylenes, total	0.26	100		0.008	U	1	0.0049	U	1	0.0039	U	1	0.0051	U	1	0.0053	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-17A 1-2			SB-17A 5-7			SB-18 SURF			SB-18 0-1			SB-18 1-2		
U= Not Detected ≥ value			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-06		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
1,1,2-trichloroethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
1,1-dichloroethane	0.27	47		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
1,1-dichloroethylene	0.24	0.98		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
1,2,3-Trichlorobenzene	NA	NA		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
1,2,3-Trichloropropane	NA	NA		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
1,2,4-Trichlorobenzene	NA	NA		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
1,2,4-Trimethylbenzene	5.9	100		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
1,2-Dibromo-3-chloropropane	NA	NA		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
1,2-dibromoethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
1,2-dichlorobenzene	1.1	100		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
1,2-dichloroethane	0.02	5.8		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
1,2-dichloropropane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
1,3,5-trimethylbenzene	3.1	100		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
1,3-dichlorobenzene	2.6	38		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
1,4-dichlorobenzene	1.8	24		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
1,4-dioxane	0.1	5.7		0.068	U	1	0.1	U	1	0.082	U	1	0.073	U	1	0.073	U	1
2-butanone (MEK)	0.1	100		0.027	U	1	0.028	J	1	0.033	U	1	0.029	U	1	0.029	U	1
2-hexanone (MBK)	NA	NA		0.023	U	1	0.035	U	1	0.027	U	1	0.024	U	1	0.024	U	1
4-methyl-2-pentanone	NA	NA		0.023	U	1	0.035	U	1	0.027	U	1	0.024	U	1	0.024	U	1
acetone	0.03	100		0.03	U	1	0.1	S	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
acrylonitrile	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
benzene	0.06	3.7		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
bromochloromethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
bromodichloromethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
Bromoform	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
bromomethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
carbon disulfide	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
carbon tetrachloride	0.76	7.1		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
chlorobenzene	4.5	100		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
chloroethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
chloroform	0.37	24		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
chloromethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
cis-1,3-dichloropropylene	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
cyclohexane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
dibromochloromethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
dibromomethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
dichlorodifluoromethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
ethyl benzene	1	76		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
hexachlorobutadiene	NA	NA		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
isopropylbenzene	2.3	100		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
methyl acetate	NA	NA		0.046	U	1	0.069	U	1	0.055	U	1	0.049	U	1	0.049	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.0091	U	1	0.014	U	1	0.011	U	1	0.0098	U	1	0.0098	U	1
methylcyclohexane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
methylene chloride	0.05	81		0.023	U	1	0.035	U	1	0.027	U	1	0.024	U	1	0.024	U	1
n-butylbenzene	18	100		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
n-propylbenzene	5	100		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
o-xylene	0.26	100		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
p- & m- xylenes	0.26	100		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
p-isopropyltoluene	10	NA		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
sec-butylbenzene	25	100		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
styrene	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
tert-butyl alcohol	NA	NA		0.046	U	1	0.069	U	1	0.055	U	1	0.049	U	1	0.049	U	1
tert-butylbenzene	11	100		0.0046	U	1	0.44	U	50	0.32	U	50	0.29	U	50	0.29	U	50
tetrachloroethylene (PCE)	1.3	18		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
toluene	0.7	100		0.0046	U	1	0.2		50	0.0055	U	1	0.0049	U	1	0.0049	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
trans-1,3-dichloropropylene	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
trichloroethylene (TCE)	0.47	6.4		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
trichlorofluoromethane	NA	NA		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
vinyl chloride (VC)	0.03	0.48		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1
xylenes, total	0.26	100		0.0046	U	1	0.0069	U	1	0.0055	U	1	0.0049	U	1	0.0049	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	DUP-20260406			SB-18 12-14			SB-18 23-25			SB-18 45-47			SB-19 SURF		
U= Not Detected ≥ value			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-07		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
1,1,2-trichloroethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
1,1-dichloroethane	0.27	47		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
1,1-dichloroethylene	0.24	0.98		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
1,2,3-Trichlorobenzene	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
1,2,3-Trichloropropane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
1,2,4-Trichlorobenzene	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
1,2,4-Trimethylbenzene	5.9	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
1,2-Dibromo-3-chloropropane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
1,2-dibromoethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
1,2-dichlorobenzene	1.1	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
1,2-dichloroethane	0.02	5.8		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
1,2-dichloropropane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
1,3,5-trimethylbenzene	3.1	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
1,3-dichlorobenzene	2.6	38		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
1,4-dichlorobenzene	1.8	24		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
1,4-dioxane	0.1	5.7		0.067	U	1	0.073	U	1	0.063	U	1	0.066	U	1	0.091	U	1
2-butanone (MEK)	0.1	100		0.027	U	1	0.029	U	1	0.025	U	1	0.026	U	1	0.036	U	1
2-hexanone (MBK)	NA	NA		0.022	U	1	0.024	U	1	0.021	U	1	0.022	U	1	0.03	U	1
4-methyl-2-pentanone	NA	NA		0.022	U	1	0.024	U	1	0.021	U	1	0.022	U	1	0.03	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
acrylonitrile	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
benzene	0.06	3.7		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
bromochloromethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
bromodichloromethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
Bromoform	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
bromomethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
carbon disulfide	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
carbon tetrachloride	0.76	7.1		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
chlorobenzene	4.5	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
chloroethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
chloroform	0.37	24		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0026	J	1	0.0061	U	1
chloromethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
cis-1,3-dichloropropylene	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
cyclohexane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
dibromochloromethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
dibromomethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
dichlorodifluoromethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
ethyl benzene	1	76		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
hexachlorobutadiene	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
isopropylbenzene	2.3	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
methyl acetate	NA	NA		0.045	U	1	0.048	U	1	0.042	U	1	0.044	U	1	0.061	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.009	U	1	0.0097	U	1	0.0084	U	1	0.0088	U	1	0.012	U	1
methylcyclohexane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
methylene chloride	0.05	81		0.022	U	1	0.024	U	1	0.021	U	1	0.022	U	1	0.03	U	1
n-butylbenzene	18	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
n-propylbenzene	5	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
o-xylene	0.26	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
p- & m- xylenes	0.26	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
p-isopropyltoluene	10	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
sec-butylbenzene	25	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
styrene	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
tert-butyl alcohol	NA	NA		0.045	U	1	0.048	U	1	0.042	U	1	0.044	U	1	0.061	U	1
tert-butylbenzene	11	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.37	U	50
tetrachloroethylene (PCE)	1.3	18		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
toluene	0.7	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
trans-1,3-dichloropropylene	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
trichloroethylene (TCE)	0.47	6.4		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
trichlorofluoromethane	NA	NA		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
vinyl chloride (VC)	0.03	0.48		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1
xylenes, total	0.26	100		0.0045	U	1	0.0048	U	1	0.0042	U	1	0.0044	U	1	0.0061	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-19 0-2			SB-19 4-5			SB-19 18-20			SB-19 23-25			SB-20 SURF		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0049	U	1	0.00094	J	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,1,2-trichloroethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,1-dichloroethane	0.27	47		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,1-dichloroethylene	0.24	0.98		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,2,3-Trichlorobenzene	NA	NA		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,2,3-Trichloropropane	NA	NA		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,2,4-Trichlorobenzene	NA	NA		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,2,4-Trimethylbenzene	5.9	100		0.31	U	50	0.00086	J	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,2-Dibromo-3-chloropropane	NA	NA		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,2-dibromoethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,2-dichlorobenzene	1.1	100		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,2-dichloroethane	0.02	5.8		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,2-dichloropropane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,3,5-trimethylbenzene	3.1	100		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,3-dichlorobenzene	2.6	38		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,4-dichlorobenzene	1.8	24		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
1,4-dioxane	0.1	5.7		0.073	U	1	0.094	U	1	0.086	U	1	0.072	U	1	0.064	U	1
2-butanone (MEK)	0.1	100		0.029	U	1	0.038	U	1	0.034	U	1	0.029	U	1	0.026	U	1
2-hexanone (MBK)	NA	NA		0.024	U	1	0.031	U	1	0.029	U	1	0.024	U	1	0.021	U	1
4-methyl-2-pentanone	NA	NA		0.024	U	1	0.031	U	1	0.029	U	1	0.024	U	1	0.021	U	1
acetone	0.03	100		0.03	U	1	0.086	S	1	0.03	U	1	0.03	U	1	0.027	JS	1
acrolein	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
acrylonitrile	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
benzene	0.06	3.7		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
bromochloromethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
bromodichloromethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
Bromoform	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
bromomethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
carbon disulfide	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
carbon tetrachloride	0.76	7.1		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
chlorobenzene	4.5	100		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
chloroethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
chloroform	0.37	24		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
chloromethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
cis-1,3-dichloropropylene	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
cyclohexane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
dibromochloromethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
dibromomethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
dichlorodifluoromethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
ethyl benzene	1	76		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
hexachlorobutadiene	NA	NA		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
isopropylbenzene	2.3	100		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
methyl acetate	NA	NA		0.049	U	1	0.063	U	1	0.057	U	1	0.048	U	1	0.043	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.0098	U	1	0.013	U	1	0.011	U	1	0.0095	U	1	0.0086	U	1
methylcyclohexane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
methylene chloride	0.05	81		0.024	U	1	0.031	U	1	0.029	U	1	0.024	U	1	0.021	U	1
n-butylbenzene	18	100		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
n-propylbenzene	5	100		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
o-xylene	0.26	100		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
p- & m- xylenes	0.26	100		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
p-isopropyltoluene	10	NA		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
sec-butylbenzene	25	100		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
styrene	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
tert-butyl alcohol	NA	NA		0.049	U	1	0.063	U	1	0.057	U	1	0.048	U	1	0.043	U	1
tert-butylbenzene	11	100		0.31	U	50	0.35	U	50	0.0057	U	1	0.0048	U	1	0.0043	U	1
tetrachloroethylene (PCE)	1.3	18		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
toluene	0.7	100		0.0049	U	1	0.0063	U	1	0.0007	J	1	0.0048	U	1	0.0043	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
trans-1,3-dichloropropylene	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
trichloroethylene (TCE)	0.47	6.4		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
trichlorofluoromethane	NA	NA		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
vinyl chloride (VC)	0.03	0.48		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1
xylenes, total	0.26	100		0.0049	U	1	0.0063	U	1	0.0057	U	1	0.0048	U	1	0.0043	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-20 0-2			SB-20 18-20			SB-20 21-23			DUP-20260407			SB-21 SURF		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
1,1,1-trichloroethane (TCA)	0.68	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
1,1,2,2-tetrachloroethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
1,1,2-trichloroethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
1,1-dichloroethane	0.27	47		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
1,1-dichloroethylene	0.24	0.98		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
1,2,3-Trichlorobenzene	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
1,2,3-Trichloropropane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
1,2,4-Trichlorobenzene	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
1,2,4-Trimethylbenzene	5.9	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
1,2-Dibromo-3-chloropropane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
1,2-dibromoethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
1,2-dichlorobenzene	1.1	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
1,2-dichloroethane	0.02	5.8		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
1,2-dichloropropane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
1,3,5-trimethylbenzene	3.1	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
1,3-dichlorobenzene	2.6	38		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
1,4-dichlorobenzene	1.8	24		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
1,4-dioxane	0.1	5.7		0.086	*LU*	*1*	0.078	*U*	*1*	0.064	*U*	*1*	0.073	*U*	*1*	0.086	*U*	*1*
2-butanone (MEK)	0.1	100		0.034	*LU*	*1*	0.031	*U*	*1*	0.026	*U*	*1*	0.029	*U*	*1*	0.035	*U*	*1*
2-hexanone (MBK)	NA	NA		0.029	*LU*	*1*	0.026	*U*	*1*	0.021	*U*	*1*	0.024	*U*	*1*	0.029	*U*	*1*
4-methyl-2-pentanone	NA	NA		0.029	*LU*	*1*	0.026	*U*	*1*	0.021	*U*	*1*	0.024	*U*	*1*	0.029	*U*	*1*
acetone	0.03	100		0.03	*LU*	*1*	0.03	*U*	*1*	0.03	*U*	*1*	0.03	*U*	*1*	0.03	*U*	*1*
acrolein	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
acrylonitrile	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
benzene	0.06	3.7		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
bromochloromethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
bromodichloromethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
Bromoform	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
bromomethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
carbon disulfide	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
carbon tetrachloride	0.76	7.1		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
chlorobenzene	4.5	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
chloroethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
chloroform	0.37	24		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
chloromethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
cis-1,3-dichloropropylene	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
cyclohexane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
dibromochloromethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
dibromomethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
dichlorodifluoromethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
ethyl benzene	1	76		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
hexachlorobutadiene	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
isopropylbenzene	2.3	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
methyl acetate	NA	NA		0.057	*LU*	*1*	0.052	*U*	*1*	0.043	*U*	*1*	0.048	*U*	*1*	0.058	*U*	*1*
methyl tert-butyl ether (MTBE)	0.1	100		0.011	*LU*	*1*	0.01	*U*	*1*	0.0086	*U*	*1*	0.0097	*U*	*1*	0.012	*U*	*1*
methylcyclohexane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
methylene chloride	0.05	81		0.0081	*JSL*	*1*	0.026	*U*	*1*	0.021	*U*	*1*	0.024	*U*	*1*	0.029	*U*	*1*
n-butylbenzene	18	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
n-propylbenzene	5	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
o-xylene	0.26	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
p- & m- xylenes	0.26	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
p-isopropyltoluene	10	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
sec-butylbenzene	25	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
styrene	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
tert-butyl alcohol	NA	NA		0.057	*LU*	*1*	0.052	*U*	*1*	0.043	*U*	*1*	0.048	*U*	*1*	0.058	*U*	*1*
tert-butylbenzene	11	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.33	*U*	*50*
tetrachloroethylene (PCE)	1.3	18		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
toluene	0.7	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
trans-1,3-dichloropropylene	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
trichloroethylene (TCE)	0.47	6.4		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
trichlorofluoromethane	NA	NA		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
vinyl chloride (VC)	0.03	0.48		0.0057	*LU*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*
xylenes, total	0.26	100		0.0057	*U*	*1*	0.0052	*U*	*1*	0.0043	*U*	*1*	0.0048	*U*	*1*	0.0058	*U*	*1*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-21 0-2			SB-21 18-20			SB-21 23-25			SB-22 SURF			SB-22 0-2		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
1,1,2-trichloroethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
1,1-dichloroethane	0.27	47		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
1,1-dichloroethylene	0.24	0.98		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
1,2,3-Trichlorobenzene	NA	NA		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
1,2,3-Trichloropropane	NA	NA		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
1,2,4-Trichlorobenzene	NA	NA		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
1,2,4-Trimethylbenzene	5.9	100		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
1,2-Dibromo-3-chloropropane	NA	NA		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
1,2-dibromoethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
1,2-dichlorobenzene	1.1	100		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
1,2-dichloroethane	0.02	5.8		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
1,2-dichloropropane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
1,3,5-trimethylbenzene	3.1	100		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
1,3-dichlorobenzene	2.6	38		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
1,4-dichlorobenzene	1.8	24		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
1,4-dioxane	0.1	5.7		0.067	U	1	0.076	U	1	0.08	U	1	0.073	U	1	0.074	U	1
2-butanone (MEK)	0.1	100		0.027	U	1	0.03	U	1	0.032	U	1	0.029	U	1	0.03	U	1
2-hexanone (MBK)	NA	NA		0.022	U	1	0.025	U	1	0.027	U	1	0.024	U	1	0.025	U	1
4-methyl-2-pentanone	NA	NA		0.022	U	1	0.025	U	1	0.027	U	1	0.024	U	1	0.025	U	1
acetone	0.03	100		0.028	JS	1	0.03	U	1	0.03	U	1	0.014	JS	1	0.03	U	1
acrolein	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
acrylonitrile	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
benzene	0.06	3.7		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
bromochloromethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
bromodichloromethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
Bromoform	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
bromomethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
carbon disulfide	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
carbon tetrachloride	0.76	7.1		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
chlorobenzene	4.5	100		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
chloroethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
chloroform	0.37	24		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
chloromethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
cis-1,3-dichloropropylene	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
cyclohexane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
dibromochloromethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
dibromomethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
dichlorodifluoromethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
ethyl benzene	1	76		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
hexachlorobutadiene	NA	NA		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
isopropylbenzene	2.3	100		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
methyl acetate	NA	NA		0.045	U	1	0.051	U	1	0.053	U	1	0.049	U	1	0.049	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.0089	U	1	0.01	U	1	0.011	U	1	0.0098	U	1	0.0099	U	1
methylcyclohexane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
methylene chloride	0.05	81		0.022	U	1	0.025	U	1	0.027	U	1	0.024	U	1	0.025	U	1
n-butylbenzene	18	100		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
n-propylbenzene	5	100		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
o-xylene	0.26	100		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
p- & m- xylenes	0.26	100		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
p-isopropyltoluene	10	NA		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
sec-butylbenzene	25	100		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
styrene	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
tert-butyl alcohol	NA	NA		0.045	U	1	0.051	U	1	0.053	U	1	0.049	U	1	0.049	U	1
tert-butylbenzene	11	100		0.35	U	50	0.0051	U	1	0.0053	U	1	0.35	U	50	0.36	U	50
tetrachloroethylene (PCE)	1.3	18		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
toluene	0.7	100		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
trans-1,3-dichloropropylene	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
trichloroethylene (TCE)	0.47	6.4		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
trichlorofluoromethane	NA	NA		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
vinyl chloride (VC)	0.03	0.48		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1
xylenes, total	0.26	100		0.0045	U	1	0.0051	U	1	0.0053	U	1	0.0049	U	1	0.0049	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-22 2-3			SB-22 13-15			SB-22 25-27			SB-23 SURF			SB-23 0-2		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,1,1-trichloroethane (TCA)	0.68	100		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,1,2,2-tetrachloroethane	NA	NA		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,1,2-trichloroethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,1-dichloroethane	0.27	47		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,1-dichloroethylene	0.24	0.98		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,2,3-Trichlorobenzene	NA	NA		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,2,3-Trichloropropane	NA	NA		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,2,4-Trichlorobenzene	NA	NA		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,2,4-Trimethylbenzene	5.9	100		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,2-Dibromo-3-chloropropane	NA	NA		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,2-dibromoethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,2-dichlorobenzene	1.1	100		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,2-dichloroethane	0.02	5.8		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,2-dichloropropane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,3,5-trimethylbenzene	3.1	100		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,3-dichlorobenzene	2.6	38		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,4-dichlorobenzene	1.8	24		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
1,4-dioxane	0.1	5.7		0.086	*U*	*1*	0.074	*U*	*1*	0.06	*U*	*1*	0.067	*U*	*1*	0.084	*U*	*1*
2-butanone (MEK)	0.1	100		0.034	*U*	*1*	0.03	*U*	*1*	0.024	*U*	*1*	0.027	*U*	*1*	0.034	*U*	*1*
2-hexanone (MBK)	NA	NA		0.029	*U*	*1*	0.025	*U*	*1*	0.02	*U*	*1*	0.022	*U*	*1*	0.028	*U*	*1*
4-methyl-2-pentanone	NA	NA		0.029	*U*	*1*	0.025	*U*	*1*	0.02	*U*	*1*	0.022	*U*	*1*	0.028	*U*	*1*
acetone	0.03	100		0.03	*U*	*1*	0.03	*U*	*1*	0.03	*U*	*1*	0.01	*JS*	*1*	0.03	*U*	*1*
acrolein	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
acrylonitrile	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
benzene	0.06	3.7		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
bromochloromethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
bromodichloromethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
Bromoform	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
bromomethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
carbon disulfide	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
carbon tetrachloride	0.76	7.1		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
chlorobenzene	4.5	100		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
chloroethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
chloroform	0.37	24		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
chloromethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
cis-1,3-dichloropropylene	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
cyclohexane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
dibromochloromethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
dibromomethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
dichlorodifluoromethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
ethyl benzene	1	76		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
hexachlorobutadiene	NA	NA		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
isopropylbenzene	2.3	100		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
methyl acetate	NA	NA		0.057	*U*	*1*	0.049	*U*	*1*	0.04	*U*	*1*	0.044	*U*	*1*	0.056	*U*	*1*
methyl tert-butyl ether (MTBE)	0.1	100		0.011	*U*	*1*	0.0099	*U*	*1*	0.008	*U*	*1*	0.0089	*U*	*1*	0.011	*U*	*1*
methylcyclohexane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
methylene chloride	0.05	81		0.029	*U*	*1*	0.025	*U*	*1*	0.02	*U*	*1*	0.022	*U*	*1*	0.028	*U*	*1*
n-butylbenzene	18	100		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
n-propylbenzene	5	100		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
o-xylene	0.26	100		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
p- & m- xylenes	0.26	100		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
p-isopropyltoluene	10	NA		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
sec-butylbenzene	25	100		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
styrene	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
tert-butyl alcohol	NA	NA		0.057	*U*	*1*	0.049	*U*	*1*	0.04	*U*	*1*	0.044	*U*	*1*	0.056	*U*	*1*
tert-butylbenzene	11	100		0.39	*U*	*50*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
tetrachloroethylene (PCE)	1.3	18		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
toluene	0.7	100		0.0057	*U*	*1*	0.0049	*U*	*1*	0.00044	*J*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
trans-1,3-dichloropropylene	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
trichloroethylene (TCE)	0.47	6.4		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
trichlorofluoromethane	NA	NA		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
vinyl chloride (VC)	0.03	0.48		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*
xylenes, total	0.26	100		0.0057	*U*	*1*	0.0049	*U*	*1*	0.004	*U*	*1*	0.0044	*U*	*1*	0.0056	*U*	*1*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-23 2-3			SB-23 15-17			SB-23 24-25			SB-24 SURF			SB-24 0-1		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-08			2026-04-08		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
1,1,2-trichloroethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
1,1-dichloroethane	0.27	47		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
1,1-dichloroethylene	0.24	0.98		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
1,2,3-Trichlorobenzene	NA	NA		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
1,2,3-Trichloropropane	NA	NA		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
1,2,4-Trichlorobenzene	NA	NA		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
1,2,4-Trimethylbenzene	5.9	100		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
1,2-Dibromo-3-chloropropane	NA	NA		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
1,2-dibromoethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
1,2-dichlorobenzene	1.1	100		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
1,2-dichloroethane	0.02	5.8		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
1,2-dichloropropane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
1,3,5-trimethylbenzene	3.1	100		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
1,3-dichlorobenzene	2.6	38		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
1,4-dichlorobenzene	1.8	24		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
1,4-dioxane	0.1	5.7		0.095	U	1	0.071	U	1	0.07	U	1	0.1	U	1	0.096	U	1
2-butanone (MEK)	0.1	100		0.038	U	1	0.028	U	1	0.028	U	1	0.047	U	1	0.015	J	1
2-hexanone (MBK)	NA	NA		0.032	U	1	0.024	U	1	0.023	U	1	0.04	U	1	0.032	U	1
4-methyl-2-pentanone	NA	NA		0.032	U	1	0.024	U	1	0.023	U	1	0.04	U	1	0.032	U	1
acetone	0.03	100		0.02	JS	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
acrylonitrile	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
benzene	0.06	3.7		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
bromochloromethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
bromodichloromethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
Bromoform	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
bromomethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
carbon disulfide	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
carbon tetrachloride	0.76	7.1		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
chlorobenzene	4.5	100		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
chloroethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
chloroform	0.37	24		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
chloromethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
cis-1,3-dichloropropylene	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
cyclohexane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
dibromochloromethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
dibromomethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
dichlorodifluoromethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
ethyl benzene	1	76		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0015	J	1
hexachlorobutadiene	NA	NA		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
isopropylbenzene	2.3	100		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
methyl acetate	NA	NA		0.063	U	1	0.047	U	1	0.047	U	1	0.079	U	1	0.064	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.013	U	1	0.0095	U	1	0.0093	U	1	0.016	U	1	0.013	U	1
methylcyclohexane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
methylene chloride	0.05	81		0.032	U	1	0.024	U	1	0.023	U	1	0.04	U	1	0.032	U	1
n-butylbenzene	18	100		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
n-propylbenzene	5	100		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
o-xylene	0.26	100		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.002	J	1
p- & m- xylenes	0.26	100		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.003	J	1
p-isopropyltoluene	10	NA		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0025	J	1	0.35	U	50
sec-butylbenzene	25	100		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
styrene	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
tert-butyl alcohol	NA	NA		0.063	U	1	0.047	U	1	0.047	U	1	0.079	U	1	0.064	U	1
tert-butylbenzene	11	100		0.42	U	50	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.35	U	50
tetrachloroethylene (PCE)	1.3	18		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
toluene	0.7	100		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
trans-1,3-dichloropropylene	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
trichloroethylene (TCE)	0.47	6.4		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
trichlorofluoromethane	NA	NA		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
vinyl chloride (VC)	0.03	0.48		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1
xylenes, total	0.26	100		0.0063	U	1	0.0047	U	1	0.0047	U	1	0.0079	U	1	0.0064	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-24 2-4			SB-24 16-18			DUP1-20260408			SB-24 26-28			SB-24 43-44		
U= Not Detected ≥ value			Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08			2026-04-08		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,1,1-trichloroethane (TCA)	0.68	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,1,2,2-tetrachloroethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,1,2-trichloroethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,1-dichloroethane	0.27	47		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,1-dichloroethylene	0.24	0.98		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,2,3-Trichlorobenzene	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,2,3-Trichloropropane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,2,4-Trichlorobenzene	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,2,4-Trimethylbenzene	5.9	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,2-Dibromo-3-chloropropane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,2-dibromoethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,2-dichlorobenzene	1.1	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,2-dichloroethane	0.02	5.8		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,2-dichloropropane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,3,5-trimethylbenzene	3.1	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,3-dichlorobenzene	2.6	38		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,4-dichlorobenzene	1.8	24		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
1,4-dioxane	0.1	5.7		0.075	U	1	0.08	U	1	0.081	U	1	0.073	U	1	0.069	U	1
2-butanone (MEK)	0.1	100		0.03	U	1	0.032	U	1	0.032	U	1	0.029	U	1	0.028	U	1
2-hexanone (MBK)	NA	NA		0.025	U	1	0.027	U	1	0.027	U	1	0.024	U	1	0.023	U	1
4-methyl-2-pentanone	NA	NA		0.025	U	1	0.027	U	1	0.027	U	1	0.024	U	1	0.023	U	1
acetone	0.03	100		0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1	0.03	U	1
acrolein	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
acrylonitrile	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
benzene	0.06	3.7		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
bromochloromethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
bromodichloromethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
Bromoform	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
bromomethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
carbon disulfide	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
carbon tetrachloride	0.76	7.1		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
chlorobenzene	4.5	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
chloroethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
chloroform	0.37	24		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
chloromethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
cis-1,2-dichloroethylene (DCE)	0.19	41		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
cis-1,3-dichloropropylene	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
cyclohexane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
dibromochloromethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
dibromomethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
dichlorodifluoromethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
ethyl benzene	1	76		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
hexachlorobutadiene	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
isopropylbenzene	2.3	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
methyl acetate	NA	NA		0.05	U	1	0.053	U	1	0.054	U	1	0.049	U	1	0.046	U	1
methyl tert-butyl ether (MTBE)	0.1	100		0.01	U	1	0.011	U	1	0.011	U	1	0.0098	U	1	0.0092	U	1
methylcyclohexane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
methylene chloride	0.05	81		0.025	U	1	0.027	U	1	0.027	U	1	0.024	U	1	0.023	U	1
n-butylbenzene	18	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
n-propylbenzene	5	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
o-xylene	0.26	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
p- & m- xylenes	0.26	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
p-isopropyltoluene	10	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
sec-butylbenzene	25	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
styrene	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
tert-butyl alcohol	NA	NA		0.05	U	1	0.053	U	1	0.054	U	1	0.049	U	1	0.046	U	1
tert-butylbenzene	11	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
tetrachloroethylene (PCE)	1.3	18		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
toluene	0.7	100		0.005	U	1	0.0053	U	1	0.00063	J	1	0.0049	U	1	0.0046	U	1
trans-1,2-dichloroethylene (DCE)	0.19	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
trans-1,3-dichloropropylene	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
trichloroethylene (TCE)	0.47	6.4		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
trichlorofluoromethane	NA	NA		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
vinyl chloride (VC)	0.03	0.48		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1
xylenes, total	0.26	100		0.005	U	1	0.0053	U	1	0.0054	U	1	0.0049	U	1	0.0046	U	1

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Vanguard Village I+II
BCP ID: C704063

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-25 SURF			SB-25 0-1			SB-25 1-2			SB-25 13-15			SB-25 33-35		
U= Not Detected ≥ value			Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08			2026-04-08		
VOCs (8260)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
1,1,1-trichloroethane (TCA)	0.68	100		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
1,1,2,2-tetrachloroethane	NA	NA		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
1,1,2-trichloroethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
1,1-dichloroethane	0.27	47		0.0051	*U*	*1*	0.27	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
1,1-dichloroethylene	0.24	0.98		0.0051	*U*	*1*	0.24	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
1,2,3-Trichlorobenzene	NA	NA		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
1,2,3-Trichloropropane	NA	NA		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
1,2,4-Trichlorobenzene	NA	NA		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
1,2,4-Trimethylbenzene	5.9	100		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
1,2-Dibromo-3-chloropropane	NA	NA		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
1,2-dibromoethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
1,2-dichlorobenzene	1.1	100		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
1,2-dichloroethane	0.02	5.8		0.0051	*U*	*1*	0.02	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
1,2-dichloropropane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
1,3,5-trimethylbenzene	3.1	100		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
1,3-dichlorobenzene	2.6	38		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
1,4-dichlorobenzene	1.8	24		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
1,4-dioxane	0.1	5.7		0.077	*U*	*1*	0.1	*U*	*50*	0.072	*U*	*1*	0.069	*U*	*1*	0.069	*U*	*1*
2-butanone (MEK)	0.1	100		0.031	*U*	*1*	0.1	*U*	*50*	0.029	*U*	*1*	0.028	*U*	*1*	0.028	*U*	*1*
2-hexanone (MBK)	NA	NA		0.026	*U*	*1*	1.7	*U*	*50*	0.024	*U*	*1*	0.023	*U*	*1*	0.023	*U*	*1*
4-methyl-2-pentanone	NA	NA		0.026	*U*	*1*	1.7	*U*	*50*	0.024	*U*	*1*	0.023	*U*	*1*	0.023	*U*	*1*
acetone	0.03	100		0.017	*JS*	*1*	0.03	*U*	*50*	0.011	*JS*	*1*	0.03	*U*	*1*	0.031	*S*	*1*
acrolein	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
acrylonitrile	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
benzene	0.06	3.7		0.0051	*U*	*1*	0.06	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.00069	*J*	*1*
bromochloromethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
bromodichloromethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
Bromoform	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
bromomethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
carbon disulfide	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
carbon tetrachloride	0.76	7.1		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
chlorobenzene	4.5	100		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
chloroethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
chloroform	0.37	24		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
chloromethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
cis-1,2-dichloroethylene (DCE)	0.19	41		0.0051	*U*	*1*	0.19	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
cis-1,3-dichloropropylene	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
cyclohexane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
dibromochloromethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
dibromomethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
dichlorodifluoromethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
ethyl benzene	1	76		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
hexachlorobutadiene	NA	NA		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
isopropylbenzene	2.3	100		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
methyl acetate	NA	NA		0.051	*U*	*1*	3.4	*U*	*50*	0.048	*U*	*1*	0.046	*U*	*1*	0.046	*U*	*1*
methyl tert-butyl ether (MTBE)	0.1	100		0.01	*U*	*1*	0.1	*U*	*50*	0.0097	*U*	*1*	0.0093	*U*	*1*	0.0092	*U*	*1*
methylcyclohexane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
methylene chloride	0.05	81		0.026	*U*	*1*	0.05	*U*	*50*	0.024	*U*	*1*	0.023	*U*	*1*	0.023	*U*	*1*
n-butylbenzene	18	100		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
n-propylbenzene	5	100		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
o-xylene	0.26	100		0.0051	*U*	*1*	0.25	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
p- & m- xylenes	0.26	100		0.0051	*U*	*1*	0.25	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
p-isopropyltoluene	10	NA		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
sec-butylbenzene	25	100		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
styrene	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
tert-butyl alcohol	NA	NA		0.051	*U*	*1*	3.4	*U*	*50*	0.048	*U*	*1*	0.046	*U*	*1*	0.046	*U*	*1*
tert-butylbenzene	11	100		0.41	*U*	*50*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.42	*U*	*50*
tetrachloroethylene (PCE)	1.3	18		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
toluene	0.7	100		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.00073	*J*	*1*
trans-1,2-dichloroethylene (DCE)	0.19	100		0.0051	*U*	*1*	0.19	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
trans-1,3-dichloropropylene	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
trichloroethylene (TCE)	0.47	6.4		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
trichlorofluoromethane	NA	NA		0.0051	*U*	*1*	0.34	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
vinyl chloride (VC)	0.03	0.48		0.0051	*U*	*1*	0.02	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*
xylenes, total	0.26	100		0.0051	*U*	*1*	0.25	*U*	*50*	0.0048	*U*	*1*	0.0046	*U*	*1*	0.0046	*U*	*1*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Table 1: VOCs in Soil

All data in mg/Kg (ppm)			**Sample**	**DUP2-20260408**	
U= Not Detected ≥ value			Date	2026-04-08	
VOCs (8260)	**UU SCO**	**RRU SCO**	Result	Q	DL
1,1,1,2-tetrachloroethane	NA	NA	0.0048	*U*	*1*
1,1,1-trichloroethane (TCA)	0.68	100	0.0048	*U*	*1*
1,1,2,2-tetrachloroethane	NA	NA	0.0048	*U*	*1*
1,1,2-trichloro-1,2,2-trifluoroethane	NA	NA	0.0048	*U*	*1*
1,1,2-trichloroethane	NA	NA	0.0048	*U*	*1*
1,1-dichloroethane	0.27	47	0.0048	*U*	*1*
1,1-dichloroethylene	0.24	0.98	0.0048	*U*	*1*
1,2,3-Trichlorobenzene	NA	NA	0.0048	*U*	*1*
1,2,3-Trichloropropane	NA	NA	0.0048	*U*	*1*
1,2,4-Trichlorobenzene	NA	NA	0.0048	*U*	*1*
1,2,4-Trimethylbenzene	5.9	100	0.0048	*U*	*1*
1,2-Dibromo-3-chloropropane	NA	NA	0.0048	*U*	*1*
1,2-dibromoethane	NA	NA	0.0048	*U*	*1*
1,2-dichlorobenzene	1.1	100	0.0048	*U*	*1*
1,2-dichloroethane	0.02	5.8	0.0048	*U*	*1*
1,2-dichloropropane	NA	NA	0.0048	*U*	*1*
1,3,5-trimethylbenzene	3.1	100	0.0048	*U*	*1*
1,3-dichlorobenzene	2.6	38	0.0048	*U*	*1*
1,4-dichlorobenzene	1.8	24	0.0048	*U*	*1*
1,4-dioxane	0.1	5.7	0.072	*U*	*1*
2-butanone (MEK)	0.1	100	0.029	*U*	*1*
2-hexanone (MBK)	NA	NA	0.024	*U*	*1*
4-methyl-2-pentanone	NA	NA	0.024	*U*	*1*
acetone	0.03	100	0.03	*U*	*1*
acrolein	NA	NA	0.0048	*U*	*1*
acrylonitrile	NA	NA	0.0048	*U*	*1*
benzene	0.06	3.7	0.0048	*U*	*1*
bromochloromethane	NA	NA	0.0048	*U*	*1*
bromodichloromethane	NA	NA	0.0048	*U*	*1*
Bromoform	NA	NA	0.0048	*U*	*1*
bromomethane	NA	NA	0.0048	*U*	*1*
carbon disulfide	NA	NA	0.0048	*U*	*1*
carbon tetrachloride	0.76	7.1	0.0048	*U*	*1*
chlorobenzene	4.5	100	0.0048	*U*	*1*
chloroethane	NA	NA	0.0048	*U*	*1*
chloroform	0.37	24	0.0048	*U*	*1*
chloromethane	NA	NA	0.0048	*U*	*1*
cis-1,2-dichloroethylene (DCE)	0.19	41	0.0048	*U*	*1*
cis-1,3-dichloropropylene	NA	NA	0.0048	*U*	*1*
cyclohexane	NA	NA	0.0048	*U*	*1*
dibromochloromethane	NA	NA	0.0048	*U*	*1*
dibromomethane	NA	NA	0.0048	*U*	*1*
dichlorodifluoromethane	NA	NA	0.0048	*U*	*1*
ethyl benzene	1	76	0.0048	*U*	*1*
hexachlorobutadiene	NA	NA	0.0048	*U*	*1*
isopropylbenzene	2.3	100	0.0048	*U*	*1*
methyl acetate	NA	NA	0.048	*U*	*1*
methyl tert-butyl ether (MTBE)	0.1	100	0.0096	*U*	*1*
methylcyclohexane	NA	NA	0.0048	*U*	*1*
methylene chloride	0.05	81	0.024	*U*	*1*
n-butylbenzene	18	100	0.0048	*U*	*1*
n-propylbenzene	5	100	0.0048	*U*	*1*
o-xylene	0.26	100	0.0048	*U*	*1*
p- & m- xylenes	0.26	100	0.0048	*U*	*1*
p-isopropyltoluene	10	NA	0.0048	*U*	*1*
sec-butylbenzene	25	100	0.0048	*U*	*1*
styrene	NA	NA	0.0048	*U*	*1*
tert-butyl alcohol	NA	NA	0.048	*U*	*1*
tert-butylbenzene	11	100	0.0048	*U*	*1*
tetrachloroethylene (PCE)	1.3	18	0.0048	*U*	*1*
toluene	0.7	100	0.0048	*U*	*1*
trans-1,2-dichloroethylene (DCE)	0.19	100	0.0048	*U*	*1*
trans-1,3-dichloropropylene	NA	NA	0.0048	*U*	*1*
trichloroethylene (TCE)	0.47	6.4	0.0048	*U*	*1*
trichlorofluoromethane	NA	NA	0.0048	*U*	*1*
vinyl chloride (VC)	0.03	0.48	0.0048	*U*	*1*
xylenes, total	0.26	100	0.0048	*U*	*1*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available
(addtional flags: B-in blank, D-diluted, E-estimated, J-approximate, S-lab solvent)

Table 2: VOC TICs in Soil

		Sample	SB-01 SURF		SB-01 0-2		SB-01 10-12		SB-01 20-22		SB-01 43-45		SB-02 SURF		SB-02 0-5		SB-02 18-20	
All data in mg/Kg (ppm)		Date	2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA																
TOTAL VOC TICs			ND		ND		ND		ND		ND		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-02 20-25		SB-02 46-48		SB-03 SURF		SB-03 0-2		SB-03 18-20		SB-03 20-22		SB-04 SURF		SB-04 0-2	
All data in mg/Kg (ppm)		Date	2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA																
TOTAL VOC TICs			ND		ND		ND		ND		ND		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-04 21-23		SB-04 23-25		DUP-20260401		SB-05 SURF		SB-05 0-1		SB-05 1-2		SB-05 10-12		SB-05 22-24	
All data in mg/Kg (ppm)		Date	2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA							0.087	*JN*								
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA									0.051	*Q*			0.041	*Q*		
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA													0.0048	*JN*		
unknown	NA	NA							0.016	*J*	0.0086	*J*						
TOTAL VOC TICs			ND		ND		ND		0.103		0.060		ND		0.046		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 2: VOC TICs in Soil

		Sample	SB-06 SURF		SB-06 0-2		SB-06 16-18		SB-06 18-20		SB-07 SURF		SB-07 0-1		SB-07 1-2		SB-07 16-18	
All data in mg/Kg (ppm)		Date	2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA																
TOTAL VOC TICs			ND		ND		ND		ND		ND		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-07 21-23		SB-08 SURF		SB-08 0-2		SB-08 20-22		SB-08 26-28		SB-09 SURF		SB-09 0-1		SB-09 1-2	
All data in mg/Kg (ppm)		Date	2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-02		2026-04-02		2026-04-02	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA			0.0061	Q												
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA																
TOTAL VOC TICs			ND		0.006		ND		ND		ND		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-09 6-8		SB-09 25-27		SB-09 42-44		SB-10 SURF		SB-10 0-2		SB-10 18-20		SB-10 23-25		SB-11 SURF	
All data in mg/Kg (ppm)		Date	2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA															0.014	*JN*
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA															0.062	*JN*
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA					0.014	*JN*										
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA															0.055	*JN*
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA					0.0038	*JN*										
Caryophyllene	NA	NA															0.32	*JN*
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA															0.012	*JN*
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA															0.11	*J*
TOTAL VOC TICs			ND		ND		0.018		ND		ND		ND		ND		0.573	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-11 0-2		SB-11 9-11		SB-11 20-22		SB-12 SURF		SB-12 0-1		SB-12 1-2		SB-12 6-8		DUP-20260402	
All data in mg/Kg (ppm)		Date	2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA	0.034	*JN*														
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA			0.02	*JN*												
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA			0.014	*JN*												
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA	0.0095	*J*							0.0052	*J*						
TOTAL VOC TICs			0.044		0.034		ND		ND		0.005		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 2: VOC TICs in Soil

		Sample	SB-12 22-24		SB-12 43-45		SB-13 SURF		SB-13 0-2		SB-13 7-9		SB-13 20-22		SB-13 22-23		SB-13 23-25	
All data in mg/Kg (ppm)		Date	2026-04-02		2026-04-02		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA																
TOTAL VOC TICs			ND		ND		ND		ND		ND		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-14 SURF		SB-14 0-2		SB-14 21-23		DUP-20260403		SB-14 23-25		SB-15 SURF		SB-15 0-2		SB-15 11-13	
All data in mg/Kg (ppm)		Date	2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA																
TOTAL VOC TICs			ND		ND		ND		ND		ND		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-15 22-24		SB-15 24-25		SB-16 SURF		SB-16 0-1		SB-16 1-2		SB-16 18-20		SB-16 23-25		SB-16 43-45	
All data in mg/Kg (ppm)		Date	2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-06	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA															0.0052	*JN*
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA															0.0052	*J*
TOTAL VOC TICs			ND		ND		ND		ND		ND		ND		ND		0.010	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-17 SURF		SB-17 5-7		SB-17 23-25		SB-17A SURF		SB-17A 0-1		SB-17A 1-2		SB-17A 5-7		SB-18 SURF	
All data in mg/Kg (ppm)		Date	2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA															0.018	*JN*
.alpha.-Pinene	NA	NA															0.061	*JN*
.beta.-Pinene	NA	NA	0.045	*JN*														
1,3-Cycloheptadiene	NA	NA															0.019	*JN*
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA	0.015	*JN*														
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA	0.023	*JN*														
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA															0.21	*JN*
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA											0.0067	*JN*	0.0071	*JN*		
Dimethyl sulfide	NA	NA	0.01	*JN*														
D-Limonene	NA	NA	0.23	*JN*														
Ethanol	NA	NA	0.013	*JN*														
Limonene	NA	NA															0.36	*JN*
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA									0.026	*J*					0.0059	*J*
TOTAL VOC TICs			0.336		ND		ND		ND		0.026		0.007		0.007		0.674	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-18 0-1		SB-18 1-2		DUP-20260406		SB-18 12-14		SB-18 23-25		SB-18 45-47		SB-19 SURF		SB-19 0-2	
All data in mg/Kg (ppm)		Date	2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-07		2026-04-07	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA													0.017	*JN*		
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA													0.0085	*JN*		
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA													0.018	*JN*		
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA													0.014	*JN*		
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA																
TOTAL VOC TICs			ND		ND		ND		ND		ND		ND		0.058		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-19 4-5		SB-19 18-20		SB-19 23-25		SB-20 SURF		SB-20 0-2		SB-20 18-20		SB-20 21-23		DUP-20260407	
All data in mg/Kg (ppm)		Date	2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA	0.015	*JN*														
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA							0.012	*JN*								
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA	0.0074	*J*					0.0069	*J*								
TOTAL VOC TICs			0.022		ND		ND		0.019		ND		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-21 SURF		SB-21 0-2		SB-21 18-20		SB-21 23-25		SB-22 SURF		SB-22 0-2		SB-22 2-3		SB-22 13-15	
All data in mg/Kg (ppm)		Date	2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA			0.066	*JN*												
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA			0.0083	*JN*												
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA			0.012	*JN*												
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA			0.0058	*JN*												
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA			0.041	*JN*												
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA			0.023	*JN*												
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA			0.01	*JN*												
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA			0.0084	*JN*												
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA			0.0066	*J*												
TOTAL VOC TICs			ND		0.181		ND		ND		ND		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 2: VOC TICs in Soil

		Sample	SB-22 25-27		SB-23 SURF		SB-23 0-2		SB-23 2-3		SB-23 15-17		SB-23 24-25		SB-24 SURF		SB-24 0-1	
All data in mg/Kg (ppm)		Date	2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-08		2026-04-08	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA											0.0087	*JN*				
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA															0.0065	*JN*
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA													0.049	*JN*		
Borane-methyl sulfide complex	NA	NA			0.0068	*JN*												
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA													0.067	*JN*		
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA							0.02	*Q*								
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA	0.028	*J*											0.017	*J*		
TOTAL VOC TICs			0.028		0.007		ND		0.02		ND		0.009		0.133		0.007	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 2: VOC TICs in Soil

		Sample	SB-24 2-4		SB-24 16-18		DUP1-20260408		SB-24 26-28		SB-24 43-44		SB-25 SURF		SB-25 0-1		SB-25 1-2	
All data in mg/Kg (ppm)		Date	2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA																
.alpha.-Phellandrene	NA	NA																
.alpha.-Pinene	NA	NA																
.beta.-Pinene	NA	NA																
1,3-Cycloheptadiene	NA	NA																
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA																
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA																
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA																
1-Hexadecanol	NA	NA																
1-Pentene	NA	NA																
1-Propene, 2-methyl-	NA	NA																
2-Octanone	NA	NA																
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA																
Benzoic acid, methyl ester	NA	NA																
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																
Borane-methyl sulfide complex	NA	NA																
Butylated Hydroxytoluene	NA	NA																
Caryophyllene	NA	NA																
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA																
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA																
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA																
Cyclopentane	NA	NA																
Dimethyl sulfide	NA	NA																
D-Limonene	NA	NA																
Ethanol	NA	NA																
Limonene	NA	NA																
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																
Naphthalene	NA	NA																
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA																
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA																
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA																
Naphthalene, 2-methyl-	NA	NA																
unknown	NA	NA																
TOTAL VOC TICs			ND		ND		ND		ND		ND		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 2: VOC TICs in Soil

		Sample	SB-25 13-15		SB-25 33-35		DUP2-20260408	
All data in mg/Kg (ppm)		Date	2026-04-08		2026-04-08		2026-04-08	
VOCs (8260)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q
.alpha.-Caryophyllene	NA	NA						
.alpha.-Phellandrene	NA	NA						
.alpha.-Pinene	NA	NA						
.beta.-Pinene	NA	NA						
1,3-Cycloheptadiene	NA	NA						
1H-Cyclopenta[1,3]cyclopropa[1,2]benzene, octahydr	NA	NA						
1H-Cycloprop[e]azulene, 1a,2,3,4,4	NA	NA						
1H-Cycloprop[e]azulene, decahydro-1,1,7-trimethyl-	NA	NA						
1-Hexadecanol	NA	NA						
1-Pentene	NA	NA						
1-Propene, 2-methyl-	NA	NA			0.016	*JN*	0.01	*JN*
2-Octanone	NA	NA						
9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	NA	NA						
Benzoic acid, methyl ester	NA	NA						
Bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA						
Bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA						
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA						
Borane-methyl sulfide complex	NA	NA						
Butylated Hydroxytoluene	NA	NA			0.074	*JN*	0.041	*JN*
Caryophyllene	NA	NA						
cis,cis,cis-7,10,13-Hexadecatrienal	NA	NA						
Cyclohexene, 3-(1,5-dimethyl-4-hexenyl)-6-methylen	NA	NA						
Cyclohexene, 4-ethenyl-4-methyl-3-(1-methylethenyl	NA	NA						
Cyclopentane	NA	NA						
Dimethyl sulfide	NA	NA						
D-Limonene	NA	NA						
Ethanol	NA	NA						
Limonene	NA	NA						
Methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA						
Naphthalene	NA	NA						
Naphthalene, 1,2,3,4,4a,5,6,8a-octahydro-7-methyl-	NA	NA						
Naphthalene, 1,2,4a,5,6,8a-hexahyd	NA	NA						
Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-	NA	NA						
Naphthalene, 2-methyl-	NA	NA						
unknown	NA	NA			0.0048	*J*		
TOTAL VOC TICs			ND		0.095		0.051	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-01 SURF			SB-01 0-2			SB-01 10-12			SB-01 20-22			SB-01 43-45			SB-02 SURF		
U= Not Detected ≥ value			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
1,2,4-trichlorobenzene	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
1,2-dichlorobenzene	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.35	U	1	0.35	U	1	0.38	U	1	0.79	U	1	0.43	U	1	0.37	U	1
1,3-dichlorobenzene	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
1,4-dichlorobenzene	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
1,4-dioxane	0.1	5.7		0.07	U	1	0.07	U	1	0.075	U	1	0.077	U	1	0.084	U	1	0.074	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
2,4,5-trichlorophenol	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
2,4,6-trichlorophenol	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
2,4-dichlorophenol	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
2,4-dimethylphenol	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
2,4-dinitrophenol	NA	NA		0.56	U	1	0.56	U	1	0.61	U	1	1.3	U	1	0.68	U	1	0.6	U	1
2,4-dinitrotoluene	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
2,6-dinitrotoluene	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
2-chloronaphthalene	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
2-chlorophenol	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
2-methylnaphthalene	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
2-Methylphenol (o-cresol)	0.33	100		0.25	U	1	0.25	U	1	0.27	U	1	0.33	U	1	0.3	U	1	0.26	U	1
2-nitroaniline	NA	NA		0.56	U	1	0.56	U	1	0.61	U	1	1.3	U	1	0.68	U	1	0.6	U	1
2-nitrophenol	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.42	U	1	0.42	U	1	0.46	U	1	0.95	U	1	0.51	U	1	0.45	U	1
3-nitroaniline	NA	NA		0.56	U	1	0.56	U	1	0.61	U	1	1.3	U	1	0.68	U	1	0.6	U	1
4,6-dinitro-2-methylphenol	NA	NA		1	U	1	1	U	1	1.1	U	1	2.3	U	1	1.2	U	1	1.1	U	1
4-bromophenyl phenyl ether	NA	NA		0.35	U	1	0.35	U	1	0.38	U	1	0.79	U	1	0.43	U	1	0.37	U	1
4-chloro-3-methylphenol	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
4-chloroaniline	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
4-chlorophenyl phenyl ether	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
4-nitroaniline	NA	NA		0.56	U	1	0.56	U	1	0.61	U	1	1.3	U	1	0.68	U	1	0.6	U	1
4-nitrophenol	NA	NA		1	U	1	1	U	1	1.1	U	1	2.3	U	1	1.2	U	1	1.1	U	1
acenaphthene	20	100		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
acenaphthylene	100	100		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
acetophenone	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
atrazine	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
benzaldehyde	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
benzidine	NA	NA		0.35	U	1	0.35	U	1	0.38	U	1	0.79	U	1	0.43	U	1	0.37	U	1
benzo(a)anthracene	1	1.4		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
benzo(a)pyrene	1	1		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
benzo(b)fluoranthene	1	1.4		0.17	J	1	0.25	U	1	0.13	J	1	0.55	U	1	0.3	U	1	0.26	U	1
benzo(g,h,i)perylene	0.64	4.9		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.22	J	1
benzo(k)fluoranthene	0.8	4.9		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
benzoic acid	NA	NA		0.7	U	1	0.7	U	1	0.76	U	1	1.6	U	1	0.85	U	1	0.75	U	1
benzyl alcohol	NA	NA		0.35	U	1	0.35	U	1	0.38	U	1	0.79	U	1	0.43	U	1	0.37	U	1
benzyl butyl phthalate	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
bis(2-chloroethoxy)methane	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
bis(2-chloroethyl)ether	NA	NA		0.35	U	1	0.35	U	1	0.38	U	1	0.79	U	1	0.43	U	1	0.37	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
caprolactam	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
carbazole	NA	NA		0.35	U	1	0.35	U	1	0.38	U	1	0.79	U	1	0.43	U	1	0.37	U	1
chrysene	1	4.9		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.18	U	1	0.19	U	1	0.33	U	1	0.21	U	1	0.19	U	1
dibenzofuran	2.1	18		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
diethyl phthalate	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
dimethyl phthalate	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
di-n-butyl phthalate	NA	NA		0.7	U	1	0.7	U	1	0.76	U	1	1.6	U	1	0.85	U	1	0.75	U	1
di-n-octyl phthalate	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
fluoranthene	85	100		0.18	J	1	0.25	U	1	0.18	J	1	0.55	U	1	0.3	U	1	0.26	U	1
fluorene	30	100		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
hexachlorobenzene	0.33	0.33		0.25	U	1	0.25	U	1	0.27	U	1	0.33	U	1	0.3	U	1	0.26	U	1
hexachlorobutadiene	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
hexachlorocyclopentadiene	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
hexachloroethane	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.25	U	1	0.25	U	1	0.27	U	1	0.5	U	1	0.3	U	1	0.19	J	1
isophorone	NA	NA		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
naphthalene	12	100		0.25	U	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.35	U	1	0.35	U	1	0.38	U	1	0.79	U	1	0.43	U	1	0.37	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.18	U	1	0.19	U	1	0.39	U	1	0.21	U	1	0.19	U	1
n-nitrosodiphenylamine	NA	NA		0.35	U	1	0.35	U	1	0.38	U	1	0.79	U	1	0.43	U	1	0.37	U	1
pentachlorophenol	0.8	1.3		0.35	U	1	0.35	U	1	0.38	U	1	0.79	U	1	0.43	U	1	0.37	U	1
phenanthrene	1.1	4.9		0.25	U	1	0.25	U	1	0.13	J	1	0.55	U	1	0.3	U	1	0.26	U	1
phenol	0.33	100		0.25	U	1	0.25	U	1	0.27	U	1	0.33	U	1	0.3	U	1	0.26	U	1
pyrene	64	100		0.13	J	1	0.25	U	1	0.27	U	1	0.55	U	1	0.3	U	1	0.26	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-02 0-5			SB-02 18-20			SB-02 20-25			SB-02 46-48			SB-03 SURF			SB-03 0-2		
U= Not Detected ≥ value			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
1,2,4-trichlorobenzene	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
1,2-dichlorobenzene	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.36	U	1	0.35	U	1	0.63	U	1	0.37	U	1	0.36	U	1	0.36	U	1
1,3-dichlorobenzene	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
1,4-dichlorobenzene	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
1,4-dioxane	0.1	5.7		0.072	U	1	0.07	U	1	0.072	U	1	0.071	U	1	0.072	U	1	0.072	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2,4,5-trichlorophenol	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2,4,6-trichlorophenol	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2,4-dichlorophenol	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2,4-dimethylphenol	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2,4-dinitrophenol	NA	NA		0.57	U	1	0.55	U	1	1	U	1	0.58	U	1	0.57	U	1	0.57	U	1
2,4-dinitrotoluene	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2,6-dinitrotoluene	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2-chloronaphthalene	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2-chlorophenol	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2-methylnaphthalene	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2-Methylphenol (o-cresol)	0.33	100		0.25	U	1	0.24	U	1	0.33	U	1	0.26	U	1	0.25	U	1	0.25	U	1
2-nitroaniline	NA	NA		0.57	U	1	0.55	U	1	1	U	1	0.58	U	1	0.57	U	1	0.57	U	1
2-nitrophenol	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.43	U	1	0.42	U	1	0.75	U	1	0.44	U	1	0.43	U	1	0.43	U	1
3-nitroaniline	NA	NA		0.57	U	1	0.55	U	1	1	U	1	0.58	U	1	0.57	U	1	0.57	U	1
4,6-dinitro-2-methylphenol	NA	NA		1	U	1	1	U	1	1.8	U	1	1.1	U	1	1	U	1	1	U	1
4-bromophenyl phenyl ether	NA	NA		0.36	U	1	0.35	U	1	0.63	U	1	0.37	U	1	0.36	U	1	0.36	U	1
4-chloro-3-methylphenol	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
4-chloroaniline	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
4-chlorophenyl phenyl ether	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
4-nitroaniline	NA	NA		0.57	U	1	0.55	U	1	1	U	1	0.58	U	1	0.57	U	1	0.57	U	1
4-nitrophenol	NA	NA		1	U	1	1	U	1	1.8	U	1	1.1	U	1	1	U	1	1	U	1
acenaphthene	20	100		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
acenaphthylene	100	100		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
acetophenone	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
atrazine	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
benzaldehyde	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
benzidine	NA	NA		0.36	U	1	0.35	U	1	0.63	U	1	0.37	U	1	0.36	U	1	0.36	U	1
benzo(a)anthracene	1	1.4		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
benzo(a)pyrene	1	1		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
benzo(b)fluoranthene	1	1.4		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
benzo(g,h,i)perylene	0.64	4.9		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
benzo(k)fluoranthene	0.8	4.9		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
benzoic acid	NA	NA		0.72	U	1	0.69	U	1	1.3	U	1	0.73	U	1	0.72	U	1	0.71	U	1
benzyl alcohol	NA	NA		0.36	U	1	0.35	U	1	0.63	U	1	0.37	U	1	0.36	U	1	0.36	U	1
benzyl butyl phthalate	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
bis(2-chloroethoxy)methane	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
bis(2-chloroethyl)ether	NA	NA		0.36	U	1	0.35	U	1	0.63	U	1	0.37	U	1	0.36	U	1	0.36	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
caprolactam	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
carbazole	NA	NA		0.36	U	1	0.35	U	1	0.63	U	1	0.37	U	1	0.36	U	1	0.36	U	1
chrysene	1	4.9		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.17	U	1	0.31	U	1	0.18	U	1	0.18	U	1	0.18	U	1
dibenzofuran	2.1	18		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
diethyl phthalate	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
dimethyl phthalate	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
di-n-butyl phthalate	NA	NA		0.72	U	1	0.69	U	1	1.3	U	1	0.73	U	1	0.72	U	1	0.71	U	1
di-n-octyl phthalate	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
fluoranthene	85	100		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
fluorene	30	100		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
hexachlorobenzene	0.33	0.33		0.25	U	1	0.24	U	1	0.33	U	1	0.26	U	1	0.25	U	1	0.25	U	1
hexachlorobutadiene	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
hexachlorocyclopentadiene	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
hexachloroethane	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
isophorone	NA	NA		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
naphthalene	12	100		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.36	U	1	0.35	U	1	0.63	U	1	0.37	U	1	0.36	U	1	0.36	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.17	U	1	0.31	U	1	0.18	U	1	0.18	U	1	0.18	U	1
n-nitrosodiphenylamine	NA	NA		0.36	U	1	0.35	U	1	0.63	U	1	0.37	U	1	0.36	U	1	0.36	U	1
pentachlorophenol	0.8	1.3		0.36	U	1	0.35	U	1	0.63	U	1	0.37	U	1	0.36	U	1	0.36	U	1
phenanthrene	1.1	4.9		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1
phenol	0.33	100		0.25	U	1	0.24	U	1	0.33	U	1	0.26	U	1	0.25	U	1	0.25	U	1
pyrene	64	100		0.25	U	1	0.24	U	1	0.44	U	1	0.26	U	1	0.25	U	1	0.25	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-03 18-20			SB-03 20-22			SB-04 SURF			SB-04 0-2			SB-04 21-23			SB-04 23-25		
U= Not Detected ≥ value			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-04-01			2026-04-01		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.37	U	1	0.4	U	1	0.43	U	1	0.43	U	1	0.37	U	1	0.64	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
1,4-dioxane	0.1	5.7		0.075	U	1	0.082	U	1	0.087	U	1	0.086	U	1	0.073	U	1	0.074	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
2,4-dinitrophenol	NA	NA		0.59	U	1	0.64	U	1	0.69	U	1	0.69	U	1	0.59	U	1	1	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.33	U	1
2-nitroaniline	NA	NA		0.59	U	1	0.64	U	1	0.69	U	1	0.69	U	1	0.59	U	1	1	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.45	U	1	0.48	U	1	0.52	U	1	0.52	U	1	0.44	U	1	0.77	U	1
3-nitroaniline	NA	NA		0.59	U	1	0.64	U	1	0.69	U	1	0.69	U	1	0.59	U	1	1	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1.2	U	1	1.2	U	1	1.3	U	1	1.1	U	1	1.9	U	1
4-bromophenyl phenyl ether	NA	NA		0.37	U	1	0.4	U	1	0.43	U	1	0.43	U	1	0.37	U	1	0.64	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
4-nitroaniline	NA	NA		0.59	U	1	0.64	U	1	0.69	U	1	0.69	U	1	0.59	U	1	1	U	1
4-nitrophenol	NA	NA		1.1	U	1	1.2	U	1	1.2	U	1	1.3	U	1	1.1	U	1	1.9	U	1
acenaphthene	20	100		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
acenaphthylene	100	100		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
acetophenone	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
atrazine	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
benzaldehyde	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
benzidine	NA	NA		0.37	U	1	0.4	U	1	0.43	U	1	0.43	U	1	0.37	U	1	0.64	U	1
benzo(a)anthracene	1	1.4		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
benzo(a)pyrene	1	1		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
benzo(b)fluoranthene	1	1.4		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
benzo(g,h,i)perylene	0.64	4.9		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.12	J	1	0.45	U	1
benzo(k)fluoranthene	0.8	4.9		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
benzoic acid	NA	NA		0.74	U	1	0.8	U	1	0.86	U	1	0.86	U	1	0.73	U	1	1.3	U	1
benzyl alcohol	NA	NA		0.37	U	1	0.4	U	1	0.43	U	1	0.43	U	1	0.37	U	1	0.64	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
bis(2-chloroethyl)ether	NA	NA		0.37	U	1	0.4	U	1	0.43	U	1	0.43	U	1	0.37	U	1	0.64	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
caprolactam	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
carbazole	NA	NA		0.37	U	1	0.4	U	1	0.43	U	1	0.43	U	1	0.37	U	1	0.64	U	1
chrysene	1	4.9		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.19	U	1	0.2	U	1	0.22	U	1	0.22	U	1	0.12	J	1	0.32	U	1
dibenzofuran	2.1	18		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
di-n-butyl phthalate	NA	NA		0.74	U	1	0.8	U	1	0.86	U	1	0.86	U	1	0.73	U	1	1.3	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
fluoranthene	85	100		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
fluorene	30	100		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.33	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
hexachloroethane	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
isophorone	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
naphthalene	12	100		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.37	U	1	0.4	U	1	0.43	U	1	0.43	U	1	0.37	U	1	0.64	U	1
n-nitroso-di-n-propylamine	NA	NA		0.19	U	1	0.2	U	1	0.22	U	1	0.22	U	1	0.18	U	1	0.32	U	1
n-nitrosodiphenylamine	NA	NA		0.37	U	1	0.4	U	1	0.43	U	1	0.43	U	1	0.37	U	1	0.64	U	1
pentachlorophenol	0.8	1.3		0.37	U	1	0.4	U	1	0.43	U	1	0.43	U	1	0.37	U	1	0.64	U	1
phenanthrene	1.1	4.9		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1
phenol	0.33	100		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.33	U	1
pyrene	64	100		0.26	U	1	0.28	U	1	0.3	U	1	0.3	U	1	0.26	U	1	0.45	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	DUP-20260401			SB-05 SURF			SB-05 0-1			SB-05 1-2			SB-05 10-12			SB-05 22-24		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.37	U	1	0.4	U	1	0.42	U	1	0.46	U	1	0.42	U	1	0.36	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
1,4-dioxane	0.1	5.7		0.073	U	1	0.081	U	1	0.085	U	1	0.092	U	1	0.07	U	1	0.072	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
2,4-dinitrophenol	NA	NA		0.59	U	1	0.65	U	1	0.68	U	1	0.74	U	1	0.67	U	1	0.58	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.28	U	1	0.46		1	0.32	U	1	0.29	U	1	0.25	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
2-nitroaniline	NA	NA		0.59	U	1	0.65	U	1	0.68	U	1	0.74	U	1	0.67	U	1	0.58	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.44	U	1	0.49	U	1	0.51	U	1	0.56	U	1	0.5	U	1	0.43	U	1
3-nitroaniline	NA	NA		0.59	U	1	0.65	U	1	0.68	U	1	0.74	U	1	0.67	U	1	0.58	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1.2	U	1	1.2	U	1	1.3	U	1	1.2	U	1	1	U	1
4-bromophenyl phenyl ether	NA	NA		0.37	U	1	0.4	U	1	0.42	U	1	0.46	U	1	0.42	U	1	0.36	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
4-nitroaniline	NA	NA		0.59	U	1	0.65	U	1	0.68	U	1	0.74	U	1	0.67	U	1	0.58	U	1
4-nitrophenol	NA	NA		1.1	U	1	1.2	U	1	1.2	U	1	1.3	U	1	1.2	U	1	1	U	1
acenaphthene	20	100		0.26	U	1	0.28	U	1	1.5		1	0.32	U	1	0.29	U	1	0.25	U	1
acenaphthylene	100	100		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
acetophenone	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.26	U	1	0.28	U	1	2.3		1	0.32	U	1	0.29	U	1	0.25	U	1
atrazine	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
benzaldehyde	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
benzidine	NA	NA		0.37	U	1	0.4	U	1	0.42	U	1	0.46	U	1	0.42	U	1	0.36	U	1
benzo(a)anthracene	1	1.4		0.26	U	1	0.27	J	1	5.7		1	0.32	U	1	0.29	U	1	0.25	U	1
benzo(a)pyrene	1	1		0.26	U	1	0.24	J	1	4.9		1	0.32	U	1	0.29	U	1	0.25	U	1
benzo(b)fluoranthene	1	1.4		0.26	U	1	0.41		1	7.5		1	0.32	U	1	0.29	U	1	0.25	U	1
benzo(g,h,i)perylene	0.64	4.9		0.26	U	1	0.19	J	1	3.1		1	0.32	U	1	0.29	U	1	0.25	U	1
benzo(k)fluoranthene	0.8	4.9		0.26	U	1	0.15	J	1	1.8		1	0.32	U	1	0.29	U	1	0.25	U	1
benzoic acid	NA	NA		0.74	U	1	0.81	U	1	0.85	U	1	0.93	U	1	0.83	U	1	0.72	U	1
benzyl alcohol	NA	NA		0.37	U	1	0.4	U	1	0.42	U	1	0.46	U	1	0.42	U	1	0.36	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
bis(2-chloroethyl)ether	NA	NA		0.37	U	1	0.4	U	1	0.42	U	1	0.46	U	1	0.42	U	1	0.36	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
caprolactam	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
carbazole	NA	NA		0.37	U	1	0.4	U	1	1.4		1	0.46	U	1	0.42	U	1	0.36	U	1
chrysene	1	4.9		0.26	U	1	0.33		1	5.3		1	0.32	U	1	0.29	U	1	0.25	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.2	U	1	0.82		1	0.23	U	1	0.21	U	1	0.18	U	1
dibenzofuran	2.1	18		0.26	U	1	0.28	U	1	0.86		1	0.32	U	1	0.29	U	1	0.25	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
di-n-butyl phthalate	NA	NA		0.74	U	1	0.81	U	1	0.85	U	1	0.93	U	1	0.83	U	1	0.72	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
fluoranthene	85	100		0.26	U	1	0.76		1	14		5	0.32	U	1	0.29	U	1	0.25	U	1
fluorene	30	100		0.26	U	1	0.28	U	1	1.2		1	0.32	U	1	0.29	U	1	0.25	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
hexachloroethane	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.26	U	1	0.18	J	1	3.5		1	0.32	U	1	0.29	U	1	0.25	U	1
isophorone	NA	NA		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
naphthalene	12	100		0.26	U	1	0.28	U	1	1.2		1	0.32	U	1	0.29	U	1	0.25	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.37	U	1	0.4	U	1	0.42	U	1	0.46	U	1	0.42	U	1	0.36	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.2	U	1	0.21	U	1	0.23	U	1	0.21	U	1	0.18	U	1
n-nitrosodiphenylamine	NA	NA		0.37	U	1	0.4	U	1	0.42	U	1	0.46	U	1	0.42	U	1	0.36	U	1
pentachlorophenol	0.8	1.3		0.37	U	1	0.4	U	1	0.42	U	1	0.46	U	1	0.42	U	1	0.36	U	1
phenanthrene	1.1	4.9		0.26	U	1	0.52		1	11		5	0.32	U	1	0.29	U	1	0.25	U	1
phenol	0.33	100		0.26	U	1	0.28	U	1	0.3	U	1	0.32	U	1	0.29	U	1	0.25	U	1
pyrene	64	100		0.26	U	1	0.57		1	6.8		1	0.32	U	1	0.29	U	1	0.25	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-06 SURF			SB-06 0-2			SB-06 16-18			SB-06 18-20			SB-07 SURF			SB-07 0-1		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.37	U	1	0.37	U	1	0.36	U	1	0.36	U	1	0.37	U	1	0.36	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
1,4-dioxane	0.1	5.7		0.072	U	1	0.074	U	1	0.072	U	1	0.071	U	1	0.074	U	1	0.071	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2,4-dinitrophenol	NA	NA		0.59	U	1	0.6	U	1	0.57	U	1	0.58	U	1	0.59	U	1	0.57	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
2-nitroaniline	NA	NA		0.59	U	1	0.6	U	1	0.57	U	1	0.58	U	1	0.59	U	1	0.57	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.44	U	1	0.45	U	1	0.43	U	1	0.43	U	1	0.45	U	1	0.43	U	1
3-nitroaniline	NA	NA		0.59	U	1	0.6	U	1	0.57	U	1	0.58	U	1	0.59	U	1	0.57	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1.1	U	1	1	U	1	1	U	1	1.1	U	1	1	U	1
4-bromophenyl phenyl ether	NA	NA		0.37	U	1	0.37	U	1	0.36	U	1	0.36	U	1	0.37	U	1	0.36	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
4-nitroaniline	NA	NA		0.59	U	1	0.6	U	1	0.57	U	1	0.58	U	1	0.59	U	1	0.57	U	1
4-nitrophenol	NA	NA		1.1	U	1	1.1	U	1	1	U	1	1	U	1	1.1	U	1	1	U	1
acenaphthene	20	100		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
acenaphthylene	100	100		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
acetophenone	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.036	U	1
anthracene	100	100		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
atrazine	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
benzaldehyde	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
benzidine	NA	NA		0.37	U	1	0.37	U	1	0.36	U	1	0.36	U	1	0.37	U	1	0.36	U	1
benzo(a)anthracene	1	1.4		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
benzo(a)pyrene	1	1		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.36		1
benzo(b)fluoranthene	1	1.4		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.42		1
benzo(g,h,i)perylene	0.64	4.9		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.21	J	1
benzo(k)fluoranthene	0.8	4.9		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.16	J	1
benzoic acid	NA	NA		0.73	U	1	0.75	U	1	0.72	U	1	0.72	U	1	0.74	U	1	0.72	U	1
benzyl alcohol	NA	NA		0.37	U	1	0.37	U	1	0.36	U	1	0.36	U	1	0.37	U	1	0.36	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
bis(2-chloroethyl)ether	NA	NA		0.37	U	1	0.37	U	1	0.36	U	1	0.36	U	1	0.37	U	1	0.36	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
caprolactam	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
carbazole	NA	NA		0.37	U	1	0.37	U	1	0.36	U	1	0.36	U	1	0.37	U	1	0.36	U	1
chrysene	1	4.9		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.19	U	1	0.18	U	1	0.18	U	1	0.19	U	1	0.18	U	1
dibenzofuran	2.1	18		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
di-n-butyl phthalate	NA	NA		0.73	U	1	0.75	U	1	0.72	U	1	0.72	U	1	0.74	U	1	0.72	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
fluoranthene	85	100		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.13	J	1
fluorene	30	100		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
hexachloroethane	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.22	J	1
isophorone	NA	NA		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
naphthalene	12	100		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.37	U	1	0.37	U	1	0.36	U	1	0.36	U	1	0.37	U	1	0.36	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.19	U	1	0.18	U	1	0.18	U	1	0.19	U	1	0.18	U	1
n-nitrosodiphenylamine	NA	NA		0.37	U	1	0.37	U	1	0.36	U	1	0.36	U	1	0.37	U	1	0.36	U	1
pentachlorophenol	0.8	1.3		0.37	U	1	0.37	U	1	0.36	U	1	0.36	U	1	0.37	U	1	0.36	U	1
phenanthrene	1.1	4.9		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
phenol	0.33	100		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1
pyrene	64	100		0.26	U	1	0.26	U	1	0.25	U	1	0.25	U	1	0.26	U	1	0.25	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-07 1-2			SB-07 16-18			SB-07 21-23			SB-08 SURF			SB-08 0-2			SB-08 20-22		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.37	U	1	0.56	U	1	0.55	U	1	0.36	U	1	0.36	U	1	0.36	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,4-dioxane	0.1	5.7		0.088	U	1	0.074	U	1	0.072	U	1	0.072	U	1	0.071	U	1	0.071	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,4-dinitrophenol	NA	NA		0.59	U	1	0.89	U	1	0.88	U	1	0.58	U	1	0.57	U	1	0.57	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.33	U	1	0.33	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2-nitroaniline	NA	NA		0.59	U	1	0.89	U	1	0.88	U	1	0.58	U	1	0.57	U	1	0.57	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.44	U	1	0.67	U	1	0.66	U	1	0.44	U	1	0.43	U	1	0.43	U	1
3-nitroaniline	NA	NA		0.59	U	1	0.89	U	1	0.88	U	1	0.58	U	1	0.57	U	1	0.57	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1.6	U	1	1.6	U	1	1.1	U	1	1	U	1	1	U	1
4-bromophenyl phenyl ether	NA	NA		0.37	U	1	0.56	U	1	0.55	U	1	0.36	U	1	0.36	U	1	0.36	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
4-nitroaniline	NA	NA		0.59	U	1	0.89	U	1	0.88	U	1	0.58	U	1	0.57	U	1	0.57	U	1
4-nitrophenol	NA	NA		1.1	U	1	1.6	U	1	1.6	U	1	1.1	U	1	1	U	1	1	U	1
acenaphthene	20	100		0.26	U	1	0.39	U	1	0.39	U	1	0.18	J	1	0.25	U	1	0.25	U	1
acenaphthylene	100	100		0.26	U	1	0.39	U	1	0.39	U	1	0.95		1	0.29		1	0.25	U	1
acetophenone	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.26	U	1	0.39	U	1	0.39	U	1	1.8		1	0.75		1	0.25	U	1
atrazine	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
benzaldehyde	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
benzidine	NA	NA		0.37	U	1	0.56	U	1	0.55	U	1	0.36	U	1	0.36	U	1	0.36	U	1
benzo(a)anthracene	1	1.4		0.14	J	1	0.3	J	1	0.39	U	1	6.6		1	2.6		1	0.13	J	1
benzo(a)pyrene	1	1		0.18	J	1	1.3		1	0.39	U	1	4.9		1	1.9		1	0.25	U	1
benzo(b)fluoranthene	1	1.4		0.22	J	1	1.8		1	0.39	U	1	10		5	3.1		1	0.16	J	1
benzo(g,h,i)perylene	0.64	4.9		0.17	J	1	0.43		1	0.39	U	1	3.2		1	1.3		1	0.25	U	1
benzo(k)fluoranthene	0.8	4.9		0.26	U	1	0.7		1	0.39	U	1	3.1		5	0.86		1	0.25	U	1
benzoic acid	NA	NA		0.74	U	1	1.1	U	1	1.1	U	1	0.73	U	1	0.71	U	1	0.71	U	1
benzyl alcohol	NA	NA		0.37	U	1	0.56	U	1	0.55	U	1	0.36	U	1	0.36	U	1	0.36	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
bis(2-chloroethyl)ether	NA	NA		0.37	U	1	0.56	U	1	0.55	U	1	0.36	U	1	0.36	U	1	0.36	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
caprolactam	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
carbazole	NA	NA		0.37	U	1	0.56	U	1	0.55	U	1	0.97		1	0.46		1	0.36	U	1
chrysene	1	4.9		0.15	J	1	0.29	J	1	0.39	U	1	5.7		1	2.3		1	0.13	J	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.28	U	1	0.28	U	1	1.1		1	0.36		1	0.18	U	1
dibenzofuran	2.1	18		0.26	U	1	0.39	U	1	0.39	U	1	0.18	J	1	0.25	U	1	0.25	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
di-n-butyl phthalate	NA	NA		0.74	U	1	1.1	U	1	1.1	U	1	0.73	U	1	0.71	U	1	0.71	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
fluoranthene	85	100		0.3		1	0.24	J	1	0.39	U	1	15		5	4.1		1	0.28		1
fluorene	30	100		0.26	U	1	0.39	U	1	0.39	U	1	0.52		1	0.24	J	1	0.25	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.33	U	1	0.33	U	1	0.25	U	1	0.25	U	1	0.25	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
hexachloroethane	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.15	J	1	0.53		1	0.39	U	1	3.5		1	1.4		1	0.25	U	1
isophorone	NA	NA		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
naphthalene	12	100		0.26	U	1	0.39	U	1	0.39	U	1	0.25	U	1	0.25	U	1	0.25	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.37	U	1	0.56	U	1	0.55	U	1	0.36	U	1	0.36	U	1	0.36	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.28	U	1	0.28	U	1	0.18	U	1	0.18	U	1	0.18	U	1
n-nitrosodiphenylamine	NA	NA		0.37	U	1	0.56	U	1	0.55	U	1	0.36	U	1	0.36	U	1	0.36	U	1
pentachlorophenol	0.8	1.3		0.37	U	1	0.56	U	1	0.55	U	1	0.36	U	1	0.36	U	1	0.36	U	1
phenanthrene	1.1	4.9		0.13	J	1	0.39	U	1	0.39	U	1	6.9		1	3.4		1	0.17	J	1
phenol	0.33	100		0.26	U	1	0.33	U	1	0.33	U	1	0.25	U	1	0.25	U	1	0.25	U	1
pyrene	64	100		0.28		1	0.22	J	1	0.39	U	1	6.2		1	3.2		1	0.22	J	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-08 26-28			SB-09 SURF			SB-09 0-1			SB-09 1-2			SB-09 6-8			SB-09 25-27		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
1,2,4-trichlorobenzene	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
1,2-dichlorobenzene	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.4	U	1	0.38	U	1	0.37	U	1
1,3-dichlorobenzene	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
1,4-dichlorobenzene	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
1,4-dioxane	0.1	5.7		0.096	U	1	0.077	U	1	0.074	U	1	0.079	U	1	0.075	U	1	0.075	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2,4,5-trichlorophenol	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2,4,6-trichlorophenol	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2,4-dichlorophenol	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2,4-dimethylphenol	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2,4-dinitrophenol	NA	NA		0.58	U	1	0.61	U	1	0.59	U	1	0.64	U	1	0.61	U	1	0.6	U	1
2,4-dinitrotoluene	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2,6-dinitrotoluene	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2-chloronaphthalene	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2-chlorophenol	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2-methylnaphthalene	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2-Methylphenol (o-cresol)	0.33	100		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
2-nitroaniline	NA	NA		0.58	U	1	0.61	U	1	0.59	U	1	0.64	U	1	0.61	U	1	0.6	U	1
2-nitrophenol	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.43	U	1	0.46	U	1	0.44	U	1	0.48	U	1	0.46	U	1	0.45	U	1
3-nitroaniline	NA	NA		0.58	U	1	0.61	U	1	0.59	U	1	0.64	U	1	0.61	U	1	0.6	U	1
4,6-dinitro-2-methylphenol	NA	NA		1	U	1	1.1	U	1	1.1	U	1	1.2	U	1	1.1	U	1	1.1	U	1
4-bromophenyl phenyl ether	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.4	U	1	0.38	U	1	0.37	U	1
4-chloro-3-methylphenol	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
4-chloroaniline	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
4-chlorophenyl phenyl ether	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
4-nitroaniline	NA	NA		0.58	U	1	0.61	U	1	0.59	U	1	0.64	U	1	0.61	U	1	0.6	U	1
4-nitrophenol	NA	NA		1	U	1	1.1	U	1	1.1	U	1	1.2	U	1	1.1	U	1	1.1	U	1
acenaphthene	20	100		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
acenaphthylene	100	100		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
acetophenone	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
atrazine	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
benzaldehyde	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
benzidine	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.4	U	1	0.38	U	1	0.37	U	1
benzo(a)anthracene	1	1.4		0.25	U	1	0.27	U	1	0.26	U	1	0.73		1	0.27	U	1	0.26	U	1
benzo(a)pyrene	1	1		0.25	U	1	0.27	U	1	0.26	U	1	0.64		1	0.27	U	1	0.26	U	1
benzo(b)fluoranthene	1	1.4		0.25	U	1	0.27	U	1	0.26	U	1	0.75		1	0.27	U	1	0.26	U	1
benzo(g,h,i)perylene	0.64	4.9		0.25	U	1	0.27	U	1	0.26	U	1	0.32		1	0.27	U	1	0.26	U	1
benzo(k)fluoranthene	0.8	4.9		0.25	U	1	0.27	U	1	0.26	U	1	0.27	J	1	0.27	U	1	0.26	U	1
benzoic acid	NA	NA		0.72	U	1	2.5		1	0.67	J	1	0.28	J	1	0.76	U	1	0.75	U	1
benzyl alcohol	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.4	U	1	0.38	U	1	0.37	U	1
benzyl butyl phthalate	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
bis(2-chloroethoxy)methane	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
bis(2-chloroethyl)ether	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.4	U	1	0.38	U	1	0.37	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
caprolactam	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
carbazole	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.4	U	1	0.38	U	1	0.37	U	1
chrysene	1	4.9		0.25	U	1	0.27	U	1	0.26	U	1	0.6		1	0.27	U	1	0.26	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.19	U	1	0.18	U	1	0.2	U	1	0.19	U	1	0.19	U	1
dibenzofuran	2.1	18		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
diethyl phthalate	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
dimethyl phthalate	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
di-n-butyl phthalate	NA	NA		0.72	U	1	0.76	U	1	0.74	U	1	0.81	U	1	0.76	U	1	0.75	U	1
di-n-octyl phthalate	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
fluoranthene	85	100		0.25	U	1	0.27	U	1	0.26	U	1	1.2		1	0.27	U	1	0.26	U	1
fluorene	30	100		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
hexachlorobenzene	0.33	0.33		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
hexachlorobutadiene	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
hexachlorocyclopentadiene	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
hexachloroethane	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.25	U	1	0.27	U	1	0.26	U	1	0.38		1	0.27	U	1	0.26	U	1
isophorone	NA	NA		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
naphthalene	12	100		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.4	U	1	0.38	U	1	0.37	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.19	U	1	0.18	U	1	0.2	U	1	0.19	U	1	0.19	U	1
n-nitrosodiphenylamine	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.4	U	1	0.38	U	1	0.37	U	1
pentachlorophenol	0.8	1.3		0.36	U	1	0.38	U	1	0.37	U	1	0.4	U	1	0.38	U	1	0.37	U	1
phenanthrene	1.1	4.9		0.25	U	1	0.27	U	1	0.26	U	1	0.55		1	0.27	U	1	0.26	U	1
phenol	0.33	100		0.25	U	1	0.27	U	1	0.26	U	1	0.28	U	1	0.27	U	1	0.26	U	1
pyrene	64	100		0.25	U	1	0.27	U	1	0.26	U	1	0.95		1	0.27	U	1	0.26	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-09 42-44			SB-10 SURF			SB-10 0-2			SB-10 18-20			SB-10 23-25			SB-11 SURF		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,2,4-trichlorobenzene	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,2-dichlorobenzene	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.38	U	1	0.38	U	1	0.39	U	1	0.35	U	1	0.36	U	1	0.36	U	1
1,3-dichlorobenzene	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,4-dichlorobenzene	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
1,4-dioxane	0.1	5.7		0.075	U	1	0.075	U	1	0.078	U	1	0.07	U	1	0.071	U	1	0.075	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,4,5-trichlorophenol	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,4,6-trichlorophenol	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,4-dichlorophenol	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,4-dimethylphenol	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,4-dinitrophenol	NA	NA		0.61	U	1	0.6	U	1	0.63	U	1	0.57	U	1	0.57	U	1	0.58	U	1
2,4-dinitrotoluene	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2,6-dinitrotoluene	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2-chloronaphthalene	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2-chlorophenol	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2-methylnaphthalene	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2-Methylphenol (o-cresol)	0.33	100		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
2-nitroaniline	NA	NA		0.61	U	1	0.6	U	1	0.63	U	1	0.57	U	1	0.57	U	1	0.58	U	1
2-nitrophenol	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.46	U	1	0.45	U	1	0.47	U	1	0.42	U	1	0.43	U	1	0.44	U	1
3-nitroaniline	NA	NA		0.61	U	1	0.6	U	1	0.63	U	1	0.57	U	1	0.57	U	1	0.58	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1.1	U	1	1.1	U	1	1	U	1	1	U	1	1.1	U	1
4-bromophenyl phenyl ether	NA	NA		0.38	U	1	0.38	U	1	0.39	U	1	0.35	U	1	0.36	U	1	0.36	U	1
4-chloro-3-methylphenol	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
4-chloroaniline	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
4-chlorophenyl phenyl ether	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
4-nitroaniline	NA	NA		0.61	U	1	0.6	U	1	0.63	U	1	0.57	U	1	0.57	U	1	0.58	U	1
4-nitrophenol	NA	NA		1.1	U	1	1.1	U	1	1.1	U	1	1	U	1	1	U	1	1.1	U	1
acenaphthene	20	100		0.27	U	1	0.26	U	1	0.13	J	1	0.25	U	1	0.25	U	1	0.25	U	1
acenaphthylene	100	100		0.27	U	1	1.3		1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
acetophenone	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.27	U	1	0.51		1	0.37		1	0.25	U	1	0.25	U	1	0.25	U	1
atrazine	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
benzaldehyde	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
benzidine	NA	NA		0.38	U	1	0.38	U	1	0.39	U	1	0.35	U	1	0.36	U	1	0.36	U	1
benzo(a)anthracene	1	1.4		0.27	U	1	2.4		1	1.1		1	0.25	U	1	0.25	U	1	0.2	J	1
benzo(a)pyrene	1	1		0.27	U	1	2.9		1	0.94		1	0.25	U	1	0.25	U	1	0.22	J	1
benzo(b)fluoranthene	1	1.4		0.27	U	1	4.2		1	1.2		1	0.25	U	1	0.25	U	1	0.33		1
benzo(g,h,i)perylene	0.64	4.9		0.27	U	1	2.5		1	0.49		1	0.25	U	1	0.25	U	1	0.18	J	1
benzo(k)fluoranthene	0.8	4.9		0.27	U	1	1.3		1	0.39		1	0.25	U	1	0.25	U	1	0.15	J	1
benzoic acid	NA	NA		0.76	U	1	0.22	J	1	0.78	U	1	0.71	U	1	0.71	U	1	0.73	U	1
benzyl alcohol	NA	NA		0.38	U	1	0.38	U	1	0.39	U	1	0.35	U	1	0.36	U	1	0.36	U	1
benzyl butyl phthalate	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
bis(2-chloroethoxy)methane	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
bis(2-chloroethyl)ether	NA	NA		0.38	U	1	0.38	U	1	0.39	U	1	0.35	U	1	0.36	U	1	0.36	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
caprolactam	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
carbazole	NA	NA		0.38	U	1	0.42		1	0.39	U	1	0.35	U	1	0.36	U	1	0.36	U	1
chrysene	1	4.9		0.27	U	1	2.7		1	0.84		1	0.25	U	1	0.25	U	1	0.24	J	1
dibenzo(a,h)anthracene	0.33	0.33		0.19	U	1	0.43		1	0.16	J	1	0.18	U	1	0.18	U	1	0.18	U	1
dibenzofuran	2.1	18		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
diethyl phthalate	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
dimethyl phthalate	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
di-n-butyl phthalate	NA	NA		0.76	U	1	0.76	U	1	0.78	U	1	0.71	U	1	0.71	U	1	0.73	U	1
di-n-octyl phthalate	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
fluoranthene	85	100		0.27	U	1	5.8		1	2.2		1	0.25	U	1	0.25	U	1	0.45		1
fluorene	30	100		0.27	U	1	0.16	J	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
hexachlorobenzene	0.33	0.33		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
hexachlorobutadiene	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
hexachlorocyclopentadiene	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
hexachloroethane	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.27	U	1	2.1		1	0.53		1	0.25	U	1	0.25	U	1	0.15	J	1
isophorone	NA	NA		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
naphthalene	12	100		0.27	U	1	0.13	J	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.38	U	1	0.38	U	1	0.39	U	1	0.35	U	1	0.36	U	1	0.36	U	1
n-nitroso-di-n-propylamine	NA	NA		0.19	U	1	0.19	U	1	0.2	U	1	0.18	U	1	0.18	U	1	0.18	U	1
n-nitrosodiphenylamine	NA	NA		0.38	U	1	0.38	U	1	0.39	U	1	0.35	U	1	0.36	U	1	0.36	U	1
pentachlorophenol	0.8	1.3		0.38	U	1	0.38	U	1	0.39	U	1	0.35	U	1	0.36	U	1	0.36	U	1
phenanthrene	1.1	4.9		0.27	U	1	3.1		1	1.9		1	0.25	U	1	0.25	U	1	0.2	J	1
phenol	0.33	100		0.27	U	1	0.26	U	1	0.27	U	1	0.25	U	1	0.25	U	1	0.25	U	1
pyrene	64	100		0.27	U	1	4.4		1	1.8		1	0.25	U	1	0.25	U	1	0.38		1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-11 0-2			SB-11 9-11			SB-11 20-22			SB-12 SURF			SB-12 0-1			SB-12 1-2		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
1,2,4-trichlorobenzene	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
1,2-dichlorobenzene	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.37	U	1	0.36	U	1	0.38	U	1
1,3-dichlorobenzene	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
1,4-dichlorobenzene	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
1,4-dioxane	0.1	5.7		0.072	U	1	0.098	U	1	0.071	U	1	0.074	U	1	0.073	U	1	0.077	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2,4,5-trichlorophenol	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2,4,6-trichlorophenol	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2,4-dichlorophenol	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2,4-dimethylphenol	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2,4-dinitrophenol	NA	NA		0.58	U	1	0.6	U	1	0.58	U	1	0.6	U	1	0.58	U	1	0.6	U	1
2,4-dinitrotoluene	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2,6-dinitrotoluene	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2-chloronaphthalene	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2-chlorophenol	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2-methylnaphthalene	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2-Methylphenol (o-cresol)	0.33	100		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
2-nitroaniline	NA	NA		0.58	U	1	0.6	U	1	0.58	U	1	0.6	U	1	0.58	U	1	0.6	U	1
2-nitrophenol	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.44	U	1	0.45	U	1	0.44	U	1	0.45	U	1	0.43	U	1	0.45	U	1
3-nitroaniline	NA	NA		0.58	U	1	0.6	U	1	0.58	U	1	0.6	U	1	0.58	U	1	0.6	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1
4-bromophenyl phenyl ether	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.37	U	1	0.36	U	1	0.38	U	1
4-chloro-3-methylphenol	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
4-chloroaniline	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
4-chlorophenyl phenyl ether	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
4-nitroaniline	NA	NA		0.58	U	1	0.6	U	1	0.58	U	1	0.6	U	1	0.58	U	1	0.6	U	1
4-nitrophenol	NA	NA		1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1
acenaphthene	20	100		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
acenaphthylene	100	100		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
acetophenone	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.25	U	1	0.32		1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
atrazine	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
benzaldehyde	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
benzidine	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.37	U	1	0.36	U	1	0.38	U	1
benzo(a)anthracene	1	1.4		0.25	U	1	0.69		1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
benzo(a)pyrene	1	1		0.25	U	1	0.6		1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
benzo(b)fluoranthene	1	1.4		0.25	U	1	0.79		1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
benzo(g,h,i)perylene	0.64	4.9		0.25	U	1	0.3		1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
benzo(k)fluoranthene	0.8	4.9		0.25	U	1	0.28		1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
benzoic acid	NA	NA		0.73	U	1	0.75	U	1	0.73	U	1	0.75	U	1	0.72	U	1	0.76	U	1
benzyl alcohol	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.37	U	1	0.36	U	1	0.38	U	1
benzyl butyl phthalate	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
bis(2-chloroethoxy)methane	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
bis(2-chloroethyl)ether	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.37	U	1	0.36	U	1	0.38	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
caprolactam	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
carbazole	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.37	U	1	0.36	U	1	0.38	U	1
chrysene	1	4.9		0.25	U	1	0.66		1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.19	U	1	0.18	U	1	0.19	U	1	0.18	U	1	0.19	U	1
dibenzofuran	2.1	18		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
diethyl phthalate	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
dimethyl phthalate	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
di-n-butyl phthalate	NA	NA		0.73	U	1	0.75	U	1	0.73	U	1	0.75	U	1	0.72	U	1	0.76	U	1
di-n-octyl phthalate	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
fluoranthene	85	100		0.25	U	1	1.4		1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
fluorene	30	100		0.25	U	1	0.14	J	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
hexachlorobenzene	0.33	0.33		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
hexachlorobutadiene	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
hexachlorocyclopentadiene	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
hexachloroethane	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.25	U	1	0.32		1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
isophorone	NA	NA		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
naphthalene	12	100		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.37	U	1	0.36	U	1	0.38	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.19	U	1	0.18	U	1	0.19	U	1	0.18	U	1	0.19	U	1
n-nitrosodiphenylamine	NA	NA		0.36	U	1	0.38	U	1	0.37	U	1	0.37	U	1	0.36	U	1	0.38	U	1
pentachlorophenol	0.8	1.3		0.36	U	1	0.38	U	1	0.37	U	1	0.37	U	1	0.36	U	1	0.38	U	1
phenanthrene	1.1	4.9		0.25	U	1	1.1		1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
phenol	0.33	100		0.25	U	1	0.26	U	1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1
pyrene	64	100		0.25	U	1	1.2		1	0.26	U	1	0.26	U	1	0.25	U	1	0.26	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-12 6-8			DUP-20260402			SB-12 22-24			SB-12 43-45			SB-13 SURF			SB-13 0-2		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-03			2026-04-03		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
1,2,4-trichlorobenzene	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
1,2-dichlorobenzene	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.39	U	1	0.39	U	1	0.36	U	1	0.38	U	1	0.38	U	1	0.36	U	1
1,3-dichlorobenzene	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
1,4-dichlorobenzene	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
1,4-dioxane	0.1	5.7		0.078	U	1	0.078	U	1	0.072	U	1	0.074	U	1	0.075	U	1	0.072	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2,4,5-trichlorophenol	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2,4,6-trichlorophenol	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2,4-dichlorophenol	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2,4-dimethylphenol	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2,4-dinitrophenol	NA	NA		0.62	U	1	0.62	U	1	0.57	U	1	0.6	U	1	0.61	U	1	0.58	U	1
2,4-dinitrotoluene	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2,6-dinitrotoluene	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2-chloronaphthalene	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2-chlorophenol	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2-methylnaphthalene	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2-Methylphenol (o-cresol)	0.33	100		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
2-nitroaniline	NA	NA		0.62	U	1	0.62	U	1	0.57	U	1	0.6	U	1	0.61	U	1	0.58	U	1
2-nitrophenol	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.47	U	1	0.47	U	1	0.43	U	1	0.45	U	1	0.46	U	1	0.43	U	1
3-nitroaniline	NA	NA		0.62	U	1	0.62	U	1	0.57	U	1	0.6	U	1	0.61	U	1	0.58	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1.1	U	1	1	U	1	1.1	U	1	1.1	U	1	1	U	1
4-bromophenyl phenyl ether	NA	NA		0.39	U	1	0.39	U	1	0.36	U	1	0.38	U	1	0.38	U	1	0.36	U	1
4-chloro-3-methylphenol	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
4-chloroaniline	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
4-chlorophenyl phenyl ether	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
4-nitroaniline	NA	NA		0.62	U	1	0.62	U	1	0.57	U	1	0.6	U	1	0.61	U	1	0.58	U	1
4-nitrophenol	NA	NA		1.1	U	1	1.1	U	1	1	U	1	1.1	U	1	1.1	U	1	1	U	1
acenaphthene	20	100		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
acenaphthylene	100	100		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
acetophenone	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.038	U	1	0.036	U	1
anthracene	100	100		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.14	J	1	0.25	U	1
atrazine	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
benzaldehyde	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
benzidine	NA	NA		0.39	U	1	0.39	U	1	0.36	U	1	0.38	U	1	0.38	U	1	0.36	U	1
benzo(a)anthracene	1	1.4		0.15	J	1	0.22	J	1	0.25	U	1	0.26	U	1	0.45		1	0.25	U	1
benzo(a)pyrene	1	1		0.15	J	1	0.19	J	1	0.25	U	1	0.26	U	1	0.38		1	0.25	U	1
benzo(b)fluoranthene	1	1.4		0.19	J	1	0.26	J	1	0.25	U	1	0.26	U	1	0.51		1	0.25	U	1
benzo(g,h,i)perylene	0.64	4.9		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.19	J	1	0.25	U	1
benzo(k)fluoranthene	0.8	4.9		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.2	J	1	0.25	U	1
benzoic acid	NA	NA		0.78	U	1	0.78	U	1	0.72	U	1	0.75	U	1	0.76	U	1	0.72	U	1
benzyl alcohol	NA	NA		0.39	U	1	0.39	U	1	0.36	U	1	0.38	U	1	0.38	U	1	0.36	U	1
benzyl butyl phthalate	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
bis(2-chloroethoxy)methane	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
bis(2-chloroethyl)ether	NA	NA		0.39	U	1	0.39	U	1	0.36	U	1	0.38	U	1	0.38	U	1	0.36	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
caprolactam	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
carbazole	NA	NA		0.39	U	1	0.39	U	1	0.36	U	1	0.38	U	1	0.38	U	1	0.36	U	1
chrysene	1	4.9		0.19	J	1	0.22	J	1	0.25	U	1	0.26	U	1	0.38		1	0.25	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.19	U	1	0.19	U	1	0.18	U	1	0.19	U	1	0.19	U	1	0.18	U	1
dibenzofuran	2.1	18		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
diethyl phthalate	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
dimethyl phthalate	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
di-n-butyl phthalate	NA	NA		0.78	U	1	0.78	U	1	0.72	U	1	0.75	U	1	0.76	U	1	0.72	U	1
di-n-octyl phthalate	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
fluoranthene	85	100		0.29		1	0.4		1	0.25	U	1	0.26	U	1	0.77		1	0.25	U	1
fluorene	30	100		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
hexachlorobenzene	0.33	0.33		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
hexachlorobutadiene	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
hexachlorocyclopentadiene	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
hexachloroethane	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.2	J	1	0.25	U	1
isophorone	NA	NA		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
naphthalene	12	100		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.39	U	1	0.39	U	1	0.36	U	1	0.38	U	1	0.38	U	1	0.36	U	1
n-nitroso-di-n-propylamine	NA	NA		0.19	U	1	0.19	U	1	0.18	U	1	0.19	U	1	0.19	U	1	0.18	U	1
n-nitrosodiphenylamine	NA	NA		0.39	U	1	0.39	U	1	0.36	U	1	0.38	U	1	0.38	U	1	0.36	U	1
pentachlorophenol	0.8	1.3		0.39	U	1	0.39	U	1	0.36	U	1	0.38	U	1	0.38	U	1	0.36	U	1
phenanthrene	1.1	4.9		0.21	J	1	0.3		1	0.25	U	1	0.26	U	1	0.57		1	0.25	U	1
phenol	0.33	100		0.27	U	1	0.27	U	1	0.25	U	1	0.26	U	1	0.27	U	1	0.25	U	1
pyrene	64	100		0.27		1	0.36		1	0.25	U	1	0.26	U	1	0.65		1	0.25	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-13 7-9			SB-13 20-22			SB-13 22-23			SB-13 23-25			SB-14 SURF			SB-14 0-2		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
1,2,4-trichlorobenzene	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
1,2-dichlorobenzene	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.44	U	1	0.37	U	1	0.37	U	1	0.42	U	1	0.4	U	1	0.39	U	1
1,3-dichlorobenzene	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
1,4-dichlorobenzene	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
1,4-dioxane	0.1	5.7		0.085	U	1	0.075	U	1	0.073	U	1	0.083	U	1	0.081	U	1	0.076	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2,4,5-trichlorophenol	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2,4,6-trichlorophenol	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2,4-dichlorophenol	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2,4-dimethylphenol	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2,4-dinitrophenol	NA	NA		0.7	U	1	0.59	U	1	0.59	U	1	0.67	U	1	0.64	U	1	0.62	U	1
2,4-dinitrotoluene	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2,6-dinitrotoluene	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2-chloronaphthalene	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2-chlorophenol	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2-methylnaphthalene	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2-Methylphenol (o-cresol)	0.33	100		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
2-nitroaniline	NA	NA		0.7	U	1	0.59	U	1	0.59	U	1	0.67	U	1	0.64	U	1	0.62	U	1
2-nitrophenol	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.52	U	1	0.44	U	1	0.44	U	1	0.51	U	1	0.48	U	1	0.46	U	1
3-nitroaniline	NA	NA		0.7	U	1	0.59	U	1	0.59	U	1	0.67	U	1	0.64	U	1	0.62	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.3	U	1	1.1	U	1	1.1	U	1	1.2	U	1	1.2	U	1	1.1	U	1
4-bromophenyl phenyl ether	NA	NA		0.44	U	1	0.37	U	1	0.37	U	1	0.42	U	1	0.4	U	1	0.39	U	1
4-chloro-3-methylphenol	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
4-chloroaniline	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
4-chlorophenyl phenyl ether	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
4-nitroaniline	NA	NA		0.7	U	1	0.59	U	1	0.59	U	1	0.67	U	1	0.64	U	1	0.62	U	1
4-nitrophenol	NA	NA		1.3	U	1	1.1	U	1	1.1	U	1	1.2	U	1	1.2	U	1	1.1	U	1
acenaphthene	20	100		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
acenaphthylene	100	100		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
acetophenone	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
aniline	0.04	8.1		0.04	U	1	0.037	U	1	0.037	U	1	0.04	U	1	0.04	U	1	0.039	U	1
anthracene	100	100		0.22	J	1	0.26	U	1	0.26	U	1	0.29	U	1	0.15	J	1	0.27	U	1
atrazine	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
benzaldehyde	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
benzidine	NA	NA		0.44	U	1	0.37	U	1	0.37	U	1	0.42	U	1	0.4	U	1	0.39	U	1
benzo(a)anthracene	1	1.4		0.66		1	0.26	U	1	0.26	U	1	0.29	U	1	0.54		1	0.22	J	1
benzo(a)pyrene	1	1		0.53		1	0.26	U	1	0.26	U	1	0.29	U	1	0.46		1	0.26	J	1
benzo(b)fluoranthene	1	1.4		0.72		1	0.26	U	1	0.26	U	1	0.29	U	1	0.74		1	0.32		1
benzo(g,h,i)perylene	0.64	4.9		0.3	J	1	0.26	U	1	0.26	U	1	0.29	U	1	0.26	J	1	0.22	J	1
benzo(k)fluoranthene	0.8	4.9		0.21	J	1	0.26	U	1	0.26	U	1	0.29	U	1	0.26	J	1	0.16	J	1
benzoic acid	NA	NA		0.87	U	1	0.74	U	1	0.73	U	1	0.84	U	1	0.81	U	1	0.77	U	1
benzyl alcohol	NA	NA		0.44	U	1	0.37	U	1	0.37	U	1	0.42	U	1	0.4	U	1	0.39	U	1
benzyl butyl phthalate	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
bis(2-chloroethoxy)methane	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
bis(2-chloroethyl)ether	NA	NA		0.44	U	1	0.37	U	1	0.37	U	1	0.42	U	1	0.4	U	1	0.39	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
caprolactam	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
carbazole	NA	NA		0.44	U	1	0.37	U	1	0.37	U	1	0.42	U	1	0.4	U	1	0.39	U	1
chrysene	1	4.9		0.55		1	0.26	U	1	0.26	U	1	0.29	U	1	0.53		1	0.27		1
dibenzo(a,h)anthracene	0.33	0.33		0.22	U	1	0.18	U	1	0.18	U	1	0.21	U	1	0.2	U	1	0.19	U	1
dibenzofuran	2.1	18		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
diethyl phthalate	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
dimethyl phthalate	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
di-n-butyl phthalate	NA	NA		0.87	U	1	0.74	U	1	0.73	U	1	0.84	U	1	0.81	U	1	0.77	U	1
di-n-octyl phthalate	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
fluoranthene	85	100		1.2		1	0.26	U	1	0.26	U	1	0.29	U	1	1.1		1	0.6		1
fluorene	30	100		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
hexachlorobenzene	0.33	0.33		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
hexachlorobutadiene	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
hexachlorocyclopentadiene	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
hexachloroethane	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.31		1	0.26	U	1	0.26	U	1	0.29	U	1	0.27	J	1	0.21	J	1
isophorone	NA	NA		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
naphthalene	12	100		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.44	U	1	0.37	U	1	0.37	U	1	0.42	U	1	0.4	U	1	0.39	U	1
n-nitroso-di-n-propylamine	NA	NA		0.22	U	1	0.18	U	1	0.18	U	1	0.21	U	1	0.2	U	1	0.19	U	1
n-nitrosodiphenylamine	NA	NA		0.44	U	1	0.37	U	1	0.37	U	1	0.42	U	1	0.4	U	1	0.39	U	1
pentachlorophenol	0.8	1.3		0.44	U	1	0.37	U	1	0.37	U	1	0.42	U	1	0.4	U	1	0.39	U	1
phenanthrene	1.1	4.9		0.94		1	0.26	U	1	0.26	U	1	0.29	U	1	0.78		1	0.52		1
phenol	0.33	100		0.31	U	1	0.26	U	1	0.26	U	1	0.29	U	1	0.28	U	1	0.27	U	1
pyrene	64	100		1		1	0.26	U	1	0.26	U	1	0.29	U	1	0.93		1	0.51		1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-14 21-23			DUP-20260403			SB-14 23-25			SB-15 SURF			SB-15 0-2			SB-15 11-13		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.39		1	0.27	U	1	0.25	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.37	U	1	0.36	U	1	0.36	U	1	0.4	U	1	0.38	U	1	0.36	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
1,4-dioxane	0.1	5.7		0.072	U	1	0.071	U	1	0.1	U	1	0.081	U	1	0.076	U	1	0.071	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.096	J	1	0.27	U	1	0.25	U	1
2,4-dinitrophenol	NA	NA		0.58	U	1	0.58	U	1	0.58	U	1	0.64	U	1	0.61	U	1	0.58	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	1.7		1	0.26	J	1	0.25	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.25	U	1	0.25	U	1	0.091	J	1	0.27	U	1	0.25	U	1
2-nitroaniline	NA	NA		0.58	U	1	0.58	U	1	0.58	U	1	0.64	U	1	0.61	U	1	0.58	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.23	J	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.44	U	1	0.44	U	1	0.44	U	1	0.48	U	1	0.46	U	1	0.43	U	1
3-nitroaniline	NA	NA		0.58	U	1	0.58	U	1	0.58	U	1	0.64	U	1	0.61	U	1	0.58	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1.1	U	1	1.1	U	1	1.2	U	1	1.1	U	1	1	U	1
4-bromophenyl phenyl ether	NA	NA		0.37	U	1	0.36	U	1	0.36	U	1	0.4	U	1	0.38	U	1	0.36	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
4-nitroaniline	NA	NA		0.58	U	1	0.58	U	1	0.58	U	1	0.64	U	1	0.61	U	1	0.58	U	1
4-nitrophenol	NA	NA		1.1	U	1	1.1	U	1	1.1	U	1	1.2	U	1	1.1	U	1	1	U	1
acenaphthene	20	100		0.26	U	1	0.25	U	1	0.25	U	1	4		1	0.72		1	0.25	U	1
acenaphthylene	100	100		0.26	U	1	0.25	U	1	0.25	U	1	0.94		1	0.54		1	0.25	U	1
acetophenone	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
aniline	0.04	8.1		0.037	U	1	0.04	U	1	0.036	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.26	U	1	0.25	U	1	0.25	U	1	4.3		1	1.8		1	0.25	U	1
atrazine	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
benzaldehyde	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
benzidine	NA	NA		0.37	U	1	0.36	U	1	0.36	U	1	0.4	U	1	0.38	U	1	0.36	U	1
benzo(a)anthracene	1	1.4		0.26	U	1	0.25	U	1	0.25	U	1	32		5	5.5		1	0.25	U	1
benzo(a)pyrene	1	1		0.26	U	1	0.25	U	1	0.25	U	1	28		5	4.4		1	0.25	U	1
benzo(b)fluoranthene	1	1.4		0.26	U	1	0.25	U	1	0.25	U	1	35		25	6.2		1	0.25	U	1
benzo(g,h,i)perylene	0.64	4.9		0.26	U	1	0.25	U	1	0.25	U	1	12		5	2.2		1	0.25	U	1
benzo(k)fluoranthene	0.8	4.9		0.26	U	1	0.25	U	1	0.25	U	1	11		5	2		1	0.25	U	1
benzoic acid	NA	NA		0.73	U	1	0.73	U	1	0.73	U	1	0.17	J	1	0.76	U	1	0.72	U	1
benzyl alcohol	NA	NA		0.37	U	1	0.36	U	1	0.36	U	1	0.4	U	1	0.38	U	1	0.36	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
bis(2-chloroethyl)ether	NA	NA		0.37	U	1	0.36	U	1	0.36	U	1	0.4	U	1	0.38	U	1	0.36	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
caprolactam	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
carbazole	NA	NA		0.37	U	1	0.36	U	1	0.36	U	1	3.9		1	1.2		1	0.36	U	1
chrysene	1	4.9		0.26	U	1	0.25	U	1	0.25	U	1	30		5	5.2		1	0.25	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.18	U	1	0.18	U	1	4.5		1	0.81		1	0.18	U	1
dibenzofuran	2.1	18		0.26	U	1	0.25	U	1	0.25	U	1	2.8		1	0.57		1	0.25	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
di-n-butyl phthalate	NA	NA		0.73	U	1	0.73	U	1	0.73	U	1	0.81	U	1	0.76	U	1	0.72	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.19	J	1	0.28	U	1	0.27	U	1	0.25	U	1
fluoranthene	85	100		0.26	U	1	0.25	U	1	0.25	U	1	54		25	10		5	0.25	U	1
fluorene	30	100		0.26	U	1	0.25	U	1	0.25	U	1	3.7		1	0.97		1	0.25	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
hexachloroethane	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.26	U	1	0.25	U	1	0.25	U	1	15		5	2.6		1	0.25	U	1
isophorone	NA	NA		0.26	U	1	0.25	U	1	0.25	U	1	0.28	U	1	0.27	U	1	0.25	U	1
naphthalene	12	100		0.26	U	1	0.25	U	1	0.25	U	1	2.6		1	0.4		1	0.25	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.37	U	1	0.36	U	1	0.36	U	1	0.4	U	1	0.38	U	1	0.36	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.18	U	1	0.18	U	1	0.2	U	1	0.19	U	1	0.18	U	1
n-nitrosodiphenylamine	NA	NA		0.37	U	1	0.36	U	1	0.36	U	1	0.4	U	1	0.38	U	1	0.36	U	1
pentachlorophenol	0.8	1.3		0.37	U	1	0.36	U	1	0.36	U	1	0.4	U	1	0.38	U	1	0.36	U	1
phenanthrene	1.1	4.9		0.26	U	1	0.25	U	1	0.25	U	1	48		25	8.7		5	0.25	U	1
phenol	0.33	100		0.26	U	1	0.25	U	1	0.25	U	1	0.74		1	0.27	U	1	0.25	U	1
pyrene	64	100		0.26	U	1	0.25	U	1	0.25	U	1	38		25	7.4		5	0.25	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-15 22-24			SB-15 24-25			SB-16 SURF			SB-16 0-1			SB-16 1-2			SB-16 18-20		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
1,2,4-trichlorobenzene	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
1,2-dichlorobenzene	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.84	U	1	0.36	U	1	0.4	U	1	0.4	U	1	0.37	U	1	0.35	U	1
1,3-dichlorobenzene	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
1,4-dichlorobenzene	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
1,4-dioxane	0.1	5.7		0.079	U	1	0.073	U	1	0.081	U	1	0.08	U	1	0.075	U	1	0.069	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2,4,5-trichlorophenol	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2,4,6-trichlorophenol	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2,4-dichlorophenol	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2,4-dimethylphenol	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2,4-dinitrophenol	NA	NA		1.3	U	1	0.58	U	1	0.64	U	1	0.65	U	1	0.59	U	1	0.57	U	1
2,4-dinitrotoluene	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2,6-dinitrotoluene	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2-chloronaphthalene	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2-chlorophenol	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2-methylnaphthalene	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2-Methylphenol (o-cresol)	0.33	100		0.33	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
2-nitroaniline	NA	NA		1.3	U	1	0.58	U	1	0.64	U	1	0.65	U	1	0.59	U	1	0.57	U	1
2-nitrophenol	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		1	U	1	0.44	U	1	0.48	U	1	0.49	U	1	0.44	U	1	0.42	U	1
3-nitroaniline	NA	NA		1.3	U	1	0.58	U	1	0.64	U	1	0.65	U	1	0.59	U	1	0.57	U	1
4,6-dinitro-2-methylphenol	NA	NA		2.4	U	1	1.1	U	1	1.2	U	1	1.2	U	1	1.1	U	1	1	U	1
4-bromophenyl phenyl ether	NA	NA		0.84	U	1	0.36	U	1	0.4	U	1	0.4	U	1	0.37	U	1	0.35	U	1
4-chloro-3-methylphenol	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
4-chloroaniline	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
4-chlorophenyl phenyl ether	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
4-nitroaniline	NA	NA		1.3	U	1	0.58	U	1	0.64	U	1	0.65	U	1	0.59	U	1	0.57	U	1
4-nitrophenol	NA	NA		2.4	U	1	1.1	U	1	1.2	U	1	1.2	U	1	1.1	U	1	1	U	1
acenaphthene	20	100		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
acenaphthylene	100	100		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
acetophenone	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
atrazine	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
benzaldehyde	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
benzidine	NA	NA		0.84	U	1	0.36	U	1	0.4	U	1	0.4	U	1	0.37	U	1	0.35	U	1
benzo(a)anthracene	1	1.4		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.14	J	1	0.25	U	1
benzo(a)pyrene	1	1		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.12	J	1	0.25	U	1
benzo(b)fluoranthene	1	1.4		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.18	J	1	0.25	U	1
benzo(g,h,i)perylene	0.64	4.9		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
benzo(k)fluoranthene	0.8	4.9		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
benzoic acid	NA	NA		1.7	U	1	0.73	U	1	0.8	U	1	0.81	U	1	0.73	U	1	0.71	U	1
benzyl alcohol	NA	NA		0.84	U	1	0.36	U	1	0.4	U	1	0.4	U	1	0.37	U	1	0.35	U	1
benzyl butyl phthalate	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
bis(2-chloroethoxy)methane	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
bis(2-chloroethyl)ether	NA	NA		0.84	U	1	0.36	U	1	0.4	U	1	0.4	U	1	0.37	U	1	0.35	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
caprolactam	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
carbazole	NA	NA		0.84	U	1	0.36	U	1	0.4	U	1	0.4	U	1	0.37	U	1	0.35	U	1
chrysene	1	4.9		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.19	J	1	0.25	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.33	U	1	0.18	U	1	0.2	U	1	0.2	U	1	0.18	U	1	0.18	U	1
dibenzofuran	2.1	18		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
diethyl phthalate	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
dimethyl phthalate	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
di-n-butyl phthalate	NA	NA		1.7	U	1	0.73	U	1	0.8	U	1	0.81	U	1	0.73	U	1	0.71	U	1
di-n-octyl phthalate	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
fluoranthene	85	100		0.59	U	1	0.25	U	1	0.19	J	1	0.28	U	1	0.3		1	0.25	U	1
fluorene	30	100		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
hexachlorobenzene	0.33	0.33		0.33	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
hexachlorobutadiene	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
hexachlorocyclopentadiene	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
hexachloroethane	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.5	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
isophorone	NA	NA		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
naphthalene	12	100		0.59	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.84	U	1	0.36	U	1	0.4	U	1	0.4	U	1	0.37	U	1	0.35	U	1
n-nitroso-di-n-propylamine	NA	NA		0.42	U	1	0.18	U	1	0.2	U	1	0.2	U	1	0.18	U	1	0.18	U	1
n-nitrosodiphenylamine	NA	NA		0.84	U	1	0.36	U	1	0.4	U	1	0.4	U	1	0.37	U	1	0.35	U	1
pentachlorophenol	0.8	1.3		0.8	U	1	0.36	U	1	0.4	U	1	0.4	U	1	0.37	U	1	0.35	U	1
phenanthrene	1.1	4.9		0.59	U	1	0.25	U	1	0.12	J	1	0.28	U	1	0.25	J	1	0.25	U	1
phenol	0.33	100		0.33	U	1	0.25	U	1	0.28	U	1	0.28	U	1	0.26	U	1	0.25	U	1
pyrene	64	100		0.59	U	1	0.25	U	1	0.16	J	1	0.28	U	1	0.26		1	0.25	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-16 23-25			SB-16 43-45			SB-17 SURF			SB-17 5-7			SB-17 23-25			SB-17A SURF		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-06		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.12	J	1	0.25	U	1	0.26	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
1,2,4-trichlorobenzene	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
1,2-dichlorobenzene	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.39	U	1	0.37	U	1	0.45	U	1	0.38	U	1	0.35	U	1	0.37	U	1
1,3-dichlorobenzene	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
1,4-dichlorobenzene	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
1,4-dioxane	0.1	5.7		0.077	U	1	0.075	U	1	0.092	U	1	0.076	U	1	0.072	U	1	0.076	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
2,4,5-trichlorophenol	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
2,4,6-trichlorophenol	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
2,4-dichlorophenol	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
2,4-dimethylphenol	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.094	J	1	0.25	U	1	0.26	U	1
2,4-dinitrophenol	NA	NA		0.62	U	1	0.6	U	1	0.72	U	1	0.61	U	1	0.57	U	1	0.6	U	1
2,4-dinitrotoluene	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
2,6-dinitrotoluene	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
2-chloronaphthalene	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
2-chlorophenol	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
2-methylnaphthalene	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.34		1	0.25	U	1	0.26	U	1
2-Methylphenol (o-cresol)	0.33	100		0.27	U	1	0.26	U	1	0.19	J	1	0.27	U	1	0.25	U	1	0.26	U	1
2-nitroaniline	NA	NA		0.62	U	1	0.6	U	1	0.72	U	1	0.61	U	1	0.57	U	1	0.6	U	1
2-nitrophenol	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.3	J	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.47	U	1	0.45	U	1	0.54	U	1	0.46	U	1	0.42	U	1	0.45	U	1
3-nitroaniline	NA	NA		0.62	U	1	0.6	U	1	0.72	U	1	0.61	U	1	0.57	U	1	0.6	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1.1	U	1	1.3	U	1	1.1	U	1	1	U	1	1.1	U	1
4-bromophenyl phenyl ether	NA	NA		0.39	U	1	0.37	U	1	0.45	U	1	0.38	U	1	0.35	U	1	0.37	U	1
4-chloro-3-methylphenol	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
4-chloroaniline	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
4-chlorophenyl phenyl ether	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
4-nitroaniline	NA	NA		0.62	U	1	0.6	U	1	0.72	U	1	0.61	U	1	0.57	U	1	0.6	U	1
4-nitrophenol	NA	NA		1.1	U	1	1.1	U	1	1.3	U	1	1.1	U	1	1	U	1	1.1	U	1
acenaphthene	20	100		0.27	U	1	0.26	U	1	0.23	J	1	0.38		1	0.25	U	1	0.26	U	1
acenaphthylene	100	100		0.27	U	1	0.26	U	1	0.2	J	1	5.6		1	0.25	U	1	0.26	U	1
acetophenone	NA	NA		0.27	U	1	0.26	U	1	0.54	U	1	0.27	U	1	0.25	U	1	0.26	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.27	U	1	0.26	U	1	0.64		1	3		1	0.25	U	1	0.26	U	1
atrazine	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
benzaldehyde	NA	NA		0.27	U	1	0.26	U	1	0.73		1	0.27	U	1	0.25	U	1	0.26	U	1
benzidine	NA	NA		0.39	U	1	0.37	U	1	0.45	U	1	0.38	U	1	0.35	U	1	0.37	U	1
benzo(a)anthracene	1	1.4		0.27	U	1	0.26	U	1	2.8		1	16		5	0.25	U	1	0.14	J	1
benzo(a)pyrene	1	1		0.27	U	1	0.26	U	1	3		1	18		5	0.25	U	1	0.14	J	1
benzo(b)fluoranthene	1	1.4		0.27	U	1	0.26	U	1	4		1	25		5	0.25	U	1	0.19	J	1
benzo(g,h,i)perylene	0.64	4.9		0.27	U	1	0.26	U	1	2		1	9.8		5	0.25	U	1	0.26	U	1
benzo(k)fluoranthene	0.8	4.9		0.27	U	1	0.26	U	1	1.4		1	7.9		5	0.25	U	1	0.26	U	1
benzoic acid	NA	NA		0.78	U	1	0.75	U	1	0.19	J	1	0.77	U	1	0.71	U	1	0.75	U	1
benzyl alcohol	NA	NA		0.39	U	1	0.37	U	1	0.45	U	1	0.38	U	1	0.35	U	1	0.37	U	1
benzyl butyl phthalate	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
bis(2-chloroethoxy)methane	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
bis(2-chloroethyl)ether	NA	NA		0.39	U	1	0.37	U	1	0.45	U	1	0.38	U	1	0.35	U	1	0.37	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
caprolactam	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
carbazole	NA	NA		0.39	U	1	0.37	U	1	0.31	J	1	1.3		1	0.35	U	1	0.37	U	1
chrysene	1	4.9		0.27	U	1	0.26	U	1	2.5		1	6.8		1	0.25	U	1	0.14	J	1
dibenzo(a,h)anthracene	0.33	0.33		0.19	U	1	0.19	U	1	0.55		1	3.2		1	0.18	U	1	0.19	U	1
dibenzofuran	2.1	18		0.27	U	1	0.26	U	1	0.31	U	1	0.62		1	0.25	U	1	0.26	U	1
diethyl phthalate	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
dimethyl phthalate	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
di-n-butyl phthalate	NA	NA		0.78	U	1	0.75	U	1	0.9	U	1	0.77	U	1	0.71	U	1	0.75	U	1
di-n-octyl phthalate	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
fluoranthene	85	100		0.27	U	1	0.26	U	1	5.2		1	30		5	0.25	U	1	0.28		1
fluorene	30	100		0.27	U	1	0.26	U	1	0.19	J	1	0.96		1	0.25	U	1	0.26	U	1
hexachlorobenzene	0.33	0.33		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
hexachlorobutadiene	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
hexachlorocyclopentadiene	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
hexachloroethane	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.27	U	1	0.26	U	1	2.1		1	11		5	0.25	U	1	0.26	U	1
isophorone	NA	NA		0.27	U	1	0.26	U	1	0.31	U	1	0.27	U	1	0.25	U	1	0.26	U	1
naphthalene	12	100		0.27	U	1	0.26	U	1	0.31	U	1	1		1	0.25	U	1	0.26	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.39	U	1	0.37	U	1	0.45	U	1	0.38	U	1	0.35	U	1	0.37	U	1
n-nitroso-di-n-propylamine	NA	NA		0.19	U	1	0.19	U	1	0.22	U	1	0.19	U	1	0.18	U	1	0.19	U	1
n-nitrosodiphenylamine	NA	NA		0.39	U	1	0.37	U	1	0.45	U	1	0.38	U	1	0.35	U	1	0.37	U	1
pentachlorophenol	0.8	1.3		0.39	U	1	0.37	U	1	0.45	U	1	0.38	U	1	0.35	U	1	0.37	U	1
phenanthrene	1.1	4.9		0.27	U	1	0.26	U	1	2.3		1	15		5	0.25	U	1	0.17	J	1
phenol	0.33	100		0.27	U	1	0.26	U	1	0.33	U	1	0.27	U	1	0.25	U	1	0.26	U	1
pyrene	64	100		0.27	U	1	0.26	U	1	4.9		1	27		5	0.25	U	1	0.24	J	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-17A 0-1			SB-17A 1-2			SB-17A 5-7			SB-18 SURF			SB-18 0-1			SB-18 1-2		
U= Not Detected ≥ value			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-06		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.36	U	1	0.36	U	1	0.42	U	1	0.38	U	1	0.39	U	1	0.38	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
1,4-dioxane	0.1	5.7		0.071	U	1	0.072	U	1	0.086	U	1	0.077	U	1	0.077	U	1	0.075	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2,4-dinitrophenol	NA	NA		0.58	U	1	0.57	U	1	0.67	U	1	0.6	U	1	0.62	U	1	0.6	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
2-nitroaniline	NA	NA		0.58	U	1	0.57	U	1	0.67	U	1	0.6	U	1	0.62	U	1	0.6	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.42		1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.44	U	1	0.43	U	1	0.5	U	1	0.45	U	1	0.46	U	1	0.45	U	1
3-nitroaniline	NA	NA		0.58	U	1	0.57	U	1	0.67	U	1	0.6	U	1	0.62	U	1	0.6	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1	U	1	1.2	U	1	1.1	U	1	1.1	U	1	1.1	U	1
4-bromophenyl phenyl ether	NA	NA		0.36	U	1	0.36	U	1	0.42	U	1	0.38	U	1	0.39	U	1	0.38	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
4-nitroaniline	NA	NA		0.58	U	1	0.57	U	1	0.67	U	1	0.6	U	1	0.62	U	1	0.6	U	1
4-nitrophenol	NA	NA		1.1	U	1	1	U	1	1.2	U	1	1.1	U	1	1.1	U	1	1.1	U	1
acenaphthene	20	100		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.12	J	1	0.26	U	1
acenaphthylene	100	100		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
acetophenone	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.2	J	1	0.26	U	1
atrazine	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
benzaldehyde	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
benzidine	NA	NA		0.36	U	1	0.36	U	1	0.42	U	1	0.38	U	1	0.39	U	1	0.38	U	1
benzo(a)anthracene	1	1.4		0.13	J	1	0.25	U	1	0.35		1	0.22	J	1	0.59		1	0.33		1
benzo(a)pyrene	1	1		0.26	U	1	0.25	U	1	0.39		1	0.22	J	1	0.52		1	0.32		1
benzo(b)fluoranthene	1	1.4		0.16	J	1	0.25	U	1	0.5		1	0.31		1	0.74		1	0.45		1
benzo(g,h,i)perylene	0.64	4.9		0.26	U	1	0.25	U	1	0.22	J	1	0.15	J	1	0.29		1	0.22	J	1
benzo(k)fluoranthene	0.8	4.9		0.26	U	1	0.25	U	1	0.2	J	1	0.26	U	1	0.3		1	0.15	J	1
benzoic acid	NA	NA		0.73	U	1	0.72	U	1	0.17	J	1	0.75	U	1	0.77	U	1	0.75	U	1
benzyl alcohol	NA	NA		0.36	U	1	0.36	U	1	0.42	U	1	0.38	U	1	0.39	U	1	0.38	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
bis(2-chloroethyl)ether	NA	NA		0.36	U	1	0.36	U	1	0.42	U	1	0.38	U	1	0.39	U	1	0.38	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
caprolactam	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
carbazole	NA	NA		0.36	U	1	0.36	U	1	0.42	U	1	0.38	U	1	0.39	U	1	0.38	U	1
chrysene	1	4.9		0.26	U	1	0.25	U	1	0.39		1	0.28		1	0.68		1	0.35		1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.18	U	1	0.21	U	1	0.19	U	1	0.19	U	1	0.19	U	1
dibenzofuran	2.1	18		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
di-n-butyl phthalate	NA	NA		0.73	U	1	0.72	U	1	0.84	U	1	0.75	U	1	0.77	U	1	0.75	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
fluoranthene	85	100		0.23	J	1	0.12	J	1	0.64		1	0.45		1	1.3		1	0.69		1
fluorene	30	100		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
hexachloroethane	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.26	U	1	0.25	U	1	0.24	J	1	0.15	J	1	0.31		1	0.22	J	1
isophorone	NA	NA		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
naphthalene	12	100		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.36	U	1	0.36	U	1	0.42	U	1	0.38	U	1	0.39	U	1	0.38	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.18	U	1	0.21	U	1	0.19	U	1	0.19	U	1	0.19	U	1
n-nitrosodiphenylamine	NA	NA		0.36	U	1	0.36	U	1	0.42	U	1	0.38	U	1	0.39	U	1	0.38	U	1
pentachlorophenol	0.8	1.3		0.36	U	1	0.36	U	1	0.42	U	1	0.38	U	1	0.39	U	1	0.38	U	1
phenanthrene	1.1	4.9		0.15	J	1	0.25	U	1	0.42		1	0.28		1	0.94		1	0.34		1
phenol	0.33	100		0.26	U	1	0.25	U	1	0.29	U	1	0.26	U	1	0.27	U	1	0.26	U	1
pyrene	64	100		0.2	J	1	0.25	U	1	0.55		1	0.4		1	1.1		1	0.58		1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	DUP-20260406			SB-18 12-14			SB-18 23-25			SB-18 45-47			SB-19 SURF			SB-19 0-2		
U= Not Detected ≥ value			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-07			2026-04-07		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.37	U	1	0.35	U	1	0.77	U	1	0.37	U	1	0.41	U	1	0.39	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
1,4-dioxane	0.1	5.7		0.075	U	1	0.07	U	1	0.091	U	1	0.074	U	1	0.082	U	1	0.077	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2,4-dinitrophenol	NA	NA		0.58	U	1	0.56	U	1	1.2	U	1	0.59	U	1	0.66	U	1	0.62	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.25	U	1	0.33	U	1	0.26	U	1	0.29	U	1	0.27	U	1
2-nitroaniline	NA	NA		0.58	U	1	0.56	U	1	1.2	U	1	0.59	U	1	0.66	U	1	0.62	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.44	U	1	0.42	U	1	0.92	U	1	0.44	U	1	0.5	U	1	0.46	U	1
3-nitroaniline	NA	NA		0.58	U	1	0.56	U	1	1.2	U	1	0.59	U	1	0.66	U	1	0.62	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1	U	1	2.2	U	1	1.1	U	1	1.2	U	1	1.1	U	1
4-bromophenyl phenyl ether	NA	NA		0.37	U	1	0.35	U	1	0.77	U	1	0.37	U	1	0.41	U	1	0.39	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
4-nitroaniline	NA	NA		0.58	U	1	0.56	U	1	1.2	U	1	0.59	U	1	0.66	U	1	0.62	U	1
4-nitrophenol	NA	NA		1.1	U	1	1	U	1	2.2	U	1	1.1	U	1	1.2	U	1	1.1	U	1
acenaphthene	20	100		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
acenaphthylene	100	100		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
acetophenone	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.039	U	1
anthracene	100	100		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.14	J	1	0.27	U	1
atrazine	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
benzaldehyde	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
benzidine	NA	NA		0.37	U	1	0.35	U	1	0.77	U	1	0.37	U	1	0.41	U	1	0.39	U	1
benzo(a)anthracene	1	1.4		0.28		1	0.25	U	1	0.54	U	1	0.26	U	1	0.6		1	0.37		1
benzo(a)pyrene	1	1		0.27		1	0.25	U	1	0.54	U	1	0.26	U	1	0.59		1	0.33		1
benzo(b)fluoranthene	1	1.4		0.36		1	0.25	U	1	0.54	U	1	0.13	J	1	0.75		1	0.44		1
benzo(g,h,i)perylene	0.64	4.9		0.19	J	1	0.25	U	1	0.54	U	1	0.26	U	1	0.31		1	0.18	J	1
benzo(k)fluoranthene	0.8	4.9		0.13	J	1	0.25	U	1	0.54	U	1	0.26	U	1	0.25	J	1	0.15	J	1
benzoic acid	NA	NA		0.73	U	1	0.7	U	1	1.5	U	1	0.73	U	1	0.83	U	1	0.77	U	1
benzyl alcohol	NA	NA		0.37	U	1	0.35	U	1	0.77	U	1	0.37	U	1	0.41	U	1	0.39	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
bis(2-chloroethyl)ether	NA	NA		0.37	U	1	0.35	U	1	0.77	U	1	0.37	U	1	0.41	U	1	0.39	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
caprolactam	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
carbazole	NA	NA		0.37	U	1	0.35	U	1	0.77	U	1	0.37	U	1	0.41	U	1	0.39	U	1
chrysene	1	4.9		0.28		1	0.25	U	1	0.54	U	1	0.26	U	1	0.57		1	0.35		1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.18	U	1	0.33	U	1	0.18	U	1	0.21	U	1	0.19	U	1
dibenzofuran	2.1	18		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
di-n-butyl phthalate	NA	NA		0.73	U	1	0.7	U	1	1.5	U	1	0.73	U	1	0.83	U	1	0.77	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
fluoranthene	85	100		0.55		1	0.25	U	1	0.54	U	1	0.16	J	1	1.1		1	0.55		1
fluorene	30	100		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.25	U	1	0.33	U	1	0.26	U	1	0.29	U	1	0.27	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
hexachloroethane	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.19	J	1	0.25	U	1	0.5	U	1	0.26	U	1	0.33		1	0.18	J	1
isophorone	NA	NA		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
naphthalene	12	100		0.26	U	1	0.25	U	1	0.54	U	1	0.26	U	1	0.29	U	1	0.27	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.37	U	1	0.35	U	1	0.77	U	1	0.37	U	1	0.41	U	1	0.39	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.18	U	1	0.38	U	1	0.18	U	1	0.21	U	1	0.19	U	1
n-nitrosodiphenylamine	NA	NA		0.37	U	1	0.35	U	1	0.77	U	1	0.37	U	1	0.41	U	1	0.39	U	1
pentachlorophenol	0.8	1.3		0.37	U	1	0.35	U	1	0.77	U	1	0.37	U	1	0.41	U	1	0.39	U	1
phenanthrene	1.1	4.9		0.31		1	0.25	U	1	0.54	U	1	0.26	U	1	0.58		1	0.27	J	1
phenol	0.33	100		0.26	U	1	0.25	U	1	0.33	U	1	0.26	U	1	0.29	U	1	0.27	U	1
pyrene	64	100		0.45		1	0.25	U	1	0.54	U	1	0.13	J	1	1		1	0.6		1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-19 4-5			SB-19 18-20			SB-19 23-25			SB-20 SURF			SB-20 0-2			SB-20 18-20		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.37	U	1	0.34	U	1	0.38	U	1	0.36	U	1	0.36	U	1	0.35	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
1,4-dioxane	0.1	5.7		0.074	U	1	0.069	U	1	0.077	U	1	0.073	U	1	0.074	U	1	0.07	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2,4-dinitrophenol	NA	NA		0.59	U	1	0.55	U	1	0.6	U	1	0.57	U	1	0.58	U	1	0.56	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
2-nitroaniline	NA	NA		0.59	U	1	0.55	U	1	0.6	U	1	0.57	U	1	0.58	U	1	0.56	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.44	U	1	0.41	U	1	0.45	U	1	0.43	U	1	0.44	U	1	0.42	U	1
3-nitroaniline	NA	NA		0.59	U	1	0.55	U	1	0.6	U	1	0.57	U	1	0.58	U	1	0.56	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	0.99	U	1	1.1	U	1	1	U	1	1.1	U	1	1	U	1
4-bromophenyl phenyl ether	NA	NA		0.37	U	1	0.34	U	1	0.38	U	1	0.36	U	1	0.36	U	1	0.35	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
4-nitroaniline	NA	NA		0.59	U	1	0.55	U	1	0.6	U	1	0.57	U	1	0.58	U	1	0.56	U	1
4-nitrophenol	NA	NA		1.1	U	1	0.99	U	1	1.1	U	1	1	U	1	1.1	U	1	1	U	1
acenaphthene	20	100		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
acenaphthylene	100	100		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
acetophenone	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
aniline	0.04	8.1		0.04	U	1	0.034	U	1	0.038	U	1	0.036	U	1	0.036	U	1	0.035	U	1
anthracene	100	100		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
atrazine	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
benzaldehyde	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
benzidine	NA	NA		0.37	U	1	0.34	U	1	0.38	U	1	0.36	U	1	0.36	U	1	0.35	U	1
benzo(a)anthracene	1	1.4		0.17	J	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
benzo(a)pyrene	1	1		0.13	J	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
benzo(b)fluoranthene	1	1.4		0.25	J	1	0.24	U	1	0.26	U	1	0.25	U	1	0.15	J	1	0.24	U	1
benzo(g,h,i)perylene	0.64	4.9		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
benzo(k)fluoranthene	0.8	4.9		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
benzoic acid	NA	NA		0.73	U	1	0.69	U	1	0.75	U	1	0.72	U	1	0.73	U	1	0.7	U	1
benzyl alcohol	NA	NA		0.37	U	1	0.34	U	1	0.38	U	1	0.36	U	1	0.36	U	1	0.35	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
bis(2-chloroethyl)ether	NA	NA		0.37	U	1	0.34	U	1	0.38	U	1	0.36	U	1	0.36	U	1	0.35	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
caprolactam	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
carbazole	NA	NA		0.37	U	1	0.34	U	1	0.38	U	1	0.36	U	1	0.36	U	1	0.35	U	1
chrysene	1	4.9		0.31		1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.17	U	1	0.19	U	1	0.18	U	1	0.18	U	1	0.17	U	1
dibenzofuran	2.1	18		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
di-n-butyl phthalate	NA	NA		0.73	U	1	0.69	U	1	0.75	U	1	0.72	U	1	0.73	U	1	0.7	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
fluoranthene	85	100		0.21	J	1	0.24	U	1	0.26	U	1	0.12	J	1	0.34		1	0.24	U	1
fluorene	30	100		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
hexachloroethane	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
isophorone	NA	NA		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
naphthalene	12	100		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.37	U	1	0.34	U	1	0.38	U	1	0.36	U	1	0.36	U	1	0.35	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.17	U	1	0.19	U	1	0.18	U	1	0.18	U	1	0.17	U	1
n-nitrosodiphenylamine	NA	NA		0.37	U	1	0.34	U	1	0.38	U	1	0.36	U	1	0.36	U	1	0.35	U	1
pentachlorophenol	0.8	1.3		0.37	U	1	0.34	U	1	0.38	U	1	0.36	U	1	0.36	U	1	0.35	U	1
phenanthrene	1.1	4.9		0.12	J	1	0.24	U	1	0.26	U	1	0.25	U	1	0.28		1	0.24	U	1
phenol	0.33	100		0.26	U	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26	U	1	0.24	U	1
pyrene	64	100		0.2	J	1	0.24	U	1	0.26	U	1	0.25	U	1	0.26		1	0.24	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-20 21-23			DUP-20260407			SB-21 SURF			SB-21 0-2			SB-21 18-20			SB-21 23-25		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.37	U	1	0.37	U	1	0.38	U	1	0.39	U	1	0.34	U	1	0.35	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
1,4-dioxane	0.1	5.7		0.073	U	1	0.072	U	1	0.077	U	1	0.077	U	1	0.067	U	1	0.069	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2,4-dinitrophenol	NA	NA		0.59	U	1	0.59	U	1	0.61	U	1	0.63	U	1	0.54	U	1	0.56	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
2-nitroaniline	NA	NA		0.59	U	1	0.59	U	1	0.61	U	1	0.63	U	1	0.54	U	1	0.56	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.44	U	1	0.44	U	1	0.46	U	1	0.47	U	1	0.4	U	1	0.42	U	1
3-nitroaniline	NA	NA		0.59	U	1	0.59	U	1	0.61	U	1	0.63	U	1	0.54	U	1	0.56	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1	0.98	U	1	1	U	1
4-bromophenyl phenyl ether	NA	NA		0.37	U	1	0.37	U	1	0.38	U	1	0.39	U	1	0.34	U	1	0.35	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
4-nitroaniline	NA	NA		0.59	U	1	0.59	U	1	0.61	U	1	0.63	U	1	0.54	U	1	0.56	U	1
4-nitrophenol	NA	NA		1.1	U	1	1.1	U	1	1.1	U	1	1.1	U	1	0.98	U	1	1	U	1
acenaphthene	20	100		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
acenaphthylene	100	100		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
acetophenone	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
aniline	0.04	8.1		0.037	U	1	0.04	U	1	0.038	U	1	0.039	U	1	0.034	U	1	0.035	U	1
anthracene	100	100		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
atrazine	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
benzaldehyde	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
benzidine	NA	NA		0.37	U	1	0.37	U	1	0.38	U	1	0.39	U	1	0.34	U	1	0.35	U	1
benzo(a)anthracene	1	1.4		0.26	U	1	0.26	U	1	0.33		1	0.21	J	1	0.24	U	1	0.24	U	1
benzo(a)pyrene	1	1		0.26	U	1	0.26	U	1	0.34		1	0.23	J	1	0.24	U	1	0.24	U	1
benzo(b)fluoranthene	1	1.4		0.26	U	1	0.26	U	1	0.41		1	0.3		1	0.24	U	1	0.24	U	1
benzo(g,h,i)perylene	0.64	4.9		0.26	U	1	0.26	U	1	0.31		1	0.15	J	1	0.24	U	1	0.24	U	1
benzo(k)fluoranthene	0.8	4.9		0.26	U	1	0.26	U	1	0.14	J	1	0.27	U	1	0.24	U	1	0.24	U	1
benzoic acid	NA	NA		0.73	U	1	0.74	U	1	0.77	U	1	0.78	U	1	0.67	U	1	0.7	U	1
benzyl alcohol	NA	NA		0.37	U	1	0.37	U	1	0.38	U	1	0.39	U	1	0.34	U	1	0.35	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
bis(2-chloroethyl)ether	NA	NA		0.37	U	1	0.37	U	1	0.38	U	1	0.39	U	1	0.34	U	1	0.35	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
caprolactam	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
carbazole	NA	NA		0.37	U	1	0.37	U	1	0.38	U	1	0.39	U	1	0.34	U	1	0.35	U	1
chrysene	1	4.9		0.26	U	1	0.26	U	1	0.27		1	0.18	J	1	0.24	U	1	0.24	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.18	U	1	0.19	U	1	0.2	U	1	0.17	U	1	0.17	U	1
dibenzofuran	2.1	18		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
di-n-butyl phthalate	NA	NA		0.73	U	1	0.74	U	1	0.77	U	1	0.78	U	1	0.67	U	1	0.7	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
fluoranthene	85	100		0.26	U	1	0.26	U	1	0.57		1	0.39		1	0.24	U	1	0.24	U	1
fluorene	30	100		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
hexachloroethane	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.26	U	1	0.26	U	1	0.27		1	0.16	J	1	0.24	U	1	0.24	U	1
isophorone	NA	NA		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
naphthalene	12	100		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.37	U	1	0.37	U	1	0.38	U	1	0.39	U	1	0.34	U	1	0.35	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.18	U	1	0.19	U	1	0.2	U	1	0.17	U	1	0.17	U	1
n-nitrosodiphenylamine	NA	NA		0.37	U	1	0.37	U	1	0.38	U	1	0.39	U	1	0.34	U	1	0.35	U	1
pentachlorophenol	0.8	1.3		0.37	U	1	0.37	U	1	0.38	U	1	0.39	U	1	0.34	U	1	0.35	U	1
phenanthrene	1.1	4.9		0.26	U	1	0.26	U	1	0.25	J	1	0.2	J	1	0.24	U	1	0.24	U	1
phenol	0.33	100		0.26	U	1	0.26	U	1	0.27	U	1	0.27	U	1	0.24	U	1	0.24	U	1
pyrene	64	100		0.26	U	1	0.26	U	1	0.51		1	0.32		1	0.24	U	1	0.24	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-22 SURF			SB-22 0-2			SB-22 2-3			SB-22 13-15			SB-22 25-27			SB-23 SURF		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.34	U	1	0.36	U	1	0.37	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
1,4-dioxane	0.1	5.7		0.075	U	1	0.068	U	1	0.07	U	1	0.069	U	1	0.071	U	1	0.074	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2,4-dinitrophenol	NA	NA		0.59	U	1	0.54	U	1	0.56	U	1	0.55	U	1	0.58	U	1	0.59	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
2-nitroaniline	NA	NA		0.59	U	1	0.54	U	1	0.56	U	1	0.55	U	1	0.58	U	1	0.59	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.44	U	1	0.41	U	1	0.42	U	1	0.41	U	1	0.43	U	1	0.44	U	1
3-nitroaniline	NA	NA		0.59	U	1	0.54	U	1	0.56	U	1	0.55	U	1	0.58	U	1	0.59	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	0.98	U	1	1	U	1	1	U	1	1	U	1	1.1	U	1
4-bromophenyl phenyl ether	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.34	U	1	0.36	U	1	0.37	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
4-nitroaniline	NA	NA		0.59	U	1	0.54	U	1	0.56	U	1	0.55	U	1	0.58	U	1	0.59	U	1
4-nitrophenol	NA	NA		1.1	U	1	0.98	U	1	1	U	1	1	U	1	1	U	1	1.1	U	1
acenaphthene	20	100		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
acenaphthylene	100	100		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
acetophenone	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
aniline	0.04	8.1		0.037	U	1	0.034	U	1	0.035	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
atrazine	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
benzaldehyde	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
benzidine	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.34	U	1	0.36	U	1	0.37	U	1
benzo(a)anthracene	1	1.4		0.42		1	0.14	J	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
benzo(a)pyrene	1	1		0.49		1	0.19	J	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
benzo(b)fluoranthene	1	1.4		0.83		1	0.27		1	0.12	J	1	0.24	U	1	0.25	U	1	0.26	U	1
benzo(g,h,i)perylene	0.64	4.9		0.37		1	0.35		1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
benzo(k)fluoranthene	0.8	4.9		0.28		1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
benzoic acid	NA	NA		0.74	U	1	0.68	U	1	0.7	U	1	0.69	U	1	0.72	U	1	0.74	U	1
benzyl alcohol	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.34	U	1	0.36	U	1	0.37	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
bis(2-chloroethyl)ether	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.34	U	1	0.36	U	1	0.37	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
caprolactam	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
carbazole	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.34	U	1	0.36	U	1	0.37	U	1
chrysene	1	4.9		0.5		1	0.17	J	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	0.17	U	1	0.18	U	1	0.17	U	1	0.18	U	1	0.18	U	1
dibenzofuran	2.1	18		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
di-n-butyl phthalate	NA	NA		0.74	U	1	0.68	U	1	0.7	U	1	0.69	U	1	0.72	U	1	0.74	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
fluoranthene	85	100		1		1	0.23	J	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
fluorene	30	100		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
hexachloroethane	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.36		1	0.12	J	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
isophorone	NA	NA		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
naphthalene	12	100		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.34	U	1	0.36	U	1	0.37	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.17	U	1	0.18	U	1	0.17	U	1	0.18	U	1	0.18	U	1
n-nitrosodiphenylamine	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.34	U	1	0.36	U	1	0.37	U	1
pentachlorophenol	0.8	1.3		0.37	U	1	0.34	U	1	0.35	U	1	0.34	U	1	0.36	U	1	0.37	U	1
phenanthrene	1.1	4.9		0.5		1	0.098	J	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
phenol	0.33	100		0.26	U	1	0.24	U	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1
pyrene	64	100		0.87		1	0.21	J	1	0.25	U	1	0.24	U	1	0.25	U	1	0.26	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-23 0-2			SB-23 2-3			SB-23 15-17			SB-23 24-25			SB-24 SURF			SB-24 0-1		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-08			2026-04-08		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
1,2,4-trichlorobenzene	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
1,2-dichlorobenzene	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.36	U	1	0.39	U	1	0.34	U	1	0.38	U	1	0.54	U	1	0.38	U	1
1,3-dichlorobenzene	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
1,4-dichlorobenzene	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
1,4-dioxane	0.1	5.7		0.069	U	1	0.077	U	1	0.069	U	1	0.074	U	1	0.1	U	1	0.075	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
2,4,5-trichlorophenol	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
2,4,6-trichlorophenol	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
2,4-dichlorophenol	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
2,4-dimethylphenol	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
2,4-dinitrophenol	NA	NA		0.57	U	1	0.63	U	1	0.54	U	1	0.6	U	1	0.86	U	1	0.6	U	1
2,4-dinitrotoluene	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
2,6-dinitrotoluene	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
2-chloronaphthalene	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
2-chlorophenol	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
2-methylnaphthalene	NA	NA		0.25	U	1	0.43		1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
2-Methylphenol (o-cresol)	0.33	100		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.33	U	1	0.26	U	1
2-nitroaniline	NA	NA		0.57	U	1	0.63	U	1	0.54	U	1	0.6	U	1	0.86	U	1	0.6	U	1
2-nitrophenol	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.43	U	1	0.47	U	1	0.41	U	1	0.45	U	1	0.64	U	1	0.45	U	1
3-nitroaniline	NA	NA		0.57	U	1	0.63	U	1	0.54	U	1	0.6	U	1	0.86	U	1	0.6	U	1
4,6-dinitro-2-methylphenol	NA	NA		1	U	1	1.1	U	1	0.99	U	1	1.1	U	1	1.6	U	1	1.1	U	1
4-bromophenyl phenyl ether	NA	NA		0.36	U	1	0.39	U	1	0.34	U	1	0.38	U	1	0.54	U	1	0.38	U	1
4-chloro-3-methylphenol	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
4-chloroaniline	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
4-chlorophenyl phenyl ether	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
4-nitroaniline	NA	NA		0.57	U	1	0.63	U	1	0.54	U	1	0.6	U	1	0.86	U	1	0.6	U	1
4-nitrophenol	NA	NA		1	U	1	1.1	U	1	0.99	U	1	1.1	U	1	1.6	U	1	1.1	U	1
acenaphthene	20	100		0.25	U	1	0.85		1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
acenaphthylene	100	100		0.25	U	1	0.76		1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
acetophenone	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.25	U	1	3		1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
atrazine	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
benzaldehyde	NA	NA		0.25	U	1	0.14	J	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
benzidine	NA	NA		0.36	U	1	0.39	U	1	0.34	U	1	0.38	U	1	0.54	U	1	0.38	U	1
benzo(a)anthracene	1	1.4		0.25	U	1	9.4		5	0.24	U	1	0.26	U	1	0.24	J	1	0.26	J	1
benzo(a)pyrene	1	1		0.25	U	1	10		5	0.24	U	1	0.26	U	1	0.2	J	1	0.21	J	1
benzo(b)fluoranthene	1	1.4		0.25	U	1	14		5	0.24	U	1	0.26	U	1	0.34	J	1	0.32		1
benzo(g,h,i)perylene	0.64	4.9		0.25	U	1	5.4		1	0.24	U	1	0.26	U	1	0.38	U	1	0.13	J	1
benzo(k)fluoranthene	0.8	4.9		0.25	U	1	3.2		1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
benzoic acid	NA	NA		0.71	U	1	0.78	U	1	0.68	U	1	0.75	U	1	1.9		1	0.44	J	1
benzyl alcohol	NA	NA		0.36	U	1	0.39	U	1	0.34	U	1	0.38	U	1	0.54	U	1	0.38	U	1
benzyl butyl phthalate	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
bis(2-chloroethoxy)methane	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
bis(2-chloroethyl)ether	NA	NA		0.36	U	1	0.39	U	1	0.34	U	1	0.38	U	1	0.54	U	1	0.38	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
caprolactam	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
carbazole	NA	NA		0.36	U	1	1.6		1	0.34	U	1	0.38	U	1	0.54	U	1	0.38	U	1
chrysene	1	4.9		0.25	U	1	8.5		5	0.24	U	1	0.26	U	1	0.26	J	1	0.23	J	1
dibenzo(a,h)anthracene	0.33	0.33		0.18	U	1	1.4		1	0.17	U	1	0.19	U	1	0.27	U	1	0.19	U	1
dibenzofuran	2.1	18		0.25	U	1	0.83		1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
diethyl phthalate	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
dimethyl phthalate	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
di-n-butyl phthalate	NA	NA		0.71	U	1	0.78	U	1	0.68	U	1	0.75	U	1	1.1	U	1	0.76	U	1
di-n-octyl phthalate	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
fluoranthene	85	100		0.25	U	1	21		5	0.24	U	1	0.26	U	1	0.44		1	0.43		1
fluorene	30	100		0.25	U	1	1.3		1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
hexachlorobenzene	0.33	0.33		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.33	U	1	0.26	U	1
hexachlorobutadiene	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
hexachlorocyclopentadiene	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
hexachloroethane	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.25	U	1	5.8		1	0.24	U	1	0.26	U	1	0.38	U	1	0.13	J	1
isophorone	NA	NA		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
naphthalene	12	100		0.25	U	1	0.58		1	0.24	U	1	0.26	U	1	0.38	U	1	0.26	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.36	U	1	0.39	U	1	0.34	U	1	0.38	U	1	0.54	U	1	0.38	U	1
n-nitroso-di-n-propylamine	NA	NA		0.18	U	1	0.2	U	1	0.17	U	1	0.19	U	1	0.27	U	1	0.19	U	1
n-nitrosodiphenylamine	NA	NA		0.36	U	1	0.39	U	1	0.34	U	1	0.38	U	1	0.54	U	1	0.38	U	1
pentachlorophenol	0.8	1.3		0.36	U	1	0.39	U	1	0.34	U	1	0.38	U	1	0.54	U	1	0.38	U	1
phenanthrene	1.1	4.9		0.25	U	1	13		5	0.24	U	1	0.26	U	1	0.38		1	0.31		1
phenol	0.33	100		0.25	U	1	0.27	U	1	0.24	U	1	0.26	U	1	0.33	U	1	0.26	U	1
pyrene	64	100		0.25	U	1	18		5	0.24	U	1	0.26	U	1	0.35	J	1	0.37		1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-24 2-4			SB-24 16-18			DUP1-20260408			SB-24 26-28			SB-24 43-44			SB-25 SURF		
U= Not Detected ≥ value			Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08			2026-04-08			2026-04-08		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.4	U	1	0.39	U	1	0.4	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
1,4-dioxane	0.1	5.7		0.075	U	1	0.068	U	1	0.069	U	1	0.08	U	1	0.076	U	1	0.082	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2,4-dinitrophenol	NA	NA		0.6	U	1	0.54	U	1	0.55	U	1	0.65	U	1	0.63	U	1	0.65	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
2-nitroaniline	NA	NA		0.6	U	1	0.54	U	1	0.55	U	1	0.65	U	1	0.63	U	1	0.65	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.45	U	1	0.41	U	1	0.42	U	1	0.48	U	1	0.47	U	1	0.49	U	1
3-nitroaniline	NA	NA		0.6	U	1	0.54	U	1	0.55	U	1	0.65	U	1	0.63	U	1	0.65	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	0.99	U	1	1	U	1	1.2	U	1	1.1	U	1	1.2	U	1
4-bromophenyl phenyl ether	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.4	U	1	0.39	U	1	0.4	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
4-nitroaniline	NA	NA		0.6	U	1	0.54	U	1	0.55	U	1	0.65	U	1	0.63	U	1	0.65	U	1
4-nitrophenol	NA	NA		1.1	U	1	0.99	U	1	1	U	1	1.2	U	1	1.1	U	1	1.2	U	1
acenaphthene	20	100		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
acenaphthylene	100	100		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
acetophenone	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.15	J	1
atrazine	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
benzaldehyde	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
benzidine	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.4	U	1	0.39	U	1	0.4	U	1
benzo(a)anthracene	1	1.4		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.5		1
benzo(a)pyrene	1	1		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.53		1
benzo(b)fluoranthene	1	1.4		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.72		1
benzo(g,h,i)perylene	0.64	4.9		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.3		1
benzo(k)fluoranthene	0.8	4.9		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.24	J	1
benzoic acid	NA	NA		0.75	U	1	0.68	U	1	0.69	U	1	0.81	U	1	0.78	U	1	0.81	U	1
benzyl alcohol	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.4	U	1	0.39	U	1	0.4	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
bis(2-chloroethyl)ether	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.4	U	1	0.39	U	1	0.4	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
caprolactam	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
carbazole	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.4	U	1	0.39	U	1	0.4	U	1
chrysene	1	4.9		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.55		1
dibenzo(a,h)anthracene	0.33	0.33		0.19	U	1	0.17	U	1	0.17	U	1	0.2	U	1	0.2	U	1	0.2	U	1
dibenzofuran	2.1	18		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
di-n-butyl phthalate	NA	NA		0.75	U	1	0.68	U	1	0.69	U	1	0.81	U	1	0.78	U	1	0.81	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.12	J	1	0.27	U	1	0.28	U	1
fluoranthene	85	100		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	1		1
fluorene	30	100		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
hexachloroethane	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.31		1
isophorone	NA	NA		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
naphthalene	12	100		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.4	U	1	0.39	U	1	0.4	U	1
n-nitroso-di-n-propylamine	NA	NA		0.19	U	1	0.17	U	1	0.17	U	1	0.2	U	1	0.2	U	1	0.2	U	1
n-nitrosodiphenylamine	NA	NA		0.37	U	1	0.34	U	1	0.35	U	1	0.4	U	1	0.39	U	1	0.4	U	1
pentachlorophenol	0.8	1.3		0.37	U	1	0.34	U	1	0.35	U	1	0.4	U	1	0.39	U	1	0.4	U	1
phenanthrene	1.1	4.9		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.72		1
phenol	0.33	100		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.28	U	1
pyrene	64	100		0.26	U	1	0.24	U	1	0.24	U	1	0.28	U	1	0.27	U	1	0.85		1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 3: SVOCs in Soil

All data in mg/Kg (ppm)			Sample	SB-25 0-1			SB-25 1-2			SB-25 13-15			SB-25 33-35			DUP2-20260408		
U= Not Detected ≥ value			Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08			2026-04-08		
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1'-biphenyl	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
1,2,4,5-tetrachlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
1,2,4-trichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
1,2-dichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
1,2-diphenylhydrazine (azobenzene)	NA	NA		0.38	U	1	0.37	U	1	0.34	U	1	0.39	U	1	0.5	U	1
1,3-dichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
1,4-dichlorobenzene	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
1,4-dioxane	0.1	5.7		0.075	U	1	0.076	U	1	0.07	U	1	0.1	U	1	0.1	U	1
2,2'-Oxybis(1-Chloropropane)	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
2,3,4,6-tetrachlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
2,4,5-trichlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
2,4,6-trichlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
2,4-dichlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
2,4-dimethylphenol	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
2,4-dinitrophenol	NA	NA		0.6	U	1	0.6	U	1	0.55	U	1	0.62	U	1	0.81	U	1
2,4-dinitrotoluene	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
2,6-dinitrotoluene	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
2-chloronaphthalene	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
2-chlorophenol	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
2-methylnaphthalene	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
2-Methylphenol (o-cresol)	0.33	100		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.33	U	1
2-nitroaniline	NA	NA		0.6	U	1	0.6	U	1	0.55	U	1	0.62	U	1	0.81	U	1
2-nitrophenol	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
3&4-Methylphenol (m&p-cresol)	0.33	100		0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1	0.33	U	1
3,3'-dichlorobenzidine	NA	NA		0.45	U	1	0.45	U	1	0.41	U	1	0.47	U	1	0.6	U	1
3-nitroaniline	NA	NA		0.6	U	1	0.6	U	1	0.55	U	1	0.62	U	1	0.81	U	1
4,6-dinitro-2-methylphenol	NA	NA		1.1	U	1	1.1	U	1	1	U	1	1.1	U	1	1.5	U	1
4-bromophenyl phenyl ether	NA	NA		0.38	U	1	0.37	U	1	0.34	U	1	0.39	U	1	0.5	U	1
4-chloro-3-methylphenol	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
4-chloroaniline	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
4-chlorophenyl phenyl ether	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
4-nitroaniline	NA	NA		0.6	U	1	0.6	U	1	0.55	U	1	0.62	U	1	0.81	U	1
4-nitrophenol	NA	NA		1.1	U	1	1.1	U	1	1	U	1	1.1	U	1	1.5	U	1
acenaphthene	20	100		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
acenaphthylene	100	100		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
acetophenone	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
aniline	0.04	8.1		0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
anthracene	100	100		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
atrazine	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
benzaldehyde	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
benzidine	NA	NA		0.38	U	1	0.37	U	1	0.34	U	1	0.39	U	1	0.5	U	1
benzo(a)anthracene	1	1.4		0.29		1	0.16	J	1	0.24	U	1	0.27	U	1	0.35	U	1
benzo(a)pyrene	1	1		0.32		1	0.16	J	1	0.24	U	1	0.27	U	1	0.35	U	1
benzo(b)fluoranthene	1	1.4		0.43		1	0.22	J	1	0.24	U	1	0.27	U	1	0.35	U	1
benzo(g,h,i)perylene	0.64	4.9		0.18	J	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
benzo(k)fluoranthene	0.8	4.9		0.15	J	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
benzoic acid	NA	NA		0.75	U	1	0.74	U	1	0.69	U	1	0.78	U	1	1	U	1
benzyl alcohol	NA	NA		0.38	U	1	0.37	U	1	0.34	U	1	0.39	U	1	0.5	U	1
benzyl butyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
bis(2-chloroethoxy)methane	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
bis(2-chloroethyl)ether	NA	NA		0.38	U	1	0.37	U	1	0.34	U	1	0.39	U	1	0.5	U	1
bis(2-ethylhexyl)phthalate	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
caprolactam	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
carbazole	NA	NA		0.38	U	1	0.37	U	1	0.34	U	1	0.39	U	1	0.5	U	1
chrysene	1	4.9		0.31		1	0.17	J	1	0.24	U	1	0.27	U	1	0.35	U	1
dibenzo(a,h)anthracene	0.33	0.33		0.19	U	1	0.19	U	1	0.17	U	1	0.19	U	1	0.25	U	1
dibenzofuran	2.1	18		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
diethyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
dimethyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
di-n-butyl phthalate	NA	NA		0.75	U	1	0.74	U	1	0.69	U	1	0.78	U	1	1	U	1
di-n-octyl phthalate	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
fluoranthene	85	100		0.53		1	0.28		1	0.24	U	1	0.27	U	1	0.35	U	1
fluorene	30	100		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
hexachlorobenzene	0.33	0.33		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.33	U	1
hexachlorobutadiene	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
hexachlorocyclopentadiene	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
hexachloroethane	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
indeno(1,2,3-cd)pyrene	0.5	1.4		0.19	J	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
isophorone	NA	NA		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
naphthalene	12	100		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.35	U	1
nitrobenzene	0.08	1.8		0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1	0.08	U	1
n-nitrosodimethylamine	NA	NA		0.38	U	1	0.37	U	1	0.34	U	1	0.39	U	1	0.5	U	1
n-nitroso-di-n-propylamine	NA	NA		0.19	U	1	0.19	U	1	0.17	U	1	0.19	U	1	0.25	U	1
n-nitrosodiphenylamine	NA	NA		0.38	U	1	0.37	U	1	0.34	U	1	0.39	U	1	0.5	U	1
pentachlorophenol	0.8	1.3		0.38	U	1	0.37	U	1	0.34	U	1	0.39	U	1	0.5	U	1
phenanthrene	1.1	4.9		0.32		1	0.14	J	1	0.24	U	1	0.27	U	1	0.35	U	1
phenol	0.33	100		0.26	U	1	0.26	U	1	0.24	U	1	0.27	U	1	0.33	U	1
pyrene	64	100		0.45		1	0.25	J	1	0.24	U	1	0.27	U	1	0.35	U	1

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 4: SVOC TICs in Soil

All data in mg/Kg (ppm)			Sample	SB-01 SURF		SB-01 0-2		SB-01 10-12		SB-01 20-22		SB-01 43-45		SB-02 SURF		SB-02 0-5		SB-02 18-20		SB-02 20-25		SB-02 46-48		SB-03 SURF		SB-03 0-2		SB-03 18-20	
			Date	2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31		2026-03-31	
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-caryophyllene	NA	NA																											
.alpha.-phellandrene	NA	NA																											
.alpha.-pinene	NA	NA																											
.beta.-pinene	NA	NA																											
.beta.-sitosterol	NA	NA																											
.gamma.-sitosterol	NA	NA																											
1,2:4,5-dibenzopyrene	NA	NA																											
1,2:7,8-dibenzophenanthrene	NA	NA																											
1,2:7,8-dibenzophenanthrene isomer	NA	NA																											
1,2-cyclohexanediol	NA	NA																											
1,2-cyclohexanediol, trans-	NA	NA																											
1,3-cycloheptadiene	NA	NA																											
11h-benzo[a]fluoren-11-one	NA	NA																											
13-docosenamide, (z)-	NA	NA																											
17-(1,5-dimethylhexyl)-10,13-dimet	NA	NA																											
1-docosene	NA	NA		0.78	JN	1.3	JN	0.83	JN	1.6	JN	1.2	JN	0.43	JN	0.65	JN	0.78	JN	1.2	JN	0.92	JN	0.96	JN	1.1	JN	1.1	JN
1-eicosanol	NA	NA																											
1-heneicosanol	NA	NA																											
1-hexadecanol	NA	NA																											
1-hexadecene	NA	NA																											
1-nonadecene	NA	NA																						0.62	JN				
1-octadecanol	NA	NA																											
1-octadecene	NA	NA		0.57	JN	1.1	JN	0.52	JN	1.2	JN	0.91	JN																
1-propene, 2-methyl-	NA	NA																											
2-adamantanecarboxylic acid, 4,8-d	NA	NA																											
2h-1-benzopyran-2-one	NA	NA																											
2-naphthalenol, 1-[(4-nitrophenyl)	NA	NA																											
2-octanone	NA	NA																											
2-pentanone, 3-ethyl-3-methyl-	NA	NA																											
2-pentanone, 4-hydroxy-	NA	NA																											
2-pentanone, 4-hydroxy-4-methyl-	NA	NA		1.3	JNA	2	JNA	1.8	JNA	5.2	JNA	2.2	JNA	1.4	JNA	2	JNA	1.9	JNA	2.8	JNA	2.4	JNA	2.1	JNA	2.6	JNA	2.9	JNA
2-pentanone, 4-hydroxy-4-methyl- isomer	NA	NA																											
2-phenylnaphthalene	NA	NA																											
3-eicosene, (e)-	NA	NA																											
3-hexanone	NA	NA																											
3-hexen-2-one	NA	NA																											
3-hexen-2-one, 5-methyl-	NA	NA																											
3-hexene-2,5-dione	NA	NA																											
3-octadecene, (e)-	NA	NA																											
4',5-dihydroxy-7-methoxyflavanone	NA	NA																											
4h-cyclopenta[def]phenanthrene	NA	NA																											
5-eicosene, (e)-	NA	NA																											
5-octadecene, (e)-	NA	NA																				0.72	JN						
9,10-anthracenedione	NA	NA																											
9,12,15-octadecatrienoic acid, (z,z,z)-	NA	NA																											
9,12-octadecadienoic acid (z,z)-	NA	NA																											
9-eicosene, (e)-	NA	NA																											
9-hexacosene	NA	NA																											
9-hexadecenoic acid	NA	NA																											
9-hexadecyn-1-ol	NA	NA																											
9h-fluoren-9-one	NA	NA																											
9-octadecenamide, (z)-	NA	NA																											
9-octadecenamide, (z)-isomer	NA	NA																											
9-octadecenoic acid, (e)-	NA	NA																											
9-octadecenoic acid, 12-hydroxy-	NA	NA																											
anthracene, 1-methyl-	NA	NA																											
benz[e]acephenanthrylene	NA	NA																											
benz[j]aceanthrylene, 3-methyl-	NA	NA																											
benzeneacetic acid	NA	NA																											
benzo[a]pyrene	NA	NA																											
benzo[b]triphenylene	NA	NA																											
benzo[e]pyrene	NA	NA																											
benzo[k]fluoranthene	NA	NA																											
benzoic acid, 4-ethoxy-, ethyl est	NA	NA		0.77	JNC	1.3	JNC	0.8	JNC	1.5	JNC	1.1	JNC	0.94	JNC	0.66	JNC	0.73	JNC	1.2	JNC	0.95	JNC	0.84	JNC	0.98	JNC	1.1	JNC
bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																											
bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																											
bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																											
butylated hydroxytoluene	NA	NA																											
caryophyllene	NA	NA																											
cis,cis,cis-7,10,13-hexadecatrienal	NA	NA																											
cis-9-hexadecenoic acid	NA	NA																											
cyclohexane, 1,1',1"-(1-ethanyl-2	NA	NA																											
cyclopentane	NA	NA																											
cyclotetracosane	NA	NA																											
decane	NA	NA																											
dibenz(a,e)aceanthrylene	NA	NA																											
dibenzo[def,mno]chrysene	NA	NA																											
dimethyl sulfide	NA	NA																											
dipropylene glycol monomethyl ethe	NA	NA																											
e-15-heptadecenal	NA	NA														0.47	JN	0.55	JN	0.89	JN							0.84	JN
e-7-octadecene	NA	NA												0.39	JN														
eicosane, 2-methyl-	NA	NA																											
ethanol	NA	NA																											
heptadecane	NA	NA																											
heptane	NA	NA																											
hexadecane	NA	NA																											
hexadecanoic acid, methyl ester	NA	NA																											
indeno[1,2,3-cd]fluoranthene	NA	NA																											
indeno[1,2,3-fg]naphthacene	NA	NA																											
isoheptadecanol	NA	NA																											
limonene	NA	NA																											
methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																											
naphthalene	NA	NA																											
naphthalene, 2-methyl-	NA	NA																											
naphtho[2,3-b]norbornadiene	NA	NA																											
n-hexadecanoic acid	NA	NA																						0.31	JN				
n-nonadecanol-1	NA	NA																											
nonadecane	NA	NA																											
octadecanal	NA	NA																											
octadecanoic acid	NA	NA																											
octane, 2,7-dimethyl-	NA	NA																											
oxirane, heptadecyl-	NA	NA																											
oxirane, hexadecyl-	NA	NA																											
pentadecanal-	NA	NA																											
pentadecane, 2,6,10,14-tetramethyl	NA	NA																											
perylene	NA	NA																											
phenanthrene, 1-methyl-	NA	NA																											
phenanthrene, 2,5-dimethyl-	NA	NA																											
phenanthrene, 2-methyl-	NA	NA																											
phenol, 4,4'-(1-methylethylidene)b	NA	NA																											
pyrene	NA	NA																											
tetratriacontane	NA	NA																											
unknown	NA	NA		0.39	JNC			0.65	JNC	0.64	JNC													0.8	JNC			0.33	JNC
z-4-nonadecen-1-ol acetate	NA	NA																											
z-8-hexadecene	NA	NA																								0.81	JN		
TOTAL SVOC TICs (suspect extraction artifacts *2-pentanone, 4-hydroxy-4-methyl-* and *benzoic acid, 4-ethoxy-, ethyl est* are excluded from total)				1.74		2.4		2		3.44		2.11		0.82		1.12		1.33		2.09		1.64		2.69		1.91		2.27	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 4: SVOC TICs in Soil

All data in mg/Kg (ppm)		Sample	SB-03 20-22		SB-04 SURF		SB-04 0-2		SB-04 21-23		SB-04 23-25		DUP-20260401		SB-05 SURF		SB-05 0-1		SB-05 1-2		SB-05 10-12		SB-05 22-24		SB-06 SURF		SB-06 0-2	
		Date	2026-03-31		2026-03-31		2026-03-31		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01	
SVOCs (8270)	**UU SCO**	**RRU SCO**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-caryophyllene	NA	NA																										
.alpha.-phellandrene	NA	NA																										
.alpha.-pinene	NA	NA																										
.beta.-pinene	NA	NA																										
.beta.-sitosterol	NA	NA																										
.gamma.-sitosterol	NA	NA			0.42	JN																						
1,2:4,5-dibenzopyrene	NA	NA																										
1,2:7,8-dibenzophenanthrene	NA	NA																										
1,2:7,8-dibenzophenanthrene isomer	NA	NA																										
1,2-cyclohexanediol	NA	NA																										
1,2-cyclohexanediol, trans-	NA	NA																										
1,3-cycloheptadiene	NA	NA																										
11h-benzo[a]fluoren-11-one	NA	NA																										
13-docosenamide, (z)-	NA	NA																										
17-(1,5-dimethylhexyl)-10,13-dimet	NA	NA																										
1-docosene	NA	NA																										
1-eicosanol	NA	NA																										
1-heneicosanol	NA	NA																										
1-hexadecanol	NA	NA																										
1-hexadecene	NA	NA																										
1-nonadecene	NA	NA																										
1-octadecanol	NA	NA																										
1-octadecene	NA	NA																										
1-propene, 2-methyl-	NA	NA																										
2-adamantanecarboxylic acid, 4,8-d	NA	NA																										
2h-1-benzopyran-2-one	NA	NA																										
2-naphthalenol, 1-[(4-nitrophenyl)	NA	NA																										
2-octanone	NA	NA																										
2-pentanone, 3-ethyl-3-methyl-	NA	NA																										
2-pentanone, 4-hydroxy-	NA	NA																										
2-pentanone, 4-hydroxy-4-methyl-	NA	NA	3.2	JNA	3.9	JNA	3	JNA																				
2-pentanone, 4-hydroxy-4-methyl- isomer	NA	NA																										
2-phenylnaphthalene	NA	NA																										
3-eicosene, (e)-	NA	NA																										
3-hexanone	NA	NA																										
3-hexen-2-one	NA	NA																										
3-hexen-2-one, 5-methyl-	NA	NA																										
3-hexene-2,5-dione	NA	NA																										
3-octadecene, (e)-	NA	NA																										
4',5-dihydroxy-7-methoxyflavanone	NA	NA																										
4h-cyclopenta[def]phenanthrene	NA	NA																										
5-eicosene, (e)-	NA	NA					1.5	JN																				
5-octadecene, (e)-	NA	NA					1.2	JN																				
9,10-anthracenedione	NA	NA																										
9,12,15-octadecatrienoic acid, (z,z,z)-	NA	NA																										
9,12-octadecadienoic acid (z,z)-	NA	NA																										
9-eicosene, (e)-	NA	NA	0.87	JN	0.75	JN																						
9-hexacosene	NA	NA																										
9-hexadecenoic acid	NA	NA																										
9-hexadecyn-1-ol	NA	NA																										
9h-fluoren-9-one	NA	NA																										
9-octadecenamide, (z)-	NA	NA																										
9-octadecenamide, (z)-isomer	NA	NA																										
9-octadecenoic acid, (e)-	NA	NA					0.47	JN																				
9-octadecenoic acid, 12-hydroxy-	NA	NA																										
anthracene, 1-methyl-	NA	NA																										
benz[e]acephenanthrylene	NA	NA																										
benz[j]aceanthrylene, 3-methyl-	NA	NA																										
benzeneacetic acid	NA	NA																										
benzo[a]pyrene	NA	NA																										
benzo[b]triphenylene	NA	NA																										
benzo[e]pyrene	NA	NA																										
benzo[k]fluoranthene	NA	NA																										
benzoic acid, 4-ethoxy-, ethyl est	NA	NA	0.87	JNC	0.78	JNC	1.4	JNC																				
bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																										
bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																										
bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																										
butylated hydroxytoluene	NA	NA																										
caryophyllene	NA	NA													0.087	JN												
cis,cis,cis-7,10,13-hexadecatrienal	NA	NA																										
cis-9-hexadecenoic acid	NA	NA																										
cyclohexane, 1,1',1''-(1-ethanyl-2	NA	NA																										
cyclopentane	NA	NA																										
cyclotetracosane	NA	NA			0.45	JN																						
decane	NA	NA																										
dibenz(a,e)aceanthrylene	NA	NA																										
dibenzo[def,mno]chrysene	NA	NA																										
dimethyl sulfide	NA	NA																										
dipropylene glycol monomethyl ethe	NA	NA																										
e-15-heptadecenal	NA	NA																										
e-7-octadecene	NA	NA																										
eicosane, 2-methyl-	NA	NA																										
ethanol	NA	NA																										
heptadecane	NA	NA																										
heptane	NA	NA																										
hexadecane	NA	NA																										
hexadecanoic acid, methyl ester	NA	NA																										
indeno[1,2,3-cd]fluoranthene	NA	NA																										
indeno[1,2,3-fg]naphthacene	NA	NA																										
isoheptadecanol	NA	NA																										
limonene	NA	NA																										
methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																										
naphthalene	NA	NA															0.051	Q			0.041	Q						
naphthalene, 2-methyl-	NA	NA																			0.0048	JN						
naphtho[2,3-b]norbornadiene	NA	NA																										
n-hexadecanoic acid	NA	NA			0.61	JN	1.7	JN																				
n-nonadecanol-1	NA	NA																										
nonadecane	NA	NA																										
octadecanal	NA	NA																										
octadecanoic acid	NA	NA					0.6	JN																				
octane, 2,7-dimethyl-	NA	NA																										
oxirane, heptadecyl-	NA	NA																										
oxirane, hexadecyl-	NA	NA																										
pentadecanal-	NA	NA																										
pentadecane, 2,6,10,14-tetramethyl	NA	NA																										
perylene	NA	NA																										
phenanthrene, 1-methyl-	NA	NA																										
phenanthrene, 2,5-dimethyl-	NA	NA																										
phenanthrene, 2-methyl-	NA	NA																										
phenol, 4,4'-(1-methylethylidene)b	NA	NA																										
pyrene	NA	NA																										
tetratriacontane	NA	NA																										
unknown	NA	NA			0.71	J									0.016	J	0.0086	J										
z-4-nonadecen-1-ol acetate	NA	NA																										
z-8-hexadecene	NA	NA																										
TOTAL SVOC TICs (suspect extraction artifacts *2-pentanone, 4-hydroxy-4-methyl-*, and *benzoic acid, 4-ethoxy-, ethyl est* are excluded from total)			0.87		2.94		5.47		ND		ND		ND		0.103		0.060		ND		0.046		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 4: SVOC TICs in Soil

All data in mg/Kg (ppm)			Sample	SB-06 16-18		SB-06 18-20		SB-07 SURF		SB-07 0-1		SB-07 1-2		SB-07 16-18		SB-07 21-23		SB-08 SURF		SB-08 0-2		SB-08 20-22		SB-08 26-28		SB-09 SURF		SB-09 0-1	
			Date	2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-01		2026-04-02		2026-04-02	
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-caryophyllene	NA	NA																											
.alpha.-phellandrene	NA	NA																											
.alpha.-pinene	NA	NA																											
.beta.-pinene	NA	NA																											
.beta.-sitosterol	NA	NA																											
.gamma.-sitosterol	NA	NA																											
1,2:4,5-dibenzopyrene	NA	NA																											
1,2:7,8-dibenzophenanthrene	NA	NA																											
1,2:7,8-dibenzophenanthrene isomer	NA	NA																											
1,2-cyclohexanediol	NA	NA																											
1,2-cyclohexanediol, trans-	NA	NA																											
1,3-cycloheptadiene	NA	NA																											
11h-benzo[a]fluoren-11-one	NA	NA																											
13-docosenamide, (z)-	NA	NA																											
17-(1,5-dimethylhexyl)-10,13-dimet	NA	NA																											
1-docosene	NA	NA																											
1-eicosanol	NA	NA																											
1-heneicosanol	NA	NA																											
1-hexadecanol	NA	NA																											
1-hexadecene	NA	NA																											
1-nonadecene	NA	NA																											
1-octadecanol	NA	NA																											
1-octadecene	NA	NA																											
1-propene, 2-methyl-	NA	NA																											
2-adamantanecarboxylic acid, 4,8-d	NA	NA																											
2h-1-benzopyran-2-one	NA	NA																											
2-naphthalenol, 1-[(4-nitrophenyl)	NA	NA																											
2-octanone	NA	NA																											
2-pentanone, 3-ethyl-3-methyl-	NA	NA																											
2-pentanone, 4-hydroxy-	NA	NA																											
2-pentanone, 4-hydroxy-4-methyl-	NA	NA																											
2-pentanone, 4-hydroxy-4-methyl- isomer	NA	NA																											
2-phenylnaphthalene	NA	NA																											
3-eicosene, (e)-	NA	NA																											
3-hexanone	NA	NA																											
3-hexen-2-one	NA	NA																											
3-hexen-2-one, 5-methyl-	NA	NA																											
3-hexene-2,5-dione	NA	NA																											
3-octadecene, (e)-	NA	NA																											
4',5-dihydroxy-7-methoxyflavanone	NA	NA																											
4h-cyclopenta[def]phenanthrene	NA	NA																											
5-eicosene, (e)-	NA	NA																											
5-octadecene, (e)-	NA	NA																											
9,10-anthracenedione	NA	NA																											
9,12,15-octadecatrienoic acid, (z,z,z)-	NA	NA																											
9,12-octadecadienoic acid (z,z)-	NA	NA																											
9-eicosene, (e)-	NA	NA																											
9-hexacosene	NA	NA																											
9-hexadecenoic acid	NA	NA																											
9-hexadecyn-1-ol	NA	NA																											
9h-fluoren-9-one	NA	NA																											
9-octadecenamide, (z)-	NA	NA																											
9-octadecenamide, (z)-isomer	NA	NA																											
9-octadecenoic acid, (e)-	NA	NA																											
9-octadecenoic acid, 12-hydroxy-	NA	NA																											
anthracene, 1-methyl-	NA	NA																											
benz[e]acephenanthrylene	NA	NA																											
benz[j]aceanthrylene, 3-methyl-	NA	NA																											
benzeneacetic acid	NA	NA																											
benzo[a]pyrene	NA	NA																											
benzo[b]triphenylene	NA	NA																											
benzo[e]pyrene	NA	NA																											
benzo[k]fluoranthene	NA	NA																											
benzoic acid, 4-ethoxy-, ethyl est	NA	NA																											
bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																											
bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																											
bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																											
butylated hydroxytoluene	NA	NA																											
caryophyllene	NA	NA																											
cis,cis,cis-7,10,13-hexadecatrienal	NA	NA																											
cis-9-hexadecenoic acid	NA	NA																											
cyclohexane, 1,1',1"-(1-ethanyl-2	NA	NA																											
cyclopentane	NA	NA																											
cyclotetracosane	NA	NA																											
decane	NA	NA																											
dibenz(a,e)aceanthrylene	NA	NA																											
dibenzo[def,mno]chrysene	NA	NA																											
dimethyl sulfide	NA	NA																											
dipropylene glycol monomethyl ethe	NA	NA																											
e-15-heptadecenal	NA	NA																											
e-7-octadecene	NA	NA																											
eicosane, 2-methyl-	NA	NA																											
ethanol	NA	NA																											
heptadecane	NA	NA																											
heptane	NA	NA																											
hexadecane	NA	NA																											
hexadecanoic acid, methyl ester	NA	NA																											
indeno[1,2,3-cd]fluoranthene	NA	NA																											
indeno[1,2,3-fg]naphthacene	NA	NA																											
isoheptadecanol	NA	NA																											
limonene	NA	NA																											
methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																											
naphthalene	NA	NA																0.0061	Q										
naphthalene, 2-methyl-	NA	NA																											
naphtho[2,3-b]norbornadiene	NA	NA																											
n-hexadecanoic acid	NA	NA																											
n-nonadecanol-1	NA	NA																											
nonadecane	NA	NA																											
octadecanal	NA	NA																											
octadecanoic acid	NA	NA																											
octane, 2,7-dimethyl-	NA	NA																											
oxirane, heptadecyl-	NA	NA																											
oxirane, hexadecyl-	NA	NA																											
pentadecanal-	NA	NA																											
pentadecane, 2,6,10,14-tetramethyl	NA	NA																											
perylene	NA	NA																											
phenanthrene, 1-methyl-	NA	NA																											
phenanthrene, 2,5-dimethyl-	NA	NA																											
phenanthrene, 2-methyl-	NA	NA																											
phenol, 4,4'-(1-methylethylidene)b	NA	NA																											
pyrene	NA	NA																											
tetratriacontane	NA	NA																											
unknown	NA	NA																											
z-4-nonadecen-1-ol acetate	NA	NA																											
z-8-hexadecene	NA	NA																											
TOTAL SVOC TICs (suspect extraction artifacts *2-pentanone, 4-hydroxy-4-methyl-* and *benzoic acid, 4-ethoxy-, ethyl est* are excluded from total)				ND		ND		ND		ND		ND		ND		ND		0.006		ND		ND		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 4: SVOC TICs in Soil

		Sample	SB-09 1-2		SB-09 6-8		SB-09 25-27		SB-09 42-44		SB-10 SURF		SB-10 0-2		SB-10 18-20		SB-10 23-25		SB-11 SURF		SB-11 0-2		SB-11 9-11		SB-11 20-22		SB-12 SURF	
All data in mg/Kg (ppm)		Date	2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02	
SVOCs (8270)	**UU SCO**	**RRU SCO**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-caryophyllene	NA	NA																	0.014	*JN*								
.alpha.-phellandrene	NA	NA																										
.alpha.-pinene	NA	NA																										
.beta.-pinene	NA	NA																										
.beta.-sitosterol	NA	NA																										
.gamma.-sitosterol	NA	NA																										
1,2:4,5-dibenzopyrene	NA	NA																										
1,2:7,8-dibenzophenanthrene	NA	NA																										
1,2:7,8-dibenzophenanthrene isomer	NA	NA																										
1,2-cyclohexanediol	NA	NA																										
1,2-cyclohexanediol, trans-	NA	NA																										
1,3-cycloheptadiene	NA	NA																										
11h-benzo[a]fluoren-11-one	NA	NA																										
13-docosenamide, (z)-	NA	NA																										
17-(1,5-dimethylhexyl)-10,13-dimet	NA	NA																										
1-docosene	NA	NA																										
1-eicosanol	NA	NA																										
1-heneicosanol	NA	NA																										
1-hexadecanol	NA	NA																	0.062	*JN*								
1-hexadecene	NA	NA																										
1-nonadecene	NA	NA																										
1-octadecanol	NA	NA																										
1-octadecene	NA	NA																										
1-propene, 2-methyl-	NA	NA							0.014	*JN*																		
2-adamantanecarboxylic acid, 4,8-d	NA	NA																										
2h-1-benzopyran-2-one	NA	NA																										
2-naphthalenol, 1-[(4-nitrophenyl)	NA	NA																										
2-octanone	NA	NA																										
2-pentanone, 3-ethyl-3-methyl-	NA	NA																										
2-pentanone, 4-hydroxy-	NA	NA																										
2-pentanone, 4-hydroxy-4-methyl-	NA	NA																										
2-pentanone, 4-hydroxy-4-methyl- isomer	NA	NA																										
2-phenylnaphthalene	NA	NA																										
3-eicosene, (e)-	NA	NA																										
3-hexanone	NA	NA																										
3-hexen-2-one	NA	NA																										
3-hexen-2-one, 5-methyl-	NA	NA																										
3-hexene-2,5-dione	NA	NA																										
3-octadecene, (e)-	NA	NA																										
4',5-dihydroxy-7-methoxyflavanone	NA	NA																										
4h-cyclopenta[def]phenanthrene	NA	NA																										
5-eicosene, (e)-	NA	NA																										
5-octadecene, (e)-	NA	NA																										
9,10-anthracenedione	NA	NA																										
9,12,15-octadecatrienoic acid, (z,z,z)-	NA	NA																			0.034	*JN*						
9,12-octadecadienoic acid (z,z)-	NA	NA																										
9-eicosene, (e)-	NA	NA																										
9-hexacosene	NA	NA																										
9-hexadecenoic acid	NA	NA																										
9-hexadecyn-1-ol	NA	NA																										
9h-fluoren-9-one	NA	NA																										
9-octadecenamide, (z)-	NA	NA																										
9-octadecenamide, (z)-isomer	NA	NA																										
9-octadecenoic acid, (e)-	NA	NA																										
9-octadecenoic acid, 12-hydroxy-	NA	NA																										
anthracene, 1-methyl-	NA	NA																										
benz[e]acephenanthrylene	NA	NA																										
benz[j]aceanthrylene, 3-methyl-	NA	NA																										
benzeneacetic acid	NA	NA																										
benzo[a]pyrene	NA	NA																										
benzo[b]triphenylene	NA	NA																										
benzo[e]pyrene	NA	NA																										
benzo[k]fluoranthene	NA	NA																										
benzoic acid, 4-ethoxy-, ethyl est	NA	NA																										
bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																										
bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																	0.055	*JN*								
bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																										
butylated hydroxytoluene	NA	NA							0.0038	*JN*																		
caryophyllene	NA	NA																	0.32	*JN*								
cis,cis,cis-7,10,13-hexadecatrienal	NA	NA																					0.02	*JN*				
cis-9-hexadecenoic acid	NA	NA																										
cyclohexane, 1,1',1"-(1-ethanyl-2	NA	NA																										
cyclopentane	NA	NA																										
cyclotetracosane	NA	NA																										
decane	NA	NA																										
dibenz(a,e)aceanthrylene	NA	NA																										
dibenzo[def,mno]chrysene	NA	NA																										
dimethyl sulfide	NA	NA																	0.012	*JN*								
dipropylene glycol monomethyl ethe	NA	NA																										
e-15-heptadecenal	NA	NA																										
e-7-octadecene	NA	NA																										
eicosane, 2-methyl-	NA	NA																										
ethanol	NA	NA																										
heptadecane	NA	NA																										
heptane	NA	NA																										
hexadecane	NA	NA																										
hexadecanoic acid, methyl ester	NA	NA																										
indeno[1,2,3-cd]fluoranthene	NA	NA																										
indeno[1,2,3-fg]naphthacene	NA	NA																										
isoheptadecanol	NA	NA																										
limonene	NA	NA																										
methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																					0.014	*JN*				
naphthalene	NA	NA																										
naphthalene, 2-methyl-	NA	NA																										
naphtho[2,3-b]norbornadiene	NA	NA																										
n-hexadecanoic acid	NA	NA																										
n-nonadecanol-1	NA	NA																										
nonadecane	NA	NA																										
octadecanal	NA	NA																										
octadecanoic acid	NA	NA																										
octane, 2,7-dimethyl-	NA	NA																										
oxirane, heptadecyl-	NA	NA																										
oxirane, hexadecyl-	NA	NA																										
pentadecanal-	NA	NA																										
pentadecane, 2,6,10,14-tetramethyl	NA	NA																										
perylene	NA	NA																										
phenanthrene, 1-methyl-	NA	NA																										
phenanthrene, 2,5-dimethyl-	NA	NA																										
phenanthrene, 2-methyl-	NA	NA																										
phenol, 4,4'-(1-methylethylidene)b	NA	NA																										
pyrene	NA	NA																										
tetratriacontane	NA	NA																										
unknown	NA	NA																	0.11	*J*	0.0095	*J*						
z-4-nonadecen-1-ol acetate	NA	NA																										
z-8-hexadecene	NA	NA																										
TOTAL SVOC TICs (suspect extraction artifacts *2-pentanone, 4-hydroxy-4-methyl-* and *benzoic acid, 4-ethoxy-, ethyl est* are excluded from total)			ND		ND		ND		0.018		ND		ND		ND		ND		0.573		0.044		0.034		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Vanguard Village I+II
BCP ID: C704063

Table 4: SVOC TICs in Soil

All data in mg/Kg (ppm)		Sample	SB-12 0-1		SB-12 1-2		SB-12 6-8		DUP-20260402		SB-12 22-24		SB-12 43-45		SB-13 SURF		SB-13 0-2		SB-13 7-9		SB-13 20-22		SB-13 22-23		SB-13 23-25		SB-14 SURF	
		Date	2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-02		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03	
SVOCs (8270)	UU SCO	RRU SCO	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-caryophyllene	NA	NA																										
.alpha.-phellandrene	NA	NA																										
.alpha.-pinene	NA	NA																										
.beta.-pinene	NA	NA																										
.beta.-sitosterol	NA	NA													1.7	JN											0.88	JN
.gamma.-sitosterol	NA	NA																										
1,2:4,5-dibenzopyrene	NA	NA																										
1,2:7,8-dibenzophenanthrene	NA	NA																										
1,2:7,8-dibenzophenanthrene isomer	NA	NA																										
1,2-cyclohexanediol	NA	NA																										
1,2-cyclohexanediol, trans-	NA	NA																										
1,3-cycloheptadiene	NA	NA																										
11h-benzo[a]fluoren-11-one	NA	NA																										
13-docosenamide, (z)-	NA	NA																										
17-(1,5-dimethylhexyl)-10,13-dimet	NA	NA													1.1	JN												
1-docosene	NA	NA																										
1-eicosanol	NA	NA																										
1-heneicosanol	NA	NA																										
1-hexadecanol	NA	NA																										
1-hexadecene	NA	NA																										
1-nonadecene	NA	NA																			0.99	JN						
1-octadecanol	NA	NA																										
1-octadecene	NA	NA																										
1-propene, 2-methyl-	NA	NA																										
2-adamantanecarboxylic acid, 4,8-d	NA	NA																										
2h-1-benzopyran-2-one	NA	NA																										
2-naphthalenol, 1-[(4-nitrophenyl)	NA	NA																										
2-octanone	NA	NA																										
2-pentanone, 3-ethyl-3-methyl-	NA	NA																										
2-pentanone, 4-hydroxy-	NA	NA													0.86	JN												
2-pentanone, 4-hydroxy-4-methyl-	NA	NA													25	JNA	6.5	JNA	8.7	JNA	2.6	JNA	2.9	JNA	3.1	JNA	3.1	JNA
2-pentanone, 4-hydroxy-4-methyl- isomer	NA	NA																										
2-phenylnaphthalene	NA	NA																										
3-eicosene, (e)-	NA	NA																										
3-hexanone	NA	NA																										
3-hexen-2-one	NA	NA													0.93	JN												
3-hexen-2-one, 5-methyl-	NA	NA																										
3-hexene-2,5-dione	NA	NA																										
3-octadecene, (e)-	NA	NA																										
4',5-dihydroxy-7-methoxyflavanone	NA	NA																										
4h-cyclopenta[def]phenanthrene	NA	NA																										
5-eicosene, (e)-	NA	NA																										
5-octadecene, (e)-	NA	NA																									0.53	JN
9,10-anthracenedione	NA	NA																										
9,12,15-octadecatrienoic acid, (z,z,z)-	NA	NA																										
9,12-octadecadienoic acid (z,z)-	NA	NA																										
9-eicosene, (e)-	NA	NA																									0.48	JN
9-hexacosene	NA	NA																										
9-hexadecenoic acid	NA	NA													0.69	JN												
9-hexadecyn-1-ol	NA	NA													0.96	JN												
9h-fluoren-9-one	NA	NA																										
9-octadecenamide, (z)-	NA	NA															0.33	JNC	0.66	JNC	0.31	JNC	0.56	JNC	0.41	JNC	0.49	JNC
9-octadecenamide, (z)-isomer	NA	NA																										
9-octadecenoic acid, (e)-	NA	NA																										
9-octadecenoic acid, 12-hydroxy-	NA	NA													0.93	JN												
anthracene, 1-methyl-	NA	NA																										
benz[e]acephenanthrylene	NA	NA																										
benz[j]aceanthrylene, 3-methyl-	NA	NA																										
benzeneacetic acid	NA	NA																										
benzo[a]pyrene	NA	NA																										
benzo[b]triphenylene	NA	NA																										
benzo[e]pyrene	NA	NA																										
benzo[k]fluoranthene	NA	NA																										
benzoic acid, 4-ethoxy-, ethyl est	NA	NA													0.98	JNC	1	JNC	1.9	JNC	1.4	JNC	1.1	JNC	1.2	JNC	0.87	JNC
bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																										
bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																										
bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																										
butylated hydroxytoluene	NA	NA																										
caryophyllene	NA	NA																										
cis,cis,cis-7,10,13-hexadecatrienal	NA	NA																										
cis-9-hexadecenoic acid	NA	NA													1.3	JN											1.7	JN
cyclohexane, 1,1',1''-(1-ethanyl-2	NA	NA																										
cyclopentane	NA	NA																										
cyclotetracosane	NA	NA																										
decane	NA	NA																										
dibenz(a,e)aceanthrylene	NA	NA																										
dibenzo[def,mno]chrysene	NA	NA																										
dimethyl sulfide	NA	NA																										
dipropylene glycol monomethyl ethe	NA	NA																										
e-15-heptadecenal	NA	NA																										
e-7-octadecene	NA	NA																										
eicosane, 2-methyl-	NA	NA																										
ethanol	NA	NA																										
heptadecane	NA	NA																										
heptane	NA	NA																										
hexadecane	NA	NA																										
hexadecanoic acid, methyl ester	NA	NA													0.64	JN												
indeno[1,2,3-cd]fluoranthene	NA	NA																										
indeno[1,2,3-fg]naphthacene	NA	NA																										
isoheptadecanol	NA	NA																										
limonene	NA	NA																										
methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																										
naphthalene	NA	NA																										
naphthalene, 2-methyl-	NA	NA																										
naphtho[2,3-b]norbornadiene	NA	NA																										
n-hexadecanoic acid	NA	NA													2.4	JN			0.57	JN							0.97	JN
n-nonadecanol-1	NA	NA																										
nonadecane	NA	NA																										
octadecanal	NA	NA																										
octadecanoic acid	NA	NA																										
octane, 2,7-dimethyl-	NA	NA																										
oxirane, heptadecyl-	NA	NA																										
oxirane, hexadecyl-	NA	NA																										
pentadecanal-	NA	NA																										
pentadecane, 2,6,10,14-tetramethyl	NA	NA																										
perylene	NA	NA																	0.42	JN							0.38	JN
phenanthrene, 1-methyl-	NA	NA																										
phenanthrene, 2,5-dimethyl-	NA	NA																										
phenanthrene, 2-methyl-	NA	NA																										
phenol, 4,4'-(1-methylethylidene)b	NA	NA																										
pyrene	NA	NA																										
tetratriacontane	NA	NA																										
unknown	NA	NA	0.0052	J											2.2	J			0.38	J	0.32	J	0.3	J			0.62	J
z-4-nonadecen-1-ol acetate	NA	NA																										
z-8-hexadecene	NA	NA																										
TOTAL SVOC TICs (suspect extraction artifacts 2-pentanone, 4-hydroxy-4-methyl-, and benzoic acid, 4-ethoxy-, ethyl est are excluded from total)			0.005		ND		ND		ND		ND		ND		13.7		0.33		2.03		1.62		0.86		0.41		6.05	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 4: SVOC TICs in Soil

All data in mg/Kg (ppm)			Sample	SB-14 0-2		SB-14 21-23		DUP-20260403		SB-14 23-25		SB-15 SURF		SB-15 0-2		SB-15 11-13		SB-15 22-24		SB-15 24-25		SB-16 SURF		SB-16 0-1		SB-16 1-2		SB-16 18-20	
			Date	2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03		2026-04-03	
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-caryophyllene	NA	NA																											
.alpha.-phellandrene	NA	NA																											
.alpha.-pinene	NA	NA																											
.beta.-pinene	NA	NA																											
.beta.-sitosterol	NA	NA																											
.gamma.-sitosterol	NA	NA																											
1,2:4,5-dibenzopyrene	NA	NA										8.2	JN																
1,2:7,8-dibenzophenanthrene	NA	NA										3	JN																
1,2:7,8-dibenzophenanthrene isomer	NA	NA																											
1,2-cyclohexanediol	NA	NA																											
1,2-cyclohexanediol, trans-	NA	NA																											
1,3-cycloheptadiene	NA	NA																											
11h-benzo[a]fluoren-11-one	NA	NA																											
13-docosenamide, (z)-	NA	NA																						0.34	JN	0.54	JN		
17-(1,5-dimethylhexyl)-10,13-dimet	NA	NA																											
1-docosene	NA	NA						1	JN									2.6	JN					1.4	JN				
1-eicosanol	NA	NA																											
1-heneicosanol	NA	NA																											
1-hexadecanol	NA	NA																											
1-hexadecene	NA	NA																											
1-nonadecene	NA	NA				0.58	JN			0.87	JN																		
1-octadecanol	NA	NA																											
1-octadecene	NA	NA						0.85	JN									2	JN	0.86	JN	0.74	JN	1.2	JN	1.2	JN	1	JN
1-propene, 2-methyl-	NA	NA																											
2-adamantanecarboxylic acid, 4,8-d	NA	NA																											
2h-1-benzopyran-2-one	NA	NA																											
2-naphthalenol, 1-[(4-nitrophenyl)	NA	NA																											
2-octanone	NA	NA																											
2-pentanone, 3-ethyl-3-methyl-	NA	NA																											
2-pentanone, 4-hydroxy-	NA	NA																								0.3	JN		
2-pentanone, 4-hydroxy-4-methyl-	NA	NA		2.8	JNA	3	JNA	3	JNA	2.9	JNA	2.9	JNA	2.8	JNA	2.9	JNA	6.1	JNA	2.7	JNA	3.1	JNA	3.3	JNA	20	JNA	4.4	JNA
2-pentanone, 4-hydroxy-4-methyl- isomer	NA	NA																				0.68	JNC			0.44	JNC		
2-phenylnaphthalene	NA	NA												0.79	JN														
3-eicosene, (e)-	NA	NA																		1.1	JN								
3-hexanone	NA	NA																											
3-hexen-2-one	NA	NA																											
3-hexen-2-one, 5-methyl-	NA	NA																											
3-hexene-2,5-dione	NA	NA																								0.34	JNC		
3-octadecene, (e)-	NA	NA																											
4',5-dihydroxy-7-methoxyflavanone	NA	NA																											
4h-cyclopenta[def]phenanthrene	NA	NA												1.8	JN														
5-eicosene, (e)-	NA	NA																											
5-octadecene, (e)-	NA	NA																											
9,10-anthracenedione	NA	NA												0.73	JN														
9,12,15-octadecatrienoic acid, (z,z,z)-	NA	NA																											
9,12-octadecadienoic acid (z,z)-	NA	NA																											
9-eicosene, (e)-	NA	NA																											
9-hexacosene	NA	NA																											
9-hexadecenoic acid	NA	NA																											
9-hexadecyn-1-ol	NA	NA																											
9h-fluoren-9-one	NA	NA												0.61	JN														
9-octadecenamide, (z)-	NA	NA		0.34	JNC	0.59	JNC	0.7	JNC	0.4	JNC					0.85	JNC	1.4	JNC	0.82	JNC	0.38	JNC	0.82	JNC	0.81	JNC	0.9	JNC
9-octadecenamide, (z)-isomer	NA	NA																				0.74	JN					0.41	JN
9-octadecenoic acid, (e)-	NA	NA																											
9-octadecenoic acid, 12-hydroxy-	NA	NA																											
anthracene, 1-methyl-	NA	NA												0.82	JN														
benz[e]acephenanthrylene	NA	NA										9.2	JN																
benz[j]aceanthrylene, 3-methyl-	NA	NA										2.3	JN																
benzeneacetic acid	NA	NA																						0.42	JN				
benzo[a]pyrene	NA	NA												1	JN														
benzo[b]triphenylene	NA	NA										3.9	JN																
benzo[e]pyrene	NA	NA										19	JN	3.6	JN														
benzo[k]fluoranthene	NA	NA																											
benzoic acid, 4-ethoxy-, ethyl est	NA	NA		1.1	JNC	0.87	JNC	1.4	JNC	1.4	JNC			1.2	JNC	1.5	JNC	3.5	JNC	1.4	JNC	1.3	JNC	2	JNC	1.8	JNC	1.6	JNC
bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																											
bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																											
bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																											
butylated hydroxytoluene	NA	NA																											
caryophyllene	NA	NA																											
cis,cis,cis-7,10,13-hexadecatrienal	NA	NA																											
cis-9-hexadecenoic acid	NA	NA																											
cyclohexane, 1,1',1"-(1-ethanyl-2	NA	NA																											
cyclopentane	NA	NA																											
cyclotetracosane	NA	NA																											
decane	NA	NA																											
dibenz(a,e)aceanthrylene	NA	NA										9.7	JN																
dibenzo[def,mno]chrysene	NA	NA																											
dimethyl sulfide	NA	NA																											
dipropylene glycol monomethyl ethe	NA	NA																											
e-15-heptadecenal	NA	NA												1.2	JN	0.93	JN									0.34	JN		
e-7-octadecene	NA	NA																											
eicosane, 2-methyl-	NA	NA																											
ethanol	NA	NA																											
heptadecane	NA	NA																											
heptane	NA	NA																											
hexadecane	NA	NA																											
hexadecanoic acid, methyl ester	NA	NA																											
indeno[1,2,3-cd]fluoranthene	NA	NA										6.4	JN																
indeno[1,2,3-fg]naphthacene	NA	NA										11	JN																
isoheptadecanol	NA	NA																											
limonene	NA	NA																											
methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																											
naphthalene	NA	NA																											
naphthalene, 2-methyl-	NA	NA																											
naphtho[2,3-b]norbornadiene	NA	NA																											
n-hexadecanoic acid	NA	NA		0.32	JN															0.34	JN	0.74	JN	0.48	JN			0.35	JN
n-nonadecanol-1	NA	NA																										1.2	JN
nonadecane	NA	NA																											
octadecanal	NA	NA																											
octadecanoic acid	NA	NA																				0.5	JN						
octane, 2,7-dimethyl-	NA	NA																											
oxirane, heptadecyl-	NA	NA																											
oxirane, hexadecyl-	NA	NA																											
pentadecanal-	NA	NA																											
pentadecane, 2,6,10,14-tetramethyl	NA	NA																											
perylene	NA	NA										6.4	JN	1.2	JN														
phenanthrene, 1-methyl-	NA	NA												1.6	JN														
phenanthrene, 2,5-dimethyl-	NA	NA																											
phenanthrene, 2-methyl-	NA	NA												1.3	JN														
phenol, 4,4'-(1-methylethylidene)b	NA	NA												2.6	JN														
pyrene	NA	NA										3.3	JN																
tetratriacontane	NA	NA																											
unknown	NA	NA		0.53	J							4.5	J	0.75	J							0.61	JNC	0.35	JNC	0.43	JNC		
z-4-nonadecen-1-ol acetate	NA	NA																											
z-8-hexadecene	NA	NA																											
TOTAL SVOC TICs (suspect extraction artifacts *2-pentanone, 4-hydroxy-4-methyl-* and *benzoic acid, 4-ethoxy-, ethyl est* are excluded from total)				1.19		1.17		2.55		1.27		86.9		18		1.78		6		3.12		3.71		5.01		3.96		3.86	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 4: SVOC TICs in Soil

		Sample	SB-16 23-25		SB-16 43-45		SB-17 SURF		SB-17 5-7		SB-17 23-25		SB-17A SURF		SB-17A 0-1		SB-17A 1-2		SB-17A 5-7		SB-18 SURF		SB-18 0-1		SB-18 1-2		DUP-20260406	
All data in mg/Kg (ppm)		Date	2026-04-03		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06		2026-04-06	
SVOCs (8270)	**UU SCO**	**RRU SCO**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-caryophyllene	NA	NA																										
.alpha.-phellandrene	NA	NA																			0.018	JN						
.alpha.-pinene	NA	NA																			0.061	JN						
.beta.-pinene	NA	NA					0.045	JN																				
.beta.-sitosterol	NA	NA																										
.gamma.-sitosterol	NA	NA																										
1,2:4,5-dibenzopyrene	NA	NA																										
1,2:7,8-dibenzophenanthrene	NA	NA																										
1,2:7,8-dibenzophenanthrene isomer	NA	NA																										
1,2-cyclohexanediol	NA	NA																										
1,2-cyclohexanediol, trans-	NA	NA																										
1,3-cycloheptadiene	NA	NA																			0.019	JN						
11h-benzo[a]fluoren-11-one	NA	NA																										
13-docosenamide, (z)-	NA	NA																										
17-(1,5-dimethylhexyl)-10,13-dimet	NA	NA																										
1-docosene	NA	NA	1.3	JN																								
1-eicosanol	NA	NA																										
1-heneicosanol	NA	NA																										
1-hexadecanol	NA	NA																										
1-hexadecene	NA	NA																										
1-nonadecene	NA	NA																										
1-octadecanol	NA	NA																										
1-octadecene	NA	NA																										
1-propene, 2-methyl-	NA	NA																										
2-adamantanecarboxylic acid, 4,8-d	NA	NA																										
2h-1-benzopyran-2-one	NA	NA																										
2-naphthalenol, 1-[(4-nitrophenyl)	NA	NA																										
2-octanone	NA	NA					0.015	JN																				
2-pentanone, 3-ethyl-3-methyl-	NA	NA																										
2-pentanone, 4-hydroxy-	NA	NA																										
2-pentanone, 4-hydroxy-4-methyl-	NA	NA	3.1	JNA																								
2-pentanone, 4-hydroxy-4-methyl- isomer	NA	NA																										
2-phenylnaphthalene	NA	NA																										
3-eicosene, (e)-	NA	NA																										
3-hexanone	NA	NA																										
3-hexen-2-one	NA	NA																										
3-hexen-2-one, 5-methyl-	NA	NA																										
3-hexene-2,5-dione	NA	NA																										
3-octadecene, (e)-	NA	NA																										
4',5-dihydroxy-7-methoxyflavanone	NA	NA																										
4h-cyclopenta[def]phenanthrene	NA	NA																										
5-eicosene, (e)-	NA	NA																										
5-octadecene, (e)-	NA	NA																										
9,10-anthracenedione	NA	NA																										
9,12,15-octadecatrienoic acid, (z,z,z)-	NA	NA																										
9,12-octadecadienoic acid (z,z)-	NA	NA																										
9-eicosene, (e)-	NA	NA																										
9-hexacosene	NA	NA																										
9-hexadecenoic acid	NA	NA																										
9-hexadecyn-1-ol	NA	NA																										
9h-fluoren-9-one	NA	NA																										
9-octadecenamide, (z)-	NA	NA	0.98	JNC																								
9-octadecenamide, (z)-isomer	NA	NA	0.34	JN																								
9-octadecenoic acid, (e)-	NA	NA																										
9-octadecenoic acid, 12-hydroxy-	NA	NA																										
anthracene, 1-methyl-	NA	NA																										
benz[e]acephenanthrylene	NA	NA																										
benz[j]aceanthrylene, 3-methyl-	NA	NA																										
benzeneacetic acid	NA	NA																										
benzo[a]pyrene	NA	NA																										
benzo[b]triphenylene	NA	NA																										
benzo[e]pyrene	NA	NA																										
benzo[k]fluoranthene	NA	NA																										
benzoic acid, 4-ethoxy-, ethyl est	NA	NA	1.7	JNC																								
bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA					0.023	JN																				
bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																										
bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																			0.21	JN						
butylated hydroxytoluene	NA	NA			0.0052	JN																						
caryophyllene	NA	NA																										
cis,cis,cis-7,10,13-hexadecatrienal	NA	NA																										
cis-9-hexadecenoic acid	NA	NA																										
cyclohexane, 1,1',1''-(1-ethanyl-2	NA	NA																										
cyclopentane	NA	NA															0.0067	JN	0.0071	JN								
cyclotetracosane	NA	NA																										
decane	NA	NA																										
dibenz(a,e)aceanthrylene	NA	NA																										
dibenzo[def,mno]chrysene	NA	NA																										
dimethyl sulfide	NA	NA					0.01	JN																				
dipropylene glycol monomethyl ethe	NA	NA																										
e-15-heptadecenal	NA	NA	1	JN																								
e-7-octadecene	NA	NA																										
eicosane, 2-methyl-	NA	NA																										
ethanol	NA	NA					0.013	JN																				
heptadecane	NA	NA																										
heptane	NA	NA																										
hexadecane	NA	NA																										
hexadecanoic acid, methyl ester	NA	NA																										
indeno[1,2,3-cd]fluoranthene	NA	NA																										
indeno[1,2,3-fg]naphthacene	NA	NA																										
isoheptadecanol	NA	NA																										
limonene	NA	NA																			0.36	JN						
methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																										
naphthalene	NA	NA																										
naphthalene, 2-methyl-	NA	NA																										
naphtho[2,3-b]norbornadiene	NA	NA																										
n-hexadecanoic acid	NA	NA																										
n-nonadecanol-1	NA	NA																										
nonadecane	NA	NA																										
octadecanal	NA	NA																										
octadecanoic acid	NA	NA																										
octane, 2,7-dimethyl-	NA	NA																										
oxirane, heptadecyl-	NA	NA																										
oxirane, hexadecyl-	NA	NA																										
pentadecanal-	NA	NA																										
pentadecane, 2,6,10,14-tetramethyl	NA	NA																										
perylene	NA	NA																										
phenanthrene, 1-methyl-	NA	NA																										
phenanthrene, 2,5-dimethyl-	NA	NA																										
phenanthrene, 2-methyl-	NA	NA																										
phenol, 4,4'-(1-methylethylidene)b	NA	NA																										
pyrene	NA	NA																										
tetratriacontane	NA	NA																										
unknown	NA	NA			0.0052	J									0.026	J					0.0059	J						
z-4-nonadecen-1-ol acetate	NA	NA																										
z-8-hexadecene	NA	NA																										
TOTAL SVOC TICs (suspect extraction artifacts *2-pentanone, 4-hydroxy-4-methyl-,* and *benzoic acid, 4-ethoxy-, ethyl est* are excluded from total)			3.62		0.010		0.106		ND		ND		ND		0.026		0.007		0.007		0.674		ND		ND		ND	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 4: SVOC TICs in Soil

All data in mg/Kg (ppm)		Sample	SB-18 12-14		SB-18 23-25		SB-18 45-47		SB-19 SURF		SB-19 0-2		SB-19 4-5		SB-19 18-20		SB-19 23-25		SB-20 SURF		SB-20 0-2		SB-20 18-20		SB-20 21-23		DUP-20260407	
		Date	2026-04-06		2026-04-06		2026-04-06		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07	
SVOCs (8270)	**UU SCO**	**RRU SCO**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-caryophyllene	NA	NA																										
.alpha.-phellandrene	NA	NA																										
.alpha.-pinene	NA	NA																										
.beta.-pinene	NA	NA																										
.beta.-sitosterol	NA	NA																										
.gamma.-sitosterol	NA	NA																										
1,2:4,5-dibenzopyrene	NA	NA																										
1,2:7,8-dibenzophenanthrene	NA	NA																										
1,2:7,8-dibenzophenanthrene isomer	NA	NA																										
1,2-cyclohexanediol	NA	NA																										
1,2-cyclohexanediol, trans-	NA	NA																										
1,3-cycloheptadiene	NA	NA																										
11h-benzo[a]fluoren-11-one	NA	NA											0.59	JN														
13-docosenamide, (z)-	NA	NA																			0.37	JN						
17-(1,5-dimethylhexyl)-10,13-dimet	NA	NA																										
1-docosene	NA	NA							0.57	JN	0.56	JN	0.8	JN	0.65	JN	0.57	JN	0.76	JN	0.64	JN	0.8	JN	0.69	JN		
1-eicosanol	NA	NA															0.48	JN										
1-heneicosanol	NA	NA																									0.58	JN
1-hexadecanol	NA	NA																										
1-hexadecene	NA	NA							0.57	JN																		
1-nonadecene	NA	NA																					0.64	JN				
1-octadecanol	NA	NA																	0.55	JN	0.46	JN						
1-octadecene	NA	NA													0.53	JN												
1-propene, 2-methyl-	NA	NA																										
2-adamantanecarboxylic acid, 4,8-d	NA	NA																										
2h-1-benzopyran-2-one	NA	NA																										
2-naphthalenol, 1-[(4-nitrophenyl)	NA	NA																										
2-octanone	NA	NA																										
2-pentanone, 3-ethyl-3-methyl-	NA	NA											0.34	JN														
2-pentanone, 4-hydroxy-	NA	NA																										
2-pentanone, 4-hydroxy-4-methyl-	NA	NA							2.5	JNA	2	JNA	2	JNA	2	JNA	2.2	JNA	2.1	JNA	6.2	JNA	2.2	JNA	2.1	JNA	2.6	JNA
2-pentanone, 4-hydroxy-4-methyl- isomer	NA	NA																										
2-phenylnaphthalene	NA	NA																										
3-eicosene, (e)-	NA	NA																										
3-hexanone	NA	NA																										
3-hexen-2-one	NA	NA																										
3-hexen-2-one, 5-methyl-	NA	NA																										
3-hexene-2,5-dione	NA	NA																										
3-octadecene, (e)-	NA	NA																										
4',5-dihydroxy-7-methoxyflavanone	NA	NA																										
4h-cyclopenta[def]phenanthrene	NA	NA																										
5-eicosene, (e)-	NA	NA																										
5-octadecene, (e)-	NA	NA											0.72	JN											0.56	JN		
9,10-anthracenedione	NA	NA																										
9,12,15-octadecatrienoic acid, (z,z,z)-	NA	NA																										
9,12-octadecadienoic acid (z,z)-	NA	NA																										
9-eicosene, (e)-	NA	NA																										
9-hexacosene	NA	NA																										
9-hexadecenoic acid	NA	NA																										
9-hexadecyn-1-ol	NA	NA																										
9h-fluoren-9-one	NA	NA																										
9-octadecenamide, (z)-	NA	NA																										
9-octadecenamide, (z)-isomer	NA	NA																										
9-octadecenoic acid, (e)-	NA	NA																										
9-octadecenoic acid, 12-hydroxy-	NA	NA																										
anthracene, 1-methyl-	NA	NA																										
benz[e]acephenanthrylene	NA	NA																										
benz[j]aceanthrylene, 3-methyl-	NA	NA																										
benzeneacetic acid	NA	NA																										
benzo[a]pyrene	NA	NA																										
benzo[b]triphenylene	NA	NA																										
benzo[e]pyrene	NA	NA							0.39	JN																		
benzo[k]fluoranthene	NA	NA																										
benzoic acid, 4-ethoxy-, ethyl est	NA	NA							1.3	JNC	1.1	JNC	1.3	JNC	1	JNC	1	JNC	1.2	JNC	0.98	JNC	1.3	JNC	1.1	JNC	0.8	JNC
bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																										
bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																										
bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																										
butylated hydroxytoluene	NA	NA																										
caryophyllene	NA	NA																										
cis,cis,cis-7,10,13-hexadecatrienal	NA	NA																										
cis-9-hexadecenoic acid	NA	NA																										
cyclohexane, 1,1',1"-(1-ethanyl-2	NA	NA																										
cyclopentane	NA	NA																										
cyclotetracosane	NA	NA																										
decane	NA	NA											0.32	JN														
dibenz(a,e)aceanthrylene	NA	NA																										
dibenzo[def,mno]chrysene	NA	NA																										
dimethyl sulfide	NA	NA																										
dipropylene glycol monomethyl ethe	NA	NA																										
e-15-heptadecenal	NA	NA																									0.48	JN
e-7-octadecene	NA	NA									0.52	JN																
eicosane, 2-methyl-	NA	NA																										
ethanol	NA	NA																										
heptadecane	NA	NA											0.36	JN														
heptane	NA	NA									0.54	JN																
hexadecane	NA	NA																										
hexadecanoic acid, methyl ester	NA	NA																										
indeno[1,2,3-cd]fluoranthene	NA	NA																										
indeno[1,2,3-fg]naphthacene	NA	NA																										
isoheptadecanol	NA	NA																										
limonene	NA	NA																										
methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																										
naphthalene	NA	NA																										
naphthalene, 2-methyl-	NA	NA																										
naphtho[2,3-b]norbornadiene	NA	NA											0.39	JN														
n-hexadecanoic acid	NA	NA							0.5	JN	0.31	JN	0.35	JN														
n-nonadecanol-1	NA	NA																										
nonadecane	NA	NA																										
octadecanal	NA	NA																										
octadecanoic acid	NA	NA																										
octane, 2,7-dimethyl-	NA	NA																										
oxirane, heptadecyl-	NA	NA																										
oxirane, hexadecyl-	NA	NA																										
pentadecanal-	NA	NA																										
pentadecane, 2,6,10,14-tetramethyl	NA	NA																										
perylene	NA	NA							0.34	JN																		
phenanthrene, 1-methyl-	NA	NA																										
phenanthrene, 2,5-dimethyl-	NA	NA											0.51	JN														
phenanthrene, 2-methyl-	NA	NA																										
phenol, 4,4'-(1-methylethylidene)b	NA	NA																										
pyrene	NA	NA																										
tetratriacontane	NA	NA																										
unknown	NA	NA							0.72	J	0.56	J	0.34	J							0.38	JNC						
z-4-nonadecen-1-ol acetate	NA	NA																										
z-8-hexadecene	NA	NA																										
TOTAL SVOC TICs (suspect extraction artifacts *2-pentanone, 4-hydroxy-4-methyl-* and *benzoic acid, 4-ethoxy-, ethyl est* are excluded from total)			ND		ND		ND		3.09		2.49		4.72		1.18		1.05		1.31		1.85		1.44		1.25		1.06	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 4: SVOC TICs in Soil

All data in mg/Kg (ppm)			Sample	SB-21 SURF		SB-21 0-2		SB-21 18-20		SB-21 23-25		SB-22 SURF		SB-22 0-2		SB-22 2-3		SB-22 13-15		SB-22 25-27		SB-23 SURF		SB-23 0-2		SB-23 2-3		SB-23 15-17	
			Date	2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07		2026-04-07	
SVOCs (8270)	**UU SCO**	**RRU SCO**		Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-caryophyllene	NA	NA																											
.alpha.-phellandrene	NA	NA																											
.alpha.-pinene	NA	NA																											
.beta.-pinene	NA	NA																											
.beta.-sitosterol	NA	NA				1.9	JN																						
.gamma.-sitosterol	NA	NA																											
1,2:4,5-dibenzopyrene	NA	NA																								2.5	JN		
1,2:7,8-dibenzophenanthrene	NA	NA																								1.5	JN		
1,2:7,8-dibenzophenanthrene isomer	NA	NA																								1.3	JN		
1,2-cyclohexanediol	NA	NA																											
1,2-cyclohexanediol, trans-	NA	NA																											
1,3-cycloheptadiene	NA	NA																											
11h-benzo[a]fluoren-11-one	NA	NA																											
13-docosenamide, (z)-	NA	NA																											
17-(1,5-dimethylhexyl)-10,13-dimet	NA	NA																											
1-docosene	NA	NA		0.83	JN	0.48	JN	0.89	JN	0.66	JN					0.35	JN					0.6	JN					0.55	JN
1-eicosanol	NA	NA																											
1-heneicosanol	NA	NA																		0.96	JN								
1-hexadecanol	NA	NA																											
1-hexadecene	NA	NA																											
1-nonadecene	NA	NA																0.47	JN					0.46	JN			0.46	JN
1-octadecanol	NA	NA																											
1-octadecene	NA	NA						0.64	JN	0.54	JN							0.4	JN			0.49	JN						
1-propene, 2-methyl-	NA	NA																											
2-adamantanecarboxylic acid, 4,8-d	NA	NA										0.49	JN																
2h-1-benzopyran-2-one	NA	NA																											
2-naphthalenol, 1-[(4-nitrophenyl)	NA	NA																											
2-octanone	NA	NA																											
2-pentanone, 3-ethyl-3-methyl-	NA	NA																											
2-pentanone, 4-hydroxy-	NA	NA																											
2-pentanone, 4-hydroxy-4-methyl-	NA	NA		2.1	JNA	2.4	JNA	2.3	JNA	2	JNA	1.9	JNA	1.3	JNA	1.5	JNA	2.5	JNA	2.2	JNA	2.7	JNA	2.4	JNA	3.3	JNA	2.4	JNA
2-pentanone, 4-hydroxy-4-methyl- isomer	NA	NA																				0.54	JNC						
2-phenylnaphthalene	NA	NA																											
3-eicosene, (e)-	NA	NA																											
3-hexanone	NA	NA		0.42	JN																								
3-hexen-2-one	NA	NA																											
3-hexen-2-one, 5-methyl-	NA	NA		0.6	JN	0.92	JN					0.72	JN																
3-hexene-2,5-dione	NA	NA																											
3-octadecene, (e)-	NA	NA																											
4',5-dihydroxy-7-methoxyflavanone	NA	NA																											
4h-cyclopenta[def]phenanthrene	NA	NA																											
5-eicosene, (e)-	NA	NA																											
5-octadecene, (e)-	NA	NA														0.3	JN												
9,10-anthracenedione	NA	NA																								1.3	JN		
9,12,15-octadecatrienoic acid, (z,z,z)-	NA	NA																											
9,12-octadecadienoic acid (z,z)-	NA	NA				0.73	JN																						
9-eicosene, (e)-	NA	NA																											
9-hexacosene	NA	NA										0.4	JN																
9-hexadecenoic acid	NA	NA																											
9-hexadecyn-1-ol	NA	NA																											
9h-fluoren-9-one	NA	NA																											
9-octadecenamide, (z)-	NA	NA																0.74	JNC			0.4	JNC						
9-octadecenamide, (z)-isomer	NA	NA																											
9-octadecenoic acid, (e)-	NA	NA																											
9-octadecenoic acid, 12-hydroxy-	NA	NA																											
anthracene, 1-methyl-	NA	NA																								1.4	JN		
benz[e]acephenanthrylene	NA	NA																											
benz[j]aceanthrylene, 3-methyl-	NA	NA																											
benzeneacetic acid	NA	NA																											
benzo[a]pyrene	NA	NA																											
benzo[b]triphenylene	NA	NA																								2	JN		
benzo[e]pyrene	NA	NA																								6.2	JN		
benzo[k]fluoranthene	NA	NA																								2.8	JN		
benzoic acid, 4-ethoxy-, ethyl est	NA	NA		1.5	JNC	1.2	JNC	1.2	JNC	1	JNC	1.2	JNC	0.75	JNC	0.83	JNC	0.68	JNC	1.4	JNC	0.87	JNC	0.7	JNC			0.74	JNC
bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																											
bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																											
bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																											
butylated hydroxytoluene	NA	NA																											
caryophyllene	NA	NA																											
cis,cis,cis-7,10,13-hexadecatrienal	NA	NA																											
cis-9-hexadecenoic acid	NA	NA																											
cyclohexane, 1,1',1"-(1-ethanyl-2	NA	NA				0.36	JN																						
cyclopentane	NA	NA																											
cyclotetracosane	NA	NA																											
decane	NA	NA																											
dibenz(a,e)aceanthrylene	NA	NA																											
dibenzo[def,mno]chrysene	NA	NA																								1.6	JN		
dimethyl sulfide	NA	NA																											
dipropylene glycol monomethyl ethe	NA	NA																											
e-15-heptadecenal	NA	NA																		0.79	JN			0.4	JN				
e-7-octadecene	NA	NA																											
eicosane, 2-methyl-	NA	NA																											
ethanol	NA	NA																											
heptadecane	NA	NA																											
heptane	NA	NA																											
hexadecane	NA	NA																				0.5	JN						
hexadecanoic acid, methyl ester	NA	NA																											
indeno[1,2,3-cd]fluoranthene	NA	NA																											
indeno[1,2,3-fg]naphthacene	NA	NA																											
isoheptadecanol	NA	NA																											
limonene	NA	NA																											
methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																											
naphthalene	NA	NA																											
naphthalene, 2-methyl-	NA	NA																											
naphtho[2,3-b]norbornadiene	NA	NA																											
n-hexadecanoic acid	NA	NA				1.2	JN					0.57	JN																
n-nonadecanol-1	NA	NA																											
nonadecane	NA	NA																											
octadecanal	NA	NA																											
octadecanoic acid	NA	NA																											
octane, 2,7-dimethyl-	NA	NA										0.4	JNC															0.29	JN
oxirane, heptadecyl-	NA	NA																											
oxirane, hexadecyl-	NA	NA																											
pentadecanal-	NA	NA																											
pentadecane, 2,6,10,14-tetramethyl	NA	NA																											
perylene	NA	NA																								2.4	JN		
phenanthrene, 1-methyl-	NA	NA																								2.2	JN		
phenanthrene, 2,5-dimethyl-	NA	NA																											
phenanthrene, 2-methyl-	NA	NA																								1.5	JN		
phenol, 4,4'-(1-methylethylidene)b	NA	NA																											
pyrene	NA	NA																											
tetratriacontane	NA	NA																				0.34	JN						
unknown	NA	NA		0.31	J	0.32	JNC					0.43	J	0.38	J	0.6	J					0.44	J			2.9	J		
z-4-nonadecen-1-ol acetate	NA	NA				0.85	JN																						
z-8-hexadecene	NA	NA		0.7	JN	0.52	JN																						
TOTAL SVOC TICs (suspect extraction artifacts *2-pentanone, 4-hydroxy-4-methyl-* and *benzoic acid, 4-ethoxy-, ethyl est* are excluded from total)				2.86		7.28		1.53		1.2		3.01		0.38		1.25		1.61		1.75		2.77		0.86		29.6		1.3	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 4: SVOC TICs in Soil

All data in mg/Kg (ppm)		Sample	SB-23 24-25		SB-24 SURF		SB-24 0-1		SB-24 2-4		SB-24 16-18		DUP1-20260408		SB-24 26-28		SB-24 43-44		SB-25 SURF		SB-25 0-1		SB-25 1-2		SB-25 13-15		SB-25 33-35	
		Date	2026-04-07		2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08		2026-04-08	
SVOCs (8270)	**UU SCO**	**RRU SCO**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
.alpha.-caryophyllene	NA	NA																										
.alpha.-phellandrene	NA	NA																										
.alpha.-pinene	NA	NA																										
.beta.-pinene	NA	NA																										
.beta.-sitosterol	NA	NA			1.8	JN	0.95	JN																				
.gamma.-sitosterol	NA	NA																										
1,2:4,5-dibenzopyrene	NA	NA																										
1,2:7,8-dibenzophenanthrene	NA	NA																										
1,2:7,8-dibenzophenanthrene isomer	NA	NA																										
1,2-cyclohexanediol	NA	NA					0.58	JNC																				
1,2-cyclohexanediol, trans-	NA	NA			4.9	JNC																						
1,3-cycloheptadiene	NA	NA																										
11h-benzo[a]fluoren-11-one	NA	NA																										
13-docosenamide, (z)-	NA	NA																										
17-(1,5-dimethylhexyl)-10,13-dimet	NA	NA																										
1-docosene	NA	NA	0.82	JN									0.47	JN							0.47	JN	0.96	JN	0.85	JN		
1-eicosanol	NA	NA																										
1-heneicosanol	NA	NA																									0.69	JN
1-hexadecanol	NA	NA																										
1-hexadecene	NA	NA																										
1-nonadecene	NA	NA																	1.1	JN								
1-octadecanol	NA	NA																										
1-octadecene	NA	NA											0.4	JN					0.87	JN	0.41	JN	0.84	JN	0.76	JN	0.61	JN
1-propene, 2-methyl-	NA	NA																										
2-adamantanecarboxylic acid, 4,8-d	NA	NA																										
2h-1-benzopyran-2-one	NA	NA			2	JN	0.61	JN																				
2-naphthalenol, 1-[(4-nitrophenyl)	NA	NA																					0.46	JN				
2-octanone	NA	NA																										
2-pentanone, 3-ethyl-3-methyl-	NA	NA																										
2-pentanone, 4-hydroxy-	NA	NA																										
2-pentanone, 4-hydroxy-4-methyl-	NA	NA	2.4	JNA	3.7	JNA	5.7	JNA	3	JNA	3.5	JNA	2.3	JNA	3.1	JNA	3.1	JNA	2.5	JNA	2.4	JNA	2.4	JNA	1.9	JNA	2.2	JNA
2-pentanone, 4-hydroxy-4-methyl- isomer	NA	NA																										
2-phenylnaphthalene	NA	NA																										
3-eicosene, (e)-	NA	NA																										
3-hexanone	NA	NA																										
3-hexen-2-one	NA	NA																										
3-hexen-2-one, 5-methyl-	NA	NA																										
3-hexene-2,5-dione	NA	NA																										
3-octadecene, (e)-	NA	NA			2.5	JN																						
4',5-dihydroxy-7-methoxyflavanone	NA	NA			10	JN																						
4h-cyclopenta[def]phenanthrene	NA	NA																										
5-eicosene, (e)-	NA	NA																										
5-octadecene, (e)-	NA	NA																										
9,10-anthracenedione	NA	NA																										
9,12,15-octadecatrienoic acid, (z,z,z)-	NA	NA																										
9,12-octadecadienoic acid (z,z)-	NA	NA																										
9-eicosene, (e)-	NA	NA																										
9-hexacosene	NA	NA																										
9-hexadecenoic acid	NA	NA																										
9-hexadecyn-1-ol	NA	NA																										
9h-fluoren-9-one	NA	NA																										
9-octadecenamide, (z)-	NA	NA																										
9-octadecenamide, (z)-isomer	NA	NA																										
9-octadecenoic acid, (e)-	NA	NA																										
9-octadecenoic acid, 12-hydroxy-	NA	NA																										
anthracene, 1-methyl-	NA	NA																	0.33	JN								
benz[e]acephenanthrylene	NA	NA																	0.38	JN								
benz[j]aceanthrylene, 3-methyl-	NA	NA																										
benzeneacetic acid	NA	NA																										
benzo[a]pyrene	NA	NA																										
benzo[b]triphenylene	NA	NA																										
benzo[e]pyrene	NA	NA																										
benzo[k]fluoranthene	NA	NA																										
benzoic acid, 4-ethoxy-, ethyl est	NA	NA	1.2	JNC	1.2	JNC	0.81	JNC	0.88	JNC	0.75	JNC	0.69	JNC	0.87	JNC	1.1	JNC	1.5	JNC	0.74	JNC	1.6	JNC	1.4	JNC	1	JNC
bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA																										
bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA																										
bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA																										
butylated hydroxytoluene	NA	NA																										
caryophyllene	NA	NA																										
cis,cis,cis-7,10,13-hexadecatrienal	NA	NA																										
cis-9-hexadecenoic acid	NA	NA																										
cyclohexane, 1,1',1''-(1-ethanyl-2	NA	NA																										
cyclopentane	NA	NA																										
cyclotetracosane	NA	NA																										
decane	NA	NA																										
dibenz(a,e)aceanthrylene	NA	NA																										
dibenzo[def,mno]chrysene	NA	NA																										
dimethyl sulfide	NA	NA																										
dipropylene glycol monomethyl ethe	NA	NA			4.7	JNC	0.57	JN																				
e-15-heptadecenal	NA	NA	0.68	JN																								
e-7-octadecene	NA	NA																										
eicosane, 2-methyl-	NA	NA																	0.84	JN								
ethanol	NA	NA																										
heptadecane	NA	NA																										
heptane	NA	NA																										
hexadecane	NA	NA																										
hexadecanoic acid, methyl ester	NA	NA																										
indeno[1,2,3-cd]fluoranthene	NA	NA																										
indeno[1,2,3-fg]naphthacene	NA	NA																										
isoheptadecanol	NA	NA					0.65	JN																				
limonene	NA	NA																										
methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA																										
naphthalene	NA	NA																										
naphthalene, 2-methyl-	NA	NA																										
naphtho[2,3-b]norbornadiene	NA	NA																										
n-hexadecanoic acid	NA	NA			1.1	JN	0.78	JN											0.65	JN								
n-nonadecanol-1	NA	NA					0.78	JN																				
nonadecane	NA	NA			1.2	JN																						
octadecanal	NA	NA			8.2	JN	1	JN																				
octadecanoic acid	NA	NA																	0.48	JN								
octane, 2,7-dimethyl-	NA	NA			4.8	JN																						
oxirane, heptadecyl-	NA	NA																	0.79	JN								
oxirane, hexadecyl-	NA	NA					1.7	JN											0.62	JN								
pentadecanal-	NA	NA																										
pentadecane, 2,6,10,14-tetramethyl	NA	NA																										
perylene	NA	NA																										
phenanthrene, 1-methyl-	NA	NA																										
phenanthrene, 2,5-dimethyl-	NA	NA																										
phenanthrene, 2-methyl-	NA	NA																										
phenol, 4,4'-(1-methylethylidene)b	NA	NA																										
pyrene	NA	NA																										
tetratriacontane	NA	NA																										
unknown	NA	NA			1.1	J	4	J	0.47	J									0.4	JNC	0.36	J	0.32	JNC				
z-4-nonadecen-1-ol acetate	NA	NA																										
z-8-hexadecene	NA	NA																										
TOTAL SVOC TICs (suspect extraction artifacts *2-pentanone, 4-hydroxy-4-methyl-*, and *benzoic acid, 4-ethoxy-, ethyl est* are excluded from total)			1.5		42.3		11.6		0.47		ND		0.87		ND		ND		6.46		1.24		2.58		1.61		1.3	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 4: SVOC TICs in Soil

All data in mg/Kg (ppm)			Sample	DUP2-20260408
			Date	2026-04-08
SVOCs (8270)	**UU SCO**	**RRU SCO**	Result	Q
.alpha.-caryophyllene	NA	NA		
.alpha.-phellandrene	NA	NA		
.alpha.-pinene	NA	NA		
.beta.-pinene	NA	NA		
.beta.-sitosterol	NA	NA		
.gamma.-sitosterol	NA	NA		
1,2:4,5-dibenzopyrene	NA	NA		
1,2:7,8-dibenzophenanthrene	NA	NA		
1,2:7,8-dibenzophenanthrene isomer	NA	NA		
1,2-cyclohexanediol	NA	NA		
1,2-cyclohexanediol, trans-	NA	NA		
1,3-cycloheptadiene	NA	NA		
11h-benzo[a]fluoren-11-one	NA	NA		
13-docosenamide, (z)-	NA	NA		
17-(1,5-dimethylhexyl)-10,13-dimet	NA	NA		
1-docosene	NA	NA		
1-eicosanol	NA	NA		
1-heneicosanol	NA	NA	0.8	*JN*
1-hexadecanol	NA	NA		
1-hexadecene	NA	NA		
1-nonadecene	NA	NA	0.72	*JN*
1-octadecanol	NA	NA		
1-octadecene	NA	NA		
1-propene, 2-methyl-	NA	NA		
2-adamantanecarboxylic acid, 4,8-d	NA	NA		
2h-1-benzopyran-2-one	NA	NA		
2-naphthalenol, 1-[(4-nitrophenyl)	NA	NA		
2-octanone	NA	NA		
2-pentanone, 3-ethyl-3-methyl-	NA	NA		
2-pentanone, 4-hydroxy-	NA	NA		
2-pentanone, 4-hydroxy-4-methyl-	NA	NA	3.1	*JNA*
2-pentanone, 4-hydroxy-4-methyl- isomer	NA	NA		
2-phenylnaphthalene	NA	NA		
3-eicosene, (e)-	NA	NA		
3-hexanone	NA	NA		
3-hexen-2-one	NA	NA		
3-hexen-2-one, 5-methyl-	NA	NA		
3-hexene-2,5-dione	NA	NA		
3-octadecene, (e)-	NA	NA		
4',5-dihydroxy-7-methoxyflavanone	NA	NA		
4h-cyclopenta[def]phenanthrene	NA	NA		
5-eicosene, (e)-	NA	NA		
5-octadecene, (e)-	NA	NA		
9,10-anthracenedione	NA	NA		
9,12,15-octadecatrienoic acid, (z,z,z)-	NA	NA		
9,12-octadecadienoic acid (z,z)-	NA	NA		
9-eicosene, (e)-	NA	NA		
9-hexacosene	NA	NA		
9-hexadecenoic acid	NA	NA		
9-hexadecyn-1-ol	NA	NA		
9h-fluoren-9-one	NA	NA		
9-octadecenamide, (z)-	NA	NA		
9-octadecenamide, (z)-isomer	NA	NA		
9-octadecenoic acid, (e)-	NA	NA		
9-octadecenoic acid, 12-hydroxy-	NA	NA		
anthracene, 1-methyl-	NA	NA		
benz[e]acephenanthrylene	NA	NA		
benz[j]aceanthrylene, 3-methyl-	NA	NA		
benzeneacetic acid	NA	NA		
benzo[a]pyrene	NA	NA		
benzo[b]triphenylene	NA	NA		
benzo[e]pyrene	NA	NA		
benzo[k]fluoranthene	NA	NA		
benzoic acid, 4-ethoxy-, ethyl est	NA	NA	1.2	*JNC*
bicyclo[3.1.0]hexane, 4-methylene-1-(1-methylethyl	NA	NA		
bicyclo[3.1.1]hept-2-ene, 2,6-dimethyl-6-(4-methyl	NA	NA		
bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-,	NA	NA		
butylated hydroxytoluene	NA	NA		
caryophyllene	NA	NA		
cis,cis,cis-7,10,13-hexadecatrienal	NA	NA		
cis-9-hexadecenoic acid	NA	NA		
cyclohexane, 1,1',1"-(1-ethanyl-2	NA	NA		
cyclopentane	NA	NA		
cyclotetracosane	NA	NA		
decane	NA	NA		
dibenz(a,e)aceanthrylene	NA	NA		
dibenzo[def,mno]chrysene	NA	NA		
dimethyl sulfide	NA	NA		
dipropylene glycol monomethyl ethe	NA	NA		
e-15-heptadecenal	NA	NA		
e-7-octadecene	NA	NA		
eicosane, 2-methyl-	NA	NA		
ethanol	NA	NA		
heptadecane	NA	NA		
heptane	NA	NA		
hexadecane	NA	NA		
hexadecanoic acid, methyl ester	NA	NA		
indeno[1,2,3-cd]fluoranthene	NA	NA		
indeno[1,2,3-fg]naphthacene	NA	NA		
isoheptadecanol	NA	NA		
limonene	NA	NA		
methyl 6,9,12,15,18-heneicosapentaenoate	NA	NA		
naphthalene	NA	NA		
naphthalene, 2-methyl-	NA	NA		
naphtho[2,3-b]norbornadiene	NA	NA		
n-hexadecanoic acid	NA	NA		
n-nonadecanol-1	NA	NA		
nonadecane	NA	NA		
octadecanal	NA	NA		
octadecanoic acid	NA	NA		
octane, 2,7-dimethyl-	NA	NA		
oxirane, heptadecyl-	NA	NA		
oxirane, hexadecyl-	NA	NA		
pentadecanal-	NA	NA		
pentadecane, 2,6,10,14-tetramethyl	NA	NA		
perylene	NA	NA		
phenanthrene, 1-methyl-	NA	NA		
phenanthrene, 2,5-dimethyl-	NA	NA		
phenanthrene, 2-methyl-	NA	NA		
phenol, 4,4'-(1-methylethylidene)b	NA	NA		
pyrene	NA	NA		
tetratriacontane	NA	NA		
unknown	NA	NA		
z-4-nonadecen-1-ol acetate	NA	NA		
z-8-hexadecene	NA	NA		
		TOTAL SVOC TICs		
		(suspect extraction artifacts *2-pentanone, 4-hydroxy-4-methyl-*, and *benzoic acid, 4-ethoxy-, ethyl est* are excluded from total)	1.52	

Analyte Detected
Detected TICs

Q = Laboratory Qualifier (flags: J estimated, A and C possible artifact, others see lab report)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-01 SURF**			**SB-01 0-2**			**SB-01 10-12**			**SB-01 20-22**			**SB-01 43-45**			**SB-02 SURF**		
U= Not Detected ≥ value		Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	7,550		*10*	12,400		*10*	7,780		*10*	16,200		*10*	13,900		*10*	14,000		*10*
Antimony	NA	NA	3.8	*U*	*1*	3.5	*U*	*1*	3.9	*U*	*1*	3.9	*U*	*1*	4.3	*U*	*1*	3.4	*U*	*1*
Arsenic	13	16	6.6		*1*	7.67		*1*	5.89		*1*	6.8		*1*	10.9		*1*	5.15		*1*
Barium	410	410	43.6		*1*	53.3		*1*	214		*1*	51.3		*1*	61.4		*1*	61.2		*1*
Beryllium	4.4	43	0.37		*1*	0.52		*1*	0.32		*1*	0.49		*1*	0.58		*1*	0.54		*1*
Cadmium	2.5	2.5	0.38	*U*	*1*	0.35	*U*	*1*	0.63		*1*	0.39	*U*	*1*	0.43	*U*	*1*	0.47		*1*
Calcium	NA	NA	75,700		*10*	7,540		*1*	67,400		*10*	3,320		*1*	6,790		*1*	4,890		*1*
Chromium (trivalent)	30	110	10.6		*1*	15.3		*1*	13.3		*1*	21.4		*1*	18.3		*1*	17.4		*1*
Chromium (hexavalent)	1	1	0.37	*U*	*1*	0.37	*U*	*1*	0.44	*U*	*1*	0.39	*U*	*1*	0.43	*U*	*1*	0.42	*U*	*1*
Cobalt	NA	NA	7.99		*1*	10.6		*1*	6.42		*1*	14.9		*1*	12.5		*1*	9.33		*1*
Copper	50	280	24.5		*1*	28.3		*1*	20.9		*1*	40.8		*1*	24.9		*1*	31.1		*1*
Iron	NA	NA	19,500		*1*	28,700		*1*	17,200		*1*	38,800		*1*	32,200		*1*	25,000		*1*
Lead	63	400	22		*1*	11.9		*1*	83.1		*1*	23.5		*1*	16.7		*1*	72.9		*1*
Magnesium	NA	NA	7,290		*1*	3,980		*1*	4,850		*1*	5,530		*1*	5,460		*1*	3,500		*1*
Manganese	1,600	2,000	414		*1*	633		*1*	427		*1*	859		*1*	468		*1*	837		*1*
Mercury	0.18	0.3	0.081	*U*	*1*	0.08	*U*	*1*	0.161		*1*	0.087	*U*	*1*	0.096	*U*	*1*	0.084	*U*	*1*
Nickel	30	320	17.2		*1*	23.7		*1*	14.7		*1*	31.4		*1*	28.1		*1*	21.3		*1*
Potassium	NA	NA	987		*10*	1,120		*10*	948		*10*	1,120		*10*	1,420		*10*	881		*10*
Selenium	3.9	110	1.5	*U*	*1*	1.4	*U*	*1*	1.6	*U*	*1*	1.6	*U*	*1*	1.7	*U*	*1*	1.4	*U*	*1*
Silver	2	110	0.38	*U*	*1*	0.35	*U*	*1*	0.39	*U*	*1*	0.39	*U*	*1*	0.43	*U*	*1*	0.34	*U*	*1*
Sodium	NA	NA	95.1		*1*	53		*1*	183		*1*	75		*1*	133		*1*	68.6		*1*
Thallium	NA	NA	3.5	*U*	*1*	3.2	*U*	*1*	3.5	*U*	*1*	3.5	*U*	*1*	3.9	*U*	*1*	3.1	*U*	*1*
Vanadium	NA	NA	15.6		*1*	20.7		*1*	17.2		*1*	22.5		*1*	19.5		*1*	25.1		*1*
Zinc	109	6,600	54.6		*1*	66.2		*1*	230		*1*	83.8		*1*	68.8		*1*	87.4		*1*
Cyanide (total)	2.3	13	0.54	*U*	*1*	0.53	*U*	*1*	0.57	*U*	*1*	0.58	*U*	*1*	0.64	*U*	*1*	0.56	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-02 0-5**			**SB-02 18-20**			**SB-02 20-25**			**SB-02 46-48**			**SB-03 SURF**			**SB-03 0-2**		
U= Not Detected ≥ value		Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	16,400		*10*	17,600		*10*	16,000		*10*	19,100		*10*	12,000		*10*	13,100		*10*
Antimony	NA	NA	3.7	*U*	*1*	3.5	*U*	*1*	3.5	*U*	*1*	3.7	*U*	*1*	3.9	*U*	*1*	3.6	*U*	*1*
Arsenic	13	16	5.69		*1*	9.22		*1*	10.9		*1*	9.3		*1*	139		*1*	17.6		*1*
Barium	410	410	49.7		*1*	82.9		*1*	73.7		*1*	45.2		*1*	136		*1*	112		*1*
Beryllium	4.4	43	0.53		*1*	0.63		*1*	0.6		*1*	0.91		*1*	0.58		*1*	0.58		*1*
Cadmium	2.5	2.5	0.37	*U*	*1*	0.35	*U*	*1*	0.35	*U*	*1*	0.37	*U*	*1*	0.53		*1*	0.36	*U*	*1*
Calcium	NA	NA	1,980		*1*	5,220		*1*	2,000		*1*	3,810		*1*	3,070		*1*	4,740		*1*
Chromium (trivalent)	30	110	19.7		*1*	22.2		*1*	21.4		*1*	26.4		*1*	13.8		*1*	15.2		*1*
Chromium (hexavalent)	1	1	0.42	*U*	*1*	0.42	*U*	*1*	0.43	*U*	*1*	0.38	*U*	*1*	0.42	*U*	*1*	0.37	*U*	*1*
Cobalt	NA	NA	13.3		*1*	15.3		*1*	14.5		*1*	17.4		*1*	19.3		*1*	17		*1*
Copper	50	280	26.6		*1*	49		*1*	32.8		*1*			*1*	22.8		*1*	30.4		*1*
Iron	NA	NA	37,400		*1*	40,600		*1*	39,200		*1*	46,200		*10*	39,700		*1*	31,200		*1*
Lead	63	400	19.4		*1*	14.8		*1*	20.6		*1*	7.21		*1*	38.5		*1*	25.2		*1*
Magnesium	NA	NA	5,250		*1*	6,140		*1*	5,760		*1*	7,470		*1*	4,570		*1*	5,160		*1*
Manganese	1,600	2,000	725		*1*	830		*1*	594		*1*	890		*1*	696		*1*	846		*1*
Mercury	0.18	0.3	0.082	*U*	*1*	0.08	*U*	*1*	0.083	*U*	*1*	0.082	*U*	*1*	0.166		*1*	0.082	*U*	*1*
Nickel	30	320	30.2		*1*	34.2		*1*	32.2		*1*	39.5		*1*	30.1		*1*	28.9		*1*
Potassium	NA	NA	1,070		*10*	1,450		*10*	1,100		*10*	1,950		*10*	1,540		*10*	1,800		*10*
Selenium	3.9	110	1.5	*U*	*1*	2	*U*	*1*	1.4	*U*	*1*	2	*U*	*1*	1.5	*U*	*1*	1.4	*U*	*1*
Silver	2	110	0.37	*U*	*1*	0.35	*U*	*1*	0.35	*U*	*1*	0.37	*U*	*1*	0.39	*U*	*1*	0.36	*U*	*1*
Sodium	NA	NA	104		*1*	133		*1*	154		*1*	175		*1*	95.7		*1*	76.2		*1*
Thallium	NA	NA	3.3	*U*	*1*	3.1	*U*	*1*	3.1	*U*	*1*	3.3	*U*	*1*	3.5	*U*	*1*	3.3	*U*	*1*
Vanadium	NA	NA	25		*1*	24.4		*1*	21.5		*1*	24.8		*1*	12.8		*1*	13.9		*1*
Zinc	109	6,600	88.9		*1*	93.2		*1*	92.9		*1*	89.1		*1*	135		*1*	83.1		*1*
Cyanide (total)	2.3	13	0.54	*U*	*1*	0.53	*U*	*1*	0.56	*U*	*1*	0.55	*U*	*1*	0.56	*U*	*1*	0.54	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-03 18-20**			**SB-03 20-22**			**SB-04 SURF**			**SB-04 0-2**			**SB-04 21-23**			**SB-04 23-25**		
U= Not Detected ≥ value		Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-04-01			2026-04-01		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	15,100		*10*	17,700		*10*	15,500		*10*	11,500		*10*	16,500		*10*	17,300		*10*
Antimony	NA	NA	3.7	*U*	*1*	4	*U*	*1*	3.9	*U*	*1*	4.1	*U*	*1*	3.4	*U*	*1*	3.7	*U*	*1*
Arsenic	13	16	10.6		*1*	10.7		*1*	7.01		*1*	10.8		*1*	10.5		*1*	10.7		*1*
Barium	410	410	74.6		*1*	82		*1*	48.5		*1*	162		*1*	76.6		*1*	80.8		*1*
Beryllium	4.4	43	0.57		*1*	0.72		*1*	0.53		*1*	0.66		*1*	0.6		*1*	0.63		*1*
Cadmium	2.5	2.5	0.37	*U*	*1*	0.4	*U*	*1*	0.39	*U*	*1*	1.1		*1*	0.34	*U*	*1*	0.37	*U*	*1*
Calcium	NA	NA	9,580		*1*	7,830		*1*	1,670		*1*	19,000		*10*	10,500		*1*	4,280		*1*
Chromium (trivalent)	30	110	20.4		*1*	23.4		*1*	18.3		*1*	20.3		*1*	21.8		*1*	21.7		*1*
Chromium (hexavalent)	1	1	0.42	*U*	*1*	0.43	*U*	*1*	0.51	*U*	*1*	0.5	*U*	*1*	0.42	*U*	*1*	0.58		*1*
Cobalt	NA	NA	13.8		*1*	15.3		*1*	10.6		*1*	10.1		*1*	14.6		*1*	15		*1*
Copper	50	280	25.2		*1*	30		*1*	17.4		*1*	65.8		*1*	31.4		*1*	35.1		*1*
Iron	NA	NA	34,600		*1*	41,600		*1*	27,000		*1*	29,200		*1*	37,600		*1*	40,200		*1*
Lead	63	400	15.9		*1*	18.4		*1*	22.5		*1*	344		*1*	25.2		*1*	36.8		*1*
Magnesium	NA	NA	6,850		*1*	6,300		*1*	3,670		*1*	4,280		*1*	6,790		*1*	6,170		*1*
Manganese	1,600	2,000	654		*1*	574		*1*	410		*1*	716		*1*	578		*1*	508		*1*
Mercury	0.18	0.3	0.084	*U*	*1*	0.093	*U*	*1*	0.099	*U*	*1*	0.335		*1*	0.083	*U*	*1*	0.083	*U*	*1*
Nickel	30	320	30.8		*1*	35.7		*1*	23.3		*1*	26.4		*1*	32.2		*1*	33.9		*1*
Potassium	NA	NA	1,340		*10*	1,430		*10*	1,150		*10*	953		*10*	1,250		*10*	1,140		*10*
Selenium	3.9	110	1.5	*U*	*1*	1.6	*U*	*1*	1.6	*U*	*1*	2	*U*	*1*	1.4	*JU*	*1*	1.5	*U*	*1*
Silver	2	110	0.37	*U*	*1*	0.4	*U*	*1*	0.39	*U*	*1*	0.75	*U*	*1*	0.34	*U*	*1*	0.37	*U*	*1*
Sodium	NA	NA	153		*1*	267		*1*	89		*1*	244		*1*	138		*1*	114		*1*
Thallium	NA	NA	3.4	*U*	*1*	3.6	*U*	*1*	3.5	*U*	*1*	3.7	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*
Vanadium	NA	NA	21.8		*1*	23.8		*1*	23.2		*1*	27.5		*1*	22.6		*1*	22.7		*1*
Zinc	109	6,600	75.2		*1*	87.3		*1*	78.5		*1*	349		*1*	88.9		*1*	93.3		*1*
Cyanide (total)	2.3	13	0.56	*U*	*1*	0.62	*U*	*1*	0.66	*U*	*1*	0.65	*U*	*1*	0.56	*U*	*1*	0.56	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**DUP-20260401**			**SB-05 SURF**			**SB-05 0-1**			**SB-05 1-2**			**SB-05 10-12**			**SB-05 22-24**		
U= Not Detected ≥ value		Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	18,200		*10*	6,910		*1*	7,060		*1*	10,500		*10*	16,500		*10*	17,000		*10*
Antimony	NA	NA	3.8	*U*	*1*	3.8	*U*	*1*	4.5	*U*	*1*	4.8	*U*	*1*	3.5	*U*	*1*	3.4	*U*	*1*
Arsenic	13	16	10.7		*1*	7.64		*1*	7.03		*1*	10.2		*1*	9.5		*1*	9.5		*1*
Barium	410	410	82.4		*1*	86		*1*	68.3		*1*	215		*1*	62.7		*1*	81.9		*1*
Beryllium	4.4	43	0.62		*1*	0.51		*1*	1.15		*1*	1.04		*1*	0.61		*1*	0.61		*1*
Cadmium	2.5	2.5	0.43		*1*	0.38	*U*	*1*	0.45	*U*	*1*	0.53		*1*	0.35	*U*	*1*	0.34	*U*	*1*
Calcium	NA	NA	2,860		*1*	81,500		*10*	2,880		*1*	3,690		*1*	4,620		*1*	2,000		*1*
Chromium (trivalent)	30	110	22.8		*1*	11.7		*1*	11		*1*	16.1		*1*	21.4		*1*	21.2		*1*
Chromium (hexavalent)	1	1	0.38	*U*	*1*	0.43	*U*	*1*	0.46	*U*	*1*	0.52	*U*	*1*	0.37	*U*	*1*	0.39	*U*	*1*
Cobalt	NA	NA	14.1		*1*	7.99		*1*	10.2		*1*	14.1		*1*	14.3		*1*	14.5		*1*
Copper	50	280	32.2		*1*	25.8		*1*	31.6		*1*	56		*1*	32.7		*1*	32.4		*1*
Iron	NA	NA	40,500		*1*	16,700		*1*	13,600		*1*	15,700		*1*	38,200		*1*	39,500		*1*
Lead	63	400	32.6		*1*	38		*1*	70.3		*1*	706		*1*	16.1		*1*	17.7		*1*
Magnesium	NA	NA	6,410		*1*	6,080		*1*	1,060		*1*	1,130		*1*	6,580		*1*	5,990		*1*
Manganese	1,600	2,000	493		*1*	373		*1*	174		*1*	1,910		*1*	651		*1*	663		*1*
Mercury	0.18	0.3	0.083	*U*	*1*	0.093	*U*	*1*	0.096	*U*	*1*	0.11	*U*	*1*	0.08	*U*	*1*	0.082	*U*	*1*
Nickel	30	320	33.2		*1*	21.7		*1*	26		*1*	24		*1*	32.7		*1*	33.7		*1*
Potassium	NA	NA	1,190		*10*	945		*10*	672		*1*	650		*1*	1,500		*10*	1,210		*10*
Selenium	3.9	110	1.5	*U*	*1*	1.5	*U*	*1*	1.8	*JU*	*1*	1.9	*U*	*1*	1.4	*U*	*1*	1.3	*U*	*1*
Silver	2	110	0.38	*U*	*1*	0.38	*U*	*1*	0.45	*U*	*1*	0.48	*U*	*1*	0.35	*U*	*1*	0.34	*U*	*1*
Sodium	NA	NA	112		*1*	134		*1*	78		*1*	134		*1*	60		*1*	58		*1*
Thallium	NA	NA	1.5	*U*	*1*	1.5	*U*	*1*	1.8	*U*	*1*	1.9	*U*	*1*	1.4	*U*	*1*	1.3	*U*	*1*
Vanadium	NA	NA	22.8		*1*	24.4		*1*	17.3		*1*	31.5		*1*	22.1		*1*	22		*1*
Zinc	109	6,600	92.1		*1*	65.5		*1*	89.9		*1*	1,060		*1*	84.1		*1*	87.1		*1*
Cyanide (total)	2.3	13	0.56	*U*	*1*	0.62	*U*	*1*	0.64	*U*	*1*	0.7	*U*	*1*	0.53	*U*	*1*	0.54	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-06 SURF**			**SB-06 0-2**			**SB-06 16-18**			**SB-06 18-20**			**SB-07 SURF**			**SB-07 0-1**		
U= Not Detected ≥ value		Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	12,100		*10*	13,200		*10*	18,100		*10*	17,100		*10*	6,820		*10*	8,900		*10*
Antimony	NA	NA	4	*U*	*1*	3.9	*U*	*1*	3.8	*U*	*1*	3.6	*U*	*1*	3.4	*U*	*1*	3.9	*U*	*1*
Arsenic	13	16	40.1		*1*	4.02		*1*	11.2		*1*	11.1		*1*	4.43		*1*	6.54		*1*
Barium	410	410	61		*1*	96.8		*1*	83.2		*1*	67.8		*1*	51.7		*1*	49.5		*1*
Beryllium	4.4	43	0.54		*1*	0.49		*1*	0.68		*1*	0.64		*1*	0.35		*1*	0.42		*1*
Cadmium	2.5	2.5	0.4	*U*	*1*	0.39	*U*	*1*	0.42		*1*	0.36		*1*	0.34	*U*	*1*	0.39	*U*	*1*
Calcium	NA	NA	57,100		*10*	2,000		*1*	1,530		*1*	1,510		*1*	61,400		*10*	80,800		*10*
Chromium (trivalent)	30	110	16.9		*1*	14.9		*1*	23.1		*1*	22		*1*	10.5		*1*	12.7		*1*
Chromium (hexavalent)	1	1	0.39	*U*	*1*	0.45	*U*	*1*	0.41	*U*	*1*	0.4	*U*	*1*	0.44	*U*	*1*	0.37	*U*	*1*
Cobalt	NA	NA	9.7		*1*	7.46		*1*	16.4		*1*	15.1		*1*	7.46		*1*	8.1		*1*
Copper	50	280	36.7		*1*	17.6		*1*	47.2		*1*	44.7		*1*	29		*1*	35.5		*1*
Iron	NA	NA	26,700		*1*	21,300		*1*	42,000		*1*	39,700		*1*	13,900		*1*	19,000		*1*
Lead	63	400	43.3		*1*	34		*1*	19.3		*1*	18.5		*1*	41.2		*1*	17.5		*1*
Magnesium	NA	NA	10,900		*1*	2,410		*1*	5,960		*1*	5,680		*1*	7,370		*1*	21,300		*1*
Manganese	1,600	2,000	842		*1*	1,190		*1*	858		*1*	713		*1*	445		*1*	716		*1*
Mercury	0.18	0.3	0.084	*U*	*1*	0.097		*1*	0.082	*U*	*1*	0.082	*U*	*1*	0.085	*U*	*1*	0.082	*U*	*1*
Nickel	30	320	21.2		*1*	15.8		*1*	35.7		*1*	33.8		*1*	18.6		*1*	15.9		*1*
Potassium	NA	NA	1,550		*10*	741		*1*	1,390		*10*	1,300		*10*	931		*10*	1,290		*10*
Selenium	3.9	110	1.6	*U*	*1*	1.6	*JU*	*1*	1.5	*JU*	*1*	1.4	*JU*	*1*	1.4	*U*	*1*	1.5	*U*	*1*
Silver	2	110	0.4	*U*	*1*	0.39	*U*	*1*	3.6		*1*	0.45		*1*	0.34	*U*	*1*	0.39	*U*	*1*
Sodium	NA	NA	168		*1*	93		*1*	128		*1*	106		*1*	99		*1*	113		*1*
Thallium	NA	NA	1.6	*U*	*1*	1.6	*U*	*1*	1.5	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*
Vanadium	NA	NA	24.6		*1*	24.4		*1*	24.5		*1*	23.2		*1*	17.1		*1*	18.7		*1*
Zinc	109	6,600	84.3		*1*	66.7		*1*	93.5		*1*	87.3		*1*	49.3		*1*	69.7		*1*
Cyanide (total)	2.3	13	0.56	*U*	*1*	0.57	*U*	*1*	0.55	*U*	*1*	0.54	*U*	*1*	0.57	*U*	*1*	0.55	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-07 1-2**			**SB-07 16-18**			**SB-07 21-23**			**SB-08 SURF**			**SB-08 0-2**			**SB-08 20-22**		
U= Not Detected ≥ value		Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	8,560		*10*	8,410		*10*	16,300		*10*	8,300		*10*	9,980		*10*	7,000		*1*
Antimony	NA	NA	3.8	*U*	*1*	3.9	*U*	*1*	3.6	*U*	*1*	3.7	*U*	*1*	3.4	*U*	*1*	3.5	*U*	*1*
Arsenic	13	16	5.12		*1*	6.11		*1*	10.1		*1*	9.13		*1*	6.79		*1*	3.41		*1*
Barium	410	410	41.3		*1*	46		*1*	77.8		*1*	52.1		*1*	97.3		*1*	43.4		*1*
Beryllium	4.4	43	0.39		*1*	0.39		*1*	0.64		*1*	0.36		*1*	0.42		*1*	0.28		*1*
Cadmium	2.5	2.5	0.38	*U*	*1*	0.39	*U*	*1*	0.36	*U*	*1*	0.37	*U*	*1*	0.34	*U*	*1*	0.35	*U*	*1*
Calcium	NA	NA	68,300		*10*	58,400		*10*	3,370		*1*	89,600		*10*	97,600		*100*	78,100		*10*
Chromium (trivalent)	30	110	12		*1*	13.1		*1*	21.8		*1*	13.9		*1*	15.3		*1*	15.7		*1*
Chromium (hexavalent)	1	1	0.4	*U*	*1*	0.38	*U*	*1*	0.41	*U*	*1*	0.41	*U*	*1*	0.41	*U*	*1*	0.4	*U*	*1*
Cobalt	NA	NA	7.48		*1*	7.89		*1*	14.8		*1*	8.02		*1*	8.25		*1*	5.87		*1*
Copper	50	280	33.1		*1*	35.9		*1*	30.1		*1*	45		*1*	33.4		*1*	21.7		*1*
Iron	NA	NA	17,700		*1*	18,400		*1*	40,600		*1*	31,800		*1*	22,000		*1*	18,200		*1*
Lead	63	400	14.7		*1*	23.9		*1*	15.3		*1*	29.6		*1*	18		*1*	14.7		*1*
Magnesium	NA	NA	12,900		*1*	11,600		*1*	6,120		*1*	10,900		*1*	10,700		*1*	12,900		*1*
Manganese	1,600	2,000	610		*1*	637		*1*	720		*1*	583		*1*	668		*1*	634		*1*
Mercury	0.18	0.3	0.083	*U*	*1*	0.084	*U*	*1*	0.083	*U*	*1*	0.082	*U*	*1*	0.082	*U*	*1*	0.081	*U*	*1*
Nickel	30	320	15.2		*1*	16.5		*1*	33.6		*1*	17.1		*1*	17.8		*1*	13.6		*1*
Potassium	NA	NA	1,120		*10*	1,150		*10*	1,300		*10*	1,090		*10*	1,180		*10*	997		*10*
Selenium	3.9	110	1.5	*U*	*1*	1.6	*U*	*1*	1.4	*JU*	*1*	1.5	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*
Silver	2	110	0.38	*U*	*1*	0.39	*U*	*1*	0.36	*U*	*1*	0.37	*U*	*1*	0.34	*U*	*1*	0.35	*U*	*1*
Sodium	NA	NA	117		*1*	509		*1*	138		*1*	119		*1*	189		*1*	139		*1*
Thallium	NA	NA	1.5	*U*	*1*	1.6	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*
Vanadium	NA	NA	16.8		*1*	17.3		*1*	22.6		*1*	18.9		*1*	19.6		*1*	16.4		*1*
Zinc	109	6,600	65.9		*1*	70.6		*1*	86		*1*	62.5		*1*	64.5		*1*	44.3		*1*
Cyanide (total)	2.3	13	0.56	*U*	*1*	0.56	*U*	*1*	0.56	*U*	*1*	0.55	*U*	*1*	0.54	*U*	*1*	0.47	*J*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-08 26-28**			**SB-09 SURF**			**SB-09 0-1**			**SB-09 1-2**			**SB-09 6-8**			**SB-09 25-27**		
U= Not Detected ≥ value		Date	2026-04-01			2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	15,800		*10*	10,400		*10*	6,240		*1*	7,350		*1*	9,460		*10*	11,700		*10*
Antimony	NA	NA	3.6	*U*	*1*	3.8	*U*	*1*	3.3	*U*	*1*	4.3	*U*	*1*	3.6	*U*	*1*	4	*U*	*1*
Arsenic	13	16	11.2		*1*	4.57		*1*	5.19		*1*	10.9		*1*	6.81		*1*	6.97		*1*
Barium	410	410	62.8		*1*	58.1		*1*	51.2		*1*	137		*1*	27.3		*1*	50.1		*1*
Beryllium	4.4	43	0.53		*1*	0.36		*1*	0.31		*1*	0.61		*1*	0.41		*1*	0.4		*1*
Cadmium	2.5	2.5	0.36	*U*	*1*	0.38	*U*	*1*	0.33	*U*	*1*	0.43	*U*	*1*	0.36	*U*	*1*	0.4	*U*	*1*
Calcium	NA	NA	2,200		*1*	110,000		*10*	68,400		*10*	29,800		*10*	1,670		*1*	20,900		*10*
Chromium (trivalent)	30	110	20.5		*1*	12.8		*1*	13.4		*1*	13.6		*1*	10.6		*1*	15.3		*1*
Chromium (hexavalent)	1	1	0.39	*U*	*1*	1.51		*1*	1.43		*1*	0.48	*U*	*1*	0.43	*U*	*1*	0.4	*U*	*1*
Cobalt	NA	NA	13.2		*1*	6.67		*1*	5.62		*1*	6.74		*1*	7.33		*1*	9.8		*1*
Copper	50	280	24.8		*1*	20.2		*1*	26.7		*1*	49.6		*1*	28.2		*1*	26.2		*1*
Iron	NA	NA	37,400		*1*	16,300		*1*	14,900		*1*	19,200		*1*	21,000		*1*	25,700		*1*
Lead	63	400	13.2		*1*	25.6		*1*	255		*1*	371		*1*	9.9		*1*	8.5		*1*
Magnesium	NA	NA	5,770		*1*	11,500		*1*	7,970		*1*	7,510		*1*	2,600		*1*	4,350		*1*
Manganese	1,600	2,000	459		*1*	434		*1*	430		*1*	638		*1*	614		*1*	399		*1*
Mercury	0.18	0.3	0.082	*U*	*1*	0.087	*U*	*1*	0.084	*U*	*1*	0.117		*1*	0.086	*U*	*1*	0.086	*U*	*1*
Nickel	30	320	31.3		*1*	16.4		*1*	13.2		*1*	14.4		*1*	17.8		*1*	23.2		*1*
Potassium	NA	NA	950		*10*	1,620		*10*	934		*10*	974		*10*	927		*10*	829		*10*
Selenium	3.9	110	1.4	*U*	*1*	1.5	*U*	*1*	1.3	*U*	*1*	1.7	*U*	*1*	1.5	*U*	*1*	1.6	*U*	*1*
Silver	2	110	0.36	*U*	*1*	0.38	*U*	*1*	0.33	*U*	*1*	0.43	*U*	*1*	0.36	*U*	*1*	0.4	*U*	*1*
Sodium	NA	NA	86		*1*	341		*1*	106		*1*	141		*1*	40		*1*	96		*1*
Thallium	NA	NA	1.4	*U*	*1*	1.5	*U*	*1*	1.3	*U*	*1*	1.7	*U*	*1*	1.5	*U*	*1*	1.6	*U*	*1*
Vanadium	NA	NA	20.7		*1*	13.7		*1*	12.1		*1*	18.3		*1*	21		*1*	14.7		*1*
Zinc	109	6,600	86.9		*1*	76.3		*1*	55.2		*1*	91.9		*1*	53.1		*1*	64.1		*1*
Cyanide (total)	2.3	13	0.54	*U*	*1*	0.58	*U*	*1*	0.56	*U*	*1*	0.61	*U*	*1*	0.57	*U*	*1*	0.57	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-09 42-44**			**SB-10 SURF**			**SB-10 0-2**			**SB-10 18-20**			**SB-10 23-25**			**SB-11 SURF**		
U= Not Detected ≥ value		Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	15,100		*10*	8,880		*10*	8,980		*10*	11,500		*10*	13,700		*10*	7,570		*10*
Antimony	NA	NA	3.4	*U*	*1*	3.8	*U*	*1*	3.6	*U*	*1*	3.2	*U*	*1*	3.4	*U*	*1*	3.3	*U*	*1*
Arsenic	13	16	8.83		*1*	4.33		*1*	5.93		*1*	5.63		*1*	6.8		*1*	4.42		*1*
Barium	410	410	70.3		*1*	39.4		*1*	70.7		*1*	56.7		*1*	61.7		*1*	39.6		*1*
Beryllium	4.4	43	0.52		*1*	0.33		*1*	0.35		*1*	0.39		*1*	0.45		*1*	0.31		*1*
Cadmium	2.5	2.5	0.36		*1*	0.38	*U*	*1*	0.42		*1*	0.32	*U*	*1*	0.36		*1*	0.33	*U*	*1*
Calcium	NA	NA	20,300		*10*	60,900		*10*	32,300		*10*	9,620		*1*	3,220		*1*	52,300		*10*
Chromium (trivalent)	30	110	17.5		*1*	11.8		*1*	11.7		*1*	13.9		*1*	17.8		*1*	10.8		*1*
Chromium (hexavalent)	1	1	0.4	*U*	*1*	0.44	*U*	*1*	0.44	*U*	*1*	0.4	*U*	*1*	0.42	*U*	*1*	0.44	*U*	*1*
Cobalt	NA	NA	10.9		*1*	6.11		*1*	6.12		*1*	9.98		*1*	11.1		*1*	5.73		*1*
Copper	50	280	22.6		*1*	51.3		*1*	33.4		*1*	18.5		*1*	29.9		*1*	25		*1*
Iron	NA	NA	28,400		*1*	16,200		*1*	20,200		*1*	24,400		*1*	28,700		*1*	16,600		*1*
Lead	63	400	13.6		*1*	47.5		*1*	108		*1*	7.5		*1*	20.7		*1*	15.5		*1*
Magnesium	NA	NA	4,490		*1*	8,170		*1*	5,090		*1*	4,500		*1*	4,870		*1*	9,690		*1*
Manganese	1,600	2,000	620		*1*	389		*1*	676		*1*	634		*1*	552		*1*	562		*1*
Mercury	0.18	0.3	0.086	*U*	*1*	0.0987		*1*	0.624		*1*	0.08	*U*	*1*	0.082	*U*	*1*	0.084	*U*	*1*
Nickel	30	320	25.1		*1*	14.8		*1*	13.4		*1*	22		*1*	26.7		*1*	15.2		*1*
Potassium	NA	NA	1,540		*10*	1,190		*10*	1,100		*10*	1,040		*10*	1,050		*10*	799		*10*
Selenium	3.9	110	1.4	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*	1.3	*U*	*1*	1.4	*U*	*1*	1.3	*U*	*1*
Silver	2	110	0.34	*U*	*1*	0.38	*U*	*1*	0.36	*U*	*1*	0.32	*U*	*1*	0.34	*U*	*1*	0.33	*U*	*1*
Sodium	NA	NA	174		*1*	107		*1*	57		*1*	66		*1*	61		*1*	87		*1*
Thallium	NA	NA	1.4	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*	1.3	*U*	*1*	1.4	*U*	*1*	1.3	*U*	*1*
Vanadium	NA	NA	17.6		*1*	15		*1*	15.9		*1*	14.5		*1*	17.7		*1*	13.7		*1*
Zinc	109	6,600	66.7		*1*	70.7		*1*	124		*1*	58.6		*1*	74.6		*1*	57.9		*1*
Cyanide (total)	2.3	13	0.57	*U*	*1*	0.37	*J*	*1*	0.59	*U*	*1*	0.53	*U*	*1*	0.55	*U*	*1*	0.56	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-11 0-2**			**SB-11 9-11**			**SB-11 20-22**			**SB-12 SURF**			**SB-12 0-1**			**SB-12 1-2**		
U= Not Detected ≥ value		Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	8,690		*10*	12,300		*10*	15,100		*10*	10,200		*10*	8,050		*10*	10,500		*10*
Antimony	NA	NA	3.4	*U*	*1*	3.9	*U*	*1*	3.2	*U*	*1*	3.7	*U*	*1*	3.6	*U*	*1*	3.5	*U*	*1*
Arsenic	13	16	4.53		*1*	7.39		*1*	7.7		*1*	3.97		*1*	5.37		*1*	5.7		*1*
Barium	410	410	45.6		*1*	76.8		*1*	67.5		*1*	55.6		*1*	45.8		*1*	46.7		*1*
Beryllium	4.4	43	0.35		*1*	0.55		*1*	0.53		*1*	0.39		*1*	0.34		*1*	0.46		*1*
Cadmium	2.5	2.5	0.34	*U*	*1*	0.39	*U*	*1*	0.39		*1*	0.37	*U*	*1*	0.36	*U*	*1*	0.35	*U*	*1*
Calcium	NA	NA	25,800		*10*	4,800		*1*	1,500		*1*	92,000		*10*	60,800		*10*	23,500		*10*
Chromium (trivalent)	30	110	10.1		*1*	14.9		*1*	18.5		*1*	11.8		*1*	9.68		*1*	12.5		*1*
Chromium (hexavalent)	1	1	0.4	*U*	*1*	0.42	*U*	*1*	0.42	*U*	*1*	0.43	*U*	*1*	0.41	*U*	*1*	0.45	*U*	*1*
Cobalt	NA	NA	6.55		*1*	11.6		*1*	12.2		*1*	6.32		*1*	5.35		*1*	7.2		*1*
Copper	50	280	23.5		*1*	16.5		*1*	27.2		*1*	21.6		*1*	20.4		*1*	25.7		*1*
Iron	NA	NA	16,000		*1*	27,300		*1*	32,400		*1*	17,500		*1*	14,500		*1*	20,100		*1*
Lead	63	400	20.4		*1*	14.1		*1*	13.5		*1*	8.5		*1*	10.3		*1*	11.3		*1*
Magnesium	NA	NA	5,790		*1*	3,960		*1*	4,940		*1*	8,760		*1*	7,360		*1*	6,860		*1*
Manganese	1,600	2,000	537		*1*	1,000		*1*	509		*1*	419		*1*	402		*1*	666		*1*
Mercury	0.18	0.3	0.083	*U*	*1*	0.086	*U*	*1*	0.082	*U*	*1*	0.084	*U*	*1*	0.083	*U*	*1*	0.086	*U*	*1*
Nickel	30	320	15.5		*1*	24		*1*	29.3		*1*	15.3		*1*	12.5		*1*	17.1		*1*
Potassium	NA	NA	983		*10*	1,460		*10*	1,190		*10*	1,140		*10*	1,020		*10*	1,180		*10*
Selenium	3.9	110	1.4	*U*	*1*	1.6	*U*	*1*	1.3	*U*	*1*	1.5	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*
Silver	2	110	0.34	*U*	*1*	0.39	*U*	*1*	0.32	*U*	*1*	0.37	*U*	*1*	0.36	*U*	*1*	0.35	*U*	*1*
Sodium	NA	NA	73		*1*	70		*1*	98		*1*	152		*1*	97		*1*	63		*1*
Thallium	NA	NA	1.4	*U*	*1*	1.6	*U*	*1*	1.3	*U*	*1*	1.5	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*
Vanadium	NA	NA	14.4		*1*	15.3		*1*	18.6		*1*	14		*1*	13.5		*1*	17.7		*1*
Zinc	109	6,600	57		*1*	70.4		*1*	76.4		*1*	48.6		*1*	45.8		*1*	64		*1*
Cyanide (total)	2.3	13	0.56	*U*	*1*	0.57	*U*	*1*	0.55	*U*	*1*	0.56	*U*	*1*	0.56	*U*	*1*	0.57	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-12 6-8**			**DUP-20260402**			**SB-12 22-24**			**SB-12 43-45**			**SB-13 SURF**			**SB-13 0-2**		
U= Not Detected ≥ value		Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-03			2026-04-03		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	7,500		*1*	8,570		*10*	13,800		*10*	14,100		*10*	10,200		*10*	8,820		*10*
Antimony	NA	NA	3.8	*U*	*1*	3.7	*U*	*1*	3.6	*U*	*1*	3.6	*U*	*1*	3.8	*U*	*1*	3.9	*U*	*1*
Arsenic	13	16	5.75		*1*	6.34		*1*	7.93		*1*	8.1		*1*	6.16		*1*	5.33		*1*
Barium	410	410	69.2		*1*	66		*1*	71.2		*1*	62.8		*1*	61.6		*1*	42.1		*1*
Beryllium	4.4	43	0.43		*1*	0.5		*1*	0.51		*1*	0.52		*1*	0.39		*1*	0.37		*1*
Cadmium	2.5	2.5	0.46		*1*	0.48		*1*	0.43		*1*	0.36		*1*	0.5		*1*	0.39	*U*	*1*
Calcium	NA	NA	35,100		*10*	14,800		*10*	1,840		*1*	4,750		*1*	84,000		*10*	61,400		*10*
Chromium (trivalent)	30	110	11.6		*1*	12.4		*1*	18.2		*1*	17.5		*1*	14.6		*1*	12.1		*1*
Chromium (hexavalent)	1	1	0.45	*U*	*1*	0.4	*U*	*1*	0.39	*U*	*1*	0.39	*U*	*1*	0.4	*U*	*1*	0.38	*U*	*1*
Cobalt	NA	NA	6.02		*1*	6.66		*1*	12		*1*	11.6		*1*	6.92		*1*	7.4		*1*
Copper	50	280	27.8		*1*	28		*1*	38.2		*1*	23.6		*1*	26		*1*	27.3		*1*
Iron	NA	NA	18,100		*1*	19,500		*1*	29,400		*1*	29,500		*1*	23,200		*1*	19,000		*1*
Lead	63	400	89.7		*1*	71.6		*1*	17.9		*1*	12.6		*1*	12.4		*1*	17		*1*
Magnesium	NA	NA	4,810		*1*	3,560		*1*	4,410		*1*	4,740		*1*	8,140		*1*	19,300		*1*
Manganese	1,600	2,000	567		*1*	518		*1*	1,450		*1*	483		*1*	511		*1*	716		*1*
Mercury	0.18	0.3	0.129		*1*	0.088	*U*	*1*	0.082	*U*	*1*	0.085	*U*	*1*	0.03	*U*	*2*	0.03	*U*	*2*
Nickel	30	320	14.9		*1*	16.7		*1*	29.1		*1*	27.5		*1*	18.4		*1*	17.3		*1*
Potassium	NA	NA	1,070		*10*	1,030		*10*	1,280		*10*	1,310		*10*	1,430		*10*	1,290		*10*
Selenium	3.9	110	1.5	*U*	*1*	1.5	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*	1.6	*U*	*1*
Silver	2	110	0.38	*U*	*1*	0.37	*U*	*1*	0.36	*U*	*1*	0.36	*U*	*1*	0.38	*U*	*1*	0.39	*U*	*1*
Sodium	NA	NA	104		*1*	87		*1*	57		*1*	125		*1*	198		*1*	108		*1*
Thallium	NA	NA	1.5	*U*	*1*	1.5	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*	1.6	*U*	*1*
Vanadium	NA	NA	15.8		*1*	16.3		*1*	17.6		*1*	18		*1*	15.1		*1*	15.9		*1*
Zinc	109	6,600	118		*1*	94.7		*1*	85.2		*1*	67.1		*1*	61		*1*	59.2		*1*
Cyanide (total)	2.3	13	0.59	*U*	*1*	5.61		*1*	0.55	*U*	*1*	0.57	*U*	*1*	0.58	*U*	*1*	0.55	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-13 7-9**			**SB-13 20-22**			**SB-13 22-23**			**SB-13 23-25**			**SB-14 SURF**			**SB-14 0-2**		
U= Not Detected ≥ value		Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	10,900		*10*	8,610		*10*	10,200		*10*	10,200		*10*	8,820		*10*	11,400		*10*
Antimony	NA	NA	4	*U*	*1*	3.4	*U*	*1*	3.6	*U*	*1*	4.3	*U*	*1*	1,680		*100*	4.1	*U*	*1*
Arsenic	13	16	11.2		*1*	5.64		*1*	5.63		*1*	9.08		*1*	27.4		*1*	5.02		*1*
Barium	410	410	235		*1*	61.3		*1*	45		*1*	61.6		*1*	88.6		*1*	92		*1*
Beryllium	4.4	43	0.65		*1*	0.34		*1*	0.42		*1*	0.4		*1*	0.34		*1*	0.46		*1*
Cadmium	2.5	2.5	1.3		*1*	0.75		*1*	0.42		*1*	0.43	*U*	*1*	0.4		*1*	0.41	*U*	*1*
Calcium	NA	NA	38,500		*10*	73,600		*10*	34,400		*10*	5,550		*1*	108,000		*10*	2,200		*1*
Chromium (trivalent)	30	110	20		*1*	14.4		*1*	13.8		*1*	13.5		*1*	26.9		*1*	11.6		*1*
Chromium (hexavalent)	1	1	0.5	*U*	*1*	0.41	*U*	*1*	0.4	*U*	*1*	0.48	*U*	*1*	0.48	*U*	*1*	0.45	*U*	*1*
Cobalt	NA	NA	8.04		*1*	7.32		*1*	9.38		*1*	9.61		*1*	8.23		*1*	7.53		*1*
Copper	50	280	74.2		*1*	20.1		*1*	20.7		*1*	20.1		*1*	63.6		*1*	19		*1*
Iron	NA	NA	18,600		*1*	25,000		*1*	24,300		*1*	23,400		*1*	18,100		*1*	21,700		*1*
Lead	63	400	473		*1*	20		*1*	9.2		*1*	12.4		*1*	26,200		*10*	35.7		*1*
Magnesium	NA	NA	5,440		*1*	6,570		*1*	5,280		*1*	4,130		*1*	17,700		*1*	3,030		*1*
Manganese	1,600	2,000	832		*1*	857		*1*	564		*1*	378		*1*	819		*1*	1,280		*1*
Mercury	0.18	0.3	0.41		*2*	0.03	*U*		0.03	*U*		0.03	*U*		0.27			0.03		
Nickel	30	320	18.8		*1*	17.5		*1*	23.2		*1*	22.1		*1*	47.7		*1*	15.2		*1*
Potassium	NA	NA	1,290		*10*	1,180		*10*	1,040		*10*	1,080		*10*	1,690		*10*	830		*1*
Selenium	3.9	110	1.6	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*	1.7	*U*	*1*	1.5	*U*	*1*	1.6	*U*	*1*
Silver	2	110	0.78		*1*	0.34	*U*	*1*	0.36	*U*	*1*	0.43	*U*	*1*	1.78		*1*	0.41	*U*	*1*
Sodium	NA	NA	196		*1*	86		*1*	64		*1*	52		*1*	460		*1*	33		*1*
Thallium	NA	NA	1.6	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*	1.7	*U*	*1*	1.5	*U*	*1*	1.6	*U*	*1*
Vanadium	NA	NA	25		*1*	15.2		*1*	15.7		*1*	14.8		*1*	19.5		*1*	19.8		*1*
Zinc	109	6,600	426		*1*	54.4		*1*	58.8		*1*	54.6		*1*	59.9		*1*	63.7		*1*
Cyanide (total)	2.3	13	0.52	*J*	*1*	0.57	*U*	*1*	0.56	*U*	*1*	0.63	*U*	*1*	0.62	*U*	*1*	0.58	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-14 21-23**			**DUP-20260403**			**SB-14 23-25**			**SB-15 SURF**			**SB-15 0-2**			**SB-15 11-13**		
U= Not Detected ≥ value		Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	15,200		*10*	16,300		*10*	13,600		*10*	8,970		*10*	8,010		*10*	11,800		*10*
Antimony	NA	NA	3.4	*U*	*1*	3.9	*U*	*1*	3.6	*U*	*1*	25.3		*1*	11.5		*1*	3.8	*U*	*1*
Arsenic	13	16	8.69		*1*	10.4		*1*	8.16		*1*	7.45		*1*	9.38		*1*	5.61		*1*
Barium	410	410	77.6		*1*	84.1		*1*	66.9		*1*	434		*1*	143		*10*	37.4		*1*
Beryllium	4.4	43	0.58		*1*	0.62		*1*	0.49		*1*	0.41		*1*	0.34		*1*	1.07		*1*
Cadmium	2.5	2.5	0.54		*1*	0.39	*U*	*1*	0.49		*1*	0.83		*1*	0.55		*1*	0.56		*1*
Calcium	NA	NA	3,600		*1*	5,580		*1*	6,130		*1*	92,300		*10*	93,100		*10*	59,800		*10*
Chromium (trivalent)	30	110	19.1		*1*	21.7		*1*	17.4		*1*	14.5		*1*	11.7		*1*	11.4		*1*
Chromium (hexavalent)	1	1	0.39	*U*	*1*	0.39	*U*	*1*	0.38	*U*	*1*	0.48	*U*	*1*	0.41	*U*	*1*	0.4	*U*	*1*
Cobalt	NA	NA	13.2		*1*	14.5		*1*	11.9		*1*	8.75		*1*	6.36		*1*	7.81		*1*
Copper	50	280	30.1		*1*	35.8		*1*	33.9		*1*	61.7		*1*	34.5		*1*	44.1		*1*
Iron	NA	NA	35,000		*1*	35,500		*1*	32,200		*1*	16,800		*1*	15,900		*1*	27,000		*1*
Lead	63	400	15.5		*1*	20.7		*1*	18.5		*1*	119		*1*	33.7		*1*	7		*1*
Magnesium	NA	NA	5,370		*1*	5,750		*1*	5,040		*1*	8,980		*1*	13,400		*1*	11,400		*1*
Manganese	1,600	2,000	438		*1*	585		*1*	483		*1*	436		*1*	424		*1*	484		*1*
Mercury	0.18	0.3	0.03	*U*		0.03	*U*	*2*	0.03	*U*	*2*	0.09			0.03	*J*	*2*	0.03	*U*	*2*
Nickel	30	320	30.1		*1*	33.4		*1*	28.1		*1*	51.9		*1*	28.2		*1*	18.3		*1*
Potassium	NA	NA	1,250		*10*	1,270		*10*	1,070		*10*	1,340		*10*	1,290		*10*	918		*10*
Selenium	3.9	110	1.4	*U*	*1*	1.5	*J*	*1*	1.4	*U*	*1*	1.6	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*
Silver	2	110	0.34	*U*	*1*	0.39	*U*	*1*	0.36	*U*	*1*	0.4	*U*	*1*	0.36	*U*	*1*	0.38	*U*	*1*
Sodium	NA	NA	57		*1*	63		*1*	74		*1*	230		*1*	182		*1*	98		*1*
Thallium	NA	NA	1.4	*U*	*1*	1.6	*U*	*1*	1.4	*U*	*1*	1.6	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*
Vanadium	NA	NA	20.2		*1*	22.1		*1*	18.1		*1*	38.2		*1*	20.6		*1*	11.3		*1*
Zinc	109	6,600	78.7		*1*	83.5		*1*	75.8		*1*	349		*1*	120		*1*	68.6		*1*
Cyanide (total)	2.3	13	0.55	*U*	*1*	0.55	*U*	*1*	0.55	*U*	*1*	0.62	*U*	*1*	0.57	*U*	*1*	0.55	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-15 22-24**			**SB-15 24-25**			**SB-16 SURF**			**SB-16 0-1**			**SB-16 1-2**			**SB-16 18-20**		
U= Not Detected ≥ value		Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	15,000		*10*	16,300		*10*	8,890		*10*	11,000		*10*	10,200		*10*	13,900		*10*
Antimony	NA	NA	4.1	*U*	*1*	3.7	*U*	*1*	3.7	*U*	*1*	3.9	*U*	*1*	3.6	*U*	*1*	3.6	*U*	*1*
Arsenic	13	16	10.9		*1*	9.61		*1*	5.7		*1*	4.51		*1*	4.57		*1*	8.32		*1*
Barium	410	410	81.9		*1*	78.8		*1*	45.3		*1*	36.6		*1*	61.1		*1*	69.3		*1*
Beryllium	4.4	43	0.58		*1*	0.61		*1*	0.45		*1*	0.49		*1*	0.42		*1*	0.52		*1*
Cadmium	2.5	2.5	0.52		*1*	0.56		*1*	0.49		*1*	0.41		*1*	0.36	*U*	*1*	0.5		*1*
Calcium	NA	NA	14,200		*10*	3,710		*1*	20,900		*10*	7,250		*1*	77,000		*10*	20,400		*10*
Chromium (trivalent)	30	110	19		*1*	20.8		*1*	15.3		*1*	18.1		*1*	15.6		*1*	19.2		*1*
Chromium (hexavalent)	1	1	0.42	*U*	*1*	0.38	*U*	*1*	0.43	*U*	*1*	0.46	*U*	*1*	0.42	*U*	*1*	0.36	*U*	*1*
Cobalt	NA	NA	12.9		*1*	13.8		*1*	7.9		*1*	9.6		*1*	6.9		*1*	11.7		*1*
Copper	50	280	29.6		*1*	30.7		*1*	54.3		*1*	24.8		*1*	25		*1*	29.1		*1*
Iron	NA	NA	33,500		*1*	37,200		*1*	21,300		*1*	21,300		*1*	17,100		*1*	31,300		*1*
Lead	63	400	20.1		*1*	14.8		*1*	40.2		*1*	15.9		*1*	24.7		*1*	16.9		*1*
Magnesium	NA	NA	5,400		*1*	5,740		*1*	5,770		*1*	4,190		*1*	7,680		*1*	6,660		*1*
Manganese	1,600	2,000	506		*1*	512		*1*	323		*1*	316		*1*	504		*1*	503		*1*
Mercury	0.18	0.3	0.03	*U*	*2*	0.03	*U*	*2*	0.03	*U*	*2*	0.03		*2*	0.03		*2*	0.03	*U*	*2*
Nickel	30	320	29.8		*1*	33.2		*1*	19.2		*1*	22.5		*1*	15.7		*1*	27.5		*1*
Potassium	NA	NA	1,460		*10*	1,200		*10*	1,260		*10*	1,200		*10*	1,260		*10*	1,400		*10*
Selenium	3.9	110	1.6	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*
Silver	2	110	0.41	*U*	*1*	0.37	*U*	*1*	0.37	*U*	*1*	0.39	*U*	*1*	0.36	*U*	*1*	0.36	*U*	*1*
Sodium	NA	NA	71		*1*	119		*1*	82		*1*	48		*1*	166		*1*	90		*1*
Thallium	NA	NA	1.6	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*
Vanadium	NA	NA	20.2		*1*	21.1		*1*	18.4		*1*	16.7		*1*	16.6		*1*	19.1		*1*
Zinc	109	6,600	75.7		*1*	84.7		*1*	111		*1*	64.4		*1*	58.1		*1*	74.2		*1*
Cyanide (total)	2.3	13	0.6	*U*	*1*	0.56	*U*	*1*	0.61	*U*	*1*	0.61	*U*	*1*	1.14	*U*	*2*	0.36	*J*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-16 23-25**			**SB-16 43-45**			**SB-17 SURF**			**SB-17 5-7**			**SB-17 23-25**			**SB-17A SURF**		
U= Not Detected ≥ value		Date	2026-04-03			2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-06		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	14,400		*10*	16,300		*10*	11,300		*10*	10,100		*10*	14,300		*10*	7,400		*1*
Antimony	NA	NA	3.9	*U*	*1*	3.5	*U*	*1*	4.4	*U*	*1*	3.8	*U*	*1*	3.4	*U*	*1*	3.8	*U*	*1*
Arsenic	13	16	10.5		*1*	8.47		*1*	7.65		*1*	6.65		*1*	13.7		*1*	5.19		*1*
Barium	410	410	80.5		*1*	51.6		*1*	128		*1*	104		*1*	70.5		*1*	51.4		*1*
Beryllium	4.4	43	0.6		*1*	0.61		*1*	1.6		*1*	0.47		*1*	0.53		*1*	0.34		*1*
Cadmium	2.5	2.5	0.51		*1*	0.37		*1*	0.79		*1*	0.78		*1*	0.35		*1*	0.38	*U*	*1*
Calcium	NA	NA	3,310		*1*	2,740		*1*	38,700		*10*	46,000		*10*	5,230		*1*	58,300		*10*
Chromium (trivalent)	30	110	18.3		*1*	21.4		*1*	35.7		*1*	32		*1*	17.8		*1*	10.9		*1*
Chromium (hexavalent)	1	1	0.42	*U*	*1*	0.41	*U*	*1*	0.54	*U*	*1*	0.43	*U*	*1*	0.4	*U*	*1*	0.44	*U*	*1*
Cobalt	NA	NA	12.3		*1*	13.9		*1*	11		*1*	49.8		*1*	12.3		*1*	5.89		*1*
Copper	50	280	25		*1*	25.6		*1*	130		*1*	103		*1*	27.8		*1*	29.2		*1*
Iron	NA	NA	32,700		*1*	34,700		*1*	28,900		*1*	22,400		*1*	31,100		*1*	16,400		*1*
Lead	63	400	16.3		*1*	8.8		*1*	164		*1*	2,850		*1*	19		*1*	28.7		*1*
Magnesium	NA	NA	4,980		*1*	5,310		*1*	6,350		*1*	8,790		*1*	4,620		*1*	11,400		*1*
Manganese	1,600	2,000	488		*1*	538		*1*	656		*1*	859		*1*	590		*1*	538		*1*
Mercury	0.18	0.3	0.03	*U*	*2*	0.085	*U*	*1*	0.654		*1*	3.25		*1*	0.081	*U*	*1*	0.086	*U*	*1*
Nickel	30	320	29.1		*1*	31		*1*	37.3		*1*	17.5		*1*	28.1		*1*	13.9		*1*
Potassium	NA	NA	1,400		*10*	1,660		*10*	1,590		*10*	1,410		*10*	1,320		*10*	1,180		*10*
Selenium	3.9	110	1.5	*U*	*1*	1.4	*U*	*1*	1.8	*U*	*1*	4		*1*	1.3	*U*	*1*	1.5	*U*	*1*
Silver	2	110	0.39	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
Sodium	NA	NA	64		*1*	147		*1*	167		*1*	243		*1*	57		*1*	82		*1*
Thallium	NA	NA	1.5	*U*	*1*	1.4	*U*	*1*	1.8	*U*	*1*	1.5	*U*	*1*	1.3	*U*	*1*	1.5	*U*	*1*
Vanadium	NA	NA	19.1		*1*	20.6		*1*	23.2		*1*	17.6		*1*	18.2		*1*	15.1		*1*
Zinc	109	6,600	72.6		*1*	76.3		*1*	389		*1*	298		*1*	72.7		*1*	84		*1*
Cyanide (total)	2.3	13	0.59	*U*	*1*	0.57	*U*	*1*	0.69	*U*	*1*	0.34	*J*	*1*	0.54	*U*	*1*	0.57	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-17A 0-1**			**SB-17A 1-2**			**SB-17A 5-7**			**SB-18 SURF**			**SB-18 0-1**			**SB-18 1-2**		
U= Not Detected ≥ value		Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-06		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	8,280		*10*	8,660		*10*	9,810		*10*	8,860		*10*	12,200		*10*	10,300		*10*
Antimony	NA	NA	3.9	*U*	*1*	3.7	*U*	*1*	4.4	*U*	*1*	3.8	*U*	*1*	3.8	*U*	*1*	3.6	*U*	*1*
Arsenic	13	16	5.95		*1*	14.4		*1*	9.23		*1*	8.03		*1*	9.05		*1*	7.39		*1*
Barium	410	410	47.8		*1*	56.1		*1*	164		*1*	87		*1*	100		*1*	107		*1*
Beryllium	4.4	43	0.37		*1*	0.36		*1*	0.58		*1*	0.43		*1*	0.51		*1*	0.45		*1*
Cadmium	2.5	2.5	0.39	*U*	*1*	0.52		*1*	1.12		*1*	0.5		*1*	0.51		*1*	0.48		*1*
Calcium	NA	NA	54,500		*10*	77,600		*10*	3,450		*1*	87,900		*10*	11,700		*1*	60,900		*10*
Chromium (trivalent)	30	110	12.8		*1*	12.1		*1*	17.1		*1*	13.7		*1*	18.2		*1*	16.3		*1*
Chromium (hexavalent)	1	1	0.42	*U*	*1*	0.38	*U*	*1*	0.49	*U*	*1*	0.43	*U*	*1*	0.41	*U*	*1*	0.45	*U*	*1*
Cobalt	NA	NA	6.61		*1*	7.01		*1*	6.66		*1*	9.04		*1*	9.85		*1*	8.62		*1*
Copper	50	280	29.1		*1*	33.7		*1*	87.7		*1*	58.6		*1*	43.4		*1*	47.1		*1*
Iron	NA	NA	18,500		*1*	19,100		*1*	16,600		*1*	20,100		*1*	25,100		*1*	20,400		*1*
Lead	63	400	33.3		*1*	28.2		*1*	276		*1*	130		*1*	153		*1*	128		*1*
Magnesium	NA	NA	10,900		*1*	11,900		*1*	1,490		*1*	6,670		*1*	3,760		*1*	6,010		*1*
Manganese	1,600	2,000	544		*1*	718		*1*	739		*1*	561		*1*	495		*1*	519		*1*
Mercury	0.18	0.3	0.082	*U*	*1*	0.082	*U*	*1*	0.188		*1*	0.209		*1*	0.65		*1*	0.287		*1*
Nickel	30	320	15.9		*1*	16.7		*1*	16.3		*1*	21.2		*1*	22.3		*1*	20.4		*1*
Potassium	NA	NA	1,120		*10*	1,150		*10*	911		*1*	1,190		*10*	1,150		*10*	1,150		*10*
Selenium	3.9	110	1.5	*U*	*1*	1.5	*U*	*1*	2.2	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*
Silver	2	110	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
Sodium	NA	NA	79		*1*	101		*1*	51		*1*	127		*1*	70		*1*	97		*1*
Thallium	NA	NA	1.5	*U*	*1*	1.5	*U*	*1*	1.8	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*	1.5	*U*	*1*
Vanadium	NA	NA	16.6		*1*	16.9		*1*	27.1		*1*	34.2		*1*	23.9		*1*	22.9		*1*
Zinc	109	6,600	91.9		*1*	159		*1*	248		*1*	132		*1*	157		*1*	134		*1*
Cyanide (total)	2.3	13	0.55	*U*	*1*	0.54	*U*	*1*	0.44	*J*	*1*	0.57	*U*	*1*	0.59	*U*	*1*	0.57	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**DUP-20260406**			**SB-18 12-14**			**SB-18 23-25**			**SB-18 45-47**			**SB-19 SURF**			**SB-19 0-2**		
U= Not Detected ≥ value		Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-07			2026-04-07		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	11,700		*10*	6,100		*1*	6,790		*1*	19,200		*10*	11,100		*10*	12,300		*10*
Antimony	NA	NA	3.4	*U*	*1*	3.4	*U*	*1*	3.5	*U*	*1*	3.8	*U*	*1*	4.5	*U*	*1*	3.6	*U*	*1*
Arsenic	13	16	7.71		*1*	3.94		*1*	3.82		*1*	9.41		*1*	8.92		*1*	8.41		*1*
Barium	410	410	135		*1*	27.3		*1*	36.3		*1*	63.6		*1*	132		*1*	176		*1*
Beryllium	4.4	43	0.54		*1*	0.23	*J*	*1*	0.31		*1*	0.75		*1*	0.54		*1*	0.55		*1*
Cadmium	2.5	2.5	0.59		*1*	0.34	*U*	*1*	0.35	*U*	*1*	0.42		*1*	0.84		*1*	0.47		*1*
Calcium	NA	NA	36,100		*10*	120,000		*100*	80,300		*10*	1,970		*1*	23,700		*10*	80,000		*10*
Chromium (trivalent)	30	110	17.8		*1*	8.38		*1*	9.88		*1*	23.2		*1*	19.1		*1*	18.3		*1*
Chromium (hexavalent)	1	1	0.4	*U*	*1*	0.38	*U*	*1*	0.39	*U*	*1*	0.42	*U*	*1*	0.5	*U*	*1*	0.44	*U*	*1*
Cobalt	NA	NA	9.76		*1*	5.11		*1*	5.77		*1*	16.1		*1*	9.79		*1*	9.33		*1*
Copper	50	280	72.9		*1*	21		*1*	22.2		*1*	23.3		*1*	59.4		*1*	56		*1*
Iron	NA	NA	22,600		*1*	13,400		*1*	14,500		*1*	38,600		*1*	25,900		*1*	20,100		*1*
Lead	63	400	218		*1*	7.1		*1*	7.3		*1*	4.3		*1*	419		*1*	207		*1*
Magnesium	NA	NA	5,870		*1*	16,100		*1*	8,000		*1*	5,890		*1*	4,750		*1*	5,600		*1*
Manganese	1,600	2,000	539		*1*	564		*1*	517		*1*	628		*1*	726		*1*	591		*1*
Mercury	0.18	0.3	0.286		*1*	0.08	*U*	*1*	0.085	*U*	*1*	0.083	*U*	*1*	0.494		*1*	0.263		*1*
Nickel	30	320	23.2		*1*	12.1		*1*	14.7		*1*	35.4		*1*	23.3		*1*	22		*1*
Potassium	NA	NA	1,280		*10*	1,510		*10*	1,510		*10*	1,940		*10*	1,210		*10*	1,730		*10*
Selenium	3.9	110	1.4	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*	1.8	*U*	*1*	1.5	*U*	*1*
Silver	2	110	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	0.45	*U*	*1*	0.36	*U*	*1*
Sodium	NA	NA	112		*1*	132		*1*	103		*1*	199		*1*	78		*1*	224		*1*
Thallium	NA	NA	1.4	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*	1.8	*U*	*1*	1.5	*U*	*1*
Vanadium	NA	NA	25.5		*1*	11.6		*1*	12		*1*	22.7		*1*	24.6		*1*	25.5		*1*
Zinc	109	6,600	199		*1*	51.9		*1*	47.9		*1*	82.3		*1*	250		*1*	168		*1*
Cyanide (total)	2.3	13	0.56	*U*	*1*	0.53	*U*	*1*	0.57	*U*	*1*	0.56	*U*	*1*	0.48	*J*	*1*	0.35	*J*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-19 4-5**			**SB-19 18-20**			**SB-19 23-25**			**SB-20 SURF**			**SB-20 0-2**			**SB-20 18-20**		
U= Not Detected ≥ value		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	9,120		*10*	7,170		*10*	17,200		*10*	11,000		*10*	15,500		*10*	7,600		*10*
Antimony	NA	NA	3.7	*U*	*1*	3.5	*U*	*1*	3.5	*U*	*1*	3.4	*U*	*1*	3.8	*U*	*1*	3.3	*U*	*1*
Arsenic	13	16	24.8		*1*	4.14		*1*	16		*1*	5.81		*1*	7.85		*1*	4.45		*1*
Barium	410	410	101		*1*	49.9		*1*	94.5		*1*	50.1		*1*	62.4		*1*	54.3		*1*
Beryllium	4.4	43	0.52		*1*	0.27	*J*	*1*	0.76		*1*	0.46		*1*	0.64		*1*	0.31		*1*
Cadmium	2.5	2.5	0.37	*U*	*1*	0.35	*U*	*1*	0.37		*1*	0.34	*U*	*1*	0.38	*U*	*1*	0.33	*U*	*1*
Calcium	NA	NA	19,000		*10*	95,000		*10*	2,070		*1*	9,670		*1*	15,400		*10*	82,400		*10*
Chromium (trivalent)	30	110	15.9		*1*	11.1		*1*	24		*1*	14.1		*1*	19.3		*1*	11.1		*1*
Chromium (hexavalent)	1	1	0.42	*U*	*1*	0.36	*U*	*1*	0.41	*U*	*1*	0.43	*U*	*1*	0.43	*U*	*1*	0.42	*U*	*1*
Cobalt	NA	NA	6.91		*1*	6.02		*1*	15.4		*1*	7.35		*1*	7.49		*1*	6.21		*1*
Copper	50	280	48.4		*1*	21.5		*1*	29.5		*1*	20.2		*1*	37.9		*1*	21.1		*1*
Iron	NA	NA	30,500		*1*	16,700		*1*	39,000		*1*	18,800		*1*	25,700		*1*	16,300		*1*
Lead	63	400	44.1		*1*	11.6		*1*	28.1		*1*	46.8		*1*	31.3		*1*	16.3		*1*
Magnesium	NA	NA	6,020		*1*	16,700		*1*	5,790		*1*	2,540		*1*	5,430		*1*	10,300		*1*
Manganese	1,600	2,000	342		*1*	609		*1*	584		*1*	645		*1*	686		*1*	607		*1*
Mercury	0.18	0.3	0.185		*1*	0.078	*U*	*1*	0.03	*U*	*2*	0.083	*U*	*1*	0.084	*U*	*1*	0.08	*U*	*1*
Nickel	30	320	17.9		*1*	14.4		*1*	36.3		*1*	15.1		*1*	20.3		*1*	14.8		*1*
Potassium	NA	NA	1,250		*10*	1,090		*10*	1,520		*10*	873		*10*	1,680		*10*	1,120		*10*
Selenium	3.9	110	2.7		*1*	1.4	*U*	*1*	2	*U*	*1*	1.4	*U*	*1*	2	*U*	*1*	1.3	*U*	*1*
Silver	2	110	0.37	*U*	*1*	0.35	*U*	*1*	0.35	*U*	*1*	0.34	*U*	*1*	0.38	*U*	*1*	0.33	*U*	*1*
Sodium	NA	NA	130		*1*	127		*1*	75		*1*	49		*1*	57		*1*	103		*1*
Thallium	NA	NA	1.5	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*	1.3	*U*	*1*
Vanadium	NA	NA	23.6		*1*	14.1		*1*	24.6		*1*	22.4		*1*	30.2		*1*	13		*1*
Zinc	109	6,600	71.8		*1*	53.8		*1*	91.1		*1*	51.9		*1*	74.3		*1*	57		*1*
Cyanide (total)	2.3	13	0.56	*U*	*1*	0.52	*U*	*1*	0.57	*U*	*1*	0.56	*U*	*1*	0.56	*U*	*1*	0.53	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-20 21-23**			**DUP-20260407**			**SB-21 SURF**			**SB-21 0-2**			**SB-21 18-20**			**SB-21 23-25**		
U= Not Detected ≥ value		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	17,800		*10*	17,800		*10*	13,600		*10*	11,200		*10*	7,100		*10*	8,490		*10*
Antimony	NA	NA	3.6	*U*	*1*	3.3	*U*	*1*	3.8	*U*	*1*	4	*U*	*1*	3.2	*U*	*1*	3.8	*U*	*1*
Arsenic	13	16	11		*1*	11.4		*1*	9.24		*1*	14.8		*1*	3.36		*1*	4.78		*1*
Barium	410	410	87.9		*1*	90.3		*1*	164		*1*	145		*1*	43.7		*1*	48.3		*1*
Beryllium	4.4	43	0.7		*1*	0.72		*1*	0.69		*1*	0.62		*1*	0.26		*1*	0.35		*1*
Cadmium	2.5	2.5	0.4		*1*	0.42		*1*	0.74		*1*	0.88		*1*	0.32	*U*	*1*	0.38	*U*	*1*
Calcium	NA	NA	3,400		*1*	4,500		*1*	17,400		*10*	24,300		*10*	95,100		*10*	82,400		*10*
Chromium (trivalent)	30	110	23.5		*1*	24		*1*	16.1		*1*	21.2		*1*	10.4		*1*	12.3		*1*
Chromium (hexavalent)	1	1	0.43	*U*	*1*	0.37	*U*	*1*	0.45	*U*	*1*	0.47	*U*	*1*	0.38	*U*	*1*	0.36	*U*	*1*
Cobalt	NA	NA	15.3		*1*	15.3		*1*	7.44		*1*	11		*1*	5.76		*1*	7.39		*1*
Copper	50	280	39.5		*1*	32.4		*1*	470		*1*	387		*1*	17.5		*1*	28.1		*1*
Iron	NA	NA	39,000		*1*	38,500		*1*	19,100		*1*	33,400		*1*	15,100		*1*	19,200		*1*
Lead	63	400	19.5		*1*	17		*1*	289		*1*	374		*1*	12.3		*1*	7.8		*1*
Magnesium	NA	NA	5,980		*1*	5,970		*1*	2,670		*1*	4,600		*1*	7,030		*1*	7,840		*1*
Manganese	1,600	2,000	519		*1*	565		*1*	553		*1*	970		*1*	706		*1*	514		*1*
Mercury	0.18	0.3	0.083	*U*	*1*	0.083	*U*	*1*	0.516		*1*	0.604		*1*	0.077	*U*	*1*	0.079	*U*	*1*
Nickel	30	320	35.8		*1*	36.3		*1*	16		*1*	26.7		*1*	14		*1*	18.1		*1*
Potassium	NA	NA	1,390		*10*	1,490		*10*	1,820		*10*	1,090		*10*	957		*10*	981		*10*
Selenium	3.9	110	2	*U*	*1*	2	*U*	*1*	2	*U*	*1*	2		*1*	1.3	*U*	*1*	1.5	*U*	*1*
Silver	2	110	0.36	*U*	*1*	0.33	*U*	*1*	0.38	*U*	*1*	0.4	*U*	*1*	0.32	*U*	*1*	0.38	*U*	*1*
Sodium	NA	NA	99		*1*	72		*1*	284		*1*	136		*1*	110		*1*	110		*1*
Thallium	NA	NA	1.4	*U*	*1*	1.3	*U*	*1*	1.5	*U*	*1*	1.6	*U*	*1*	1.3	*U*	*1*	1.5	*U*	*1*
Vanadium	NA	NA	24.1		*1*	25.2		*1*	20		*1*	34.9		*1*	11.7		*1*	14.6		*1*
Zinc	109	6,600	93.4		*1*	90.6		*1*	396		*1*	515		*1*	57.6		*1*	53		*1*
Cyanide (total)	2.3	13	0.56	*U*	*1*	0.56	*U*	*1*	0.88		*1*	0.95		*1*	0.52	*U*	*1*	0.53	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-22 SURF**			**SB-22 0-2**			**SB-22 2-3**			**SB-22 13-15**			**SB-22 25-27**			**SB-23 SURF**		
U= Not Detected ≥ value		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	9,400		*10*	5,740		*1*	7,970		*10*	8,510		*10*	15,200		*10*	7,750		*10*
Antimony	NA	NA	3.8	*U*	*1*	3.2	*U*	*1*	3.7	*U*	*1*	3.5	*U*	*1*	3.6	*U*	*1*	3.6	*U*	*1*
Arsenic	13	16	7.12		*1*	8.83		*1*	9.43		*1*	4.02		*1*	7.9		*1*	5.03		*1*
Barium	410	410	113		*1*	42.5		*1*	48.5		*1*	44.1		*1*	99.3		*1*	39.7		*1*
Beryllium	4.4	43	0.46		*1*	0.34		*1*	0.4		*1*	0.29		*1*	0.53		*1*	0.34		*1*
Cadmium	2.5	2.5	0.6		*1*	0.32	*U*	*1*	0.37	*U*	*1*	0.35	*U*	*1*	0.36	*U*	*1*	0.36	*U*	*1*
Calcium	NA	NA	91,900		*10*	175,000		*100*	116,000		*100*	75,600		*10*	5,990		*1*	58,400		*10*
Chromium (trivalent)	30	110	16.8		*1*	9.75		*1*	12.6		*1*	11.6		*1*	19.7		*1*	11.4		*1*
Chromium (hexavalent)	1	1	0.38	*U*	*1*	0.39	*U*	*1*	0.39	*U*	*1*	0.37	*U*	*1*	0.42	*U*	*1*	0.44	*U*	*1*
Cobalt	NA	NA	9.65		*1*	6.63		*1*	9.52		*1*	7.63		*1*	14.9		*1*	5.94		*1*
Copper	50	280	43.6		*1*	20		*1*	22.6		*1*	41.6		*1*	30.7		*1*	26.5		*1*
Iron	NA	NA	21,800		*1*	13,100		*1*	17,300		*1*	18,600		*1*	35,200		*1*	16,400		*1*
Lead	63	400	196		*1*	88.2		*1*	34.3		*1*	5.7		*1*	22.5		*1*	14.5		*1*
Magnesium	NA	NA	5,840		*1*	7,030		*1*	11,700		*1*	9,960		*1*	5,630		*1*	11,800		*1*
Manganese	1,600	2,000	534		*1*	484		*1*	543		*1*	453		*1*	709		*1*	582		*1*
Mercury	0.18	0.3	0.183		*1*	0.079	*U*	*1*	0.08	*U*	*1*	0.078	*U*	*1*	0.082	*U*	*1*	0.289		*1*
Nickel	30	320	23.9		*1*	16.8		*1*	23.9		*1*	17.1		*1*	31.7		*1*	14.3		*1*
Potassium	NA	NA	1,170		*10*	1,120		*10*	1,260		*10*	1,210		*10*	1,010		*10*	1,310		*10*
Selenium	3.9	110	1.5	*U*	*1*	1.3	*U*	*1*	1.5	*U*	*1*	1.4	*U*	*1*	2	*U*	*1*	1.4	*U*	*1*
Silver	2	110	0.38	*U*	*1*	0.32	*U*	*1*	0.37	*U*	*1*	0.35	*U*	*1*	0.36	*U*	*1*	0.36	*U*	*1*
Sodium	NA	NA	105		*1*	154		*1*	152		*1*	112		*1*	72		*1*	162		*1*
Thallium	NA	NA	1.5	*U*	*1*	1.3	*U*	*1*	1.5	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*
Vanadium	NA	NA	29.9		*1*	25.1		*1*	29		*1*	15.4		*1*	21.1		*1*	16.2		*1*
Zinc	109	6,600	203		*1*	56.5		*1*	63.2		*1*	50.2		*1*	89.8		*1*	82.7		*1*
Cyanide (total)	2.3	13	0.57	*U*	*1*	0.53	*U*	*1*	0.39	*J*	*1*	0.52	*U*	*1*	0.54	*U*	*1*	0.56	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-23 0-2**			**SB-23 2-3**			**SB-23 15-17**			**SB-23 24-25**			**SB-24 SURF**			**SB-24 0-1**		
U= Not Detected ≥ value		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-08			2026-04-08		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	5,720		*1*	8,040		*1*	7,250		*10*	10,600		*10*	9,530		*1*	10,200		*10*
Antimony	NA	NA	3.5	*U*	*1*	4.1	*U*	*1*	3.6	*U*	*1*	3.5	*U*	*1*	5.3	*U*	*1*	3.9	*U*	*1*
Arsenic	13	16	4.15		*1*	9.01		*1*	4.14		*1*	9.28		*1*	9		*1*	8.06		*1*
Barium	410	410	30.9		*1*	280		*1*	40.8		*1*	75.8		*1*	84.3		*1*	82.1		*1*
Beryllium	4.4	43	0.26	*J*	*1*	0.38		*1*	0.3		*1*	0.46		*1*	0.58		*1*	0.46		*1*
Cadmium	2.5	2.5	0.35	*U*	*1*	0.55		*1*	0.36	*U*	*1*	0.35	*U*	*1*	0.53	*U*	*1*	0.5		*1*
Calcium	NA	NA	90,800		*10*	32,300		*10*	107,000		*10*	14,100		*10*	15,200		*1*	47,500		*10*
Chromium (trivalent)	30	110	9.56		*1*	20.7		*1*	13.2		*1*	15.3		*1*	17.9		*1*	30.3		*1*
Chromium (hexavalent)	1	1	0.42	*U*	*1*	0.43	*U*	*1*	0.4	*U*	*1*	0.43	*U*	*1*	1	*U*	*1*	0.42	*U*	*1*
Cobalt	NA	NA	5.15		*1*	7.64		*1*	6.24		*1*	10.1		*1*	9.47		*1*	9.45		*1*
Copper	50	280	22.7		*1*	54.4		*1*	25.7		*1*	23.3		*1*	66.2		*1*	85.3		*1*
Iron	NA	NA	12,800		*1*	21,000		*1*	17,000		*1*	24,000		*1*	21,700		*1*	31,400		*1*
Lead	63	400	10.6		*1*	202		*1*	19.5		*1*	15.2		*1*	145		*1*	124		*1*
Magnesium	NA	NA	15,200		*1*	6,430		*1*	11,700		*1*	5,120		*1*	4,490		*1*	5,060		*1*
Manganese	1,600	2,000	435		*1*	403		*1*	554		*1*	576		*1*	379		*1*	582		*1*
Mercury	0.18	0.3	0.081	*U*	*1*	0.128		*1*	0.079	*U*	*1*	0.085	*U*	*1*	0.09		*2*	0.11		*2*
Nickel	30	320	12.1		*1*	30.7		*1*	16.1		*1*	22.5		*1*	24.7		*1*	26.5		*1*
Potassium	NA	NA	1,240		*10*	821		*10*	1,100		*10*	1,300		*10*	1,190		*10*	1,090		*10*
Selenium	3.9	110	1.4	*U*	*1*	2	*JU*	*1*	1.4	*U*	*1*	1.4	*U*	*1*	2.1	*U*	*1*	1.6	*U*	*1*
Silver	2	110	0.35	*U*	*1*	0.52		*1*	0.36	*U*	*1*	0.35	*U*	*1*	0.53	*U*	*1*	0.4		*1*
Sodium	NA	NA	101		*1*	156		*1*	131		*1*	61		*1*	95		*1*	104		*1*
Thallium	NA	NA	1.4	*U*	*1*	1.7	*U*	*1*	1.4	*U*	*1*	1.4	*U*	*1*	2.1	*U*	*1*	1.6	*U*	*1*
Vanadium	NA	NA	13		*1*	47.2		*1*	14		*1*	15.9		*1*	21.9		*1*	21.6		*1*
Zinc	109	6,600	50.5		*1*	317		*1*	58.5		*1*	73.2		*1*	130		*1*	119		*1*
Cyanide (total)	2.3	13	0.54	*U*	*1*	0.53	*J*	*1*	0.53	*U*	*1*	0.57	*U*	*1*	0.81	*U*	*1*	0.57	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-24 2-4**			**SB-24 16-18**			**DUP1-20260408**			**SB-24 26-28**			**SB-24 43-44**			**SB-25 SURF**		
U= Not Detected ≥ value		Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08			2026-04-08			2026-04-08		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	17,200		*10*	6,720		*10*	7,810		*10*	9,490		*10*	16,000		*10*	7,960		*1*
Antimony	NA	NA	3.6	*U*	*1*	3.1	*U*	*1*	3.2	*U*	*1*	3.6	*U*	*1*	3.7	*U*	*1*	4.3	*U*	*1*
Arsenic	13	16	9.01		*1*	3.06		*1*	3.58		*1*	7.59		*1*	9.38		*1*	6.51		*1*
Barium	410	410	61.9		*1*	34.5		*1*	37.1		*1*	57.3		*1*	67.9		*1*	108		*1*
Beryllium	4.4	43	0.71		*1*	0.24	*J*	*1*	0.28		*1*	0.33		*1*	0.54		*1*	0.39		*1*
Cadmium	2.5	2.5	0.38		*1*	0.31	*U*	*1*	0.32	*U*	*1*	0.36	*U*	*1*	0.37	*U*	*1*	0.45		*1*
Calcium	NA	NA	5,330		*1*	120,000		*100*	76,600		*10*	4,780		*1*	1,990		*1*	11,600		*1*
Chromium (trivalent)	30	110	18.7		*1*	8.62		*1*	10.4		*1*	11.6		*1*	18.1		*1*	15.6		*1*
Chromium (hexavalent)	1	1	0.44	*U*	*1*	0.37	*U*	*1*	0.38	*U*	*1*	0.42	*U*	*1*	0.45	*U*	*1*	0.44	*U*	*1*
Cobalt	NA	NA	7.29		*1*	5.05		*1*	6.23		*1*	8.4		*1*	12.1		*1*	6.45		*1*
Copper	50	280	41.9		*1*	20.3		*1*	25.6		*1*	17.7		*1*	26.8		*1*	33.7		*1*
Iron	NA	NA	27,800		*1*	13,700		*1*	17,300		*1*	20,900		*1*	32,000		*1*	17,200		*1*
Lead	63	400	16.8		*1*	6.5		*1*	7.1		*1*	11.3		*1*	18.2		*1*	758		*1*
Magnesium	NA	NA	3,500		*1*	13,700		*1*	14,000		*1*	3,450		*1*	4,800		*1*	3,920		*1*
Manganese	1,600	2,000	1,100		*1*	393		*1*	429		*1*	375		*1*	535		*1*	434		*1*
Mercury	0.18	0.3	0.04		*2*	0.03	*U*	*2*	0.03	*U*	*2*	0.03	*U*	*2*	0.03	*U*	*2*	0.4		*2*
Nickel	30	320	20.8		*1*	12.5		*1*	15.1		*1*	19.1		*1*	27.7		*1*	16.2		*1*
Potassium	NA	NA	2,150		*10*	945		*10*	882		*10*	895		*10*	1,480		*10*	1,070		*10*
Selenium	3.9	110	1.5	*U*	*1*	1.2	*U*	*1*	1.3	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*	1.7	*U*	*1*
Silver	2	110	0.36	*U*	*1*	0.31	*U*	*1*	0.32	*U*	*1*	0.36	*U*	*1*	0.37	*U*	*1*	1.37		*1*
Sodium	NA	NA	50		*1*	109		*1*	98		*1*	41		*1*	161		*1*	64		*1*
Thallium	NA	NA	1.5	*U*	*1*	1.2	*U*	*1*	1.3	*U*	*1*	1.4	*U*	*1*	1.5	*U*	*1*	1.7	*U*	*1*
Vanadium	NA	NA	28.5		*1*	10.6		*1*	12.3		*1*	12.7		*1*	19.1		*1*	19.8		*1*
Zinc	109	6,600	79.6		*1*	41.7		*1*	49.8		*1*	46.7		*1*	72.1		*1*	131		*1*
Cyanide (total)	2.3	13	0.56	*U*	*1*	0.52	*U*	*1*	0.52	*U*	*1*	0.61	*U*	*1*	0.59	*U*	*1*	0.6	*J*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 5: TAL Metals in Soil

All data in mg/Kg (ppm)		**Sample**	**SB-25 0-1**			**SB-25 1-2**			**SB-25 13-15**			**SB-25 33-35**			**DUP2-20260408**		
U= Not Detected ≥ value		Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08			2026-04-08		
Metals (6010/7473)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	NA	10,200		*10*	12,600		*10*	6,230		*1*	11,000		*10*	11,500		*10*
Antimony	NA	NA	4	*U*	*1*	3.6	*U*	*1*	3.3	*U*	*1*	4.1	*U*	*1*	3.8	*U*	*1*
Arsenic	13	16	11.9		*1*	6.8		*1*	3.92		*1*	7.38		*1*	9.89		*1*
Barium	410	410	125		*1*	202		*1*	33.1		*1*	61.2		*1*	60.9		*1*
Beryllium	4.4	43	0.43		*1*	0.47		*1*	0.21	*J*	*1*	0.37		*1*	0.41		*1*
Cadmium	2.5	2.5	0.67		*1*	0.47		*1*	0.33	*U*	*1*	0.41	*U*	*1*	0.38	*U*	*1*
Calcium	NA	NA	11,500		*1*	13,500		*10*	101,000		*10*	136,000		*100*	14,100		*10*
Chromium (trivalent)	30	110	17.5		*1*	20.9		*1*	8.76		*1*	15.4		*1*	18.1		*1*
Chromium (hexavalent)	1	1	0.4	*U*	*1*	0.45	*U*	*1*	0.4	*U*	*1*	0.43	*U*	*1*	0.43	*U*	*1*
Cobalt	NA	NA	7.49		*1*	7.72		*1*	5.03		*1*	9.04		*1*	9.25		*1*
Copper	50	280	48.8		*1*	68.1		*1*	23.6		*1*	16.2		*1*	21.6		*1*
Iron	NA	NA	39,000		*1*	23,400		*1*	14,000		*1*	22,300		*1*	24,300		*1*
Lead	63	400	820		*1*	1,260		*1*	12.9		*1*	11		*1*	12.3		*1*
Magnesium	NA	NA	4,250		*1*	4,240		*1*	16,400		*1*	5,170		*1*	5,540		*1*
Manganese	1,600	2,000	775		*1*	1,380		*1*	519		*1*	688		*1*	622		*1*
Mercury	0.18	0.3	0.29		*2*	1.74		*10*	0.03	*U*	*2*	0.03	*U*		0.03	*U*	*2*
Nickel	30	320	16.6		*1*	16.9		*1*	12.3		*1*	19.8		*1*	22.1		*1*
Potassium	NA	NA	1,020		*10*	887		*10*	838		*10*	1,280		*10*	1,340		*10*
Selenium	3.9	110	2.1	*U*	*1*	2	*U*	*1*	1.3	*U*	*1*	1.6	*U*	*1*	1.5	*U*	*1*
Silver	2	110	0.4	*U*	*1*	0.45		*1*	0.33	*U*	*1*	0.41	*U*	*1*	0.38	*U*	*1*
Sodium	NA	NA	72		*1*	54		*1*	92		*1*	141		*1*	107		*1*
Thallium	NA	NA	1.6	*U*	*1*	1.5	*U*	*1*	1.3	*U*	*1*	1.6	*U*	*1*	1.5	*U*	*1*
Vanadium	NA	NA	22.6		*1*	23.1		*1*	11.2		*1*	15.3		*1*	16.3		*1*
Zinc	109	6,600	161		*1*	230		*1*	39.6		*1*	50.5		*1*	54.4		*1*
Cyanide (total)	2.3	13	0.35	*J*	*1*	1.28		*1*	0.53	*U*	*1*	0.59	*U*	*1*	0.62	*U*	*1*

value ≤ UU SCO
value > UU SCO
value > RRU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-01 SURF**			**SB-01 0-2**			**SB-01 10-12**			**SB-01 20-22**		
U= Not Detected ≥ value			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0021	*U*	*2*	0.0021	*U*	*2*	0.0022	*U*	*2*	0.0023	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0021	*U*	*2*	0.0021	*U*	*2*	0.0071		*2*	0.0023	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0021	*U*	*2*	0.0021	*U*	*2*	0.023		*2*	0.0023	*U*	*2*
a-BHC	0.0048	0.044	0.007	*U*	*2*	0.0069	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
a-Chlordane	0.014	0.65	0.0035	*U*	*2*	0.0035	*U*	*2*	0.0037	*U*	*2*	0.0038	*U*	*2*
Alachlor	NA	NA	0.0035	*U*	*2*	0.0035	*U*	*2*	0.0037	*U*	*2*	0.0038	*U*	*2*
Aldrin	0.0048	0.044	0.0035	*U*	*2*	0.0035	*U*	*2*	0.0037	*U*	*2*	0.0038	*U*	*2*
b-BHC	0.021	0.18	0.007	*U*	*2*	0.0069	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Chlordane	NA	NA	0.035	*U*	*2*	0.035	*U*	*2*	0.037	*U*	*2*	0.038	*U*	*2*
d-BHC	0.04	100	0.007	*U*	*2*	0.0069	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Dieldrin	0.005	0.075	0.0035	*U*	*2*	0.0035	*U*	*2*	0.0037	*U*	*2*	0.0038	*U*	*2*
Endosulfan I	4.3	35	0.007	*U*	*2*	0.0069	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Endosulfan II	4.3	35	0.007	*U*	*2*	0.0069	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Endosulfan sulfate	4.3	35	0.007	*U*	*2*	0.0069	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Endrin	0.014	5.3	0.007	*U*	*2*	0.0069	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Endrin aldehyde	NA	NA	0.007	*U*	*2*	0.0069	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Endrin ketone	NA	NA	0.007	*U*	*2*	0.0069	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
g-BHC	0.025	0.21	0.0014	*U*	*2*	0.0014	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA	0.0035	*U*	*2*	0.0035	*U*	*2*	0.0037	*U*	*2*	0.0038	*U*	*2*
Heptachlor	0.013	0.53	0.007	*U*	*2*	0.0069	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Heptachlor epoxide	NA	NA	0.007	*U*	*2*	0.0069	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Methoxychlor	NA	NA	0.035	*U*	*2*	0.035	*U*	*2*	0.037	*U*	*2*	0.038	*U*	*2*
Toxaphene	NA	NA	0.14	*U*	*2*	0.14	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-01 SURF**			**SB-01 0-2**			**SB-01 10-12**			**SB-01 20-22**		
			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.07	*U*	*2*	0.069	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1221	0.1	1	0.07	*U*	*2*	0.069	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1232	0.1	1	0.07	*U*	*2*	0.069	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1242	0.1	1	0.07	*U*	*2*	0.069	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1248	0.1	1	0.07	*U*	*2*	0.069	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1254	0.1	1	0.07	*U*	*2*	0.069	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1260	0.1	1	0.07	*U*	*2*	0.069	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1262	0.1	1	0.07	*U*	*2*	0.069	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1268	0.1	1	0.07	*U*	*2*	0.069	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

			Sample	**SB-01 SURF**			**SB-01 0-2**			**SB-01 10-12**			**SB-01 20-22**		
			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.13	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.37	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.13	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.37	*U*	*10*
2,4-D	NA	NA	0.26	*U*	*10*	0.26	*U*	*10*	0.28	*U*	*10*	0.75	*U*	*10*
2,4-DB	NA	NA	1.3	*U*	*10*	1.3	*U*	*10*	1.4	*U*	*10*	3.7	*U*	*10*
Dalapon	NA	NA	0.13	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.37	*U*	*10*
Dicamba	NA	NA	0.13	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.37	*U*	*10*
Dichloroprop	NA	NA	0.26	*U*	*10*	0.26	*U*	*10*	0.28	*U*	*10*	0.75	*U*	*10*
Dinoseb	NA	NA	0.26	*U*	*10*	0.26	*U*	*10*	0.28	*U*	*10*	0.75	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-01 43-45**			**SB-02 SURF**			**SB-02 0-5**			**SB-02 18-20**		
U= Not Detected ≥ value			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0025	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0025	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0025	*U*	*2*	0.042		*2*	0.013		*2*	0.0021	*U*	*2*
a-BHC	0.0048	0.044		0.0084	*U*	*2*	0.0074	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
a-Chlordane	0.014	0.65		0.0042	*U*	*2*	0.0037	*U*	*2*	0.0036	*U*	*2*	0.0035	*U*	*2*
Alachlor	NA	NA		0.0042	*U*	*2*	0.0037	*U*	*2*	0.0036	*U*	*2*	0.0035	*U*	*2*
Aldrin	0.0048	0.044		0.0042	*U*	*2*	0.0037	*U*	*2*	0.0036	*U*	*2*	0.0035	*U*	*2*
b-BHC	0.021	0.18		0.0084	*U*	*2*	0.0074	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Chlordane	NA	NA		0.042	*U*	*2*	0.037	*U*	*2*	0.036	*U*	*2*	0.035	*U*	*2*
d-BHC	0.04	100		0.0084	*U*	*2*	0.0074	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Dieldrin	0.005	0.075		0.0042	*U*	*2*	0.0037	*U*	*2*	0.0036	*U*	*2*	0.0035	*U*	*2*
Endosulfan I	4.3	35		0.0084	*U*	*2*	0.0074	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Endosulfan II	4.3	35		0.0084	*U*	*2*	0.0074	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Endosulfan sulfate	4.3	35		0.0084	*U*	*2*	0.04	*U*	*2*	0.015	*U*	*2*	0.007	*U*	*2*
Endrin	0.014	5.3		0.0084	*U*	*2*	0.0074	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Endrin aldehyde	NA	NA		0.0084	*U*	*2*	0.015	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Endrin ketone	NA	NA		0.0084	*U*	*2*	0.0074	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
g-BHC	0.025	0.21		0.0017	*U*	*2*	0.0015	*U*	*2*	0.0014	*U*	*2*	0.0014	*U*	*2*
g-Chlordane	NA	NA		0.0042	*U*	*2*	0.0037	*U*	*2*	0.0036	*U*	*2*	0.0035	*U*	*2*
Heptachlor	0.013	0.53		0.0084	*U*	*2*	0.0074	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Heptachlor epoxide	NA	NA		0.0084	*U*	*2*	0.0074	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Methoxychlor	NA	NA		0.042	*U*	*2*	0.037	*U*	*2*	0.036	*U*	*2*	0.035	*U*	*2*
Toxaphene	NA	NA		0.17	*U*	*2*	0.15	*U*	*2*	0.14	*U*	*2*	0.14	*U*	*2*

			Sample	**SB-01 43-45**			**SB-02 SURF**			**SB-02 0-5**			**SB-02 18-20**		
			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.084	*U*	*2*	0.074	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1221	0.1	1		0.084	*U*	*2*	0.074	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1232	0.1	1		0.084	*U*	*2*	0.074	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1242	0.1	1		0.084	*U*	*2*	0.074	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1248	0.1	1		0.084	*U*	*2*	0.074	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1254	0.1	1		0.084	*U*	*2*	0.074	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1260	0.1	1		0.084	*U*	*2*	0.074	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1262	0.1	1		0.084	*U*	*2*	0.074	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1268	0.1	1		0.084	*U*	*2*	0.074	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-01 43-45**			**SB-02 SURF**			**SB-02 0-5**			**SB-02 18-20**		
			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.16	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.16	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
2,4-D	NA	NA		0.32	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.26	*U*	*10*
2,4-DB	NA	NA		1.6	*U*	*10*	1.4	*U*	*10*	1.3	*U*	*10*	1.3	*U*	*10*
Dalapon	NA	NA		0.16	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
Dicamba	NA	NA		0.16	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
Dichloroprop	NA	NA		0.32	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.26	*U*	*10*
Dinoseb	NA	NA		0.32	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.26	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-02 20-25**			**SB-02 46-48**			**SB-03 SURF**			**SB-03 0-2**		
U= Not Detected ≥ value			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0022	*U*	*2*	0.0021	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0022	*U*	*2*	0.0021	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0022	*U*	*2*	0.0021	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*
a-BHC	0.0048	0.044		0.0072	*U*	*2*	0.0072	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
a-Chlordane	0.014	0.65		0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0035	*U*	*2*
Alachlor	NA	NA		0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0035	*U*	*2*
Aldrin	0.0048	0.044		0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0035	*U*	*2*
b-BHC	0.021	0.18		0.0072	*U*	*2*	0.0072	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Chlordane	NA	NA		0.036	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*	0.035	*U*	*2*
d-BHC	0.04	100		0.0072	*U*	*2*	0.0072	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Dieldrin	0.005	0.075		0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0035	*U*	*2*
Endosulfan I	4.3	35		0.0072	*U*	*2*	0.0072	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Endosulfan II	4.3	35		0.0072	*U*	*2*	0.0072	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Endosulfan sulfate	4.3	35		0.0072	*U*	*2*	0.0072	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Endrin	0.014	5.3		0.0072	*U*	*2*	0.0072	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Endrin aldehyde	NA	NA		0.0072	*U*	*2*	0.0072	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Endrin ketone	NA	NA		0.0072	*U*	*2*	0.0072	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
g-BHC	0.025	0.21		0.0014	*U*	*2*	0.0014	*U*	*2*	0.0014	*U*	*2*	0.0014	*U*	*2*
g-Chlordane	NA	NA		0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0035	*U*	*2*
Heptachlor	0.013	0.53		0.0072	*U*	*2*	0.0072	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Heptachlor epoxide	NA	NA		0.0072	*U*	*2*	0.0072	*U*	*2*	0.0072	*U*	*2*	0.007	*U*	*2*
Methoxychlor	NA	NA		0.036	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*	0.035	*U*	*2*
Toxaphene	NA	NA		0.14	*U*	*2*	0.14	*U*	*2*	0.14	*U*	*2*	0.14	*U*	*2*

			Sample	**SB-02 20-25**			**SB-02 46-48**			**SB-03 SURF**			**SB-03 0-2**		
			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.072	*U*	*2*	0.072	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1221	0.1	1		0.072	*U*	*2*	0.072	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1232	0.1	1		0.072	*U*	*2*	0.072	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1242	0.1	1		0.072	*U*	*2*	0.072	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1248	0.1	1		0.072	*U*	*2*	0.072	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1254	0.1	1		0.072	*U*	*2*	0.072	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1260	0.1	1		0.072	*U*	*2*	0.072	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1262	0.1	1		0.072	*U*	*2*	0.072	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
PCB-1268	0.1	1		0.072	*U*	*2*	0.072	*U*	*2*	0.072	*U*	*2*	0.07	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-02 20-25**			**SB-02 46-48**			**SB-03 SURF**			**SB-03 0-2**		
			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA		0.27	*U*	*10*	0.27	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*
2,4-DB	NA	NA		1.4	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA		0.27	*U*	*10*	0.27	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*
Dinoseb	NA	NA		0.27	*U*	*10*	0.27	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)		**Sample**	**SB-03 18-20**			**SB-03 20-22**			**SB-04 SURF**			**SB-04 0-2**		
U= Not Detected ≥ value		Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0022	*U*	*2*	0.0024	*U*	*2*	0.0026	*U*	*2*	0.0082		*2*
4,4' -DDE	0.0033	3.4	0.0022	*U*	*2*	0.0024	*U*	*2*	0.003	*U*	*2*	0.006		*2*
4,4' -DDT	0.0033	3.8	0.0022	*U*	*2*	0.0024	*U*	*2*	0.0026	*U*	*2*	0.017		*2*
a-BHC	0.0048	0.044	0.0073	*U*	*2*	0.0081	*U*	*2*	0.0087	*U*	*2*	0.0086	*U*	*2*
a-Chlordane	0.014	0.65	0.0037	*U*	*2*	0.0041	*U*	*2*	0.0043	*U*	*2*	0.0062		*2*
Alachlor	NA	NA	0.0037	*U*	*2*	0.0041	*U*	*2*	0.0043	*U*	*2*	0.0043	*U*	*2*
Aldrin	0.0048	0.044	0.0037	*U*	*2*	0.0041	*U*	*2*	0.0043	*U*	*2*	0.0043	*U*	*2*
b-BHC	0.021	0.18	0.0073	*U*	*2*	0.0081	*U*	*2*	0.0087	*U*	*2*	0.0086	*U*	*2*
Chlordane	NA	NA	0.037	*U*	*2*	0.041	*U*	*2*	0.043	*U*	*2*	0.043	*U*	*2*
d-BHC	0.04	100	0.0073	*U*	*2*	0.0081	*U*	*2*	0.0087	*U*	*2*	0.0086	*U*	*2*
Dieldrin	0.005	0.075	0.0037	*U*	*2*	0.0041	*U*	*2*	0.0043	*U*	*2*	0.0043	*U*	*2*
Endosulfan I	4.3	35	0.0073	*U*	*2*	0.0081	*U*	*2*	0.0087	*U*	*2*	0.0086	*U*	*2*
Endosulfan II	4.3	35	0.0073	*U*	*2*	0.0081	*U*	*2*	0.0087	*U*	*2*	0.0086	*U*	*2*
Endosulfan sulfate	4.3	35	0.0073	*U*	*2*	0.0081	*U*	*2*	0.0087	*U*	*2*	0.0086	*U*	*2*
Endrin	0.014	5.3	0.0073	*U*	*2*	0.0081	*U*	*2*	0.0087	*U*	*2*	0.0086	*U*	*2*
Endrin aldehyde	NA	NA	0.0073	*U*	*2*	0.0081	*U*	*2*	0.0087	*U*	*2*	0.0086	*U*	*2*
Endrin ketone	NA	NA	0.0073	*U*	*2*	0.0081	*U*	*2*	0.0087	*U*	*2*	0.0086	*U*	*2*
g-BHC	0.025	0.21	0.0015	*U*	*2*	0.0016	*U*	*2*	0.0017	*U*	*2*	0.0017	*U*	*2*
g-Chlordane	NA	NA	0.0037	*U*	*2*	0.0041	*U*	*2*	0.0043	*U*	*2*	0.0043	*U*	*2*
Heptachlor	0.013	0.53	0.0073	*U*	*2*	0.0081	*U*	*2*	0.0087	*U*	*2*	0.0086	*U*	*2*
Heptachlor epoxide	NA	NA	0.0073	*U*	*2*	0.0081	*U*	*2*	0.0087	*U*	*2*	0.0086	*U*	*2*
Methoxychlor	NA	NA	0.037	*U*	*2*	0.041	*U*	*2*	0.043	*U*	*2*	0.043	*U*	*2*
Toxaphene	NA	NA	0.15	*U*	*2*	0.16	*U*	*2*	0.17	*U*	*2*	0.17	*U*	*2*

		Sample	**SB-03 18-20**			**SB-03 20-22**			**SB-04 SURF**			**SB-04 0-2**		
		Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.073	*U*	*2*	0.081	*U*	*2*	0.087	*U*	*2*	0.086	*U*	*2*
PCB-1221	0.1	1	0.073	*U*	*2*	0.081	*U*	*2*	0.087	*U*	*2*	0.086	*U*	*2*
PCB-1232	0.1	1	0.073	*U*	*2*	0.081	*U*	*2*	0.087	*U*	*2*	0.086	*U*	*2*
PCB-1242	0.1	1	0.073	*U*	*2*	0.081	*U*	*2*	0.087	*U*	*2*	0.086	*U*	*2*
PCB-1248	0.1	1	0.073	*U*	*2*	0.081	*U*	*2*	0.087	*U*	*2*	0.086	*U*	*2*
PCB-1254	0.1	1	0.073	*U*	*2*	0.081	*U*	*2*	0.087	*U*	*2*	0.086	*U*	*2*
PCB-1260	0.1	1	0.073	*U*	*2*	0.081	*U*	*2*	0.087	*U*	*2*	0.086	*U*	*2*
PCB-1262	0.1	1	0.073	*U*	*2*	0.081	*U*	*2*	0.087	*U*	*2*	0.086	*U*	*2*
PCB-1268	0.1	1	0.073	*U*	*2*	0.081	*U*	*2*	0.087	*U*	*2*	0.086	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

		Sample	**SB-03 18-20**			**SB-03 20-22**			**SB-04 SURF**			**SB-04 0-2**		
		Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.14	*U*	*10*	0.15	*U*	*10*	0.16	*U*	*10*	0.16	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.14	*U*	*10*	0.15	*U*	*10*	0.16	*U*	*10*	0.16	*U*	*10*
2,4-D	NA	NA	0.28	*U*	*10*	0.31	*U*	*10*	0.32	*U*	*10*	0.32	*U*	*10*
2,4-DB	NA	NA	1.4	*U*	*10*	1.5	*U*	*10*	1.6	*U*	*10*	1.6	*U*	*10*
Dalapon	NA	NA	0.14	*U*	*10*	0.15	*U*	*10*	0.16	*U*	*10*	0.16	*U*	*10*
Dicamba	NA	NA	0.14	*U*	*10*	0.15	*U*	*10*	0.16	*U*	*10*	0.16	*U*	*10*
Dichloroprop	NA	NA	0.28	*U*	*10*	0.31	*U*	*10*	0.32	*U*	*10*	0.32	*U*	*10*
Dinoseb	NA	NA	0.28	*U*	*10*	0.31	*U*	*10*	0.32	*U*	*10*	0.32	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-04 21-23**			**SB-04 23-25**			**DUP-20260401**			**SB-05 SURF**		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0033	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0025	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0033	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.003	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0033	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0025	*U*	*2*
a-BHC	0.0048	0.044		0.011	*U*	*2*	0.0072	*U*	*2*	0.0073	*U*	*2*	0.0082	*U*	*2*
a-Chlordane	0.014	0.65		0.0055	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0041	*U*	*2*
Alachlor	NA	NA		0.0055	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0041	*U*	*2*
Aldrin	0.0048	0.044		0.0022	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0041	*U*	*2*
b-BHC	0.021	0.18		0.011	*U*	*2*	0.0072	*U*	*2*	0.0073	*U*	*2*	0.0082	*U*	*2*
Chlordane	NA	NA		0.055	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*	0.041	*U*	*2*
d-BHC	0.04	100		0.011	*U*	*2*	0.0072	*U*	*2*	0.0073	*U*	*2*	0.0082	*U*	*2*
Dieldrin	0.005	0.075		0.0022	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0041	*U*	*2*
Endosulfan I	4.3	35		0.011	*U*	*2*	0.0072	*U*	*2*	0.0073	*U*	*2*	0.0082	*U*	*2*
Endosulfan II	4.3	35		0.011	*U*	*2*	0.0072	*U*	*2*	0.0073	*U*	*2*	0.0082	*U*	*2*
Endosulfan sulfate	4.3	35		0.011	*U*	*2*	0.0072	*U*	*2*	0.0073	*U*	*2*	0.0082	*U*	*2*
Endrin	0.014	5.3		0.011	*U*	*2*	0.0072	*U*	*2*	0.0073	*U*	*2*	0.0082	*U*	*2*
Endrin aldehyde	NA	NA		0.011	*U*	*2*	0.0072	*U*	*2*	0.0073	*U*	*2*	0.0082	*U*	*2*
Endrin ketone	NA	NA		0.011	*U*	*2*	0.0072	*U*	*2*	0.0073	*U*	*2*	0.0082	*U*	*2*
g-BHC	0.025	0.21		0.0022	*U*	*2*	0.0014	*U*	*2*	0.0015	*U*	*2*	0.0016	*U*	*2*
g-Chlordane	NA	NA		0.0055	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0041	*U*	*2*
Heptachlor	0.013	0.53		0.011	*U*	*2*	0.0072	*U*	*2*	0.0073	*U*	*2*	0.0082	*U*	*2*
Heptachlor epoxide	NA	NA		0.011	*U*	*2*	0.0072	*U*	*2*	0.0073	*U*	*2*	0.0082	*U*	*2*
Methoxychlor	NA	NA		0.055	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*	0.041	*U*	*2*
Toxaphene	NA	NA		0.22	*U*	*2*	0.14	*U*	*2*	0.15	*U*	*2*	0.16	*U*	*2*

			Sample	**SB-04 21-23**			**SB-04 23-25**			**DUP-20260401**			**SB-05 SURF**		
			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.055	*U*	*2*	0.072	*U*	*2*	0.073	*U*	*2*	0.082	*U*	*2*
PCB-1221	0.1	1		0.055	*U*	*2*	0.072	*U*	*2*	0.073	*U*	*2*	0.082	*U*	*2*
PCB-1232	0.1	1		0.055	*U*	*2*	0.072	*U*	*2*	0.073	*U*	*2*	0.082	*U*	*2*
PCB-1242	0.1	1		0.055	*U*	*2*	0.072	*U*	*2*	0.073	*U*	*2*	0.082	*U*	*2*
PCB-1248	0.1	1		0.055	*U*	*2*	0.072	*U*	*2*	0.073	*U*	*2*	0.082	*U*	*2*
PCB-1254	0.1	1		0.055	*U*	*2*	0.072	*U*	*2*	0.073	*U*	*2*	0.082	*U*	*2*
PCB-1260	0.1	1		0.055	*U*	*2*	0.072	*U*	*2*	0.073	*U*	*2*	0.082	*U*	*2*
PCB-1262	0.1	1		0.055	*U*	*2*	0.072	*U*	*2*	0.073	*U*	*2*	0.082	*U*	*2*
PCB-1268	0.1	1		0.055	*U*	*2*	0.072	*U*	*2*	0.073	*U*	*2*	0.082	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-04 21-23**			**SB-04 23-25**			**DUP-20260401**			**SB-05 SURF**		
			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
2,4-D	NA	NA		0.28	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*	0.3	*U*	*10*
2,4-DB	NA	NA		1.4	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*	1.5	*U*	*10*
Dalapon	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
Dicamba	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
Dichloroprop	NA	NA		0.28	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*	0.3	*U*	*10*
Dinoseb	NA	NA		0.28	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*	0.3	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-05 0-1**			**SB-05 1-2**			**SB-05 10-12**			**SB-05 22-24**		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0025	*U*	*2*	0.0028	*U*	*2*	0.0021	*U*	*2*	0.0032	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0025	*U*	*2*	0.0045		*2*	0.0021	*U*	*2*	0.0032	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0025	*U*	*2*	0.0028	*U*	*2*	0.0021	*U*	*2*	0.0032	*U*	*2*
a-BHC	0.0048	0.044	0.0085	*U*	*2*	0.0093	*U*	*2*	0.0071	*U*	*2*	0.011	*U*	*2*
a-Chlordane	0.014	0.65	0.0042	*U*	*2*	0.0046	*U*	*2*	0.0035	*U*	*2*	0.0054	*U*	*2*
Alachlor	NA	NA	0.0042	*U*	*2*	0.0046	*U*	*2*	0.0035	*U*	*2*	0.0054	*U*	*2*
Aldrin	0.0048	0.044	0.0042	*U*	*2*	0.0046	*U*	*2*	0.0035	*U*	*2*	0.0022	*U*	*2*
b-BHC	0.021	0.18	0.0085	*U*	*2*	0.0093	*U*	*2*	0.0071	*U*	*2*	0.011	*U*	*2*
Chlordane	NA	NA	0.042	*U*	*2*	0.046	*U*	*2*	0.035	*U*	*2*	0.054	*U*	*2*
d-BHC	0.04	100	0.0085	*U*	*2*	0.0093	*U*	*2*	0.0071	*U*	*2*	0.011	*U*	*2*
Dieldrin	0.005	0.075	0.0042	*U*	*2*	0.0046	*U*	*2*	0.0035	*U*	*2*	0.0022	*U*	*2*
Endosulfan I	4.3	35	0.0085	*U*	*2*	0.0093	*U*	*2*	0.0071	*U*	*2*	0.011	*U*	*2*
Endosulfan II	4.3	35	0.0085	*U*	*2*	0.0093	*U*	*2*	0.0071	*U*	*2*	0.011	*U*	*2*
Endosulfan sulfate	4.3	35	0.0085	*U*	*2*	0.0093	*U*	*2*	0.0071	*U*	*2*	0.011	*U*	*2*
Endrin	0.014	5.3	0.0085	*U*	*2*	0.0093	*U*	*2*	0.0071	*U*	*2*	0.011	*U*	*2*
Endrin aldehyde	NA	NA	0.0085	*U*	*2*	0.0093	*U*	*2*	0.0071	*U*	*2*	0.011	*U*	*2*
Endrin ketone	NA	NA	0.0085	*U*	*2*	0.0093	*U*	*2*	0.0071	*U*	*2*	0.011	*U*	*2*
g-BHC	0.025	0.21	0.0017	*U*	*2*	0.0019	*U*	*2*	0.0014	*U*	*2*	0.0022	*U*	*2*
g-Chlordane	NA	NA	0.0042	*U*	*2*	0.0046	*U*	*2*	0.0035	*U*	*2*	0.0054	*U*	*2*
Heptachlor	0.013	0.53	0.0085	*U*	*2*	0.0093	*U*	*2*	0.0071	*U*	*2*	0.011	*U*	*2*
Heptachlor epoxide	NA	NA	0.0085	*U*	*2*	0.0093	*U*	*2*	0.0071	*U*	*2*	0.011	*U*	*2*
Methoxychlor	NA	NA	0.042	*U*	*2*	0.046	*U*	*2*	0.035	*U*	*2*	0.054	*U*	*2*
Toxaphene	NA	NA	0.17	*U*	*2*	0.19	*U*	*2*	0.14	*U*	*2*	0.22	*U*	*2*

			Sample	**SB-05 0-1**			**SB-05 1-2**			**SB-05 10-12**			**SB-05 22-24**		
			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.085	*U*	*2*	0.093	*U*	*2*	0.071	*U*	*2*	0.054	*U*	*2*
PCB-1221	0.1	1	0.085	*U*	*2*	0.093	*U*	*2*	0.071	*U*	*2*	0.054	*U*	*2*
PCB-1232	0.1	1	0.085	*U*	*2*	0.093	*U*	*2*	0.071	*U*	*2*	0.054	*U*	*2*
PCB-1242	0.1	1	0.085	*U*	*2*	0.093	*U*	*2*	0.071	*U*	*2*	0.054	*U*	*2*
PCB-1248	0.1	1	0.085	*U*	*2*	0.093	*U*	*2*	0.071	*U*	*2*	0.054	*U*	*2*
PCB-1254	0.1	1	0.085	*U*	*2*	0.093	*U*	*2*	0.071	*U*	*2*	0.054	*U*	*2*
PCB-1260	0.1	1	0.085	*U*	*2*	0.093	*U*	*2*	0.071	*U*	*2*	0.054	*U*	*2*
PCB-1262	0.1	1	0.085	*U*	*2*	0.093	*U*	*2*	0.071	*U*	*2*	0.054	*U*	*2*
PCB-1268	0.1	1	0.085	*U*	*2*	0.093	*U*	*2*	0.071	*U*	*2*	0.054	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

			Sample	**SB-05 0-1**			**SB-05 1-2**			**SB-05 10-12**			**SB-05 22-24**		
			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.16	*U*	*10*	0.17	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.16	*U*	*10*	0.17	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
2,4-D	NA	NA	0.32	*U*	*10*	0.35	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*
2,4-DB	NA	NA	1.6	*U*	*10*	1.7	*U*	*10*	1.3	*U*	*10*	1.3	*U*	*10*
Dalapon	NA	NA	0.16	*U*	*10*	0.17	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
Dicamba	NA	NA	0.16	*U*	*10*	0.17	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
Dichloroprop	NA	NA	0.32	*U*	*10*	0.35	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*
Dinoseb	NA	NA	0.32	*U*	*10*	0.35	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-06 SURF**			**SB-06 0-2**			**SB-06 16-18**			**SB-06 18-20**		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
a-BHC	0.0048	0.044	0.0074	*U*	*2*	0.0075	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
a-Chlordane	0.014	0.65	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Alachlor	NA	NA	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Aldrin	0.0048	0.044	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
b-BHC	0.021	0.18	0.0074	*U*	*2*	0.0075	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Chlordane	NA	NA	0.037	*U*	*2*	0.038	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*
d-BHC	0.04	100	0.0074	*U*	*2*	0.0075	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Dieldrin	0.005	0.075	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Endosulfan I	4.3	35	0.0074	*U*	*2*	0.0075	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Endosulfan II	4.3	35	0.0074	*U*	*2*	0.0075	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Endosulfan sulfate	4.3	35	0.0074	*U*	*2*	0.0075	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Endrin	0.014	5.3	0.0074	*U*	*2*	0.0075	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Endrin aldehyde	NA	NA	0.0074	*U*	*2*	0.0075	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Endrin ketone	NA	NA	0.0074	*U*	*2*	0.0075	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
g-BHC	0.025	0.21	0.0015	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*	0.0014	*U*	*2*
g-Chlordane	NA	NA	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Heptachlor	0.013	0.53	0.0074	*U*	*2*	0.0075	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Heptachlor epoxide	NA	NA	0.0074	*U*	*2*	0.0075	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Methoxychlor	NA	NA	0.037	*U*	*2*	0.038	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*
Toxaphene	NA	NA	0.15	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*	0.14	*U*	*2*

			Sample	**SB-06 SURF**			**SB-06 0-2**			**SB-06 16-18**			**SB-06 18-20**		
			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.074	*U*	*2*	0.075	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1221	0.1	1	0.074	*U*	*2*	0.075	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1232	0.1	1	0.074	*U*	*2*	0.075	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1242	0.1	1	0.074	*U*	*2*	0.075	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1248	0.1	1	0.074	*U*	*2*	0.075	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1254	0.1	1	0.074	*U*	*2*	0.075	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1260	0.1	1	0.074	*U*	*2*	0.075	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1262	0.1	1	0.074	*U*	*2*	0.075	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1268	0.1	1	0.074	*U*	*2*	0.075	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

			Sample	**SB-06 SURF**			**SB-06 0-2**			**SB-06 16-18**			**SB-06 18-20**		
			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA	0.28	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*
2,4-DB	NA	NA	1.4	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA	0.28	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*
Dinoseb	NA	NA	0.28	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-07 SURF**			**SB-07 0-1**			**SB-07 1-2**			**SB-07 16-18**		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0033	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0033	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0033	*U*	*2*
a-BHC	0.0048	0.044	0.0075	*U*	*2*	0.0072	*U*	*2*	0.0074	*U*	*2*	0.011	*U*	*2*
a-Chlordane	0.014	0.65	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*	0.0054	*U*	*2*
Alachlor	NA	NA	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*	0.0054	*U*	*2*
Aldrin	0.0048	0.044	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*	0.0022	*U*	*2*
b-BHC	0.021	0.18	0.0075	*U*	*2*	0.0072	*U*	*2*	0.0074	*U*	*2*	0.011	*U*	*2*
Chlordane	NA	NA	0.038	*U*	*2*	0.036	*U*	*2*	0.037	*U*	*2*	0.054	*U*	*2*
d-BHC	0.04	100	0.0075	*U*	*2*	0.0072	*U*	*2*	0.0074	*U*	*2*	0.011	*U*	*2*
Dieldrin	0.005	0.075	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*	0.0022	*U*	*2*
Endosulfan I	4.3	35	0.0075	*U*	*2*	0.0072	*U*	*2*	0.0074	*U*	*2*	0.011	*U*	*2*
Endosulfan II	4.3	35	0.0075	*U*	*2*	0.0072	*U*	*2*	0.0074	*U*	*2*	0.011	*U*	*2*
Endosulfan sulfate	4.3	35	0.0075	*U*	*2*	0.0072	*U*	*2*	0.0074	*U*	*2*	0.011	*U*	*2*
Endrin	0.014	5.3	0.0075	*U*	*2*	0.0072	*U*	*2*	0.0074	*U*	*2*	0.011	*U*	*2*
Endrin aldehyde	NA	NA	0.0075	*U*	*2*	0.0072	*U*	*2*	0.0074	*U*	*2*	0.011	*U*	*2*
Endrin ketone	NA	NA	0.0075	*U*	*2*	0.0072	*U*	*2*	0.0074	*U*	*2*	0.011	*U*	*2*
g-BHC	0.025	0.21	0.0015	*U*	*2*	0.0014	*U*	*2*	0.0015	*U*	*2*	0.0022	*U*	*2*
g-Chlordane	NA	NA	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*	0.0054	*U*	*2*
Heptachlor	0.013	0.53	0.0075	*U*	*2*	0.0072	*U*	*2*	0.0074	*U*	*2*	0.011	*U*	*2*
Heptachlor epoxide	NA	NA	0.0075	*U*	*2*	0.0072	*U*	*2*	0.0074	*U*	*2*	0.011	*U*	*2*
Methoxychlor	NA	NA	0.038	*U*	*2*	0.036	*U*	*2*	0.037	*U*	*2*	0.054	*U*	*2*
Toxaphene	NA	NA	0.15	*U*	*2*	0.14	*U*	*2*	0.15	*U*	*2*	0.22	*U*	*2*

			Sample	**SB-07 SURF**			**SB-07 0-1**			**SB-07 1-2**			**SB-07 16-18**		
			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.075	*U*	*2*	0.072	*U*	*2*	0.074	*U*	*2*	0.054	*U*	*2*
PCB-1221	0.1	1	0.075	*U*	*2*	0.072	*U*	*2*	0.074	*U*	*2*	0.054	*U*	*2*
PCB-1232	0.1	1	0.075	*U*	*2*	0.072	*U*	*2*	0.074	*U*	*2*	0.054	*U*	*2*
PCB-1242	0.1	1	0.075	*U*	*2*	0.072	*U*	*2*	0.074	*U*	*2*	0.054	*U*	*2*
PCB-1248	0.1	1	0.075	*U*	*2*	0.072	*U*	*2*	0.074	*U*	*2*	0.054	*U*	*2*
PCB-1254	0.1	1	0.075	*U*	*2*	0.072	*U*	*2*	0.074	*U*	*2*	0.054	*U*	*2*
PCB-1260	0.1	1	0.075	*U*	*2*	0.072	*U*	*2*	0.074	*U*	*2*	0.054	*U*	*2*
PCB-1262	0.1	1	0.075	*U*	*2*	0.072	*U*	*2*	0.074	*U*	*2*	0.054	*U*	*2*
PCB-1268	0.1	1	0.075	*U*	*2*	0.072	*U*	*2*	0.074	*U*	*2*	0.054	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

			Sample	**SB-07 SURF**			**SB-07 0-1**			**SB-07 1-2**			**SB-07 16-18**		
			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.19	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.19	*U*	*10*
2,4-D	NA	NA	0.28	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*	0.39	*U*	*10*
2,4-DB	NA	NA	1.4	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*	1.9	*U*	*10*
Dalapon	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.19	*U*	*10*
Dicamba	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.19	*U*	*10*
Dichloroprop	NA	NA	0.28	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*	0.39	*U*	*10*
Dinoseb	NA	NA	0.28	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*	0.39	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-07 21-23**			**SB-08 SURF**			**SB-08 0-2**			**SB-08 20-22**		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0022	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0022	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0022	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*
a-BHC	0.0048	0.044		0.0073	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*
a-Chlordane	0.014	0.65		0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Alachlor	NA	NA		0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Aldrin	0.0048	0.044		0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
b-BHC	0.021	0.18		0.0073	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*
Chlordane	NA	NA		0.036	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*
d-BHC	0.04	100		0.0073	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*
Dieldrin	0.005	0.075		0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Endosulfan I	4.3	35		0.0073	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*
Endosulfan II	4.3	35		0.0073	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*
Endosulfan sulfate	4.3	35		0.0073	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*
Endrin	0.014	5.3		0.0073	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*
Endrin aldehyde	NA	NA		0.0073	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*
Endrin ketone	NA	NA		0.0073	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*
g-BHC	0.025	0.21		0.0015	*U*	*2*	0.0015	*U*	*2*	0.0014	*U*	*2*	0.0014	*U*	*2*
g-Chlordane	NA	NA		0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Heptachlor	0.013	0.53		0.0073	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*
Heptachlor epoxide	NA	NA		0.0073	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*
Methoxychlor	NA	NA		0.036	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*
Toxaphene	NA	NA		0.15	*U*	*2*	0.15	*U*	*2*	0.14	*U*	*2*	0.14	*U*	*2*
			Sample	**SB-07 21-23**			**SB-08 SURF**			**SB-08 0-2**			**SB-08 20-22**		
			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.073	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*
PCB-1221	0.1	1		0.073	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*
PCB-1232	0.1	1		0.073	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*
PCB-1242	0.1	1		0.073	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*
PCB-1248	0.1	1		0.073	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*
PCB-1254	0.1	1		0.073	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*
PCB-1260	0.1	1		0.073	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*
PCB-1262	0.1	1		0.073	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*
PCB-1268	0.1	1		0.073	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		
			Sample	**SB-07 21-23**			**SB-08 SURF**			**SB-08 0-2**			**SB-08 20-22**		
			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*
2,4-D	NA	NA		0.27	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*	0.26	*U*	*10*
2,4-DB	NA	NA		1.4	*U*	*10*	1.3	*U*	*10*	1.4	*U*	*10*	1.3	*U*	*10*
Dalapon	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*
Dicamba	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*
Dichloroprop	NA	NA		0.27	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*	0.26	*U*	*10*
Dinoseb	NA	NA		0.27	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*	0.26	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-08 26-28**			**SB-09 SURF**			**SB-09 0-1**			**SB-09 1-2**		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-02			2026-04-02			2026-04-02		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0022	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0024	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0022	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0024	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0022	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0024	*U*	*2*
a-BHC	0.0048	0.044		0.0072	*U*	*2*	0.0077	*U*	*2*	0.0074	*U*	*2*	0.0079	*U*	*2*
a-Chlordane	0.014	0.65		0.0036	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*	0.0039	*U*	*2*
Alachlor	NA	NA		0.0036	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*	0.0039	*U*	*2*
Aldrin	0.0048	0.044		0.0036	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*	0.0039	*U*	*2*
b-BHC	0.021	0.18		0.0072	*U*	*2*	0.0077	*U*	*2*	0.0074	*U*	*2*	0.0079	*U*	*2*
Chlordane	NA	NA		0.036	*U*	*2*	0.038	*U*	*2*	0.037	*U*	*2*	0.039	*U*	*2*
d-BHC	0.04	100		0.0072	*U*	*2*	0.0077	*U*	*2*	0.0074	*U*	*2*	0.0079	*U*	*2*
Dieldrin	0.005	0.075		0.0036	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*	0.0039	*U*	*2*
Endosulfan I	4.3	35		0.0072	*U*	*2*	0.0077	*U*	*2*	0.0074	*U*	*2*	0.0079	*U*	*2*
Endosulfan II	4.3	35		0.0072	*U*	*2*	0.0077	*U*	*2*	0.0074	*U*	*2*	0.0079	*U*	*2*
Endosulfan sulfate	4.3	35		0.0072	*U*	*2*	0.0077	*U*	*2*	0.0074	*U*	*2*	0.0079	*U*	*2*
Endrin	0.014	5.3		0.0072	*U*	*2*	0.0077	*U*	*2*	0.0074	*U*	*2*	0.0079	*U*	*2*
Endrin aldehyde	NA	NA		0.0072	*U*	*2*	0.0077	*U*	*2*	0.0074	*U*	*2*	0.0079	*U*	*2*
Endrin ketone	NA	NA		0.0072	*U*	*2*	0.0077	*U*	*2*	0.0074	*U*	*2*	0.0079	*U*	*2*
g-BHC	0.025	0.21		0.0014	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*	0.0016	*U*	*2*
g-Chlordane	NA	NA		0.0036	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*	0.0039	*U*	*2*
Heptachlor	0.013	0.53		0.0072	*U*	*2*	0.0077	*U*	*2*	0.0074	*U*	*2*	0.0079	*U*	*2*
Heptachlor epoxide	NA	NA		0.0072	*U*	*2*	0.0077	*U*	*2*	0.0074	*U*	*2*	0.0079	*U*	*2*
Methoxychlor	NA	NA		0.036	*U*	*2*	0.038	*U*	*2*	0.037	*U*	*2*	0.039	*U*	*2*
Toxaphene	NA	NA		0.14	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*	0.16	*U*	*2*

			Sample	**SB-08 26-28**			**SB-09 SURF**			**SB-09 0-1**			**SB-09 1-2**		
			Date	2026-04-01			2026-04-02			2026-04-02			2026-04-02		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.072	*U*	*2*	0.077	*U*	*2*	0.074	*U*	*2*	0.079	*U*	*2*
PCB-1221	0.1	1		0.072	*U*	*2*	0.077	*U*	*2*	0.074	*U*	*2*	0.079	*U*	*2*
PCB-1232	0.1	1		0.072	*U*	*2*	0.077	*U*	*2*	0.074	*U*	*2*	0.079	*U*	*2*
PCB-1242	0.1	1		0.072	*U*	*2*	0.077	*U*	*2*	0.074	*U*	*2*	0.079	*U*	*2*
PCB-1248	0.1	1		0.072	*U*	*2*	0.077	*U*	*2*	0.074	*U*	*2*	0.079	*U*	*2*
PCB-1254	0.1	1		0.072	*U*	*2*	0.077	*U*	*2*	0.074	*U*	*2*	0.079	*U*	*2*
PCB-1260	0.1	1		0.072	*U*	*2*	0.077	*U*	*2*	0.074	*U*	*2*	0.079	*U*	*2*
PCB-1262	0.1	1		0.072	*U*	*2*	0.077	*U*	*2*	0.074	*U*	*2*	0.079	*U*	*2*
PCB-1268	0.1	1		0.072	*U*	*2*	0.077	*U*	*2*	0.074	*U*	*2*	0.079	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-08 26-28**			**SB-09 SURF**			**SB-09 0-1**			**SB-09 1-2**		
			Date	2026-04-01			2026-04-02			2026-04-02			2026-04-02		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
2,4-D	NA	NA		0.27	*U*	*10*	0.29	*U*	*10*	0.28	*U*	*10*	0.3	*U*	*10*
2,4-DB	NA	NA		1.3	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*	1.5	*U*	*10*
Dalapon	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
Dicamba	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
Dichloroprop	NA	NA		0.27	*U*	*10*	0.29	*U*	*10*	0.28	*U*	*10*	0.3	*U*	*10*
Dinoseb	NA	NA		0.27	*U*	*10*	0.29	*U*	*10*	0.28	*U*	*10*	0.3	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-09 6-8**			**SB-09 25-27**			**SB-09 42-44**			**SB-10 SURF**		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*
a-BHC	0.0048	0.044	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0076	*U*	*2*	0.0075	*U*	*2*
a-Chlordane	0.014	0.65	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*
Alachlor	NA	NA	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*
Aldrin	0.0048	0.044	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*
b-BHC	0.021	0.18	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0076	*U*	*2*	0.0075	*U*	*2*
Chlordane	NA	NA	0.037	*U*	*2*	0.038	*U*	*2*	0.038	*U*	*2*	0.037	*U*	*2*
d-BHC	0.04	100	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0076	*U*	*2*	0.0075	*U*	*2*
Dieldrin	0.005	0.075	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*
Endosulfan I	4.3	35	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0076	*U*	*2*	0.0075	*U*	*2*
Endosulfan II	4.3	35	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0076	*U*	*2*	0.0075	*U*	*2*
Endosulfan sulfate	4.3	35	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0076	*U*	*2*	0.0075	*U*	*2*
Endrin	0.014	5.3	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0076	*U*	*2*	0.0075	*U*	*2*
Endrin aldehyde	NA	NA	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0076	*U*	*2*	0.0075	*U*	*2*
Endrin ketone	NA	NA	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0076	*U*	*2*	0.0075	*U*	*2*
g-BHC	0.025	0.21	0.0015	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*
Heptachlor	0.013	0.53	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0076	*U*	*2*	0.0075	*U*	*2*
Heptachlor epoxide	NA	NA	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0076	*U*	*2*	0.0075	*U*	*2*
Methoxychlor	NA	NA	0.037	*U*	*2*	0.038	*U*	*2*	0.038	*U*	*2*	0.037	*U*	*2*
Toxaphene	NA	NA	0.15	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-09 6-8**			**SB-09 25-27**			**SB-09 42-44**			**SB-10 SURF**		
			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.076	*U*	*2*	0.075	*U*	*2*
PCB-1221	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.076	*U*	*2*	0.075	*U*	*2*
PCB-1232	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.076	*U*	*2*	0.075	*U*	*2*
PCB-1242	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.076	*U*	*2*	0.075	*U*	*2*
PCB-1248	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.076	*U*	*2*	0.075	*U*	*2*
PCB-1254	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.076	*U*	*2*	0.075	*U*	*2*
PCB-1260	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.076	*U*	*2*	0.075	*U*	*2*
PCB-1262	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.076	*U*	*2*	0.075	*U*	*2*
PCB-1268	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.076	*U*	*2*	0.075	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

			Sample	**SB-09 6-8**			**SB-09 25-27**			**SB-09 42-44**			**SB-10 SURF**		
			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.14	*U*	*10*	0.26	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.14	*U*	*10*	0.26	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA	0.29	*U*	*10*	0.52	*U*	*10*	0.29	*U*	*10*	0.28	*U*	*10*
2,4-DB	NA	NA	1.4	*U*	*10*	2.6	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA	0.14	*U*	*10*	0.26	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA	0.14	*U*	*10*	0.26	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA	0.29	*U*	*10*	0.52	*U*	*10*	0.29	*U*	*10*	0.28	*U*	*10*
Dinoseb	NA	NA	0.29	*U*	*10*	0.52	*U*	*10*	0.29	*U*	*10*	0.28	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-10 0-2**			**SB-10 18-20**			**SB-10 23-25**			**SB-11 SURF**		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0023	*U*	*2*	0.0021	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0023	*U*	*2*	0.0021	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0023	*U*	*2*	0.0021	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
a-BHC	0.0048	0.044	0.0077	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
a-Chlordane	0.014	0.65	0.0039	*U*	*2*	0.0035	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*
Alachlor	NA	NA	0.0039	*U*	*2*	0.0035	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*
Aldrin	0.0048	0.044	0.0039	*U*	*2*	0.0035	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*
b-BHC	0.021	0.18	0.0077	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Chlordane	NA	NA	0.039	*U*	*2*	0.035	*U*	*2*	0.036	*U*	*2*	0.037	*U*	*2*
d-BHC	0.04	100	0.0077	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Dieldrin	0.005	0.075	0.0039	*U*	*2*	0.0035	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*
Endosulfan I	4.3	35	0.0077	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Endosulfan II	4.3	35	0.0077	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Endosulfan sulfate	4.3	35	0.0077	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Endrin	0.014	5.3	0.0077	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Endrin aldehyde	NA	NA	0.0077	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Endrin ketone	NA	NA	0.0077	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
g-BHC	0.025	0.21	0.0015	*U*	*2*	0.0014	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA	0.0039	*U*	*2*	0.0035	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*
Heptachlor	0.013	0.53	0.0077	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Heptachlor epoxide	NA	NA	0.0077	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Methoxychlor	NA	NA	0.039	*U*	*2*	0.035	*U*	*2*	0.036	*U*	*2*	0.037	*U*	*2*
Toxaphene	NA	NA	0.15	*U*	*2*	0.14	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-10 0-2**			**SB-10 18-20**			**SB-10 23-25**			**SB-11 SURF**		
			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.077	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1221	0.1	1	0.077	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1232	0.1	1	0.077	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1242	0.1	1	0.077	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1248	0.1	1	0.077	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1254	0.1	1	0.077	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1260	0.1	1	0.077	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1262	0.1	1	0.077	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1268	0.1	1	0.077	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

			Sample	**SB-10 0-2**			**SB-10 18-20**			**SB-10 23-25**			**SB-11 SURF**		
			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.15	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.15	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA	0.29	*U*	*10*	0.26	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*
2,4-DB	NA	NA	1.5	*U*	*10*	1.3	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA	0.15	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA	0.15	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA	0.29	*U*	*10*	0.26	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*
Dinoseb	NA	NA	0.29	*U*	*10*	0.26	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-11 0-2**			**SB-11 9-11**			**SB-11 20-22**			**SB-12 SURF**		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
a-BHC	0.0048	0.044	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
a-Chlordane	0.014	0.65	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*
Alachlor	NA	NA	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*
Aldrin	0.0048	0.044	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*
b-BHC	0.021	0.18	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Chlordane	NA	NA	0.037	*U*	*2*	0.038	*U*	*2*	0.036	*U*	*2*	0.037	*U*	*2*
d-BHC	0.04	100	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Dieldrin	0.005	0.075	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*
Endosulfan I	4.3	35	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Endosulfan II	4.3	35	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Endosulfan sulfate	4.3	35	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Endrin	0.014	5.3	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Endrin aldehyde	NA	NA	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Endrin ketone	NA	NA	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
g-BHC	0.025	0.21	0.0015	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA	0.0037	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*	0.0037	*U*	*2*
Heptachlor	0.013	0.53	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Heptachlor epoxide	NA	NA	0.0074	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*	0.0074	*U*	*2*
Methoxychlor	NA	NA	0.037	*U*	*2*	0.038	*U*	*2*	0.036	*U*	*2*	0.037	*U*	*2*
Toxaphene	NA	NA	0.15	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-11 0-2**			**SB-11 9-11**			**SB-11 20-22**			**SB-12 SURF**		
			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1221	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1232	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1242	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1248	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1254	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1260	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1262	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
PCB-1268	0.1	1	0.074	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*	0.074	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

			Sample	**SB-11 0-2**			**SB-11 9-11**			**SB-11 20-22**			**SB-12 SURF**		
			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA	0.28	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.28	*U*	*10*
2,4-DB	NA	NA	1.4	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA	0.28	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.28	*U*	*10*
Dinoseb	NA	NA	0.28	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.28	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-12 0-1**			**SB-12 1-2**			**SB-12 6-8**			**DUP-20260402**		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0022	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*
a-BHC	0.0048	0.044	0.0072	*U*	*2*	0.0075	*U*	*2*	0.0078	*U*	*2*	0.0077	*U*	*2*
a-Chlordane	0.014	0.65	0.0036	*U*	*2*	0.0038	*U*	*2*	0.0039	*U*	*2*	0.0039	*U*	*2*
Alachlor	NA	NA	0.0036	*U*	*2*	0.0038	*U*	*2*	0.0039	*U*	*2*	0.0039	*U*	*2*
Aldrin	0.0048	0.044	0.0036	*U*	*2*	0.0038	*U*	*2*	0.0039	*U*	*2*	0.0039	*U*	*2*
b-BHC	0.021	0.18	0.0072	*U*	*2*	0.0075	*U*	*2*	0.0078	*U*	*2*	0.0077	*U*	*2*
Chlordane	NA	NA	0.036	*U*	*2*	0.038	*U*	*2*	0.039	*U*	*2*	0.039	*U*	*2*
d-BHC	0.04	100	0.0072	*U*	*2*	0.0075	*U*	*2*	0.0078	*U*	*2*	0.0077	*U*	*2*
Dieldrin	0.005	0.075	0.0036	*U*	*2*	0.0038	*U*	*2*	0.0039	*U*	*2*	0.0039	*U*	*2*
Endosulfan I	4.3	35	0.0072	*U*	*2*	0.0075	*U*	*2*	0.0078	*U*	*2*	0.0077	*U*	*2*
Endosulfan II	4.3	35	0.0072	*U*	*2*	0.0075	*U*	*2*	0.0078	*U*	*2*	0.0077	*U*	*2*
Endosulfan sulfate	4.3	35	0.0072	*U*	*2*	0.0075	*U*	*2*	0.0078	*U*	*2*	0.0077	*U*	*2*
Endrin	0.014	5.3	0.0072	*U*	*2*	0.0075	*U*	*2*	0.0078	*U*	*2*	0.0077	*U*	*2*
Endrin aldehyde	NA	NA	0.0072	*U*	*2*	0.0075	*U*	*2*	0.0078	*U*	*2*	0.0077	*U*	*2*
Endrin ketone	NA	NA	0.0072	*U*	*2*	0.0075	*U*	*2*	0.0078	*U*	*2*	0.0077	*U*	*2*
g-BHC	0.025	0.21	0.0014	*U*	*2*	0.0015	*U*	*2*	0.0016	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA	0.0036	*U*	*2*	0.0038	*U*	*2*	0.0039	*U*	*2*	0.0039	*U*	*2*
Heptachlor	0.013	0.53	0.0072	*U*	*2*	0.0075	*U*	*2*	0.0078	*U*	*2*	0.0077	*U*	*2*
Heptachlor epoxide	NA	NA	0.0072	*U*	*2*	0.0075	*U*	*2*	0.0078	*U*	*2*	0.0077	*U*	*2*
Methoxychlor	NA	NA	0.036	*U*	*2*	0.038	*U*	*2*	0.039	*U*	*2*	0.039	*U*	*2*
Toxaphene	NA	NA	0.14	*U*	*2*	0.15	*U*	*2*	0.16	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-12 0-1**			**SB-12 1-2**			**SB-12 6-8**			**DUP-20260402**		
			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.072	*U*	*2*	0.075	*U*	*2*	0.078	*U*	*2*	0.077	*U*	*2*
PCB-1221	0.1	1	0.072	*U*	*2*	0.075	*U*	*2*	0.078	*U*	*2*	0.077	*U*	*2*
PCB-1232	0.1	1	0.072	*U*	*2*	0.075	*U*	*2*	0.078	*U*	*2*	0.077	*U*	*2*
PCB-1242	0.1	1	0.072	*U*	*2*	0.075	*U*	*2*	0.078	*U*	*2*	0.077	*U*	*2*
PCB-1248	0.1	1	0.072	*U*	*2*	0.075	*U*	*2*	0.078	*U*	*2*	0.077	*U*	*2*
PCB-1254	0.1	1	0.072	*U*	*2*	0.075	*U*	*2*	0.078	*U*	*2*	0.077	*U*	*2*
PCB-1260	0.1	1	0.072	*U*	*2*	0.075	*U*	*2*	0.078	*U*	*2*	0.077	*U*	*2*
PCB-1262	0.1	1	0.072	*U*	*2*	0.075	*U*	*2*	0.078	*U*	*2*	0.077	*U*	*2*
PCB-1268	0.1	1	0.072	*U*	*2*	0.075	*U*	*2*	0.078	*U*	*2*	0.077	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

			Sample	**SB-12 0-1**			**SB-12 1-2**			**SB-12 6-8**			**DUP-20260402**		
			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
2,4-D	NA	NA	0.27	*U*	*10*	0.28	*U*	*10*	0.29	*U*	*10*	0.29	*U*	*10*
2,4-DB	NA	NA	1.4	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*	1.5	*U*	*10*
Dalapon	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
Dicamba	NA	NA	0.14	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*
Dichloroprop	NA	NA	0.27	*U*	*10*	0.28	*U*	*10*	0.29	*U*	*10*	0.29	*U*	*10*
Dinoseb	NA	NA	0.27	*U*	*10*	0.28	*U*	*10*	0.29	*U*	*10*	0.29	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-12 22-24**			**SB-12 43-45**			**SB-13 SURF**			**SB-13 0-2**		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-03			2026-04-03		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0021	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0021	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0021	*U*	*2*	0.0023	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*
a-BHC	0.0048	0.044		0.0071	*U*	*2*	0.0075	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*
a-Chlordane	0.014	0.65		0.0036	*U*	*2*	0.0038	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*
Alachlor	NA	NA		0.0036	*U*	*2*	0.0038	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*
Aldrin	0.0048	0.044		0.0036	*U*	*2*	0.0038	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*
b-BHC	0.021	0.18		0.0071	*U*	*2*	0.0075	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*
Chlordane	NA	NA		0.036	*U*	*2*	0.038	*U*	*2*	0.038	*U*	*2*	0.036	*U*	*2*
d-BHC	0.04	100		0.0071	*U*	*2*	0.0075	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*
Dieldrin	0.005	0.075		0.0036	*U*	*2*	0.0038	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*
Endosulfan I	4.3	35		0.0071	*U*	*2*	0.0075	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*
Endosulfan II	4.3	35		0.0071	*U*	*2*	0.0075	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*
Endosulfan sulfate	4.3	35		0.0071	*U*	*2*	0.0075	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*
Endrin	0.014	5.3		0.0071	*U*	*2*	0.0075	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*
Endrin aldehyde	NA	NA		0.0071	*U*	*2*	0.0075	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*
Endrin ketone	NA	NA		0.0071	*U*	*2*	0.0075	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*
g-BHC	0.025	0.21		0.0014	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA		0.0036	*U*	*2*	0.0038	*U*	*2*	0.0038	*U*	*2*	0.0036	*U*	*2*
Heptachlor	0.013	0.53		0.0071	*U*	*2*	0.0075	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*
Heptachlor epoxide	NA	NA		0.0071	*U*	*2*	0.0075	*U*	*2*	0.0076	*U*	*2*	0.0073	*U*	*2*
Methoxychlor	NA	NA		0.036	*U*	*2*	0.038	*U*	*2*	0.038	*U*	*2*	0.036	*U*	*2*
Toxaphene	NA	NA		0.14	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-12 22-24**			**SB-12 43-45**			**SB-13 SURF**			**SB-13 0-2**		
			Date	2026-04-02			2026-04-02			2026-04-03			2026-04-03		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.071	*U*	*2*	0.075	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1221	0.1	1		0.071	*U*	*2*	0.075	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1232	0.1	1		0.071	*U*	*2*	0.075	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1242	0.1	1		0.071	*U*	*2*	0.075	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1248	0.1	1		0.071	*U*	*2*	0.075	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1254	0.1	1		0.071	*U*	*2*	0.075	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1260	0.1	1		0.071	*U*	*2*	0.075	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1262	0.1	1		0.071	*U*	*2*	0.075	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1268	0.1	1		0.071	*U*	*2*	0.075	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-12 22-24**			**SB-12 43-45**			**SB-13 SURF**			**SB-13 0-2**		
			Date	2026-04-02			2026-04-02			2026-04-03			2026-04-03		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.14	*U*	*10*	0.19	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.14	*U*	*10*	0.19	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA		0.27	*U*	*10*	0.38	*U*	*10*	0.29	*U*	*10*	0.27	*U*	*10*
2,4-DB	NA	NA		1.4	*U*	*10*	1.9	*U*	*10*	1.5	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA		0.14	*U*	*10*	0.19	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA		0.14	*U*	*10*	0.19	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA		0.27	*U*	*10*	0.38	*U*	*10*	0.29	*U*	*10*	0.27	*U*	*10*
Dinoseb	NA	NA		0.27	*U*	*10*	0.38	*U*	*10*	0.29	*U*	*10*	0.27	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-13 7-9**			**SB-13 20-22**			**SB-13 22-23**			**SB-13 23-25**		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0033	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0033	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0033	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0033	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0033	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0033	*U*	*2*
a-BHC	0.0048	0.044	0.018	*U*	*2*	0.0074	*U*	*2*	0.0073	*U*	*2*	0.018	*U*	*2*
a-Chlordane	0.014	0.65	0.0092	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0089	*U*	*2*
Alachlor	NA	NA	0.0092	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0089	*U*	*2*
Aldrin	0.0048	0.044	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0035	*U*	*2*
b-BHC	0.021	0.18	0.018	*U*	*2*	0.0074	*U*	*2*	0.0073	*U*	*2*	0.018	*U*	*2*
Chlordane	NA	NA	0.092	*U*	*2*	0.037	*U*	*2*	0.037	*U*	*2*	0.089	*U*	*2*
d-BHC	0.04	100	0.018	*U*	*2*	0.0074	*U*	*2*	0.0073	*U*	*2*	0.018	*U*	*2*
Dieldrin	0.005	0.075	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0035	*U*	*2*
Endosulfan I	4.3	35	0.018	*U*	*2*	0.0074	*U*	*2*	0.0073	*U*	*2*	0.018	*U*	*2*
Endosulfan II	4.3	35	0.018	*U*	*2*	0.0074	*U*	*2*	0.0073	*U*	*2*	0.018	*U*	*2*
Endosulfan sulfate	4.3	35	0.018	*U*	*2*	0.0074	*U*	*2*	0.0073	*U*	*2*	0.018	*U*	*2*
Endrin	0.014	5.3	0.0092	*U*	*2*	0.0074	*U*	*2*	0.0073	*U*	*2*	0.0089	*U*	*2*
Endrin aldehyde	NA	NA	0.018	*U*	*2*	0.0074	*U*	*2*	0.0073	*U*	*2*	0.018	*U*	*2*
Endrin ketone	NA	NA	0.018	*U*	*2*	0.0074	*U*	*2*	0.0073	*U*	*2*	0.018	*U*	*2*
g-BHC	0.025	0.21	0.0037	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*	0.0035	*U*	*2*
g-Chlordane	NA	NA	0.0092	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0089	*U*	*2*
Heptachlor	0.013	0.53	0.0092	*U*	*2*	0.0074	*U*	*2*	0.0073	*U*	*2*	0.0089	*U*	*2*
Heptachlor epoxide	NA	NA	0.018	*U*	*2*	0.0074	*U*	*2*	0.0073	*U*	*2*	0.018	*U*	*2*
Methoxychlor	NA	NA	0.092	*U*	*2*	0.037	*U*	*2*	0.037	*U*	*2*	0.089	*U*	*2*
Toxaphene	NA	NA	0.37	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*	0.35	*U*	*2*

			Sample	**SB-13 7-9**			**SB-13 20-22**			**SB-13 22-23**			**SB-13 23-25**		
			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.092	*U*	*2*	0.074	*U*	*2*	0.073	*U*	*2*	0.089	*U*	*2*
PCB-1221	0.1	1	0.092	*U*	*2*	0.074	*U*	*2*	0.073	*U*	*2*	0.089	*U*	*2*
PCB-1232	0.1	1	0.092	*U*	*2*	0.074	*U*	*2*	0.073	*U*	*2*	0.089	*U*	*2*
PCB-1242	0.1	1	0.092	*U*	*2*	0.074	*U*	*2*	0.073	*U*	*2*	0.089	*U*	*2*
PCB-1248	0.1	1	0.092	*U*	*2*	0.074	*U*	*2*	0.073	*U*	*2*	0.089	*U*	*2*
PCB-1254	0.1	1	0.092	*U*	*2*	0.074	*U*	*2*	0.073	*U*	*2*	0.089	*U*	*2*
PCB-1260	0.1	1	0.092	*U*	*2*	0.074	*U*	*2*	0.073	*U*	*2*	0.089	*U*	*2*
PCB-1262	0.1	1	0.092	*U*	*2*	0.074	*U*	*2*	0.073	*U*	*2*	0.089	*U*	*2*
PCB-1268	0.1	1	0.092	*U*	*2*	0.074	*U*	*2*	0.073	*U*	*2*	0.089	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

			Sample	**SB-13 7-9**			**SB-13 20-22**			**SB-13 22-23**			**SB-13 23-25**		
			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.16	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.16	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.16	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.16	*U*	*10*
2,4-D	NA	NA	0.33	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*	0.31	*U*	*10*
2,4-DB	NA	NA	1.6	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*	1.6	*U*	*10*
Dalapon	NA	NA	0.16	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.16	*U*	*10*
Dicamba	NA	NA	0.16	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.16	*U*	*10*
Dichloroprop	NA	NA	0.33	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*	0.31	*U*	*10*
Dinoseb	NA	NA	0.33	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*	0.31	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)		**Sample**	**SB-14 SURF**			**SB-14 0-2**			**SB-14 21-23**			**DUP-20260403**		
U= Not Detected ≥ value		Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0025	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0025	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0025	*U*	*2*	0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
a-BHC	0.0048	0.044	0.0082	*U*	*2*	0.0077	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
a-Chlordane	0.014	0.65	0.0041	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*	0.0036	*U*	*2*
Alachlor	NA	NA	0.0041	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*	0.0036	*U*	*2*
Aldrin	0.0048	0.044	0.0041	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*	0.0036	*U*	*2*
b-BHC	0.021	0.18	0.0082	*U*	*2*	0.0077	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Chlordane	NA	NA	0.041	*U*	*2*	0.038	*U*	*2*	0.037	*U*	*2*	0.036	*U*	*2*
d-BHC	0.04	100	0.0082	*U*	*2*	0.0077	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Dieldrin	0.005	0.075	0.0041	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*	0.0036	*U*	*2*
Endosulfan I	4.3	35	0.1	*U*	*2*	0.0077	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Endosulfan II	4.3	35	0.0082	*U*	*2*	0.0077	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Endosulfan sulfate	4.3	35	0.0082	*U*	*2*	0.0077	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Endrin	0.014	5.3	0.0082	*U*	*2*	0.0077	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Endrin aldehyde	NA	NA	0.0082	*U*	*2*	0.0077	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Endrin ketone	NA	NA	0.0082	*U*	*2*	0.0077	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
g-BHC	0.025	0.21	0.0016	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*	0.0014	*U*	*2*
g-Chlordane	NA	NA	0.0041	*U*	*2*	0.0038	*U*	*2*	0.0037	*U*	*2*	0.0036	*U*	*2*
Heptachlor	0.013	0.53	0.0082	*U*	*2*	0.0077	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Heptachlor epoxide	NA	NA	0.0082	*U*	*2*	0.0077	*U*	*2*	0.0073	*U*	*2*	0.0072	*U*	*2*
Methoxychlor	NA	NA	0.041	*U*	*2*	0.038	*U*	*2*	0.037	*U*	*2*	0.036	*U*	*2*
Toxaphene	NA	NA	0.16	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*	0.14	*U*	*2*

		Sample	**SB-14 SURF**			**SB-14 0-2**			**SB-14 21-23**			**DUP-20260403**		
		Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.082	*U*	*2*	0.077	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1221	0.1	1	0.082	*U*	*2*	0.077	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1232	0.1	1	0.082	*U*	*2*	0.077	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1242	0.1	1	0.082	*U*	*2*	0.077	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1248	0.1	1	0.082	*U*	*2*	0.077	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1254	0.1	1	0.082	*U*	*2*	0.077	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1260	0.1	1	0.082	*U*	*2*	0.077	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1262	0.1	1	0.082	*U*	*2*	0.077	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
PCB-1268	0.1	1	0.082	*U*	*2*	0.077	*U*	*2*	0.073	*U*	*2*	0.072	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

		Sample	**SB-14 SURF**			**SB-14 0-2**			**SB-14 21-23**			**DUP-20260403**		
		Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.15	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.15	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA	0.3	*U*	*10*	0.29	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*
2,4-DB	NA	NA	1.5	*U*	*10*	1.4	*U*	*10*	1.3	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA	0.15	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA	0.15	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA	0.3	*U*	*10*	0.29	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*
Dinoseb	NA	NA	0.3	*U*	*10*	0.29	*U*	*10*	0.27	*U*	*10*	0.27	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-14 23-25**			**SB-15 SURF**			**SB-15 0-2**			**SB-15 11-13**		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0022	*U*	*2*	0.0099		*2*	0.0076	*U*	*20*	0.0022	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0022	*U*	*2*	0.011		*2*	0.0076	*U*	*20*	0.0022	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0022	*U*	*2*	0.013		*2*	0.0076	*U*	*20*	0.0022	*U*	*2*
a-BHC	0.0048	0.044		0.0072	*U*	*2*	0.0081	*U*	*2*	0.015	*U*	*20*	0.0073	*U*	*2*
a-Chlordane	0.014	0.65		0.0036	*U*	*2*	0.01	*U*	*2*	0.0076	*U*	*20*	0.0036	*U*	*2*
Alachlor	NA	NA		0.0036	*U*	*2*	0.0041	*U*	*2*	0.038	*U*	*20*	0.0036	*U*	*2*
Aldrin	0.0048	0.044		0.0036	*U*	*2*	0.0041	*U*	*2*	0.0076	*U*	*20*	0.0036	*U*	*2*
b-BHC	0.021	0.18		0.0072	*U*	*2*	0.0081	*U*	*2*	0.015	*U*	*20*	0.0073	*U*	*2*
Chlordane	NA	NA		0.036	*U*	*2*	0.041	*U*	*2*	0.38	*U*	*20*	0.036	*U*	*2*
d-BHC	0.04	100		0.0072	*U*	*2*	0.0081	*U*	*2*	0.015	*U*	*20*	0.0073	*U*	*2*
Dieldrin	0.005	0.075		0.0036	*U*	*2*	0.0041	*U*	*2*	0.0076	*U*	*20*	0.0036	*U*	*2*
Endosulfan I	4.3	35		0.0072	*U*	*2*	0.0081	*U*	*2*	0.076	*U*	*20*	0.0073	*U*	*2*
Endosulfan II	4.3	35		0.0072	*U*	*2*	0.0081	*U*	*2*	0.076	*U*	*20*	0.0073	*U*	*2*
Endosulfan sulfate	4.3	35		0.0072	*U*	*2*	0.0081	*U*	*2*	0.076	*U*	*20*	0.0073	*U*	*2*
Endrin	0.014	5.3		0.0072	*U*	*2*	0.0081	*U*	*2*	0.0076	*U*	*20*	0.0073	*U*	*2*
Endrin aldehyde	NA	NA		0.0072	*U*	*2*	0.015	*U*	*2*	0.076	*U*	*20*	0.0073	*U*	*2*
Endrin ketone	NA	NA		0.0072	*U*	*2*	0.0081	*U*	*2*	0.076	*U*	*20*	0.0073	*U*	*2*
g-BHC	0.025	0.21		0.0014	*U*	*2*	0.0016	*U*	*2*	0.015	*U*	*20*	0.0015	*U*	*2*
g-Chlordane	NA	NA		0.0036	*U*	*2*	0.01	*U*	*2*	0.038	*U*	*20*	0.0036	*U*	*2*
Heptachlor	0.013	0.53		0.0072	*U*	*2*	0.0081	*U*	*2*	0.015	*U*	*20*	0.0073	*U*	*2*
Heptachlor epoxide	NA	NA		0.0072	*U*	*2*	0.0081	*U*	*2*	0.076	*U*	*20*	0.0073	*U*	*2*
Methoxychlor	NA	NA		0.036	*U*	*2*	0.041	*U*	*2*	0.38	*U*	*20*	0.036	*U*	*2*
Toxaphene	NA	NA		0.14	*U*	*2*	0.16	*U*	*2*	1.5	*U*	*20*	0.15	*U*	*2*

			Sample	**SB-14 23-25**			**SB-15 SURF**			**SB-15 0-2**			**SB-15 11-13**		
			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.072	*U*	*2*	0.081	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1221	0.1	1		0.072	*U*	*2*	0.081	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1232	0.1	1		0.072	*U*	*2*	0.081	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1242	0.1	1		0.072	*U*	*2*	0.081	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1248	0.1	1		0.072	*U*	*2*	0.081	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1254	0.1	1		0.072	*U*	*2*	0.081	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1260	0.1	1		0.072	*U*	*2*	0.081	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1262	0.1	1		0.072	*U*	*2*	0.081	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
PCB-1268	0.1	1		0.072	*U*	*2*	0.081	*U*	*2*	0.076	*U*	*2*	0.073	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-14 23-25**			**SB-15 SURF**			**SB-15 0-2**			**SB-15 11-13**		
			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.13	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.13	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA		0.27	*U*	*10*	0.31	*U*	*10*	0.29	*U*	*10*	0.27	*U*	*10*
2,4-DB	NA	NA		1.3	*U*	*10*	1.5	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA		0.13	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA		0.13	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA		0.27	*U*	*10*	0.31	*U*	*10*	0.29	*U*	*10*	0.27	*U*	*10*
Dinoseb	NA	NA		0.27	*U*	*10*	0.31	*U*	*10*	0.29	*U*	*10*	0.27	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-15 22-24**			**SB-15 24-25**			**SB-16 SURF**			**SB-16 0-1**		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0024	*U*	*2*	0.0022	*U*	*2*	0.0024	*U*	*2*	0.0024	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0024	*U*	*2*	0.0022	*U*	*2*	0.0024	*U*	*2*	0.0024	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0024	*U*	*2*	0.0022	*U*	*2*	0.0024	*U*	*2*	0.0024	*U*	*2*
a-BHC	0.0048	0.044		0.0079	*U*	*2*	0.0072	*U*	*2*	0.008	*U*	*2*	0.008	*U*	*2*
a-Chlordane	0.014	0.65		0.0039	*U*	*2*	0.0036	*U*	*2*	0.004	*U*	*2*	0.004	*U*	*2*
Alachlor	NA	NA		0.0039	*U*	*2*	0.0036	*U*	*2*	0.004	*U*	*2*	0.004	*U*	*2*
Aldrin	0.0048	0.044		0.0039	*U*	*2*	0.0036	*U*	*2*	0.004	*U*	*2*	0.004	*U*	*2*
b-BHC	0.021	0.18		0.0079	*U*	*2*	0.0072	*U*	*2*	0.008	*U*	*2*	0.008	*U*	*2*
Chlordane	NA	NA		0.039	*U*	*2*	0.036	*U*	*2*	0.04	*U*	*2*	0.04	*U*	*2*
d-BHC	0.04	100		0.0079	*U*	*2*	0.0072	*U*	*2*	0.008	*U*	*2*	0.008	*U*	*2*
Dieldrin	0.005	0.075		0.0039	*U*	*2*	0.0036	*U*	*2*	0.004	*U*	*2*	0.004	*U*	*2*
Endosulfan I	4.3	35		0.0079	*U*	*2*	0.0072	*U*	*2*	0.008	*U*	*2*	0.008	*U*	*2*
Endosulfan II	4.3	35		0.0079	*U*	*2*	0.0072	*U*	*2*	0.008	*U*	*2*	0.008	*U*	*2*
Endosulfan sulfate	4.3	35		0.0079	*U*	*2*	0.0072	*U*	*2*	0.008	*U*	*2*	0.008	*U*	*2*
Endrin	0.014	5.3		0.0079	*U*	*2*	0.0072	*U*	*2*	0.008	*U*	*2*	0.008	*U*	*2*
Endrin aldehyde	NA	NA		0.0079	*U*	*2*	0.0072	*U*	*2*	0.008	*U*	*2*	0.008	*U*	*2*
Endrin ketone	NA	NA		0.0079	*U*	*2*	0.0072	*U*	*2*	0.008	*U*	*2*	0.008	*U*	*2*
g-BHC	0.025	0.21		0.0016	*U*	*2*	0.0014	*U*	*2*	0.0016	*U*	*2*	0.0016	*U*	*2*
g-Chlordane	NA	NA		0.0039	*U*	*2*	0.0036	*U*	*2*	0.004	*U*	*2*	0.004	*U*	*2*
Heptachlor	0.013	0.53		0.0079	*U*	*2*	0.0072	*U*	*2*	0.008	*U*	*2*	0.008	*U*	*2*
Heptachlor epoxide	NA	NA		0.0079	*U*	*2*	0.0072	*U*	*2*	0.008	*U*	*2*	0.008	*U*	*2*
Methoxychlor	NA	NA		0.039	*U*	*2*	0.036	*U*	*2*	0.04	*U*	*2*	0.04	*U*	*2*
Toxaphene	NA	NA		0.16	*U*	*2*	0.14	*U*	*2*	0.16	*U*	*2*	0.16	*U*	*2*

			Sample	**SB-15 22-24**			**SB-15 24-25**			**SB-16 SURF**			**SB-16 0-1**		
			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.079	*U*	*2*	0.072	*U*	*2*	0.08	*U*	*2*	0.08	*U*	*2*
PCB-1221	0.1	1		0.079	*U*	*2*	0.072	*U*	*2*	0.08	*U*	*2*	0.08	*U*	*2*
PCB-1232	0.1	1		0.079	*U*	*2*	0.072	*U*	*2*	0.08	*U*	*2*	0.08	*U*	*2*
PCB-1242	0.1	1		0.079	*U*	*2*	0.072	*U*	*2*	0.08	*U*	*2*	0.08	*U*	*2*
PCB-1248	0.1	1		0.079	*U*	*2*	0.072	*U*	*2*	0.08	*U*	*2*	0.08	*U*	*2*
PCB-1254	0.1	1		0.079	*U*	*2*	0.072	*U*	*2*	0.08	*U*	*2*	0.08	*U*	*2*
PCB-1260	0.1	1		0.079	*U*	*2*	0.072	*U*	*2*	0.08	*U*	*2*	0.08	*U*	*2*
PCB-1262	0.1	1		0.079	*U*	*2*	0.072	*U*	*2*	0.08	*U*	*2*	0.08	*U*	*2*
PCB-1268	0.1	1		0.079	*U*	*2*	0.072	*U*	*2*	0.08	*U*	*2*	0.08	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-15 22-24**			**SB-15 24-25**			**SB-16 SURF**			**SB-16 0-1**		
			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.28	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*	0.15	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.28	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*	0.15	*U*	*10*
2,4-D	NA	NA		0.57	*U*	*10*	0.28	*U*	*10*	0.3	*U*	*10*	0.3	*U*	*10*
2,4-DB	NA	NA		2.8	*U*	*10*	1.4	*U*	*10*	1.5	*U*	*10*	1.5	*U*	*10*
Dalapon	NA	NA		0.28	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*	0.15	*U*	*10*
Dicamba	NA	NA		0.28	*U*	*10*	0.14	*U*	*10*	0.15	*U*	*10*	0.15	*U*	*10*
Dichloroprop	NA	NA		0.57	*U*	*10*	0.28	*U*	*10*	0.3	*U*	*10*	0.3	*U*	*10*
Dinoseb	NA	NA		0.57	*U*	*10*	0.28	*U*	*10*	0.3	*U*	*10*	0.3	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-16 1-2**			**SB-16 18-20**			**SB-16 23-25**			**SB-16 43-45**		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-06		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0023	*U*	*2*	0.0021	*U*	*2*	0.0023	*U*	*2*	0.003	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0023	*U*	*2*	0.0021	*U*	*2*	0.0023	*U*	*2*	0.003	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0023	*U*	*2*	0.0021	*U*	*2*	0.0023	*U*	*2*	0.003	*U*	*2*
a-BHC	0.0048	0.044		0.0076	*U*	*2*	0.0069	*U*	*2*	0.0078	*U*	*2*	0.015	*U*	*2*
a-Chlordane	0.014	0.65		0.0038	*U*	*2*	0.0035	*U*	*2*	0.0039	*U*	*2*	0.0076	*U*	*2*
Alachlor	NA	NA		0.0038	*U*	*2*	0.0035	*U*	*2*	0.0039	*U*	*2*	0.0076	*U*	*2*
Aldrin	0.0048	0.044		0.0038	*U*	*2*	0.0035	*U*	*2*	0.0039	*U*	*2*	0.003	*U*	*2*
b-BHC	0.021	0.18		0.0076	*U*	*2*	0.0069	*U*	*2*	0.0078	*U*	*2*	0.015	*U*	*2*
Chlordane	NA	NA		0.038	*U*	*2*	0.035	*U*	*2*	0.039	*U*	*2*	0.076	*U*	*2*
d-BHC	0.04	100		0.0076	*U*	*2*	0.0069	*U*	*2*	0.0078	*U*	*2*	0.015	*U*	*2*
Dieldrin	0.005	0.075		0.0038	*U*	*2*	0.0035	*U*	*2*	0.0039	*U*	*2*	0.003	*U*	*2*
Endosulfan I	4.3	35		0.0076	*U*	*2*	0.0069	*U*	*2*	0.0078	*U*	*2*	0.015	*U*	*2*
Endosulfan II	4.3	35		0.0076	*U*	*2*	0.0069	*U*	*2*	0.0078	*U*	*2*	0.015	*U*	*2*
Endosulfan sulfate	4.3	35		0.0076	*U*	*2*	0.0069	*U*	*2*	0.0078	*U*	*2*	0.015	*U*	*2*
Endrin	0.014	5.3		0.0076	*U*	*2*	0.0069	*U*	*2*	0.0078	*U*	*2*	0.0076	*U*	*2*
Endrin aldehyde	NA	NA		0.0076	*U*	*2*	0.0069	*U*	*2*	0.0078	*U*	*2*	0.015	*U*	*2*
Endrin ketone	NA	NA		0.0076	*U*	*2*	0.0069	*U*	*2*	0.0078	*U*	*2*	0.015	*U*	*2*
g-BHC	0.025	0.21		0.0015	*U*	*2*	0.0014	*U*	*2*	0.0016	*U*	*2*	0.003	*U*	*2*
g-Chlordane	NA	NA		0.0038	*U*	*2*	0.0035	*U*	*2*	0.0039	*U*	*2*	0.0076	*U*	*2*
Heptachlor	0.013	0.53		0.0076	*U*	*2*	0.0069	*U*	*2*	0.0078	*U*	*2*	0.0076	*U*	*2*
Heptachlor epoxide	NA	NA		0.0076	*U*	*2*	0.0069	*U*	*2*	0.0078	*U*	*2*	0.015	*U*	*2*
Methoxychlor	NA	NA		0.038	*U*	*2*	0.035	*U*	*2*	0.039	*U*	*2*	0.076	*U*	*2*
Toxaphene	NA	NA		0.15	*U*	*2*	0.14	*U*	*2*	0.16	*U*	*2*	0.3	*U*	*2*

			Sample	**SB-16 1-2**			**SB-16 18-20**			**SB-16 23-25**			**SB-16 43-45**		
			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-06		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.076	*U*	*2*	0.069	*U*	*2*	0.078	*U*	*2*	0.076	*U*	*2*
PCB-1221	0.1	1		0.076	*U*	*2*	0.069	*U*	*2*	0.078	*U*	*2*	0.076	*U*	*2*
PCB-1232	0.1	1		0.076	*U*	*2*	0.069	*U*	*2*	0.078	*U*	*2*	0.076	*U*	*2*
PCB-1242	0.1	1		0.076	*U*	*2*	0.069	*U*	*2*	0.078	*U*	*2*	0.076	*U*	*2*
PCB-1248	0.1	1		0.076	*U*	*2*	0.069	*U*	*2*	0.078	*U*	*2*	0.076	*U*	*2*
PCB-1254	0.1	1		0.076	*U*	*2*	0.069	*U*	*2*	0.078	*U*	*2*	0.076	*U*	*2*
PCB-1260	0.1	1		0.076	*U*	*2*	0.069	*U*	*2*	0.078	*U*	*2*	0.076	*U*	*2*
PCB-1262	0.1	1		0.076	*U*	*2*	0.069	*U*	*2*	0.078	*U*	*2*	0.076	*U*	*2*
PCB-1268	0.1	1		0.076	*U*	*2*	0.069	*U*	*2*	0.078	*U*	*2*	0.076	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-16 1-2**			**SB-16 18-20**			**SB-16 23-25**			**SB-16 43-45**		
			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-06		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA		0.28	*U*	*10*	0.26	*U*	*10*	0.29	*U*	*10*	0.28	*U*	*10*
2,4-DB	NA	NA		1.4	*U*	*10*	1.3	*U*	*10*	1.5	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA		0.28	*U*	*10*	0.26	*U*	*10*	0.29	*U*	*10*	0.28	*U*	*10*
Dinoseb	NA	NA		0.28	*U*	*10*	0.26	*U*	*10*	0.29	*U*	*10*	0.28	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-17 SURF**			**SB-17 5-7**			**SB-17 23-25**			**SB-17A SURF**		
U= Not Detected ≥ value			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.035		2	0.0033	U	10	0.0029	U	2	0.0023	U	2
4,4' -DDE	0.0033	3.4	0.0033	U	2	0.0033	U	10	0.0029	U	2	0.0023	U	2
4,4' -DDT	0.0033	3.8	0.0028	U	2	0.0033	U	10	0.0029	U	2	0.0023	U	2
a-BHC	0.0048	0.044	0.014	U	2	0.0077	U	10	0.014	U	2	0.011	U	2
a-Chlordane	0.014	0.65	0.0069	U	2	0.0038	U	10	0.0072	U	2	0.0057	U	2
Alachlor	NA	NA	0.0069	U	2	0.019	U	10	0.0072	U	2	0.0057	U	2
Aldrin	0.0048	0.044	0.0028	U	2	0.0048	U	10	0.0029	U	2	0.0023	U	2
b-BHC	0.021	0.18	0.014	U	2	0.0077	U	10	0.014	U	2	0.011	U	2
Chlordane	NA	NA	0.069	U	2	0.19	U	10	0.072	U	2	0.057	U	2
d-BHC	0.04	100	0.014	U	2	0.038	U	10	0.014	U	2	0.011	U	2
Dieldrin	0.005	0.075	0.0028	U	2	0.005	U	10	0.0029	U	2	0.0023	U	2
Endosulfan I	4.3	35	0.014	U	2	0.038	U	10	0.014	U	2	0.011	U	2
Endosulfan II	4.3	35	0.014	U	2	0.038	U	10	0.014	U	2	0.011	U	2
Endosulfan sulfate	4.3	35	0.014	U	2	0.038	U	10	0.014	U	2	0.011	U	2
Endrin	0.014	5.3	0.014	U	2	0.014	U	10	0.0072	U	2	0.011	U	2
Endrin aldehyde	NA	NA	0.02	U	2	0.038	U	10	0.014	U	2	0.011	U	2
Endrin ketone	NA	NA	0.014	U	2	0.038	U	10	0.014	U	2	0.011	U	2
g-BHC	0.025	0.21	0.0028	U	2	0.0077	U	10	0.0029	U	2	0.0023	U	2
g-Chlordane	NA	NA	0.0069	U	2	0.019	U	10	0.0072	U	2	0.0057	U	2
Heptachlor	0.013	0.53	0.0069	U	2	0.013	U	10	0.0072	U	2	0.011	U	2
Heptachlor epoxide	NA	NA	0.014	U	2	0.038	U	10	0.014	U	2	0.011	U	2
Methoxychlor	NA	NA	0.069	U	2	0.19	U	10	0.072	U	2	0.057	U	2
Toxaphene	NA	NA	0.28	U	2	0.77	U	10	0.29	U	2	0.23	U	2

			Sample	**SB-17 SURF**			**SB-17 5-7**			**SB-17 23-25**			**SB-17A SURF**		
			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.1	U	2	0.077	U	2	0.072	U	2	0.057	U	2
PCB-1221	0.1	1	0.1	U	2	0.077	U	2	0.072	U	2	0.057	U	2
PCB-1232	0.1	1	0.1	U	2	0.077	U	2	0.072	U	2	0.057	U	2
PCB-1242	0.1	1	0.1	U	2	0.077	U	2	0.072	U	2	0.057	U	2
PCB-1248	0.1	1	0.1	U	2	0.077	U	2	0.072	U	2	0.057	U	2
PCB-1254	0.1	1	0.31		2	0.077	U	2	0.072	U	2	0.057	U	2
PCB-1260	0.1	1	0.1	U	2	0.077	U	2	0.072	U	2	0.057	U	2
PCB-1262	0.1	1	0.1	U	2	0.077	U	2	0.072	U	2	0.057	U	2
PCB-1268	0.1	1	0.1	U	2	0.077	U	2	0.072	U	2	0.057	U	2
Total PCBs	0.1	1	0.31			ND			ND			ND		

			Sample	**SB-17 SURF**			**SB-17 5-7**			**SB-17 23-25**			**SB-17A SURF**		
			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.17	U	10	0.14	U	10	0.13	U	10	0.14	U	10
2,4,5-TP (Silvex)	NA	NA	0.17	U	10	0.14	U	10	0.13	U	10	0.14	U	10
2,4-D	NA	NA	0.34	U	10	0.29	U	10	0.27	U	10	0.28	U	10
2,4-DB	NA	NA	1.7	U	10	1.4	U	10	1.3	U	10	1.4	U	10
Dalapon	NA	NA	0.17	U	10	0.14	U	10	0.13	U	10	0.14	U	10
Dicamba	NA	NA	0.17	U	10	0.14	U	10	0.13	U	10	0.14	U	10
Dichloroprop	NA	NA	0.34	U	10	0.29	U	10	0.27	U	10	0.28	U	10
Dinoseb	NA	NA	0.34	U	10	0.29	U	10	0.27	U	10	0.28	U	10

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-17A 0-1**			**SB-17A 1-2**			**SB-17A 5-7**			**SB-18 SURF**		
U= Not Detected ≥ value			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0021	*U*	*2*	0.0021	*U*	*2*	0.0026	*U*	*2*	0.0023	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0021	*U*	*2*	0.0021	*U*	*2*	0.0059		*2*	0.0023	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0021	*U*	*2*	0.0021	*U*	*2*	0.0087		*2*	0.0042		*2*
a-BHC	0.0048	0.044	0.0071	*U*	*2*	0.0071	*U*	*2*	0.0086	*U*	*2*	0.0076	*U*	*2*
a-Chlordane	0.014	0.65	0.0036	*U*	*2*	0.0035	*U*	*2*	0.0043	*U*	*2*	0.0038	*U*	*2*
Alachlor	NA	NA	0.0036	*U*	*2*	0.0035	*U*	*2*	0.0043	*U*	*2*	0.0038	*U*	*2*
Aldrin	0.0048	0.044	0.0036	*U*	*2*	0.0035	*U*	*2*	0.0043	*U*	*2*	0.0038	*U*	*2*
b-BHC	0.021	0.18	0.0071	*U*	*2*	0.0071	*U*	*2*	0.0086	*U*	*2*	0.0076	*U*	*2*
Chlordane	NA	NA	0.036	*U*	*2*	0.035	*U*	*2*	0.043	*U*	*2*	0.038	*U*	*2*
d-BHC	0.04	100	0.0071	*U*	*2*	0.0071	*U*	*2*	0.0086	*U*	*2*	0.0076	*U*	*2*
Dieldrin	0.005	0.075	0.0036	*U*	*2*	0.0035	*U*	*2*	0.0043	*U*	*2*	0.0038	*U*	*2*
Endosulfan I	4.3	35	0.0071	*U*	*2*	0.0071	*U*	*2*	0.0086	*U*	*2*	0.0076	*U*	*2*
Endosulfan II	4.3	35	0.0071	*U*	*2*	0.0071	*U*	*2*	0.0086	*U*	*2*	0.0076	*U*	*2*
Endosulfan sulfate	4.3	35	0.0071	*U*	*2*	0.0071	*U*	*2*	0.0086	*U*	*2*	0.0076	*U*	*2*
Endrin	0.014	5.3	0.0071	*U*	*2*	0.0071	*U*	*2*	0.0086	*U*	*2*	0.0076	*U*	*2*
Endrin aldehyde	NA	NA	0.0071	*U*	*2*	0.0071	*U*	*2*	0.0086	*U*	*2*	0.0076	*U*	*2*
Endrin ketone	NA	NA	0.0071	*U*	*2*	0.0071	*U*	*2*	0.0086	*U*	*2*	0.0076	*U*	*2*
g-BHC	0.025	0.21	0.0014	*U*	*2*	0.0014	*U*	*2*	0.0017	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA	0.0036	*U*	*2*	0.0035	*U*	*2*	0.0043	*U*	*2*	0.0038	*U*	*2*
Heptachlor	0.013	0.53	0.0071	*U*	*2*	0.0071	*U*	*2*	0.0086	*U*	*2*	0.0076	*U*	*2*
Heptachlor epoxide	NA	NA	0.0071	*U*	*2*	0.0071	*U*	*2*	0.0086	*U*	*2*	0.0076	*U*	*2*
Methoxychlor	NA	NA	0.036	*U*	*2*	0.035	*U*	*2*	0.043	*U*	*2*	0.038	*U*	*2*
Toxaphene	NA	NA	0.14	*U*	*2*	0.14	*U*	*2*	0.17	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-17A 0-1**			**SB-17A 1-2**			**SB-17A 5-7**			**SB-18 SURF**		
			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.071	*U*	*2*	0.071	*U*	*2*	0.086	*U*	*2*	0.076	*U*	*2*
PCB-1221	0.1	1	0.071	*U*	*2*	0.071	*U*	*2*	0.086	*U*	*2*	0.076	*U*	*2*
PCB-1232	0.1	1	0.071	*U*	*2*	0.071	*U*	*2*	0.086	*U*	*2*	0.076	*U*	*2*
PCB-1242	0.1	1	0.071	*U*	*2*	0.071	*U*	*2*	0.086	*U*	*2*	0.076	*U*	*2*
PCB-1248	0.1	1	0.071	*U*	*2*	0.071	*U*	*2*	0.086	*U*	*2*	0.076	*U*	*2*
PCB-1254	0.1	1	0.071	*U*	*2*	0.071	*U*	*2*	0.086	*U*	*2*	0.076	*U*	*2*
PCB-1260	0.1	1	0.071	*U*	*2*	0.071	*U*	*2*	0.086	*U*	*2*	0.076	*U*	*2*
PCB-1262	0.1	1	0.071	*U*	*2*	0.071	*U*	*2*	0.086	*U*	*2*	0.076	*U*	*2*
PCB-1268	0.1	1	0.071	*U*	*2*	0.071	*U*	*2*	0.086	*U*	*2*	0.076	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

			Sample	**SB-17A 0-1**			**SB-17A 1-2**			**SB-17A 5-7**			**SB-18 SURF**		
			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.13	*U*	*10*	0.13	*U*	*10*	0.16	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.13	*U*	*10*	0.13	*U*	*10*	0.16	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA	0.27	*U*	*10*	0.27	*U*	*10*	0.32	*U*	*10*	0.29	*U*	*10*
2,4-DB	NA	NA	1.3	*U*	*10*	1.3	*U*	*10*	1.6	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA	0.13	*U*	*10*	0.13	*U*	*10*	0.16	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA	0.13	*U*	*10*	0.13	*U*	*10*	0.16	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA	0.27	*U*	*10*	0.27	*U*	*10*	0.32	*U*	*10*	0.29	*U*	*10*
Dinoseb	NA	NA	0.27	*U*	*10*	0.27	*U*	*10*	0.32	*U*	*10*	0.29	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-18 0-1**			**SB-18 1-2**			**DUP-20260406**			**SB-18 12-14**		
U= Not Detected ≥ value			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0023	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0071		*2*	0.0036		*2*	0.0079		*2*	0.0021	*U*	*2*
a-BHC	0.0048	0.044		0.0077	*U*	*2*	0.0074	*U*	*2*	0.0074	*U*	*2*	0.0069	*U*	*2*
a-Chlordane	0.014	0.65		0.0039	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0035	*U*	*2*
Alachlor	NA	NA		0.0039	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0035	*U*	*2*
Aldrin	0.0048	0.044		0.0039	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0035	*U*	*2*
b-BHC	0.021	0.18		0.0077	*U*	*2*	0.0074	*U*	*2*	0.0074	*U*	*2*	0.0069	*U*	*2*
Chlordane	NA	NA		0.039	*U*	*2*	0.037	*U*	*2*	0.037	*U*	*2*	0.035	*U*	*2*
d-BHC	0.04	100		0.0077	*U*	*2*	0.0074	*U*	*2*	0.0074	*U*	*2*	0.0069	*U*	*2*
Dieldrin	0.005	0.075		0.0039	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0035	*U*	*2*
Endosulfan I	4.3	35		0.0077	*U*	*2*	0.0074	*U*	*2*	0.0074	*U*	*2*	0.0069	*U*	*2*
Endosulfan II	4.3	35		0.0077	*U*	*2*	0.0074	*U*	*2*	0.0074	*U*	*2*	0.0069	*U*	*2*
Endosulfan sulfate	4.3	35		0.0077	*U*	*2*	0.0074	*U*	*2*	0.0074	*U*	*2*	0.0069	*U*	*2*
Endrin	0.014	5.3		0.0077	*U*	*2*	0.0074	*U*	*2*	0.0074	*U*	*2*	0.0069	*U*	*2*
Endrin aldehyde	NA	NA		0.0077	*U*	*2*	0.0074	*U*	*2*	0.0074	*U*	*2*	0.0069	*U*	*2*
Endrin ketone	NA	NA		0.0077	*U*	*2*	0.0074	*U*	*2*	0.0074	*U*	*2*	0.0069	*U*	*2*
g-BHC	0.025	0.21		0.0015	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*	0.0014	*U*	*2*
g-Chlordane	NA	NA		0.0039	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*	0.0035	*U*	*2*
Heptachlor	0.013	0.53		0.0077	*U*	*2*	0.0074	*U*	*2*	0.0074	*U*	*2*	0.0069	*U*	*2*
Heptachlor epoxide	NA	NA		0.0077	*U*	*2*	0.0074	*U*	*2*	0.0074	*U*	*2*	0.0069	*U*	*2*
Methoxychlor	NA	NA		0.039	*U*	*2*	0.037	*U*	*2*	0.037	*U*	*2*	0.035	*U*	*2*
Toxaphene	NA	NA		0.15	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*	0.14	*U*	*2*

			Sample	**SB-18 0-1**			**SB-18 1-2**			**DUP-20260406**			**SB-18 12-14**		
			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.077	*U*	*2*	0.074	*U*	*2*	0.074	*U*	*2*	0.069	*U*	*2*
PCB-1221	0.1	1		0.077	*U*	*2*	0.074	*U*	*2*	0.074	*U*	*2*	0.069	*U*	*2*
PCB-1232	0.1	1		0.077	*U*	*2*	0.074	*U*	*2*	0.074	*U*	*2*	0.069	*U*	*2*
PCB-1242	0.1	1		0.077	*U*	*2*	0.074	*U*	*2*	0.074	*U*	*2*	0.069	*U*	*2*
PCB-1248	0.1	1		0.077	*U*	*2*	0.074	*U*	*2*	0.074	*U*	*2*	0.069	*U*	*2*
PCB-1254	0.1	1		0.077	*U*	*2*	0.074	*U*	*2*	0.074	*U*	*2*	0.069	*U*	*2*
PCB-1260	0.1	1		0.077	*U*	*2*	0.074	*U*	*2*	0.074	*U*	*2*	0.069	*U*	*2*
PCB-1262	0.1	1		0.077	*U*	*2*	0.074	*U*	*2*	0.074	*U*	*2*	0.069	*U*	*2*
PCB-1268	0.1	1		0.077	*U*	*2*	0.074	*U*	*2*	0.074	*U*	*2*	0.069	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-18 0-1**			**SB-18 1-2**			**DUP-20260406**			**SB-18 12-14**		
			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*
2,4-D	NA	NA		0.29	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*	0.26	*U*	*10*
2,4-DB	NA	NA		1.5	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*	1.3	*U*	*10*
Dalapon	NA	NA		0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*
Dicamba	NA	NA		0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*
Dichloroprop	NA	NA		0.29	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*	0.26	*U*	*10*
Dinoseb	NA	NA		0.29	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*	0.26	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-18 23-25**			**SB-18 45-47**			**SB-19 SURF**			**SB-19 0-2**		
U= Not Detected ≥ value			Date	2026-04-06			2026-04-06			2026-04-07			2026-04-07		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0031	*U*	*2*	0.0022	*U*	*2*	0.0025	*U*	*2*	0.0023	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0031	*U*	*2*	0.0022	*U*	*2*	0.0025	*U*	*2*	0.0023	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0031	*U*	*2*	0.0022	*U*	*2*	0.02		*2*	0.0023	*U*	*2*
a-BHC	0.0048	0.044		0.016	*U*	*2*	0.0073	*U*	*2*	0.0084	*U*	*2*	0.0077	*U*	*2*
a-Chlordane	0.014	0.65		0.0078	*U*	*2*	0.0037	*U*	*2*	0.0042	*U*	*2*	0.0038	*U*	*2*
Alachlor	NA	NA		0.0078	*U*	*2*	0.0037	*U*	*2*	0.0042	*U*	*2*	0.0038	*U*	*2*
Aldrin	0.0048	0.044		0.0031	*U*	*2*	0.0037	*U*	*2*	0.0042	*U*	*2*	0.0038	*U*	*2*
b-BHC	0.021	0.18		0.016	*U*	*2*	0.0073	*U*	*2*	0.0084	*U*	*2*	0.0077	*U*	*2*
Chlordane	NA	NA		0.078	*U*	*2*	0.037	*U*	*2*	0.042	*U*	*2*	0.038	*U*	*2*
d-BHC	0.04	100		0.016	*U*	*2*	0.0073	*U*	*2*	0.0084	*U*	*2*	0.0077	*U*	*2*
Dieldrin	0.005	0.075		0.0031	*U*	*2*	0.0037	*U*	*2*	0.0042	*U*	*2*	0.0038	*U*	*2*
Endosulfan I	4.3	35		0.016	*U*	*2*	0.0073	*U*	*2*	0.0084	*U*	*2*	0.0077	*U*	*2*
Endosulfan II	4.3	35		0.016	*U*	*2*	0.0073	*U*	*2*	0.0084	*U*	*2*	0.0077	*U*	*2*
Endosulfan sulfate	4.3	35		0.016	*U*	*2*	0.0073	*U*	*2*	0.0084	*U*	*2*	0.0077	*U*	*2*
Endrin	0.014	5.3		0.0078	*U*	*2*	0.0073	*U*	*2*	0.0084	*U*	*2*	0.0077	*U*	*2*
Endrin aldehyde	NA	NA		0.016	*U*	*2*	0.0073	*U*	*2*	0.0084	*U*	*2*	0.0077	*U*	*2*
Endrin ketone	NA	NA		0.016	*U*	*2*	0.0073	*U*	*2*	0.0084	*U*	*2*	0.0077	*U*	*2*
g-BHC	0.025	0.21		0.0031	*U*	*2*	0.0015	*U*	*2*	0.0017	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA		0.0078	*U*	*2*	0.0037	*U*	*2*	0.0042	*U*	*2*	0.0038	*U*	*2*
Heptachlor	0.013	0.53		0.0078	*U*	*2*	0.0073	*U*	*2*	0.0084	*U*	*2*	0.0077	*U*	*2*
Heptachlor epoxide	NA	NA		0.016	*U*	*2*	0.0073	*U*	*2*	0.0084	*U*	*2*	0.0077	*U*	*2*
Methoxychlor	NA	NA		0.078	*U*	*2*	0.037	*U*	*2*	0.042	*U*	*2*	0.038	*U*	*2*
Toxaphene	NA	NA		0.31	*U*	*2*	0.15	*U*	*2*	0.17	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-18 23-25**			**SB-18 45-47**			**SB-19 SURF**			**SB-19 0-2**		
			Date	2026-04-06			2026-04-06			2026-04-07			2026-04-07		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.078	*U*	*2*	0.073	*U*	*2*	0.084	*U*	*2*	0.077	*U*	*2*
PCB-1221	0.1	1		0.078	*U*	*2*	0.073	*U*	*2*	0.084	*U*	*2*	0.077	*U*	*2*
PCB-1232	0.1	1		0.078	*U*	*2*	0.073	*U*	*2*	0.084	*U*	*2*	0.077	*U*	*2*
PCB-1242	0.1	1		0.078	*U*	*2*	0.073	*U*	*2*	0.084	*U*	*2*	0.077	*U*	*2*
PCB-1248	0.1	1		0.078	*U*	*2*	0.073	*U*	*2*	0.084	*U*	*2*	0.077	*U*	*2*
PCB-1254	0.1	1		0.078	*U*	*2*	0.073	*U*	*2*	0.084	*U*	*2*	0.077	*U*	*2*
PCB-1260	0.1	1		0.078	*U*	*2*	0.073	*U*	*2*	0.084	*U*	*2*	0.095		*2*
PCB-1262	0.1	1		0.078	*U*	*2*	0.073	*U*	*2*	0.084	*U*	*2*	0.077	*U*	*2*
PCB-1268	0.1	1		0.078	*U*	*2*	0.073	*U*	*2*	0.084	*U*	*2*	0.077	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			0.095		

			Sample	**SB-18 23-25**			**SB-18 45-47**			**SB-19 SURF**			**SB-19 0-2**		
			Date	2026-04-06			2026-04-06			2026-04-07			2026-04-07		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.16	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.16	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA		0.28	*U*	*10*	0.27	*U*	*10*	0.31	*U*	*10*	0.29	*U*	*10*
2,4-DB	NA	NA		1.4	*U*	*10*	1.4	*U*	*10*	1.6	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.16	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA		0.14	*U*	*10*	0.14	*U*	*10*	0.16	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA		0.28	*U*	*10*	0.27	*U*	*10*	0.31	*U*	*10*	0.29	*U*	*10*
Dinoseb	NA	NA		0.28	*U*	*10*	0.27	*U*	*10*	0.31	*U*	*10*	0.29	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-19 4-5**			**SB-19 18-20**			**SB-19 23-25**			**SB-20 SURF**		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0022	*U*	*2*	0.0085		*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0022	*U*	*2*	0.0021	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0022	*U*	*2*	0.0078		*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
a-BHC	0.0048	0.044		0.0074	*U*	*2*	0.0069	*U*	*2*	0.0075	*U*	*2*	0.0074	*U*	*2*
a-Chlordane	0.014	0.65		0.0037	*U*	*2*	0.0035	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*
Alachlor	NA	NA		0.0037	*U*	*2*	0.0035	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*
Aldrin	0.0048	0.044		0.0037	*U*	*2*	0.0035	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*
b-BHC	0.021	0.18		0.0074	*U*	*2*	0.0069	*U*	*2*	0.0075	*U*	*2*	0.0074	*U*	*2*
Chlordane	NA	NA		0.037	*U*	*2*	0.035	*U*	*2*	0.037	*U*	*2*	0.037	*U*	*2*
d-BHC	0.04	100		0.0074	*U*	*2*	0.0069	*U*	*2*	0.0075	*U*	*2*	0.0074	*U*	*2*
Dieldrin	0.005	0.075		0.0037	*U*	*2*	0.0035	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*
Endosulfan I	4.3	35		0.0074	*U*	*2*	0.0069	*U*	*2*	0.0075	*U*	*2*	0.0074	*U*	*2*
Endosulfan II	4.3	35		0.0074	*U*	*2*	0.0069	*U*	*2*	0.0075	*U*	*2*	0.0074	*U*	*2*
Endosulfan sulfate	4.3	35		0.0074	*U*	*2*	0.0069	*U*	*2*	0.0075	*U*	*2*	0.0074	*U*	*2*
Endrin	0.014	5.3		0.0074	*U*	*2*	0.0069	*U*	*2*	0.0075	*U*	*2*	0.0074	*U*	*2*
Endrin aldehyde	NA	NA		0.0074	*U*	*2*	0.0069	*U*	*2*	0.0075	*U*	*2*	0.0074	*U*	*2*
Endrin ketone	NA	NA		0.0074	*U*	*2*	0.0069	*U*	*2*	0.0075	*U*	*2*	0.0074	*U*	*2*
g-BHC	0.025	0.21		0.0015	*U*	*2*	0.0014	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA		0.0037	*U*	*2*	0.0035	*U*	*2*	0.0037	*U*	*2*	0.0037	*U*	*2*
Heptachlor	0.013	0.53		0.0074	*U*	*2*	0.0069	*U*	*2*	0.0075	*U*	*2*	0.0074	*U*	*2*
Heptachlor epoxide	NA	NA		0.0074	*U*	*2*	0.0069	*U*	*2*	0.0075	*U*	*2*	0.0074	*U*	*2*
Methoxychlor	NA	NA		0.037	*U*	*2*	0.035	*U*	*2*	0.037	*U*	*2*	0.037	*U*	*2*
Toxaphene	NA	NA		0.15	*U*	*2*	0.14	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-19 4-5**			**SB-19 18-20**			**SB-19 23-25**			**SB-20 SURF**		
			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.074	*U*	*2*	0.069	*U*	*2*	0.075	*U*	*2*	0.074	*U*	*2*
PCB-1221	0.1	1		0.074	*U*	*2*	0.069	*U*	*2*	0.075	*U*	*2*	0.074	*U*	*2*
PCB-1232	0.1	1		0.074	*U*	*2*	0.069	*U*	*2*	0.075	*U*	*2*	0.074	*U*	*2*
PCB-1242	0.1	1		0.074	*U*	*2*	0.069	*U*	*2*	0.075	*U*	*2*	0.074	*U*	*2*
PCB-1248	0.1	1		0.074	*U*	*2*	0.069	*U*	*2*	0.075	*U*	*2*	0.074	*U*	*2*
PCB-1254	0.1	1		0.074	*U*	*2*	0.069	*U*	*2*	0.075	*U*	*2*	0.074	*U*	*2*
PCB-1260	0.1	1		0.074	*U*	*2*	0.11		*2*	0.075	*U*	*2*	0.074	*U*	*2*
PCB-1262	0.1	1		0.074	*U*	*2*	0.069	*U*	*2*	0.075	*U*	*2*	0.074	*U*	*2*
PCB-1268	0.1	1		0.074	*U*	*2*	0.069	*U*	*2*	0.075	*U*	*2*	0.074	*U*	*2*
Total PCBs	0.1	1		ND			0.11			ND			ND		

			Sample	**SB-19 4-5**			**SB-19 18-20**			**SB-19 23-25**			**SB-20 SURF**		
			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA		0.27	*U*	*10*	0.26	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*
2,4-DB	NA	NA		1.4	*U*	*10*	1.3	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA		0.27	*U*	*10*	0.26	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*
Dinoseb	NA	NA		0.27	*U*	*10*	0.26	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-20 0-2**			**SB-20 18-20**			**SB-20 21-23**			**DUP-20260407**		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0022	*U*	*2*	0.0021	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0022	*U*	*2*	0.0021	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0022	*U*	*2*	0.0021	*U*	*2*	0.0022	*U*	*2*	0.0022	*U*	*2*
a-BHC	0.0048	0.044	0.0074	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0073	*U*	*2*
a-Chlordane	0.014	0.65	0.0037	*U*	*2*	0.0035	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Alachlor	NA	NA	0.0037	*U*	*2*	0.0035	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Aldrin	0.0048	0.044	0.0037	*U*	*2*	0.0035	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
b-BHC	0.021	0.18	0.0074	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0073	*U*	*2*
Chlordane	NA	NA	0.037	*U*	*2*	0.035	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*
d-BHC	0.04	100	0.0074	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0073	*U*	*2*
Dieldrin	0.005	0.075	0.0037	*U*	*2*	0.0035	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Endosulfan I	4.3	35	0.0074	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0073	*U*	*2*
Endosulfan II	4.3	35	0.0074	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0073	*U*	*2*
Endosulfan sulfate	4.3	35	0.0074	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0073	*U*	*2*
Endrin	0.014	5.3	0.0074	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0073	*U*	*2*
Endrin aldehyde	NA	NA	0.0074	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0073	*U*	*2*
Endrin ketone	NA	NA	0.0074	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0073	*U*	*2*
g-BHC	0.025	0.21	0.0015	*U*	*2*	0.0014	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA	0.0037	*U*	*2*	0.0035	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*
Heptachlor	0.013	0.53	0.0074	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0073	*U*	*2*
Heptachlor epoxide	NA	NA	0.0074	*U*	*2*	0.007	*U*	*2*	0.0073	*U*	*2*	0.0073	*U*	*2*
Methoxychlor	NA	NA	0.037	*U*	*2*	0.035	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*
Toxaphene	NA	NA	0.15	*U*	*2*	0.14	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-20 0-2**			**SB-20 18-20**			**SB-20 21-23**			**DUP-20260407**		
			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.073	*U*	*2*
PCB-1221	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.073	*U*	*2*
PCB-1232	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.073	*U*	*2*
PCB-1242	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.073	*U*	*2*
PCB-1248	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.073	*U*	*2*
PCB-1254	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.073	*U*	*2*
PCB-1260	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.073	*U*	*2*
PCB-1262	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.073	*U*	*2*
PCB-1268	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.073	*U*	*2*	0.073	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

			Sample	**SB-20 0-2**			**SB-20 18-20**			**SB-20 21-23**			**DUP-20260407**		
			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA	0.28	*U*	*10*	0.26	*U*	*10*	0.27	*U*	*10*	0.28	*U*	*10*
2,4-DB	NA	NA	1.4	*U*	*10*	1.3	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA	0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA	0.14	*U*	*10*	0.13	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA	0.28	*U*	*10*	0.26	*U*	*10*	0.27	*U*	*10*	0.28	*U*	*10*
Dinoseb	NA	NA	0.28	*U*	*10*	0.26	*U*	*10*	0.27	*U*	*10*	0.28	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)		**Sample**	**SB-21 SURF**			**SB-21 0-2**			**SB-21 18-20**			**SB-21 23-25**		
U= Not Detected ≥ value		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0023	*U*	*2*	0.0023	*U*	*2*	0.002	*U*	*2*	0.002	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0023	*U*	*2*	0.0023	*U*	*2*	0.002	*U*	*2*	0.002	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0023	*U*	*2*	0.0023	*U*	*2*	0.002	*U*	*2*	0.002	*U*	*2*
a-BHC	0.0048	0.044	0.0077	*U*	*2*	0.0078	*U*	*2*	0.0068	*U*	*2*	0.0068	*U*	*2*
a-Chlordane	0.014	0.65	0.0039	*U*	*2*	0.0039	*U*	*2*	0.0034	*U*	*2*	0.0034	*U*	*2*
Alachlor	NA	NA	0.0039	*U*	*2*	0.0039	*U*	*2*	0.0034	*U*	*2*	0.0034	*U*	*2*
Aldrin	0.0048	0.044	0.0039	*U*	*2*	0.0039	*U*	*2*	0.0034	*U*	*2*	0.0034	*U*	*2*
b-BHC	0.021	0.18	0.0077	*U*	*2*	0.0078	*U*	*2*	0.0068	*U*	*2*	0.0068	*U*	*2*
Chlordane	NA	NA	0.039	*U*	*2*	0.039	*U*	*2*	0.034	*U*	*2*	0.034	*U*	*2*
d-BHC	0.04	100	0.0077	*U*	*2*	0.0078	*U*	*2*	0.0068	*U*	*2*	0.0068	*U*	*2*
Dieldrin	0.005	0.075	0.0039	*U*	*2*	0.0039	*U*	*2*	0.0034	*U*	*2*	0.0034	*U*	*2*
Endosulfan I	4.3	35	0.0077	*U*	*2*	0.0078	*U*	*2*	0.0068	*U*	*2*	0.0068	*U*	*2*
Endosulfan II	4.3	35	0.0077	*U*	*2*	0.0078	*U*	*2*	0.0068	*U*	*2*	0.0068	*U*	*2*
Endosulfan sulfate	4.3	35	0.0077	*U*	*2*	0.0078	*U*	*2*	0.0068	*U*	*2*	0.0068	*U*	*2*
Endrin	0.014	5.3	0.0077	*U*	*2*	0.0078	*U*	*2*	0.0068	*U*	*2*	0.0068	*U*	*2*
Endrin aldehyde	NA	NA	0.0077	*U*	*2*	0.0078	*U*	*2*	0.0068	*U*	*2*	0.0068	*U*	*2*
Endrin ketone	NA	NA	0.0077	*U*	*2*	0.0078	*U*	*2*	0.0068	*U*	*2*	0.0068	*U*	*2*
g-BHC	0.025	0.21	0.0015	*U*	*2*	0.0016	*U*	*2*	0.0014	*U*	*2*	0.0014	*U*	*2*
g-Chlordane	NA	NA	0.0039	*U*	*2*	0.0039	*U*	*2*	0.0034	*U*	*2*	0.0034	*U*	*2*
Heptachlor	0.013	0.53	0.0077	*U*	*2*	0.0078	*U*	*2*	0.0068	*U*	*2*	0.0068	*U*	*2*
Heptachlor epoxide	NA	NA	0.0077	*U*	*2*	0.0078	*U*	*2*	0.0068	*U*	*2*	0.0068	*U*	*2*
Methoxychlor	NA	NA	0.039	*U*	*2*	0.039	*U*	*2*	0.034	*U*	*2*	0.034	*U*	*2*
Toxaphene	NA	NA	0.15	*U*	*2*	0.16	*U*	*2*	0.14	*U*	*2*	0.14	*U*	*2*

		Sample	**SB-21 SURF**			**SB-21 0-2**			**SB-21 18-20**			**SB-21 23-25**		
		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.077	*U*	*2*	0.078	*U*	*2*	0.068	*U*	*2*	0.068	*U*	*2*
PCB-1221	0.1	1	0.077	*U*	*2*	0.078	*U*	*2*	0.068	*U*	*2*	0.068	*U*	*2*
PCB-1232	0.1	1	0.077	*U*	*2*	0.078	*U*	*2*	0.068	*U*	*2*	0.068	*U*	*2*
PCB-1242	0.1	1	0.077	*U*	*2*	0.078	*U*	*2*	0.068	*U*	*2*	0.068	*U*	*2*
PCB-1248	0.1	1	0.077	*U*	*2*	0.078	*U*	*2*	0.068	*U*	*2*	0.068	*U*	*2*
PCB-1254	0.1	1	0.077	*U*	*2*	0.078	*U*	*2*	0.068	*U*	*2*	0.068	*U*	*2*
PCB-1260	0.1	1	0.077	*U*	*2*	0.078	*U*	*2*	0.068	*U*	*2*	0.068	*U*	*2*
PCB-1262	0.1	1	0.077	*U*	*2*	0.078	*U*	*2*	0.068	*U*	*2*	0.068	*U*	*2*
PCB-1268	0.1	1	0.077	*U*	*2*	0.078	*U*	*2*	0.068	*U*	*2*	0.068	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

		Sample	**SB-21 SURF**			**SB-21 0-2**			**SB-21 18-20**			**SB-21 23-25**		
		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.15	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.15	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
2,4-D	NA	NA	0.29	*U*	*10*	0.29	*U*	*10*	0.25	*U*	*10*	0.26	*U*	*10*
2,4-DB	NA	NA	1.5	*U*	*10*	1.4	*U*	*10*	1.3	*U*	*10*	1.3	*U*	*10*
Dalapon	NA	NA	0.15	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
Dicamba	NA	NA	0.15	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
Dichloroprop	NA	NA	0.29	*U*	*10*	0.29	*U*	*10*	0.25	*U*	*10*	0.26	*U*	*10*
Dinoseb	NA	NA	0.29	*U*	*10*	0.29	*U*	*10*	0.25	*U*	*10*	0.26	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)		**Sample**	**SB-22 SURF**			**SB-22 0-2**			**SB-22 2-3**			**SB-22 13-15**		
U= Not Detected ≥ value		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0022	*U*	*2*	0.0021	*U*	*2*	0.0021	*U*	*2*	0.0021	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0022	*U*	*2*	0.0021	*U*	*2*	0.0021	*U*	*2*	0.0021	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0022	*U*	*2*	0.003	*U*	*2*	0.0021	*U*	*2*	0.0021	*U*	*2*
a-BHC	0.0048	0.044	0.0074	*U*	*2*	0.007	*U*	*2*	0.007	*U*	*2*	0.0069	*U*	*2*
a-Chlordane	0.014	0.65	0.008	*U*	*2*	0.008	*U*	*2*	0.0035	*U*	*2*	0.0035	*U*	*2*
Alachlor	NA	NA	0.0037	*U*	*2*	0.0035	*U*	*2*	0.0035	*U*	*2*	0.0035	*U*	*2*
Aldrin	0.0048	0.044	0.0037	*U*	*2*	0.0035	*U*	*2*	0.0035	*U*	*2*	0.0035	*U*	*2*
b-BHC	0.021	0.18	0.0074	*U*	*2*	0.007	*U*	*2*	0.007	*U*	*2*	0.0069	*U*	*2*
Chlordane	NA	NA	0.037	*U*	*2*	0.035	*U*	*2*	0.035	*U*	*2*	0.035	*U*	*2*
d-BHC	0.04	100	0.0074	*U*	*2*	0.007	*U*	*2*	0.007	*U*	*2*	0.0069	*U*	*2*
Dieldrin	0.005	0.075	0.0037	*U*	*2*	0.0035	*U*	*2*	0.0035	*U*	*2*	0.0035	*U*	*2*
Endosulfan I	4.3	35	0.0074	*U*	*2*	0.007	*U*	*2*	0.007	*U*	*2*	0.0069	*U*	*2*
Endosulfan II	4.3	35	0.0074	*U*	*2*	0.007	*U*	*2*	0.007	*U*	*2*	0.0069	*U*	*2*
Endosulfan sulfate	4.3	35	0.0074	*U*	*2*	0.007	*U*	*2*	0.007	*U*	*2*	0.0069	*U*	*2*
Endrin	0.014	5.3	0.0074	*U*	*2*	0.007	*U*	*2*	0.007	*U*	*2*	0.0069	*U*	*2*
Endrin aldehyde	NA	NA	0.0074	*U*	*2*	0.007	*U*	*2*	0.007	*U*	*2*	0.0069	*U*	*2*
Endrin ketone	NA	NA	0.0074	*U*	*2*	0.007	*U*	*2*	0.007	*U*	*2*	0.0069	*U*	*2*
g-BHC	0.025	0.21	0.0015	*U*	*2*	0.0014	*U*	*2*	0.0014	*U*	*2*	0.0014	*U*	*2*
g-Chlordane	NA	NA	0.008	*U*	*2*	0.008	*U*	*2*	0.0035	*U*	*2*	0.0035	*U*	*2*
Heptachlor	0.013	0.53	0.0074	*U*	*2*	0.007	*U*	*2*	0.007	*U*	*2*	0.0069	*U*	*2*
Heptachlor epoxide	NA	NA	0.0074	*U*	*2*	0.007	*U*	*2*	0.007	*U*	*2*	0.0069	*U*	*2*
Methoxychlor	NA	NA	0.037	*U*	*2*	0.035	*U*	*2*	0.035	*U*	*2*	0.035	*U*	*2*
Toxaphene	NA	NA	0.15	*U*	*2*	0.14	*U*	*2*	0.14	*U*	*2*	0.14	*U*	*2*

		Sample	**SB-22 SURF**			**SB-22 0-2**			**SB-22 2-3**			**SB-22 13-15**		
		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.07	*U*	*2*	0.069	*U*	*2*
PCB-1221	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.07	*U*	*2*	0.069	*U*	*2*
PCB-1232	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.07	*U*	*2*	0.069	*U*	*2*
PCB-1242	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.07	*U*	*2*	0.069	*U*	*2*
PCB-1248	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.07	*U*	*2*	0.069	*U*	*2*
PCB-1254	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.07	*U*	*2*	0.069	*U*	*2*
PCB-1260	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.07	*U*	*2*	0.069	*U*	*2*
PCB-1262	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.07	*U*	*2*	0.069	*U*	*2*
PCB-1268	0.1	1	0.074	*U*	*2*	0.07	*U*	*2*	0.07	*U*	*2*	0.069	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND			ND		

		Sample	**SB-22 SURF**			**SB-22 0-2**			**SB-22 2-3**			**SB-22 13-15**		
		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
2,4-D	NA	NA	0.28	*U*	*10*	0.26	*U*	*10*	0.26	*U*	*10*	0.25	*U*	*10*
2,4-DB	NA	NA	1.4	*U*	*10*	1.3	*U*	*10*	1.3	*U*	*10*	1.3	*U*	*10*
Dalapon	NA	NA	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
Dicamba	NA	NA	0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*
Dichloroprop	NA	NA	0.28	*U*	*10*	0.26	*U*	*10*	0.26	*U*	*10*	0.25	*U*	*10*
Dinoseb	NA	NA	0.28	*U*	*10*	0.26	*U*	*10*	0.26	*U*	*10*	0.25	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-22 25-27**			**SB-23 SURF**			**SB-23 0-2**			**SB-23 2-3**		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0021	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*	0.0023	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0021	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*	0.0023	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0021	*U*	*2*	0.0022	*U*	*2*	0.0021	*U*	*2*	0.0023	*U*	*2*
a-BHC	0.0048	0.044		0.0071	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*	0.0078	*U*	*2*
a-Chlordane	0.014	0.65		0.0035	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0039	*U*	*2*
Alachlor	NA	NA		0.0035	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0039	*U*	*2*
Aldrin	0.0048	0.044		0.0035	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0039	*U*	*2*
b-BHC	0.021	0.18		0.0071	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*	0.0078	*U*	*2*
Chlordane	NA	NA		0.035	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*	0.039	*U*	*2*
d-BHC	0.04	100		0.0071	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*	0.0078	*U*	*2*
Dieldrin	0.005	0.075		0.0035	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0039	*U*	*2*
Endosulfan I	4.3	35		0.0071	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*	0.0078	*U*	*2*
Endosulfan II	4.3	35		0.0071	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*	0.0078	*U*	*2*
Endosulfan sulfate	4.3	35		0.0071	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*	0.0078	*U*	*2*
Endrin	0.014	5.3		0.0071	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*	0.0078	*U*	*2*
Endrin aldehyde	NA	NA		0.0071	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*	0.0078	*U*	*2*
Endrin ketone	NA	NA		0.0071	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*	0.0078	*U*	*2*
g-BHC	0.025	0.21		0.0014	*U*	*2*	0.0014	*U*	*2*	0.0014	*U*	*2*	0.0016	*U*	*2*
g-Chlordane	NA	NA		0.0035	*U*	*2*	0.0036	*U*	*2*	0.0036	*U*	*2*	0.0039	*U*	*2*
Heptachlor	0.013	0.53		0.0071	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*	0.0078	*U*	*2*
Heptachlor epoxide	NA	NA		0.0071	*U*	*2*	0.0072	*U*	*2*	0.0071	*U*	*2*	0.0078	*U*	*2*
Methoxychlor	NA	NA		0.035	*U*	*2*	0.036	*U*	*2*	0.036	*U*	*2*	0.039	*U*	*2*
Toxaphene	NA	NA		0.14	*U*	*2*	0.14	*U*	*2*	0.14	*U*	*2*	0.16	*U*	*2*

			Sample	**SB-22 25-27**			**SB-23 SURF**			**SB-23 0-2**			**SB-23 2-3**		
			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.071	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*	0.078	*U*	*2*
PCB-1221	0.1	1		0.071	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*	0.078	*U*	*2*
PCB-1232	0.1	1		0.071	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*	0.078	*U*	*2*
PCB-1242	0.1	1		0.071	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*	0.078	*U*	*2*
PCB-1248	0.1	1		0.071	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*	0.078	*U*	*2*
PCB-1254	0.1	1		0.071	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*	0.15		*2*
PCB-1260	0.1	1		0.071	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*	0.078	*U*	*2*
PCB-1262	0.1	1		0.071	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*	0.078	*U*	*2*
PCB-1268	0.1	1		0.071	*U*	*2*	0.072	*U*	*2*	0.071	*U*	*2*	0.078	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			0.15		

			Sample	**SB-22 25-27**			**SB-23 SURF**			**SB-23 0-2**			**SB-23 2-3**		
			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.15	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.15	*U*	*10*
2,4-D	NA	NA		0.27	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.3	*U*	*10*
2,4-DB	NA	NA		1.3	*U*	*10*	1.4	*U*	*10*	1.3	*U*	*10*	1.5	*U*	*10*
Dalapon	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.15	*U*	*10*
Dicamba	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.13	*U*	*10*	0.15	*U*	*10*
Dichloroprop	NA	NA		0.27	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.3	*U*	*10*
Dinoseb	NA	NA		0.27	*U*	*10*	0.28	*U*	*10*	0.27	*U*	*10*	0.3	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-23 15-17**			**SB-23 24-25**			**SB-24 SURF**			**SB-24 0-1**		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-08			2026-04-08		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0021	*U*	*2*	0.0023	*U*	*2*	0.0041		*2*	0.0022	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0021	*U*	*2*	0.0023	*U*	*2*	0.0032	*U*	*2*	0.0022	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0021	*U*	*2*	0.0023	*U*	*2*	0.0032	*U*	*2*	0.0022	*U*	*2*
a-BHC	0.0048	0.044		0.0069	*U*	*2*	0.0075	*U*	*2*	0.011	*U*	*2*	0.0074	*U*	*2*
a-Chlordane	0.014	0.65		0.0034	*U*	*2*	0.0038	*U*	*2*	0.0053	*U*	*2*	0.0037	*U*	*2*
Alachlor	NA	NA		0.0034	*U*	*2*	0.0038	*U*	*2*	0.0053	*U*	*2*	0.0037	*U*	*2*
Aldrin	0.0048	0.044		0.0034	*U*	*2*	0.0038	*U*	*2*	0.0021	*U*	*2*	0.0037	*U*	*2*
b-BHC	0.021	0.18		0.0069	*U*	*2*	0.0075	*U*	*2*	0.011	*U*	*2*	0.0074	*U*	*2*
Chlordane	NA	NA		0.034	*U*	*2*	0.038	*U*	*2*	0.053	*U*	*2*	0.037	*U*	*2*
d-BHC	0.04	100		0.0069	*U*	*2*	0.0075	*U*	*2*	0.011	*U*	*2*	0.0074	*U*	*2*
Dieldrin	0.005	0.075		0.0034	*U*	*2*	0.0038	*U*	*2*	0.0021	*U*	*2*	0.0037	*U*	*2*
Endosulfan I	4.3	35		0.0069	*U*	*2*	0.0075	*U*	*2*	0.011	*U*	*2*	0.0074	*U*	*2*
Endosulfan II	4.3	35		0.0069	*U*	*2*	0.0075	*U*	*2*	0.011	*U*	*2*	0.0074	*U*	*2*
Endosulfan sulfate	4.3	35		0.0069	*U*	*2*	0.0075	*U*	*2*	0.011	*U*	*2*	0.0074	*U*	*2*
Endrin	0.014	5.3		0.0069	*U*	*2*	0.0075	*U*	*2*	0.011	*U*	*2*	0.0074	*U*	*2*
Endrin aldehyde	NA	NA		0.0069	*U*	*2*	0.0075	*U*	*2*	0.015	*U*	*2*	0.0074	*U*	*2*
Endrin ketone	NA	NA		0.0069	*U*	*2*	0.0075	*U*	*2*	0.011	*U*	*2*	0.0074	*U*	*2*
g-BHC	0.025	0.21		0.0014	*U*	*2*	0.0015	*U*	*2*	0.0021	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA		0.0034	*U*	*2*	0.0038	*U*	*2*	0.0053	*U*	*2*	0.0037	*U*	*2*
Heptachlor	0.013	0.53		0.0069	*U*	*2*	0.0075	*U*	*2*	0.011	*U*	*2*	0.0074	*U*	*2*
Heptachlor epoxide	NA	NA		0.0069	*U*	*2*	0.0075	*U*	*2*	0.011	*U*	*2*	0.0074	*U*	*2*
Methoxychlor	NA	NA		0.034	*U*	*2*	0.038	*U*	*2*	0.053	*U*	*2*	0.037	*U*	*2*
Toxaphene	NA	NA		0.14	*U*	*2*	0.15	*U*	*2*	0.21	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-23 15-17**			**SB-23 24-25**			**SB-24 SURF**			**SB-24 0-1**		
			Date	2026-04-07			2026-04-07			2026-04-08			2026-04-08		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.069	*U*	*2*	0.075	*U*	*2*	0.053	*U*	*2*	0.074	*U*	*2*
PCB-1221	0.1	1		0.069	*U*	*2*	0.075	*U*	*2*	0.053	*U*	*2*	0.074	*U*	*2*
PCB-1232	0.1	1		0.069	*U*	*2*	0.075	*U*	*2*	0.053	*U*	*2*	0.074	*U*	*2*
PCB-1242	0.1	1		0.069	*U*	*2*	0.075	*U*	*2*	0.053	*U*	*2*	0.074	*U*	*2*
PCB-1248	0.1	1		0.069	*U*	*2*	0.075	*U*	*2*	0.053	*U*	*2*	0.074	*U*	*2*
PCB-1254	0.1	1		0.069	*U*	*2*	0.075	*U*	*2*	0.053	*U*	*2*	0.074	*U*	*2*
PCB-1260	0.1	1		0.069	*U*	*2*	0.075	*U*	*2*	0.053	*U*	*2*	0.074	*U*	*2*
PCB-1262	0.1	1		0.069	*U*	*2*	0.075	*U*	*2*	0.053	*U*	*2*	0.074	*U*	*2*
PCB-1268	0.1	1		0.069	*U*	*2*	0.075	*U*	*2*	0.053	*U*	*2*	0.074	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-23 15-17**			**SB-23 24-25**			**SB-24 SURF**			**SB-24 0-1**		
			Date	2026-04-07			2026-04-07			2026-04-08			2026-04-08		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.2	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.2	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA		0.26	*U*	*10*	0.28	*U*	*10*	0.4	*U*	*10*	0.28	*U*	*10*
2,4-DB	NA	NA		1.3	*U*	*10*	1.4	*U*	*10*	2	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.2	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA		0.13	*U*	*10*	0.14	*U*	*10*	0.2	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA		0.26	*U*	*10*	0.28	*U*	*10*	0.4	*U*	*10*	0.28	*U*	*10*
Dinoseb	NA	NA		0.26	*U*	*10*	0.28	*U*	*10*	0.4	*U*	*10*	0.28	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-24 2-4**			**SB-24 16-18**			**DUP1-20260408**			**SB-24 26-28**		
U= Not Detected ≥ value			Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0022	*U*	*2*	0.002	*U*	*2*	0.0021	*U*	*2*	0.0024	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0022	*U*	*2*	0.002	*U*	*2*	0.0021	*U*	*2*	0.0024	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0022	*U*	*2*	0.002	*U*	*2*	0.0021	*U*	*2*	0.0024	*U*	*2*
a-BHC	0.0048	0.044		0.0073	*U*	*2*	0.0068	*U*	*2*	0.0069	*U*	*2*	0.0081	*U*	*2*
a-Chlordane	0.014	0.65		0.0037	*U*	*2*	0.0034	*U*	*2*	0.0034	*U*	*2*	0.004	*U*	*2*
Alachlor	NA	NA		0.0037	*U*	*2*	0.0034	*U*	*2*	0.0034	*U*	*2*	0.004	*U*	*2*
Aldrin	0.0048	0.044		0.0037	*U*	*2*	0.0034	*U*	*2*	0.0034	*U*	*2*	0.004	*U*	*2*
b-BHC	0.021	0.18		0.0073	*U*	*2*	0.0068	*U*	*2*	0.0069	*U*	*2*	0.0081	*U*	*2*
Chlordane	NA	NA		0.037	*U*	*2*	0.034	*U*	*2*	0.034	*U*	*2*	0.04	*U*	*2*
d-BHC	0.04	100		0.0073	*U*	*2*	0.0068	*U*	*2*	0.0069	*U*	*2*	0.0081	*U*	*2*
Dieldrin	0.005	0.075		0.0037	*U*	*2*	0.0034	*U*	*2*	0.0034	*U*	*2*	0.004	*U*	*2*
Endosulfan I	4.3	35		0.0073	*U*	*2*	0.0068	*U*	*2*	0.0069	*U*	*2*	0.0081	*U*	*2*
Endosulfan II	4.3	35		0.0073	*U*	*2*	0.0068	*U*	*2*	0.0069	*U*	*2*	0.0081	*U*	*2*
Endosulfan sulfate	4.3	35		0.0073	*U*	*2*	0.0068	*U*	*2*	0.0069	*U*	*2*	0.0081	*U*	*2*
Endrin	0.014	5.3		0.0073	*U*	*2*	0.0068	*U*	*2*	0.0069	*U*	*2*	0.0081	*U*	*2*
Endrin aldehyde	NA	NA		0.0073	*U*	*2*	0.0068	*U*	*2*	0.0069	*U*	*2*	0.0081	*U*	*2*
Endrin ketone	NA	NA		0.0073	*U*	*2*	0.0068	*U*	*2*	0.0069	*U*	*2*	0.0081	*U*	*2*
g-BHC	0.025	0.21		0.0015	*U*	*2*	0.0014	*U*	*2*	0.0014	*U*	*2*	0.0016	*U*	*2*
g-Chlordane	NA	NA		0.0037	*U*	*2*	0.0034	*U*	*2*	0.0034	*U*	*2*	0.004	*U*	*2*
Heptachlor	0.013	0.53		0.0073	*U*	*2*	0.0068	*U*	*2*	0.0069	*U*	*2*	0.0081	*U*	*2*
Heptachlor epoxide	NA	NA		0.0073	*U*	*2*	0.0068	*U*	*2*	0.0069	*U*	*2*	0.0081	*U*	*2*
Methoxychlor	NA	NA		0.037	*U*	*2*	0.034	*U*	*2*	0.034	*U*	*2*	0.04	*U*	*2*
Toxaphene	NA	NA		0.15	*U*	*2*	0.14	*U*	*2*	0.14	*U*	*2*	0.16	*U*	*2*

			Sample	**SB-24 2-4**			**SB-24 16-18**			**DUP1-20260408**			**SB-24 26-28**		
			Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.073	*U*	*2*	0.068	*U*	*2*	0.069	*U*	*2*	0.081	*U*	*2*
PCB-1221	0.1	1		0.073	*U*	*2*	0.068	*U*	*2*	0.069	*U*	*2*	0.081	*U*	*2*
PCB-1232	0.1	1		0.073	*U*	*2*	0.068	*U*	*2*	0.069	*U*	*2*	0.081	*U*	*2*
PCB-1242	0.1	1		0.073	*U*	*2*	0.068	*U*	*2*	0.069	*U*	*2*	0.081	*U*	*2*
PCB-1248	0.1	1		0.073	*U*	*2*	0.068	*U*	*2*	0.069	*U*	*2*	0.081	*U*	*2*
PCB-1254	0.1	1		0.073	*U*	*2*	0.068	*U*	*2*	0.069	*U*	*2*	0.081	*U*	*2*
PCB-1260	0.1	1		0.073	*U*	*2*	0.068	*U*	*2*	0.069	*U*	*2*	0.081	*U*	*2*
PCB-1262	0.1	1		0.073	*U*	*2*	0.068	*U*	*2*	0.069	*U*	*2*	0.081	*U*	*2*
PCB-1268	0.1	1		0.073	*U*	*2*	0.068	*U*	*2*	0.069	*U*	*2*	0.081	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-24 2-4**			**SB-24 16-18**			**DUP1-20260408**			**SB-24 26-28**		
			Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*	0.37	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*	0.37	*U*	*10*
2,4-D	NA	NA		0.28	*U*	*10*	0.26	*U*	*10*	0.26	*U*	*10*	0.75	*U*	*10*
2,4-DB	NA	NA		1.4	*U*	*10*	1.3	*U*	*10*	1.3	*U*	*10*	3.7	*U*	*10*
Dalapon	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*	0.37	*U*	*10*
Dicamba	NA	NA		0.14	*U*	*10*	0.13	*U*	*10*	0.13	*U*	*10*	0.37	*U*	*10*
Dichloroprop	NA	NA		0.28	*U*	*10*	0.26	*U*	*10*	0.26	*U*	*10*	0.75	*U*	*10*
Dinoseb	NA	NA		0.28	*U*	*10*	0.26	*U*	*10*	0.26	*U*	*10*	0.75	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-24 43-44**			**SB-25 SURF**			**SB-25 0-1**			**SB-25 1-2**		
U= Not Detected ≥ value			Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08		
Pesticides (8081)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5		0.0023	*U*	*2*	0.0024	*U*	*2*	0.0022	*U*	*2*	0.0023	*U*	*2*
4,4' -DDE	0.0033	3.4		0.0023	*U*	*2*	0.0024	*U*	*2*	0.0022	*U*	*2*	0.0023	*U*	*2*
4,4' -DDT	0.0033	3.8		0.0023	*U*	*2*	0.0024	*U*	*2*	0.0022	*U*	*2*	0.0023	*U*	*2*
a-BHC	0.0048	0.044		0.0076	*U*	*2*	0.0081	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
a-Chlordane	0.014	0.65		0.0038	*U*	*2*	0.0041	*U*	*2*	0.0037	*U*	*2*	0.0038	*U*	*2*
Alachlor	NA	NA		0.0038	*U*	*2*	0.0041	*U*	*2*	0.0037	*U*	*2*	0.0038	*U*	*2*
Aldrin	0.0048	0.044		0.0038	*U*	*2*	0.0041	*U*	*2*	0.0037	*U*	*2*	0.0038	*U*	*2*
b-BHC	0.021	0.18		0.0076	*U*	*2*	0.0081	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Chlordane	NA	NA		0.038	*U*	*2*	0.041	*U*	*2*	0.037	*U*	*2*	0.038	*U*	*2*
d-BHC	0.04	100		0.0076	*U*	*2*	0.0081	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Dieldrin	0.005	0.075		0.0038	*U*	*2*	0.0041	*U*	*2*	0.0037	*U*	*2*	0.0038	*U*	*2*
Endosulfan I	4.3	35		0.0076	*U*	*2*	0.0081	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Endosulfan II	4.3	35		0.0076	*U*	*2*	0.0081	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Endosulfan sulfate	4.3	35		0.0076	*U*	*2*	0.0081	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Endrin	0.014	5.3		0.0076	*U*	*2*	0.0081	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Endrin aldehyde	NA	NA		0.0076	*U*	*2*	0.0081	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Endrin ketone	NA	NA		0.0076	*U*	*2*	0.0081	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
g-BHC	0.025	0.21		0.0015	*U*	*2*	0.0016	*U*	*2*	0.0015	*U*	*2*	0.0015	*U*	*2*
g-Chlordane	NA	NA		0.0038	*U*	*2*	0.0041	*U*	*2*	0.0037	*U*	*2*	0.0038	*U*	*2*
Heptachlor	0.013	0.53		0.0076	*U*	*2*	0.0081	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Heptachlor epoxide	NA	NA		0.0076	*U*	*2*	0.0081	*U*	*2*	0.0074	*U*	*2*	0.0076	*U*	*2*
Methoxychlor	NA	NA		0.038	*U*	*2*	0.041	*U*	*2*	0.037	*U*	*2*	0.038	*U*	*2*
Toxaphene	NA	NA		0.15	*U*	*2*	0.16	*U*	*2*	0.15	*U*	*2*	0.15	*U*	*2*

			Sample	**SB-24 43-44**			**SB-25 SURF**			**SB-25 0-1**			**SB-25 1-2**		
			Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08		
PBCs (8082)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1		0.076	*U*	*2*	0.081	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1221	0.1	1		0.076	*U*	*2*	0.081	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1232	0.1	1		0.076	*U*	*2*	0.081	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1242	0.1	1		0.076	*U*	*2*	0.081	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1248	0.1	1		0.076	*U*	*2*	0.081	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1254	0.1	1		0.076	*U*	*2*	0.081	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1260	0.1	1		0.076	*U*	*2*	0.081	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1262	0.1	1		0.076	*U*	*2*	0.081	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
PCB-1268	0.1	1		0.076	*U*	*2*	0.081	*U*	*2*	0.074	*U*	*2*	0.076	*U*	*2*
Total PCBs	0.1	1		ND			ND			ND			ND		

			Sample	**SB-24 43-44**			**SB-25 SURF**			**SB-25 0-1**			**SB-25 1-2**		
			Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08		
Herbicides (8151)	**UU SCO**	**RRU SCO**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA		0.22	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4,5-TP (Silvex)	NA	NA		0.22	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
2,4-D	NA	NA		0.43	*U*	*10*	0.31	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*
2,4-DB	NA	NA		2.2	*U*	*10*	1.5	*U*	*10*	1.4	*U*	*10*	1.4	*U*	*10*
Dalapon	NA	NA		0.22	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dicamba	NA	NA		0.22	*U*	*10*	0.15	*U*	*10*	0.14	*U*	*10*	0.14	*U*	*10*
Dichloroprop	NA	NA		0.43	*U*	*10*	0.31	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*
Dinoseb	NA	NA		0.43	*U*	*10*	0.31	*U*	*10*	0.28	*U*	*10*	0.28	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 6: Pesticides, PCBs, and Herbicides in Soil

Vanguard Village I+II
BCP ID: C704063

All data in mg/Kg (ppm)			**Sample**	**SB-25 13-15**			**SB-25 33-35**			**DUP2-20260408**		
U= Not Detected ≥ value			Date	2026-04-08			2026-04-08			2026-04-08		
Pesticides (8081)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0.0033	5	0.0021	*U*	*2*	0.0023	*U*	*2*	0.003	*U*	*2*
4,4' -DDE	0.0033	3.4	0.0021	*U*	*2*	0.0023	*U*	*2*	0.003	*U*	*2*
4,4' -DDT	0.0033	3.8	0.0021	*U*	*2*	0.0023	*U*	*2*	0.003	*U*	*2*
a-BHC	0.0048	0.044	0.007	*U*	*2*	0.0078	*U*	*2*	0.0099	*U*	*2*
a-Chlordane	0.014	0.65	0.0035	*U*	*2*	0.0039	*U*	*2*	0.0049	*U*	*2*
Alachlor	NA	NA	0.0035	*U*	*2*	0.0039	*U*	*2*	0.0049	*U*	*2*
Aldrin	0.0048	0.044	0.0035	*U*	*2*	0.0039	*U*	*2*	0.002	*U*	*2*
b-BHC	0.021	0.18	0.007	*U*	*2*	0.0078	*U*	*2*	0.0099	*U*	*2*
Chlordane	NA	NA	0.035	*U*	*2*	0.039	*U*	*2*	0.049	*U*	*2*
d-BHC	0.04	100	0.007	*U*	*2*	0.0078	*U*	*2*	0.0099	*U*	*2*
Dieldrin	0.005	0.075	0.0035	*U*	*2*	0.0039	*U*	*2*	0.0049	*U*	*2*
Endosulfan I	4.3	35	0.007	*U*	*2*	0.0078	*U*	*2*	0.0099	*U*	*2*
Endosulfan II	4.3	35	0.007	*U*	*2*	0.0078	*U*	*2*	0.0099	*U*	*2*
Endosulfan sulfate	4.3	35	0.007	*U*	*2*	0.0078	*U*	*2*	0.0099	*U*	*2*
Endrin	0.014	5.3	0.007	*U*	*2*	0.0078	*U*	*2*	0.0099	*U*	*2*
Endrin aldehyde	NA	NA	0.007	*U*	*2*	0.0078	*U*	*2*	0.0099	*U*	*2*
Endrin ketone	NA	NA	0.007	*U*	*2*	0.0078	*U*	*2*	0.0099	*U*	*2*
g-BHC	0.025	0.21	0.0014	*U*	*2*	0.0016	*U*	*2*	0.002	*U*	*2*
g-Chlordane	NA	NA	0.0035	*U*	*2*	0.0039	*U*	*2*	0.0049	*U*	*2*
Heptachlor	0.013	0.53	0.007	*U*	*2*	0.0078	*U*	*2*	0.0099	*U*	*2*
Heptachlor epoxide	NA	NA	0.007	*U*	*2*	0.0078	*U*	*2*	0.0099	*U*	*2*
Methoxychlor	NA	NA	0.035	*U*	*2*	0.039	*U*	*2*	0.049	*U*	*2*
Toxaphene	NA	NA	0.14	*U*	*2*	0.16	*U*	*2*	0.2	*U*	*2*

			Sample	**SB-25 13-15**			**SB-25 33-35**			**DUP2-20260408**		
			Date	2026-04-08			2026-04-08			2026-04-08		
PBCs (8082)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.1	1	0.07	*U*	*2*	0.078	*U*	*2*	0.099	*U*	*2*
PCB-1221	0.1	1	0.07	*U*	*2*	0.078	*U*	*2*	0.099	*U*	*2*
PCB-1232	0.1	1	0.07	*U*	*2*	0.078	*U*	*2*	0.099	*U*	*2*
PCB-1242	0.1	1	0.07	*U*	*2*	0.078	*U*	*2*	0.099	*U*	*2*
PCB-1248	0.1	1	0.07	*U*	*2*	0.078	*U*	*2*	0.099	*U*	*2*
PCB-1254	0.1	1	0.07	*U*	*2*	0.078	*U*	*2*	0.099	*U*	*2*
PCB-1260	0.1	1	0.07	*U*	*2*	0.078	*U*	*2*	0.099	*U*	*2*
PCB-1262	0.1	1	0.07	*U*	*2*	0.078	*U*	*2*	0.099	*U*	*2*
PCB-1268	0.1	1	0.07	*U*	*2*	0.078	*U*	*2*	0.099	*U*	*2*
Total PCBs	0.1	1	ND			ND			ND		

			Sample	**SB-25 13-15**			**SB-25 33-35**			**DUP2-20260408**		
			Date	2026-04-08			2026-04-08			2026-04-08		
Herbicides (8151)	**UU SCO**	**RRU SCO**	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	NA	NA	0.13	*U*	*10*	0.15	*U*	*10*	0.28	*U*	*10*
2,4,5-TP (Silvex)	NA	NA	0.13	*U*	*10*	0.15	*U*	*10*	0.28	*U*	*10*
2,4-D	NA	NA	0.26	*U*	*10*	0.29	*U*	*10*	0.55	*U*	*10*
2,4-DB	NA	NA	1.3	*U*	*10*	1.5	*U*	*10*	2.8	*U*	*10*
Dalapon	NA	NA	0.13	*U*	*10*	0.15	*U*	*10*	0.28	*U*	*10*
Dicamba	NA	NA	0.13	*U*	*10*	0.15	*U*	*10*	0.28	*U*	*10*
Dichloroprop	NA	NA	0.26	*U*	*10*	0.29	*U*	*10*	0.55	*U*	*10*
Dinoseb	NA	NA	0.26	*U*	*10*	0.29	*U*	*10*	0.55	*U*	*10*

value ≤ UU SCO
value > UU SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-01 SURF			SB-01 0-2			SB-01 10-12			SB-01 20-22			SB-01 43-45			SB-02 SURF		
U= Not Detected ≥ value			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.733	U	1	0.781	U	1	0.73	U	1	0.583	U	1	0.571	U	1	0.688	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.733	U	1	0.781	U	1	0.73	U	1	0.583	U	1	0.571	U	1	0.688	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.733	U	1	0.781	U	1	0.73	U	1	0.583	U	1	0.571	U	1	0.688	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.733	U	1	0.781	U	1	0.73	U	1	0.583	U	1	0.571	U	1	0.688	U	1
3:3FTCA	NA	NA		0.917	U	1	0.976	U	1	0.912	U	1	0.729	U	1	0.714	U	1	0.86	U	1
5:3FTCA	NA	NA		4.58	U	1	4.88	U	1	4.56	U	1	3.64	U	1	3.57	U	1	4.3	U	1
7:3FTCA	NA	NA		4.58	U	1	4.88	U	1	4.56	U	1	3.64	U	1	3.57	U	1	4.3	U	1
9Cl-PF3ONS	NA	NA		0.733	U	1	0.781	U	1	0.73	U	1	0.583	U	1	0.571	U	1	0.688	U	1
ADONA	NA	NA		0.733	U	1	0.781	U	1	0.73	U	1	0.583	U	1	0.571	U	1	0.688	U	1
HFPO-DA	NA	NA		0.733	U	1	0.781	U	1	0.73	U	1	0.583	U	1	0.571	U	1	0.688	U	1
NEtFOSA	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
NEtFOSAA	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
NEtFOSE	NA	NA		1.83	U	1	1.95	U	1	1.82	U	1	1.46	U	1	1.43	U	1	1.72	U	1
NFDHA	NA	NA		0.367	U	1	0.391	U	1	0.365	U	1	0.292	U	1	0.286	U	1	0.344	U	1
NMeFOSA	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
NMeFOSAA	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
NMeFOSE	NA	NA		1.83	U	1	1.95	U	1	1.82	U	1	1.46	U	1	1.43	U	1	1.72	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.733	U	1	0.781	U	1	0.73	U	1	0.583	U	1	0.571	U	1	0.688	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.0646	J	1
Perfluorooctanoic acid (PFOA)	0.66	33		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.367	U	1	0.391	U	1	0.365	U	1	0.292	U	1	0.286	U	1	0.344	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.183	U	1	0.195	U	1	0.182	U	1	0.146	U	1	0.143	U	1	0.172	U	1
PFEESA	NA	NA		0.367	U	1	0.391	U	1	0.365	U	1	0.292	U	1	0.286	U	1	0.344	U	1
PFMBA	NA	NA		0.367	U	1	0.391	U	1	0.365	U	1	0.292	U	1	0.286	U	1	0.344	U	1
PFMPA	NA	NA		0.367	U	1	0.391	U	1	0.365	U	1	0.292	U	1	0.286	U	1	0.344	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-02 0-5			SB-02 18-20			SB-02 20-25			SB-02 46-48			SB-03 SURF			SB-03 0-2		
U= Not Detected ≥ value			Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-03-31		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.726	U	1	0.787	U	1	0.686	U	1	0.77	U	1	0.729	U	1	0.624	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.726	U	1	0.787	U	1	0.686	U	1	0.77	U	1	0.729	U	1	0.624	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.726	U	1	0.787	U	1	0.686	U	1	0.77	U	1	0.729	U	1	0.624	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.726	U	1	0.787	U	1	0.686	U	1	0.77	U	1	0.729	U	1	0.624	U	1
3:3FTCA	NA	NA		0.908	U	1	0.984	U	1	0.858	U	1	0.962	U	1	0.912	U	1	0.78	U	1
5:3FTCA	NA	NA		4.54	U	1	4.92	U	1	4.29	U	1	4.81	U	1	4.56	U	1	3.9	U	1
7:3FTCA	NA	NA		4.54	U	1	4.92	U	1	4.29	U	1	4.81	U	1	4.56	U	1	3.9	U	1
9Cl-PF3ONS	NA	NA		0.726	U	1	0.787	U	1	0.686	U	1	0.77	U	1	0.729	U	1	0.624	U	1
ADONA	NA	NA		0.726	U	1	0.787	U	1	0.686	U	1	0.77	U	1	0.729	U	1	0.624	U	1
HFPO-DA	NA	NA		0.726	U	1	0.787	U	1	0.686	U	1	0.77	U	1	0.729	U	1	0.624	U	1
NEtFOSA	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
NEtFOSAA	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
NEtFOSE	NA	NA		1.82	U	1	1.97	U	1	1.72	U	1	1.92	U	1	1.82	U	1	1.56	U	1
NFDHA	NA	NA		0.363	U	1	0.394	U	1	0.343	U	1	0.385	U	1	0.365	U	1	0.312	U	1
NMeFOSA	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
NMeFOSAA	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
NMeFOSE	NA	NA		1.82	U	1	1.97	U	1	1.72	U	1	1.92	U	1	1.82	U	1	1.56	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.726	U	1	0.787	U	1	0.686	U	1	0.77	U	1	0.729	U	1	0.624	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluorooctanoic acid (PFOA)	0.66	33		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.363	U	1	0.394	U	1	0.343	U	1	0.385	U	1	0.365	U	1	0.312	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.182	U	1	0.197	U	1	0.172	U	1	0.192	U	1	0.182	U	1	0.156	U	1
PFEESA	NA	NA		0.363	U	1	0.394	U	1	0.343	U	1	0.385	U	1	0.365	U	1	0.312	U	1
PFMBA	NA	NA		0.363	U	1	0.394	U	1	0.343	U	1	0.385	U	1	0.365	U	1	0.312	U	1
PFMPA	NA	NA		0.363	U	1	0.394	U	1	0.343	U	1	0.385	U	1	0.365	U	1	0.312	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 7: PFAS in Soil

All data in µg/Kg (ppb)		Sample	SB-03 18-20			SB-03 20-22			SB-04 SURF			SB-04 0-2			SB-04 21-23			SB-04 23-25		
U= Not Detected ≥ value		Date	2026-03-31			2026-03-31			2026-03-31			2026-03-31			2026-04-01			2026-04-01		
PFAS (1633)	**UU Guidance**	**RRU Guidance**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA	0.712	U	1	0.742	U	1	0.805	U	1	0.693	U	1	0.665	U	1	0.64	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA	0.712	U	1	0.742	U	1	0.805	U	1	0.693	U	1	0.665	U	1	0.64	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA	0.712	U	1	0.742	U	1	0.805	U	1	0.693	U	1	0.665	U	1	0.64	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA	0.712	U	1	0.742	U	1	0.805	U	1	0.693	U	1	0.665	U	1	0.64	U	1
3:3FTCA	NA	NA	0.89	U	1	0.928	U	1	1	U	1	0.866	U	1	0.831	U	1	0.8	U	1
5:3FTCA	NA	NA	4.45	U	1	4.64	U	1	5.03	U	1	4.33	U	1	4.15	U	1	4	U	1
7:3FTCA	NA	NA	4.45	U	1	4.64	U	1	5.03	U	1	4.33	U	1	4.15	U	1	4	U	1
9Cl-PF3ONS	NA	NA	0.712	U	1	0.742	U	1	0.805	U	1	0.693	U	1	0.665	U	1	0.64	U	1
ADONA	NA	NA	0.712	U	1	0.742	U	1	0.805	U	1	0.693	U	1	0.665	U	1	0.64	U	1
HFPO-DA	NA	NA	0.712	U	1	0.742	U	1	0.805	U	1	0.693	U	1	0.665	U	1	0.64	U	1
NEtFOSA	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
NEtFOSAA	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
NEtFOSE	NA	NA	1.78	U	1	1.86	U	1	2.01	U	1	1.73	U	1	1.66	U	1	1.6	U	1
NFDHA	NA	NA	0.356	U	1	0.371	U	1	0.402	U	1	0.346	U	1	0.332	U	1	0.32	U	1
NMeFOSA	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
NMeFOSAA	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
NMeFOSE	NA	NA	1.78	U	1	1.86	U	1	2.01	U	1	1.73	U	1	1.66	U	1	1.6	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.0981	J	1	0.166	U	1	0.16	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
Perfluorodecanoic acid (PFDA)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.344		1	0.166	U	1	0.16	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.0862	J	1	0.166	U	1	0.16	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.071	J	1	0.166	U	1	0.16	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.122	J	1	0.166	U	1	0.16	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA	0.712	U	1	0.742	U	1	0.805	U	1	0.693	U	1	0.665	U	1	0.64	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
Perfluorononanoic acid (PFNA)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.134	J	1	0.166	U	1	0.16	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44	0.178	U	1	0.186	U	1	0.151	J	1	3.85		1	0.166	U	1	0.16	U	1
Perfluorooctanoic acid (PFOA)	0.66	33	0.178	U	1	0.186	U	1	0.0336	J	1	0.262		1	0.166	U	1	0.16	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA	0.356	U	1	0.371	U	1	0.402	U	1	0.153	J	1	0.332	U	1	0.32	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.173	U	1	0.166	U	1	0.16	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA	0.178	U	1	0.186	U	1	0.201	U	1	0.0712	J	1	0.166	U	1	0.16	U	1
PFEESA	NA	NA	0.356	U	1	0.371	U	1	0.402	U	1	0.346	U	1	0.332	U	1	0.32	U	1
PFMBA	NA	NA	0.356	U	1	0.371	U	1	0.402	U	1	0.346	U	1	0.332	U	1	0.32	U	1
PFMPA	NA	NA	0.356	U	1	0.371	U	1	0.402	U	1	0.346	U	1	0.332	U	1	0.32	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	DUP-20260401			SB-05 SURF			SB-05 0-1			SB-05 1-2			SB-05 10-12			SB-05 22-24		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.796	*U*	*1*	0.719	*U*	*1*	0.796	*U*	*1*	0.8	*U*	*1*	0.705	*U*	*1*	0.786	*U*	*1*
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.796	*U*	*1*	0.719	*U*	*1*	0.796	*U*	*1*	0.8	*U*	*1*	0.705	*U*	*1*	0.786	*U*	*1*
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.796	*U*	*1*	0.719	*U*	*1*	0.796	*U*	*1*	0.8	*U*	*1*	0.705	*U*	*1*	0.786	*U*	*1*
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.796	*U*	*1*	0.719	*U*	*1*	0.796	*U*	*1*	0.8	*U*	*1*	0.705	*U*	*1*	0.786	*U*	*1*
3:3FTCA	NA	NA		0.995	*U*	*1*	0.899	*U*	*1*	0.995	*U*	*1*	1	*U*	*1*	0.881	*U*	*1*	0.983	*U*	*1*
5:3FTCA	NA	NA		4.98	*U*	*1*	4.5	*U*	*1*	4.98	*U*	*1*	5	*U*	*1*	4.4	*U*	*1*	4.91	*U*	*1*
7:3FTCA	NA	NA		4.98	*U*	*1*	4.5	*U*	*1*	4.98	*U*	*1*	5	*U*	*1*	4.4	*U*	*1*	4.91	*U*	*1*
9Cl-PF3ONS	NA	NA		0.796	*U*	*1*	0.719	*U*	*1*	0.796	*U*	*1*	0.8	*U*	*1*	0.705	*U*	*1*	0.786	*U*	*1*
ADONA	NA	NA		0.796	*U*	*1*	0.719	*U*	*1*	0.796	*U*	*1*	0.8	*U*	*1*	0.705	*U*	*1*	0.786	*U*	*1*
HFPO-DA	NA	NA		0.796	*U*	*1*	0.719	*U*	*1*	0.796	*U*	*1*	0.8	*U*	*1*	0.705	*U*	*1*	0.786	*U*	*1*
NEtFOSA	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
NEtFOSAA	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
NEtFOSE	NA	NA		1.99	*U*	*1*	1.8	*U*	*1*	1.99	*U*	*1*	2	*U*	*1*	1.76	*U*	*1*	1.96	*U*	*1*
NFDHA	NA	NA		0.398	*U*	*1*	0.36	*U*	*1*	0.398	*U*	*1*	0.4	*U*	*1*	0.352	*U*	*1*	0.393	*U*	*1*
NMeFOSA	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
NMeFOSAA	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
NMeFOSE	NA	NA		1.99	*U*	*1*	1.8	*U*	*1*	1.99	*U*	*1*	2	*U*	*1*	1.76	*U*	*1*	1.96	*U*	*1*
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluorodecanoic acid (PFDA)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluorododecanoic acid (PFDoA)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluorohexanoic acid (PFHxA)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.796	*U*	*1*	0.719	*U*	*1*	0.796	*U*	*1*	0.8	*U*	*1*	0.705	*U*	*1*	0.786	*U*	*1*
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluorononanoic acid (PFNA)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.199	*U*	*1*	0.06	*J*	*1*	0.138	*J*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluorooctanoic acid (PFOA)	0.66	33		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.0574	*J*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluoropentanoic acid (PFPeA)	NA	NA		0.398	*U*	*1*	0.36	*U*	*1*	0.398	*U*	*1*	0.4	*U*	*1*	0.352	*U*	*1*	0.393	*U*	*1*
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.199	*U*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.199	*U*	*1*	0.18	*U*	*1*	0.0398	*J*	*1*	0.2	*U*	*1*	0.176	*U*	*1*	0.196	*U*	*1*
PFEESA	NA	NA		0.398	*U*	*1*	0.36	*U*	*1*	0.398	*U*	*1*	0.4	*U*	*1*	0.352	*U*	*1*	0.393	*U*	*1*
PFMBA	NA	NA		0.398	*U*	*1*	0.36	*U*	*1*	0.398	*U*	*1*	0.4	*U*	*1*	0.352	*U*	*1*	0.393	*U*	*1*
PFMPA	NA	NA		0.398	*U*	*1*	0.36	*U*	*1*	0.398	*U*	*1*	0.4	*U*	*1*	0.352	*U*	*1*	0.393	*U*	*1*

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-06 SURF			SB-06 0-2			SB-06 16-18			SB-06 18-20			SB-07 SURF			SB-07 0-1		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.804	U	1	0.826	U	1	0.8	U	1	0.784	U	1	0.798	U	1	0.807	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.804	U	1	0.826	U	1	0.8	U	1	0.784	U	1	0.798	U	1	0.807	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.804	U	1	0.826	U	1	0.8	U	1	0.784	U	1	0.798	U	1	0.807	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.804	U	1	0.826	U	1	0.8	U	1	0.784	U	1	0.798	U	1	0.807	U	1
3:3FTCA	NA	NA		1	U	1	1.03	U	1	1	U	1	0.981	U	1	0.997	U	1	1.01	U	1
5:3FTCA	NA	NA		5.03	U	1	5.16	U	1	5	U	1	4.9	U	1	4.98	U	1	5.05	U	1
7:3FTCA	NA	NA		5.03	U	1	5.16	U	1	5	U	1	4.9	U	1	4.98	U	1	5.05	U	1
9Cl-PF3ONS	NA	NA		0.804	U	1	0.826	U	1	0.8	U	1	0.784	U	1	0.798	U	1	0.807	U	1
ADONA	NA	NA		0.804	U	1	0.826	U	1	0.8	U	1	0.784	U	1	0.798	U	1	0.807	U	1
HFPO-DA	NA	NA		0.804	U	1	0.826	U	1	0.8	U	1	0.784	U	1	0.798	U	1	0.807	U	1
NEtFOSA	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
NEtFOSAA	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
NEtFOSE	NA	NA		2.01	U	1	2.07	U	1	2	U	1	1.96	U	1	1.99	U	1	2.02	U	1
NFDHA	NA	NA		0.402	U	1	0.413	U	1	0.4	U	1	0.392	U	1	0.399	U	1	0.404	U	1
NMeFOSA	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
NMeFOSAA	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
NMeFOSE	NA	NA		2.01	U	1	2.07	U	1	2	U	1	1.96	U	1	1.99	U	1	2.02	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.0523	J	1	0.202	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.804	U	1	0.826	U	1	0.8	U	1	0.784	U	1	0.798	U	1	0.807	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.0356	J	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.0986	J	1	0.185	J	1	0.2	U	1	0.196	U	1	0.0792	J	1	0.202	U	1
Perfluorooctanoic acid (PFOA)	0.66	33		0.0342	J	1	0.0947	J	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.402	U	1	0.413	U	1	0.4	U	1	0.392	U	1	0.399	U	1	0.404	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.201	U	1	0.207	U	1	0.2	U	1	0.196	U	1	0.199	U	1	0.202	U	1
PFEESA	NA	NA		0.402	U	1	0.413	U	1	0.4	U	1	0.392	U	1	0.399	U	1	0.404	U	1
PFMBA	NA	NA		0.402	U	1	0.413	U	1	0.4	U	1	0.392	U	1	0.399	U	1	0.404	U	1
PFMPA	NA	NA		0.402	U	1	0.413	U	1	0.4	U	1	0.392	U	1	0.399	U	1	0.404	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-07 1-2			SB-07 16-18			SB-07 21-23			SB-08 SURF			SB-08 0-2			SB-08 20-22		
U= Not Detected ≥ value			Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.788	*U*	*1*	0.813	*U*	*1*	0.782	*U*	*1*	0.8	*U*	*1*	0.796	*U*	*1*	0.803	*U*	*1*
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.788	*U*	*1*	0.813	*U*	*1*	0.782	*U*	*1*	0.8	*U*	*1*	0.796	*U*	*1*	0.803	*U*	*1*
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.788	*U*	*1*	0.813	*U*	*1*	0.782	*U*	*1*	0.8	*U*	*1*	0.796	*U*	*1*	0.803	*U*	*1*
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.788	*U*	*1*	0.813	*U*	*1*	0.782	*U*	*1*	0.8	*U*	*1*	0.796	*U*	*1*	0.803	*U*	*1*
3:3FTCA	NA	NA		0.985	*U*	*1*	1.02	*U*	*1*	0.977	*U*	*1*	1	*U*	*1*	0.996	*U*	*1*	1	*U*	*1*
5:3FTCA	NA	NA		4.92	*U*	*1*	5.08	*U*	*1*	4.88	*U*	*1*	5	*U*	*1*	4.98	*U*	*1*	5.02	*U*	*1*
7:3FTCA	NA	NA		4.92	*U*	*1*	5.08	*U*	*1*	4.88	*U*	*1*	5	*U*	*1*	4.98	*U*	*1*	5.02	*U*	*1*
9Cl-PF3ONS	NA	NA		0.788	*U*	*1*	0.813	*U*	*1*	0.782	*U*	*1*	0.8	*U*	*1*	0.796	*U*	*1*	0.803	*U*	*1*
ADONA	NA	NA		0.788	*U*	*1*	0.813	*U*	*1*	0.782	*U*	*1*	0.8	*U*	*1*	0.796	*U*	*1*	0.803	*U*	*1*
HFPO-DA	NA	NA		0.788	*U*	*1*	0.813	*U*	*1*	0.782	*U*	*1*	0.8	*U*	*1*	0.796	*U*	*1*	0.803	*U*	*1*
NEtFOSA	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
NEtFOSAA	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
NEtFOSE	NA	NA		1.97	*U*	*1*	2.03	*U*	*1*	1.95	*U*	*1*	2	*U*	*1*	1.99	*U*	*1*	2.01	*U*	*1*
NFDHA	NA	NA		0.394	*U*	*1*	0.406	*U*	*1*	0.391	*U*	*1*	0.4	*U*	*1*	0.398	*U*	*1*	0.402	*U*	*1*
NMeFOSA	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
NMeFOSAA	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
NMeFOSE	NA	NA		1.97	*U*	*1*	2.03	*U*	*1*	1.95	*U*	*1*	2	*U*	*1*	1.99	*U*	*1*	2.01	*U*	*1*
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluorodecanoic acid (PFDA)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluorododecanoic acid (PFDoA)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluorohexanoic acid (PFHxA)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.788	*U*	*1*	0.813	*U*	*1*	0.782	*U*	*1*	0.8	*U*	*1*	0.796	*U*	*1*	0.803	*U*	*1*
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluorononanoic acid (PFNA)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluorooctanoic acid (PFOA)	0.66	33		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluoropentanoic acid (PFPeA)	NA	NA		0.394	*U*	*1*	0.406	*U*	*1*	0.391	*U*	*1*	0.4	*U*	*1*	0.398	*U*	*1*	0.402	*U*	*1*
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.197	*U*	*1*	0.203	*U*	*1*	0.195	*U*	*1*	0.2	*U*	*1*	0.199	*U*	*1*	0.201	*U*	*1*
PFEESA	NA	NA		0.394	*U*	*1*	0.406	*U*	*1*	0.391	*U*	*1*	0.4	*U*	*1*	0.398	*U*	*1*	0.402	*U*	*1*
PFMBA	NA	NA		0.394	*U*	*1*	0.406	*U*	*1*	0.391	*U*	*1*	0.4	*U*	*1*	0.398	*U*	*1*	0.402	*U*	*1*
PFMPA	NA	NA		0.394	*U*	*1*	0.406	*U*	*1*	0.391	*U*	*1*	0.4	*U*	*1*	0.398	*U*	*1*	0.402	*U*	*1*

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)		Sample	SB-08 26-28			SB-09 SURF			SB-09 0-1			SB-09 1-2			SB-09 6-8			SB-09 25-27		
U= Not Detected ≥ value		Date	2026-04-01			2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
PFAS (1633)	**UU Guidance**	**RRU Guidance**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA	0.793	U	1	0.75	U	1	0.719	U	1	0.774	U	1	0.744	U	1	0.81	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA	0.793	U	1	0.75	U	1	0.719	U	1	0.774	U	1	0.744	U	1	0.81	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA	0.793	U	1	0.75	U	1	0.719	U	1	0.774	U	1	0.744	U	1	0.81	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA	0.793	U	1	0.75	U	1	0.719	U	1	0.774	U	1	0.744	U	1	0.81	U	1
3:3FTCA	NA	NA	0.991	U	1	0.937	U	1	0.899	U	1	0.967	U	1	0.93	U	1	1.01	U	1
5:3FTCA	NA	NA	4.96	U	1	4.69	U	1	4.49	U	1	4.84	U	1	4.65	U	1	5.06	U	1
7:3FTCA	NA	NA	4.96	U	1	4.69	U	1	4.49	U	1	4.84	U	1	4.65	U	1	5.06	U	1
9Cl-PF3ONS	NA	NA	0.793	U	1	0.75	U	1	0.719	U	1	0.774	U	1	0.744	U	1	0.81	U	1
ADONA	NA	NA	0.793	U	1	0.75	U	1	0.719	U	1	0.774	U	1	0.744	U	1	0.81	U	1
HFPO-DA	NA	NA	0.793	U	1	0.75	U	1	0.719	U	1	0.774	U	1	0.744	U	1	0.81	U	1
NEtFOSA	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
NEtFOSAA	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
NEtFOSE	NA	NA	1.98	U	1	1.87	U	1	1.8	U	1	1.93	U	1	1.86	U	1	2.02	U	1
NFDHA	NA	NA	0.396	U	1	0.375	U	1	0.359	U	1	0.387	U	1	0.372	U	1	0.405	U	1
NMeFOSA	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
NMeFOSAA	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
NMeFOSE	NA	NA	1.98	U	1	1.87	U	1	1.8	U	1	1.93	U	1	1.86	U	1	2.02	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluorodecanoic acid (PFDA)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.078	J	1	0.186	U	1	0.202	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.0606	J	1	0.186	U	1	0.202	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA	0.793	U	1	0.75	U	1	0.719	U	1	0.774	U	1	0.744	U	1	0.81	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluorononanoic acid (PFNA)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluorooctanoic acid (PFOA)	0.66	33	0.198	U	1	0.187	U	1	0.18	U	1	0.13	J	1	0.186	U	1	0.202	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA	0.396	U	1	0.375	U	1	0.359	U	1	0.387	U	1	0.372	U	1	0.405	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA	0.198	U	1	0.187	U	1	0.18	U	1	0.193	U	1	0.186	U	1	0.202	U	1
PFEESA	NA	NA	0.396	U	1	0.375	U	1	0.359	U	1	0.387	U	1	0.372	U	1	0.405	U	1
PFMBA	NA	NA	0.396	U	1	0.375	U	1	0.359	U	1	0.387	U	1	0.372	U	1	0.405	U	1
PFMPA	NA	NA	0.396	U	1	0.375	U	1	0.359	U	1	0.387	U	1	0.372	U	1	0.405	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-09 42-44			SB-10 SURF			SB-10 0-2			SB-10 18-20			SB-10 23-25			SB-11 SURF		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.796	U	1	0.796	U	1	0.799	U	1	0.803	U	1	0.808	U	1	0.801	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.796	U	1	0.796	U	1	0.799	U	1	0.803	U	1	0.808	U	1	0.801	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.796	U	1	0.796	U	1	0.799	U	1	0.803	U	1	0.808	U	1	0.801	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.796	U	1	0.796	U	1	0.799	U	1	0.803	U	1	0.808	U	1	0.801	U	1
3:3FTCA	NA	NA		0.994	U	1	0.995	U	1	0.999	U	1	1	U	1	1.01	U	1	1	U	1
5:3FTCA	NA	NA		4.97	U	1	4.97	U	1	5	U	1	5.02	U	1	5.05	U	1	5	U	1
7:3FTCA	NA	NA		4.97	U	1	4.97	U	1	5	U	1	5.02	U	1	5.05	U	1	5	U	1
9Cl-PF3ONS	NA	NA		0.796	U	1	0.796	U	1	0.799	U	1	0.803	U	1	0.808	U	1	0.801	U	1
ADONA	NA	NA		0.796	U	1	0.796	U	1	0.799	U	1	0.803	U	1	0.808	U	1	0.801	U	1
HFPO-DA	NA	NA		0.796	U	1	0.796	U	1	0.799	U	1	0.803	U	1	0.808	U	1	0.801	U	1
NEtFOSA	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
NEtFOSAA	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
NEtFOSE	NA	NA		1.99	U	1	1.99	U	1	2	U	1	2.01	U	1	2.02	U	1	2	U	1
NFDHA	NA	NA		0.398	U	1	0.398	U	1	0.4	U	1	0.401	U	1	0.404	U	1	0.4	U	1
NMeFOSA	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
NMeFOSAA	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
NMeFOSE	NA	NA		1.99	U	1	1.99	U	1	2	U	1	2.01	U	1	2.02	U	1	2	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.0411	J	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.796	U	1	0.796	U	1	0.799	U	1	0.803	U	1	0.808	U	1	0.801	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.0345	J	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.135	J	1
Perfluorooctanoic acid (PFOA)	0.66	33		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.047	J	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.398	U	1	0.398	U	1	0.4	U	1	0.401	U	1	0.404	U	1	0.4	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.199	U	1	0.199	U	1	0.2	U	1	0.201	U	1	0.202	U	1	0.2	U	1
PFEESA	NA	NA		0.398	U	1	0.398	U	1	0.4	U	1	0.401	U	1	0.404	U	1	0.4	U	1
PFMBA	NA	NA		0.398	U	1	0.398	U	1	0.4	U	1	0.401	U	1	0.404	U	1	0.4	U	1
PFMPA	NA	NA		0.398	U	1	0.398	U	1	0.4	U	1	0.401	U	1	0.404	U	1	0.4	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-11 0-2			SB-11 9-11			SB-11 20-22			SB-12 SURF			SB-12 0-1			SB-12 1-2		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-02		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.804	U	1	0.796	U	1	0.799	U	1	0.806	U	1	0.802	U	1	0.818	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.804	U	1	0.796	U	1	0.799	U	1	0.806	U	1	0.802	U	1	0.818	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.804	U	1	0.796	U	1	0.799	U	1	0.806	U	1	0.802	U	1	0.818	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.804	U	1	0.796	U	1	0.799	U	1	0.806	U	1	0.802	U	1	0.818	U	1
3:3FTCA	NA	NA		1	U	1	0.994	U	1	0.999	U	1	1.01	U	1	1	U	1	1.02	U	1
5:3FTCA	NA	NA		5.02	U	1	4.97	U	1	4.99	U	1	5.04	U	1	5.01	U	1	5.11	U	1
7:3FTCA	NA	NA		5.02	U	1	4.97	U	1	4.99	U	1	5.04	U	1	5.01	U	1	5.11	U	1
9Cl-PF3ONS	NA	NA		0.804	U	1	0.796	U	1	0.799	U	1	0.806	U	1	0.802	U	1	0.818	U	1
ADONA	NA	NA		0.804	U	1	0.796	U	1	0.799	U	1	0.806	U	1	0.802	U	1	0.818	U	1
HFPO-DA	NA	NA		0.804	U	1	0.796	U	1	0.799	U	1	0.806	U	1	0.802	U	1	0.818	U	1
NEtFOSA	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
NEtFOSAA	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
NEtFOSE	NA	NA		2.01	U	1	1.99	U	1	2	U	1	2.02	U	1	2	U	1	2.04	U	1
NFDHA	NA	NA		0.402	U	1	0.398	U	1	0.4	U	1	0.403	U	1	0.401	U	1	0.409	U	1
NMeFOSA	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
NMeFOSAA	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
NMeFOSE	NA	NA		2.01	U	1	1.99	U	1	2	U	1	2.02	U	1	2	U	1	2.04	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.0624	J	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.0975	J	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.804	U	1	0.796	U	1	0.799	U	1	0.806	U	1	0.802	U	1	0.818	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.0452	J	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.245		1	0.555		1	0.0952	J	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluorooctanoic acid (PFOA)	0.66	33		0.0829	J	1	0.0894	J	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.13	J	1	0.398	U	1	0.4	U	1	0.403	U	1	0.401	U	1	0.409	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.201	U	1	0.199	U	1	0.2	U	1	0.202	U	1	0.2	U	1	0.204	U	1
PFEESA	NA	NA		0.402	U	1	0.398	U	1	0.4	U	1	0.403	U	1	0.401	U	1	0.409	U	1
PFMBA	NA	NA		0.402	U	1	0.398	U	1	0.4	U	1	0.403	U	1	0.401	U	1	0.409	U	1
PFMPA	NA	NA		0.402	U	1	0.398	U	1	0.4	U	1	0.403	U	1	0.401	U	1	0.409	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-12 6-8			DUP-20260402			SB-12 22-24			SB-12 43-45			SB-13 SURF			SB-13 0-2		
U= Not Detected ≥ value			Date	2026-04-02			2026-04-02			2026-04-02			2026-04-02			2026-04-03			2026-04-03		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.765	U	1	0.788	U	1	0.743	U	1	0.771	U	1	0.804	U	1	0.799	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.765	U	1	0.788	U	1	0.743	U	1	0.771	U	1	0.804	U	1	0.799	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.765	U	1	0.788	U	1	0.743	U	1	0.771	U	1	0.804	U	1	0.799	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.765	U	1	0.788	U	1	0.743	U	1	0.771	U	1	0.804	U	1	0.799	U	1
3:3FTCA	NA	NA		0.957	U	1	0.984	U	1	0.929	U	1	0.964	U	1	1	U	1	0.999	U	1
5:3FTCA	NA	NA		4.78	U	1	4.92	U	1	4.64	U	1	4.82	U	1	5.03	U	1	5	U	1
7:3FTCA	NA	NA		4.78	U	1	4.92	U	1	4.64	U	1	4.82	U	1	5.03	U	1	5	U	1
9Cl-PF3ONS	NA	NA		0.765	U	1	0.788	U	1	0.743	U	1	0.771	U	1	0.804	U	1	0.799	U	1
ADONA	NA	NA		0.765	U	1	0.788	U	1	0.743	U	1	0.771	U	1	0.804	U	1	0.799	U	1
HFPO-DA	NA	NA		0.765	U	1	0.788	U	1	0.743	U	1	0.771	U	1	0.804	U	1	0.799	U	1
NEtFOSA	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
NEtFOSAA	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
NEtFOSE	NA	NA		1.91	U	1	1.97	U	1	1.86	U	1	1.93	U	1	2.01	U	1	2	U	1
NFDHA	NA	NA		0.383	U	1	0.394	U	1	0.372	U	1	0.386	U	1	0.402	U	1	0.4	U	1
NMeFOSA	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
NMeFOSAA	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
NMeFOSE	NA	NA		1.91	U	1	1.97	U	1	1.86	U	1	1.93	U	1	2.01	U	1	2	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.765	U	1	0.788	U	1	0.743	U	1	0.771	U	1	0.804	U	1	0.799	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.0753	J	1
Perfluorooctanoic acid (PFOA)	0.66	33		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.0308	J	1	0.2	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.383	U	1	0.394	U	1	0.372	U	1	0.386	U	1	0.402	U	1	0.4	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.191	U	1	0.197	U	1	0.186	U	1	0.193	U	1	0.201	U	1	0.2	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.0482	J	1	0.197	U	1	0.186	U	1	0.193	U	1	0.062	J	1	0.2	U	1
PFEESA	NA	NA		0.383	U	1	0.394	U	1	0.372	U	1	0.386	U	1	0.402	U	1	0.4	U	1
PFMBA	NA	NA		0.383	U	1	0.394	U	1	0.372	U	1	0.386	U	1	0.402	U	1	0.4	U	1
PFMPA	NA	NA		0.383	U	1	0.394	U	1	0.372	U	1	0.386	U	1	0.402	U	1	0.4	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-13 7-9			SB-13 20-22			SB-13 22-23			SB-13 23-25			SB-14 SURF			SB-14 0-2		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.777	U	1	0.793	U	1	0.755	U	1	0.798	U	1	0.78	U	1	0.764	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.777	U	1	0.793	U	1	0.755	U	1	0.798	U	1	0.78	U	1	0.764	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.777	U	1	0.793	U	1	0.755	U	1	0.798	U	1	0.78	U	1	0.764	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.777	U	1	0.793	U	1	0.755	U	1	0.798	U	1	0.78	U	1	0.764	U	1
3:3FTCA	NA	NA		0.971	U	1	0.991	U	1	0.944	U	1	0.997	U	1	0.975	U	1	0.956	U	1
5:3FTCA	NA	NA		4.85	U	1	4.95	U	1	4.72	U	1	4.99	U	1	4.87	U	1	4.78	U	1
7:3FTCA	NA	NA		4.85	U	1	4.95	U	1	4.72	U	1	4.99	U	1	4.87	U	1	4.78	U	1
9Cl-PF3ONS	NA	NA		0.777	U	1	0.793	U	1	0.755	U	1	0.798	U	1	0.78	U	1	0.764	U	1
ADONA	NA	NA		0.777	U	1	0.793	U	1	0.755	U	1	0.798	U	1	0.78	U	1	0.764	U	1
HFPO-DA	NA	NA		0.777	U	1	0.793	U	1	0.755	U	1	0.798	U	1	0.78	U	1	0.764	U	1
NEtFOSA	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
NEtFOSAA	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
NEtFOSE	NA	NA		1.94	U	1	1.98	U	1	1.89	U	1	1.99	U	1	0.709	J	1	1.91	U	1
NFDHA	NA	NA		0.388	U	1	0.396	U	1	0.378	U	1	0.399	U	1	0.39	U	1	0.382	U	1
NMeFOSA	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
NMeFOSAA	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
NMeFOSE	NA	NA		1.94	U	1	1.98	U	1	1.89	U	1	1.99	U	1	1.95	U	1	1.91	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.072	J	1	0.191	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.0529	J	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.777	U	1	0.793	U	1	0.755	U	1	0.798	U	1	0.78	U	1	0.764	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.0616	J	1	0.191	U	1
Perfluorooctanoic acid (PFOA)	0.66	33		0.0982	J	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.0668	J	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.388	U	1	0.396	U	1	0.378	U	1	0.399	U	1	0.39	U	1	0.382	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.195	U	1	0.191	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.118	J	1	0.191	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.194	U	1	0.198	U	1	0.189	U	1	0.199	U	1	0.0661	J	1	0.191	U	1
PFEESA	NA	NA		0.388	U	1	0.396	U	1	0.378	U	1	0.399	U	1	0.39	U	1	0.382	U	1
PFMBA	NA	NA		0.388	U	1	0.396	U	1	0.378	U	1	0.399	U	1	0.39	U	1	0.382	U	1
PFMPA	NA	NA		0.388	U	1	0.396	U	1	0.378	U	1	0.399	U	1	0.39	U	1	0.382	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-14 21-23			DUP-20260403			SB-14 23-25			SB-15 SURF			SB-15 0-2			SB-15 11-13		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.777	U	1	0.743	U	1	0.734	U	1	0.767	U	1	0.766	U	1	0.748	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.777	U	1	0.743	U	1	0.734	U	1	0.767	U	1	0.766	U	1	0.748	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.777	U	1	0.743	U	1	0.734	U	1	0.767	U	1	0.766	U	1	0.748	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.777	U	1	0.743	U	1	0.734	U	1	0.767	U	1	0.766	U	1	0.748	U	1
3:3FTCA	NA	NA		0.971	U	1	0.928	U	1	0.917	U	1	0.958	U	1	0.957	U	1	0.936	U	1
5:3FTCA	NA	NA		4.86	U	1	4.64	U	1	4.59	U	1	4.79	U	1	4.78	U	1	4.68	U	1
7:3FTCA	NA	NA		4.86	U	1	4.64	U	1	4.59	U	1	4.79	U	1	4.78	U	1	4.68	U	1
9Cl-PF3ONS	NA	NA		0.777	U	1	0.743	U	1	0.734	U	1	0.767	U	1	0.766	U	1	0.748	U	1
ADONA	NA	NA		0.777	U	1	0.743	U	1	0.734	U	1	0.767	U	1	0.766	U	1	0.748	U	1
HFPO-DA	NA	NA		0.777	U	1	0.743	U	1	0.734	U	1	0.767	U	1	0.766	U	1	0.748	U	1
NEtFOSA	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
NEtFOSAA	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
NEtFOSE	NA	NA		1.94	U	1	1.86	U	1	1.83	U	1	1.92	U	1	1.91	U	1	1.87	U	1
NFDHA	NA	NA		0.388	U	1	0.371	U	1	0.367	U	1	0.383	U	1	0.383	U	1	0.374	U	1
NMeFOSA	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
NMeFOSAA	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
NMeFOSE	NA	NA		1.94	U	1	1.86	U	1	1.83	U	1	1.92	U	1	1.91	U	1	1.87	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.122	J	1	0.191	U	1	0.187	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.777	U	1	0.743	U	1	0.734	U	1	0.767	U	1	0.766	U	1	0.748	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.0346	J	1	0.191	U	1	0.187	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.194	U	1	0.186	U	1	0.183	U	1	0.446		1	0.173	J	1	0.38		1
Perfluorooctanoic acid (PFOA)	0.66	33		0.194	U	1	0.186	U	1	0.183	U	1	0.0527	J	1	0.191	U	1	0.187	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.388	U	1	0.371	U	1	0.367	U	1	0.383	U	1	0.383	U	1	0.374	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.192	U	1	0.191	U	1	0.187	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.194	U	1	0.186	U	1	0.183	U	1	0.0507	J	1	0.191	U	1	0.187	U	1
PFEESA	NA	NA		0.388	U	1	0.371	U	1	0.367	U	1	0.383	U	1	0.383	U	1	0.374	U	1
PFMBA	NA	NA		0.388	U	1	0.371	U	1	0.367	U	1	0.383	U	1	0.383	U	1	0.374	U	1
PFMPA	NA	NA		0.388	U	1	0.371	U	1	0.367	U	1	0.383	U	1	0.383	U	1	0.374	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-15 22-24			SB-15 24-25			SB-16 SURF			SB-16 0-1			SB-16 1-2			SB-16 18-20		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03			2026-04-03		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.782	U	1	0.775	U	1	0.765	U	1	0.778	U	1	0.767	U	1	0.813	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.782	U	1	0.775	U	1	0.765	U	1	0.778	U	1	0.767	U	1	0.813	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.782	U	1	0.775	U	1	0.765	U	1	0.778	U	1	0.767	U	1	0.813	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.782	U	1	0.775	U	1	0.765	U	1	0.778	U	1	0.767	U	1	0.813	U	1
3:3FTCA	NA	NA		0.978	U	1	0.969	U	1	0.956	U	1	0.973	U	1	0.959	U	1	1.02	U	1
5:3FTCA	NA	NA		4.89	U	1	4.84	U	1	4.78	U	1	4.86	U	1	4.8	U	1	5.08	U	1
7:3FTCA	NA	NA		4.89	U	1	4.84	U	1	4.78	U	1	4.86	U	1	4.8	U	1	5.08	U	1
9Cl-PF3ONS	NA	NA		0.782	U	1	0.775	U	1	0.765	U	1	0.778	U	1	0.767	U	1	0.813	U	1
ADONA	NA	NA		0.782	U	1	0.775	U	1	0.765	U	1	0.778	U	1	0.767	U	1	0.813	U	1
HFPO-DA	NA	NA		0.782	U	1	0.775	U	1	0.765	U	1	0.778	U	1	0.767	U	1	0.813	U	1
NEtFOSA	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
NEtFOSAA	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
NEtFOSE	NA	NA		1.96	U	1	1.94	U	1	1.91	U	1	1.94	U	1	1.92	U	1	2.03	U	1
NFDHA	NA	NA		0.391	U	1	0.388	U	1	0.382	U	1	0.389	U	1	0.384	U	1	0.406	U	1
NMeFOSA	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
NMeFOSAA	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
NMeFOSE	NA	NA		1.96	U	1	1.94	U	1	1.91	U	1	1.94	U	1	1.92	U	1	2.03	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.782	U	1	0.775	U	1	0.765	U	1	0.778	U	1	0.767	U	1	0.813	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.196	U	1	0.194	U	1	0.0472	J	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.0728	J	1	0.194	U	1	0.134	J	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluorooctanoic acid (PFOA)	0.66	33		0.196	U	1	0.194	U	1	0.0466	J	1	0.0398	J	1	0.192	U	1	0.203	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.391	U	1	0.388	U	1	0.382	U	1	0.389	U	1	0.384	U	1	0.406	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.196	U	1	0.194	U	1	0.191	U	1	0.194	U	1	0.192	U	1	0.203	U	1
PFEESA	NA	NA		0.391	U	1	0.388	U	1	0.382	U	1	0.389	U	1	0.384	U	1	0.406	U	1
PFMBA	NA	NA		0.391	U	1	0.388	U	1	0.382	U	1	0.389	U	1	0.384	U	1	0.406	U	1
PFMPA	NA	NA		0.391	U	1	0.388	U	1	0.382	U	1	0.389	U	1	0.384	U	1	0.406	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-16 23-25			SB-16 43-45			SB-17 SURF			SB-17 5-7			SB-17 23-25			SB-17A SURF		
U= Not Detected ≥ value			Date	2026-04-03			2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-06		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.774	U	1	0.682	U	1	0.888	U	1	0.81	U	1	0.738	U	1	0.766	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.774	U	1	0.682	U	1	0.888	U	1	0.81	U	1	0.738	U	1	0.766	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.774	U	1	0.682	U	1	0.888	U	1	0.81	U	1	0.738	U	1	0.766	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.774	U	1	0.682	U	1	0.888	U	1	0.81	U	1	0.738	U	1	0.766	U	1
3:3FTCA	NA	NA		0.968	U	1	0.853	U	1	1.11	U	1	1.01	U	1	0.922	U	1	0.958	U	1
5:3FTCA	NA	NA		4.84	U	1	4.26	U	1	5.55	U	1	5.06	U	1	4.61	U	1	4.79	U	1
7:3FTCA	NA	NA		4.84	U	1	4.26	U	1	5.55	U	1	5.06	U	1	4.61	U	1	4.79	U	1
9Cl-PF3ONS	NA	NA		0.774	U	1	0.682	U	1	0.888	U	1	0.81	U	1	0.738	U	1	0.766	U	1
ADONA	NA	NA		0.774	U	1	0.682	U	1	0.888	U	1	0.81	U	1	0.738	U	1	0.766	U	1
HFPO-DA	NA	NA		0.774	U	1	0.682	U	1	0.888	U	1	0.81	U	1	0.738	U	1	0.766	U	1
NEtFOSA	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
NEtFOSAA	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
NEtFOSE	NA	NA		1.94	U	1	1.7	U	1	2.22	U	1	2.02	U	1	1.84	U	1	1.92	U	1
NFDHA	NA	NA		0.387	U	1	0.341	U	1	0.444	U	1	0.405	U	1	0.369	U	1	0.383	U	1
NMeFOSA	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
NMeFOSAA	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
NMeFOSE	NA	NA		1.94	U	1	1.7	U	1	2.22	U	1	2.02	U	1	1.84	U	1	1.92	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.194	U	1	0.17	U	1	0.0918	J	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.194	U	1	0.17	U	1	0.112	J	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.194	U	1	0.17	U	1	0.048	J	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.774	U	1	0.682	U	1	0.888	U	1	0.81	U	1	0.738	U	1	0.766	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.194	U	1	0.17	U	1	0.0717	J	1	0.0491	J	1	0.184	U	1	0.192	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.194	U	1	0.17	U	1	0.317		1	0.202	U	1	0.184	U	1	0.188	J	1
Perfluorooctanoic acid (PFOA)	0.66	33		0.194	U	1	0.17	U	1	0.059	J	1	0.0335	J	1	0.184	U	1	0.0284	J	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.387	U	1	0.341	U	1	0.444	U	1	0.405	U	1	0.369	U	1	0.383	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.194	U	1	0.17	U	1	0.222	U	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.194	U	1	0.17	U	1	0.0762	J	1	0.202	U	1	0.184	U	1	0.192	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.194	U	1	0.17	U	1	0.15	J	1	0.202	U	1	0.184	U	1	0.192	U	1
PFEESA	NA	NA		0.387	U	1	0.341	U	1	0.444	U	1	0.405	U	1	0.369	U	1	0.383	U	1
PFMBA	NA	NA		0.387	U	1	0.341	U	1	0.444	U	1	0.405	U	1	0.369	U	1	0.383	U	1
PFMPA	NA	NA		0.387	U	1	0.341	U	1	0.444	U	1	0.405	U	1	0.369	U	1	0.383	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-17A 0-1			SB-17A 1-2			SB-17A 5-7			SB-18 SURF			SB-18 0-1			SB-18 1-2		
U= Not Detected ≥ value			Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-06		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.74	U	1	0.812	U	1	0.887	U	1	0.808	U	1	0.808	U	1	0.78	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.74	U	1	0.812	U	1	0.887	U	1	0.808	U	1	0.808	U	1	0.78	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.74	U	1	0.812	U	1	0.887	U	1	0.808	U	1	0.808	U	1	0.78	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.74	U	1	0.812	U	1	0.887	U	1	0.808	U	1	0.808	U	1	0.78	U	1
3:3FTCA	NA	NA		0.925	U	1	1.02	U	1	1.11	U	1	1.01	U	1	1.01	U	1	0.976	U	1
5:3FTCA	NA	NA		4.62	U	1	5.08	U	1	5.55	U	1	5.05	U	1	5.05	U	1	4.88	U	1
7:3FTCA	NA	NA		4.62	U	1	5.08	U	1	5.55	U	1	5.05	U	1	5.05	U	1	4.88	U	1
9Cl-PF3ONS	NA	NA		0.74	U	1	0.812	U	1	0.887	U	1	0.808	U	1	0.808	U	1	0.78	U	1
ADONA	NA	NA		0.74	U	1	0.812	U	1	0.887	U	1	0.808	U	1	0.808	U	1	0.78	U	1
HFPO-DA	NA	NA		0.74	U	1	0.812	U	1	0.887	U	1	0.808	U	1	0.808	U	1	0.78	U	1
NEtFOSA	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
NEtFOSAA	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
NEtFOSE	NA	NA		1.85	U	1	2.03	U	1	2.22	U	1	2.02	U	1	2.02	U	1	1.95	U	1
NFDHA	NA	NA		0.37	U	1	0.406	U	1	0.444	U	1	0.404	U	1	0.404	U	1	0.39	U	1
NMeFOSA	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
NMeFOSAA	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
NMeFOSE	NA	NA		1.85	U	1	2.03	U	1	2.22	U	1	2.02	U	1	2.02	U	1	1.95	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.185	U	1	0.203	U	1	0.197	J	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.185	U	1	0.203	U	1	0.108	J	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.185	U	1	0.203	U	1	0.0996	J	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.74	U	1	0.812	U	1	0.887	U	1	0.808	U	1	0.808	U	1	0.78	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.185	U	1	0.203	U	1	0.197	J	1	0.0391	J	1	0.202	U	1	0.195	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.209		1	0.284		1	1.49		1	0.196	J	1	0.469		1	0.313		1
Perfluorooctanoic acid (PFOA)	0.66	33		0.185	U	1	0.0391	J	1	0.484		1	0.0302	J	1	0.0565	J	1	0.0596	J	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.37	U	1	0.406	U	1	0.444	U	1	0.404	U	1	0.404	U	1	0.39	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.185	U	1	0.203	U	1	0.222	U	1	0.202	U	1	0.202	U	1	0.195	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.185	U	1	0.203	U	1	0.0968	J	1	0.202	U	1	0.202	U	1	0.195	U	1
PFEESA	NA	NA		0.37	U	1	0.406	U	1	0.444	U	1	0.404	U	1	0.404	U	1	0.39	U	1
PFMBA	NA	NA		0.37	U	1	0.406	U	1	0.444	U	1	0.404	U	1	0.404	U	1	0.39	U	1
PFMPA	NA	NA		0.37	U	1	0.406	U	1	0.444	U	1	0.404	U	1	0.404	U	1	0.39	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 7: PFAS in Soil

All data in µg/Kg (ppb)		Sample	DUP-20260406			SB-18 12-14			SB-18 23-25			SB-18 45-47			SB-19 SURF			SB-19 0-2		
U= Not Detected ≥ value		Date	2026-04-06			2026-04-06			2026-04-06			2026-04-06			2026-04-07			2026-04-07		
PFAS (1633)	**UU Guidance**	**RRU Guidance**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA	0.76	*U*	*1*	0.752	*U*	*1*	0.783	*U*	*1*	0.732	*U*	*1*	0.773	*U*	*1*	0.732	*U*	*1*
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA	0.76	*U*	*1*	0.752	*U*	*1*	0.783	*U*	*1*	0.732	*U*	*1*	0.773	*U*	*1*	0.732	*U*	*1*
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA	0.76	*U*	*1*	0.752	*U*	*1*	0.783	*U*	*1*	0.732	*U*	*1*	0.773	*U*	*1*	0.732	*U*	*1*
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA	0.76	*U*	*1*	0.752	*U*	*1*	0.783	*U*	*1*	0.732	*U*	*1*	0.773	*U*	*1*	0.732	*U*	*1*
3:3FTCA	NA	NA	0.951	*U*	*1*	0.94	*U*	*1*	0.979	*U*	*1*	0.915	*U*	*1*	0.966	*U*	*1*	0.915	*U*	*1*
5:3FTCA	NA	NA	4.75	*U*	*1*	4.7	*U*	*1*	4.9	*U*	*1*	4.57	*U*	*1*	4.83	*U*	*1*	4.58	*U*	*1*
7:3FTCA	NA	NA	4.75	*U*	*1*	4.7	*U*	*1*	4.9	*U*	*1*	4.57	*U*	*1*	4.83	*U*	*1*	4.58	*U*	*1*
9Cl-PF3ONS	NA	NA	0.76	*U*	*1*	0.752	*U*	*1*	0.783	*U*	*1*	0.732	*U*	*1*	0.773	*U*	*1*	0.732	*U*	*1*
ADONA	NA	NA	0.76	*U*	*1*	0.752	*U*	*1*	0.783	*U*	*1*	0.732	*U*	*1*	0.773	*U*	*1*	0.732	*U*	*1*
HFPO-DA	NA	NA	0.76	*U*	*1*	0.752	*U*	*1*	0.783	*U*	*1*	0.732	*U*	*1*	0.773	*U*	*1*	0.732	*U*	*1*
NEtFOSA	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
NEtFOSAA	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
NEtFOSE	NA	NA	1.9	*U*	*1*	1.88	*U*	*1*	1.96	*U*	*1*	1.83	*U*	*1*	1.93	*U*	*1*	1.83	*U*	*1*
NFDHA	NA	NA	0.38	*U*	*1*	0.376	*U*	*1*	0.392	*U*	*1*	0.366	*U*	*1*	0.386	*U*	*1*	0.366	*U*	*1*
NMeFOSA	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
NMeFOSAA	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
NMeFOSE	NA	NA	1.9	*U*	*1*	1.88	*U*	*1*	1.96	*U*	*1*	1.83	*U*	*1*	1.93	*U*	*1*	1.83	*U*	*1*
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluorobutanesulfonic acid (PFBS)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluorodecanoic acid (PFDA)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluorododecanoic acid (PFDoA)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluoroheptanoic acid (PFHpA)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluorohexanoic acid (PFHxA)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluoro-n-butanoic acid (PFBA)	NA	NA	0.76	*U*	*1*	0.752	*U*	*1*	0.783	*U*	*1*	0.732	*U*	*1*	0.773	*U*	*1*	0.732	*U*	*1*
Perfluorononanesulfonic Acid (PFNS)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluorononanoic acid (PFNA)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluorooctanesulfonic Acid (PFOS)	0.88	44	0.267		*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.231		*1*	0.331		*1*
Perfluorooctanoic acid (PFOA)	0.66	33	0.0457	*J*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.0302	*J*	*1*	0.0361	*J*	*1*
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluoropentanoic acid (PFPeA)	NA	NA	0.38	*U*	*1*	0.376	*U*	*1*	0.392	*U*	*1*	0.366	*U*	*1*	0.386	*U*	*1*	0.366	*U*	*1*
Perfluorotetradecanoic acid (PFTA)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluorotridecanoic acid (PFTrDA)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
Perfluoroundecanoic acid (PFUnA)	NA	NA	0.19	*U*	*1*	0.188	*U*	*1*	0.196	*U*	*1*	0.183	*U*	*1*	0.193	*U*	*1*	0.183	*U*	*1*
PFEESA	NA	NA	0.38	*U*	*1*	0.376	*U*	*1*	0.392	*U*	*1*	0.366	*U*	*1*	0.386	*U*	*1*	0.366	*U*	*1*
PFMBA	NA	NA	0.38	*U*	*1*	0.376	*U*	*1*	0.392	*U*	*1*	0.366	*U*	*1*	0.386	*U*	*1*	0.366	*U*	*1*
PFMPA	NA	NA	0.38	*U*	*1*	0.376	*U*	*1*	0.392	*U*	*1*	0.366	*U*	*1*	0.386	*U*	*1*	0.366	*U*	*1*

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-19 4-5			SB-19 18-20			SB-19 23-25			SB-20 SURF			SB-20 0-2			SB-20 18-20		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		NA			0.793	U	1	0.64	U	1	0.826	U	1	0.739	U	1	0.765	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		NA			0.793	U	1	0.64	U	1	0.826	U	1	0.739	U	1	0.765	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		NA			0.793	U	1	0.64	U	1	0.826	U	1	0.739	U	1	0.765	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		NA			0.793	U	1	0.64	U	1	0.826	U	1	0.739	U	1	0.765	U	1
3:3FTCA	NA	NA		NA			0.992	U	1	0.8	U	1	1.03	U	1	0.924	U	1	0.956	U	1
5:3FTCA	NA	NA		NA			4.96	U	1	4	U	1	5.16	U	1	4.62	U	1	4.78	U	1
7:3FTCA	NA	NA		NA			4.96	U	1	4	U	1	5.16	U	1	4.62	U	1	4.78	U	1
9Cl-PF3ONS	NA	NA		NA			0.793	U	1	0.64	U	1	0.826	U	1	0.739	U	1	0.765	U	1
ADONA	NA	NA		NA			0.793	U	1	0.64	U	1	0.826	U	1	0.739	U	1	0.765	U	1
HFPO-DA	NA	NA		NA			0.793	U	1	0.64	U	1	0.826	U	1	0.739	U	1	0.765	U	1
NEtFOSA	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
NEtFOSAA	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
NEtFOSE	NA	NA		NA			1.98	U	1	1.6	U	1	2.06	U	1	1.85	U	1	1.91	U	1
NFDHA	NA	NA		NA			0.397	U	1	0.32	U	1	0.413	U	1	0.37	U	1	0.382	U	1
NMeFOSA	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
NMeFOSAA	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
NMeFOSE	NA	NA		NA			1.98	U	1	1.6	U	1	2.06	U	1	1.85	U	1	1.91	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		NA			0.793	U	1	0.64	U	1	0.826	U	1	0.739	U	1	0.765	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluorononanoic acid (PFNA)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluorooctanoic acid (PFOA)	0.66	33		NA			0.198	U	1	0.16	U	1	0.033	J	1	0.185	U	1	0.191	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		NA			0.397	U	1	0.32	U	1	0.413	U	1	0.37	U	1	0.382	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		NA			0.198	U	1	0.16	U	1	0.206	U	1	0.185	U	1	0.191	U	1
PFEESA	NA	NA		NA			0.397	U	1	0.32	U	1	0.413	U	1	0.37	U	1	0.382	U	1
PFMBA	NA	NA		NA			0.397	U	1	0.32	U	1	0.413	U	1	0.37	U	1	0.382	U	1
PFMPA	NA	NA		NA			0.397	U	1	0.32	U	1	0.413	U	1	0.37	U	1	0.382	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)		Sample	SB-20 21-23			DUP-20260407			SB-21 SURF			SB-21 0-2			SB-21 18-20			SB-21 23-25		
U= Not Detected ≥ value		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
PFAS (1633)	**UU Guidance**	**RRU Guidance**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA	0.719	U	1	0.708	U	1	0.784	U	1	0.846	U	1	0.787	U	1	0.728	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA	0.719	U	1	0.708	U	1	0.784	U	1	0.846	U	1	0.787	U	1	0.728	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA	0.719	U	1	0.708	U	1	0.784	U	1	0.846	U	1	0.787	U	1	0.728	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA	0.719	U	1	0.708	U	1	0.784	U	1	0.846	U	1	0.787	U	1	0.728	U	1
3:3FTCA	NA	NA	0.898	U	1	0.885	U	1	0.98	U	1	1.06	U	1	0.983	U	1	0.91	U	1
5:3FTCA	NA	NA	4.49	U	1	4.42	U	1	4.9	U	1	5.29	U	1	4.92	U	1	4.55	U	1
7:3FTCA	NA	NA	4.49	U	1	4.42	U	1	4.9	U	1	5.29	U	1	4.92	U	1	4.55	U	1
9Cl-PF3ONS	NA	NA	0.719	U	1	0.708	U	1	0.784	U	1	0.846	U	1	0.787	U	1	0.728	U	1
ADONA	NA	NA	0.719	U	1	0.708	U	1	0.784	U	1	0.846	U	1	0.787	U	1	0.728	U	1
HFPO-DA	NA	NA	0.719	U	1	0.708	U	1	0.784	U	1	0.846	U	1	0.787	U	1	0.728	U	1
NEtFOSA	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
NEtFOSAA	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
NEtFOSE	NA	NA	1.8	U	1	1.77	U	1	1.96	U	1	2.11	U	1	1.97	U	1	1.82	U	1
NFDHA	NA	NA	0.359	U	1	0.354	U	1	0.392	U	1	0.423	U	1	0.393	U	1	0.364	U	1
NMeFOSA	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
NMeFOSAA	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
NMeFOSE	NA	NA	1.8	U	1	1.77	U	1	1.96	U	1	2.11	U	1	1.97	U	1	1.82	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluorodecanoic acid (PFDA)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA	0.719	U	1	0.708	U	1	0.784	U	1	0.846	U	1	0.787	U	1	0.728	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluorononanoic acid (PFNA)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.037	J	1	0.197	U	1	0.182	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44	0.18	U	1	0.177	U	1	0.24		1	0.208	J	1	0.197	U	1	0.182	U	1
Perfluorooctanoic acid (PFOA)	0.66	33	0.18	U	1	0.177	U	1	0.0552	J	1	0.0409	J	1	0.197	U	1	0.182	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA	0.359	U	1	0.354	U	1	0.392	U	1	0.423	U	1	0.393	U	1	0.364	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA	0.18	U	1	0.177	U	1	0.196	U	1	0.211	U	1	0.197	U	1	0.182	U	1
PFEESA	NA	NA	0.359	U	1	0.354	U	1	0.392	U	1	0.423	U	1	0.393	U	1	0.364	U	1
PFMBA	NA	NA	0.359	U	1	0.354	U	1	0.392	U	1	0.423	U	1	0.393	U	1	0.364	U	1
PFMPA	NA	NA	0.359	U	1	0.354	U	1	0.392	U	1	0.423	U	1	0.393	U	1	0.364	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)			Sample	SB-22 SURF			SB-22 0-2			SB-22 2-3			SB-22 13-15			SB-22 25-27			SB-23 SURF		
U= Not Detected ≥ value			Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-07		
PFAS (1633)	**UU Guidance**	**RRU Guidance**		Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA		0.734	U	1	0.755	U	1	0.732	U	1	0.725	U	1	0.743	U	1	0.712	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA		0.734	U	1	0.755	U	1	0.732	U	1	0.725	U	1	0.743	U	1	0.712	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA		0.734	U	1	0.755	U	1	0.732	U	1	0.725	U	1	0.743	U	1	0.712	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA		0.734	U	1	0.755	U	1	0.732	U	1	0.725	U	1	0.743	U	1	0.712	U	1
3:3FTCA	NA	NA		0.917	U	1	0.944	U	1	0.916	U	1	0.906	U	1	0.928	U	1	0.89	U	1
5:3FTCA	NA	NA		4.59	U	1	4.72	U	1	4.58	U	1	4.53	U	1	4.64	U	1	4.45	U	1
7:3FTCA	NA	NA		4.59	U	1	4.72	U	1	4.58	U	1	4.53	U	1	4.64	U	1	4.45	U	1
9Cl-PF3ONS	NA	NA		0.734	U	1	0.755	U	1	0.732	U	1	0.725	U	1	0.743	U	1	0.712	U	1
ADONA	NA	NA		0.734	U	1	0.755	U	1	0.732	U	1	0.725	U	1	0.743	U	1	0.712	U	1
HFPO-DA	NA	NA		0.734	U	1	0.755	U	1	0.732	U	1	0.725	U	1	0.743	U	1	0.712	U	1
NEtFOSA	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
NEtFOSAA	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
NEtFOSE	NA	NA		1.83	U	1	0.655	J	1	1.83	U	1	1.81	U	1	1.86	U	1	1.78	U	1
NFDHA	NA	NA		0.367	U	1	0.378	U	1	0.366	U	1	0.362	U	1	0.371	U	1	0.356	U	1
NMeFOSA	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
NMeFOSAA	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
NMeFOSE	NA	NA		1.83	U	1	1.89	U	1	1.83	U	1	1.81	U	1	1.86	U	1	1.78	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA		0.183	U	1	0.0532	J	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluorodecanoic acid (PFDA)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA		0.734	U	1	0.755	U	1	0.732	U	1	0.725	U	1	0.743	U	1	0.712	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluorononanoic acid (PFNA)	NA	NA		0.0318	J	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44		0.125	J	1	0.175	J	1	0.179	J	1	0.181	U	1	0.186	U	1	0.0913	J	1
Perfluorooctanoic acid (PFOA)	0.66	33		0.033	J	1	0.036	J	1	0.0405	J	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA		0.367	U	1	0.378	U	1	0.366	U	1	0.362	U	1	0.371	U	1	0.356	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA		0.183	U	1	0.189	U	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA		0.183	U	1	0.0696	J	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA		0.183	U	1	0.037	J	1	0.183	U	1	0.181	U	1	0.186	U	1	0.178	U	1
PFEESA	NA	NA		0.367	U	1	0.378	U	1	0.366	U	1	0.362	U	1	0.371	U	1	0.356	U	1
PFMBA	NA	NA		0.367	U	1	0.378	U	1	0.366	U	1	0.362	U	1	0.371	U	1	0.356	U	1
PFMPA	NA	NA		0.367	U	1	0.378	U	1	0.366	U	1	0.362	U	1	0.371	U	1	0.356	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)		Sample	SB-23 0-2			SB-23 2-3			SB-23 15-17			SB-23 24-25			SB-24 SURF			SB-24 0-1		
U= Not Detected ≥ value		Date	2026-04-07			2026-04-07			2026-04-07			2026-04-07			2026-04-08			2026-04-08		
PFAS (1633)	**UU Guidance**	**RRU Guidance**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA	0.741	U	1	0.833	U	1	0.764	U	1	0.826	U	1	0.939	U	1	0.781	U	1
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA	0.741	U	1	0.833	U	1	0.764	U	1	0.826	U	1	0.939	U	1	0.781	U	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA	0.741	U	1	0.833	U	1	0.764	U	1	0.826	U	1	0.939	U	1	0.781	U	1
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA	0.741	U	1	0.833	U	1	0.764	U	1	0.826	U	1	0.939	U	1	0.781	U	1
3:3FTCA	NA	NA	0.926	U	1	1.04	U	1	0.955	U	1	1.03	U	1	1.17	U	1	0.976	U	1
5:3FTCA	NA	NA	4.63	U	1	5.2	U	1	4.77	U	1	5.16	U	1	5.87	U	1	4.88	U	1
7:3FTCA	NA	NA	4.63	U	1	5.2	U	1	4.77	U	1	5.16	U	1	5.87	U	1	4.88	U	1
9Cl-PF3ONS	NA	NA	0.741	U	1	0.833	U	1	0.764	U	1	0.826	U	1	0.939	U	1	0.781	U	1
ADONA	NA	NA	0.741	U	1	0.833	U	1	0.764	U	1	0.826	U	1	0.939	U	1	0.781	U	1
HFPO-DA	NA	NA	0.741	U	1	0.833	U	1	0.764	U	1	0.826	U	1	0.939	U	1	0.781	U	1
NEtFOSA	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
NEtFOSAA	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
NEtFOSE	NA	NA	1.85	U	1	2.08	U	1	1.91	U	1	2.06	U	1	2.35	U	1	1.95	U	1
NFDHA	NA	NA	0.37	U	1	0.416	U	1	0.382	U	1	0.413	U	1	0.469	U	1	0.39	U	1
NMeFOSA	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
NMeFOSAA	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
NMeFOSE	NA	NA	1.85	U	1	2.08	U	1	1.91	U	1	2.06	U	1	2.35	U	1	1.95	U	1
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluorobutanesulfonic acid (PFBS)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluorodecanoic acid (PFDA)	NA	NA	0.185	U	1	0.0768	J	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluorododecanoic acid (PFDoA)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluoroheptanoic acid (PFHpA)	NA	NA	0.185	U	1	0.0459	J	1	0.191	U	1	0.206	U	1	0.0498	J	1	0.195	U	1
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluorohexanoic acid (PFHxA)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluoro-n-butanoic acid (PFBA)	NA	NA	0.741	U	1	0.833	U	1	0.764	U	1	0.826	U	1	0.939	U	1	0.781	U	1
Perfluorononanesulfonic Acid (PFNS)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluorononanoic acid (PFNA)	NA	NA	0.185	U	1	0.0454	J	1	0.191	U	1	0.206	U	1	0.074	J	1	0.0751	J	1
Perfluorooctanesulfonic Acid (PFOS)	0.88	44	0.185	U	1	0.244		1	0.191	U	1	0.206	U	1	0.239		1	0.233		1
Perfluorooctanoic acid (PFOA)	0.66	33	0.185	U	1	0.0538	J	1	0.191	U	1	0.206	U	1	0.0849	J	1	0.0738	J	1
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluoropentanoic acid (PFPeA)	NA	NA	0.37	U	1	0.416	U	1	0.382	U	1	0.413	U	1	0.469	U	1	0.39	U	1
Perfluorotetradecanoic acid (PFTA)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluorotridecanoic acid (PFTrDA)	NA	NA	0.185	U	1	0.208	U	1	0.191	U	1	0.206	U	1	0.235	U	1	0.195	U	1
Perfluoroundecanoic acid (PFUnA)	NA	NA	0.185	U	1	0.0819	J	1	0.191	U	1	0.206	U	1	0.073	J	1	0.0406	J	1
PFEESA	NA	NA	0.37	U	1	0.416	U	1	0.382	U	1	0.413	U	1	0.469	U	1	0.39	U	1
PFMBA	NA	NA	0.37	U	1	0.416	U	1	0.382	U	1	0.413	U	1	0.469	U	1	0.39	U	1
PFMPA	NA	NA	0.37	U	1	0.416	U	1	0.382	U	1	0.413	U	1	0.469	U	1	0.39	U	1

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)		Sample	SB-24 2-4			SB-24 16-18			DUP1-20260408			SB-24 26-28			SB-24 43-44			SB-25 SURF		
U= Not Detected ≥ value		Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08			2026-04-08			2026-04-08		
PFAS (1633)	**UU Guidance**	**RRU Guidance**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA	0.739	*U*	*1*	0.788	*U*	*1*	0.812	*U*	*1*	0.798	*U*	*1*	0.787	*U*	*1*	0.821	*U*	*1*
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA	0.739	*U*	*1*	0.788	*U*	*1*	0.812	*U*	*1*	0.798	*U*	*1*	0.787	*U*	*1*	0.821	*U*	*1*
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA	0.739	*U*	*1*	0.788	*U*	*1*	0.812	*U*	*1*	0.798	*U*	*1*	0.787	*U*	*1*	0.821	*U*	*1*
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA	0.739	*U*	*1*	0.788	*U*	*1*	0.812	*U*	*1*	0.798	*U*	*1*	0.787	*U*	*1*	0.821	*U*	*1*
3:3FTCA	NA	NA	0.924	*U*	*1*	0.985	*U*	*1*	1.02	*U*	*1*	0.997	*U*	*1*	0.984	*U*	*1*	1.03	*U*	*1*
5:3FTCA	NA	NA	4.62	*U*	*1*	4.92	*U*	*1*	5.08	*U*	*1*	4.99	*U*	*1*	4.92	*U*	*1*	5.13	*U*	*1*
7:3FTCA	NA	NA	4.62	*U*	*1*	4.92	*U*	*1*	5.08	*U*	*1*	4.99	*U*	*1*	4.92	*U*	*1*	5.13	*U*	*1*
9Cl-PF3ONS	NA	NA	0.739	*U*	*1*	0.788	*U*	*1*	0.812	*U*	*1*	0.798	*U*	*1*	0.787	*U*	*1*	0.821	*U*	*1*
ADONA	NA	NA	0.739	*U*	*1*	0.788	*U*	*1*	0.812	*U*	*1*	0.798	*U*	*1*	0.787	*U*	*1*	0.821	*U*	*1*
HFPO-DA	NA	NA	0.739	*U*	*1*	0.788	*U*	*1*	0.812	*U*	*1*	0.798	*U*	*1*	0.787	*U*	*1*	0.821	*U*	*1*
NEtFOSA	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
NEtFOSAA	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
NEtFOSE	NA	NA	1.85	*U*	*1*	1.97	*U*	*1*	2.03	*U*	*1*	1.99	*U*	*1*	1.97	*U*	*1*	2.05	*U*	*1*
NFDHA	NA	NA	0.37	*U*	*1*	0.394	*U*	*1*	0.406	*U*	*1*	0.399	*U*	*1*	0.394	*U*	*1*	0.41	*U*	*1*
NMeFOSA	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
NMeFOSAA	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
NMeFOSE	NA	NA	1.85	*U*	*1*	1.97	*U*	*1*	2.03	*U*	*1*	1.99	*U*	*1*	1.97	*U*	*1*	2.05	*U*	*1*
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
Perfluorobutanesulfonic acid (PFBS)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
Perfluorodecanoic acid (PFDA)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.172	*J*	*1*
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
Perfluorododecanoic acid (PFDoA)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
Perfluoroheptanoic acid (PFHpA)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.203	*J*	*1*
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
Perfluorohexanoic acid (PFHxA)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.13	*J*	*1*
Perfluoro-n-butanoic acid (PFBA)	NA	NA	0.739	*U*	*1*	0.788	*U*	*1*	0.812	*U*	*1*	0.798	*U*	*1*	0.787	*U*	*1*	0.325	*J*	*1*
Perfluorononanesulfonic Acid (PFNS)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
Perfluorononanoic acid (PFNA)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.278		*1*
Perfluorooctanesulfonic Acid (PFOS)	0.88	44	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	1.01		*1*
Perfluorooctanoic acid (PFOA)	0.66	33	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.321		*1*
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
Perfluoropentanoic acid (PFPeA)	NA	NA	0.37	*U*	*1*	0.394	*U*	*1*	0.406	*U*	*1*	0.399	*U*	*1*	0.394	*U*	*1*	0.131	*J*	*1*
Perfluorotetradecanoic acid (PFTA)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.205	*U*	*1*
Perfluorotridecanoic acid (PFTrDA)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.0609	*J*	*1*
Perfluoroundecanoic acid (PFUnA)	NA	NA	0.185	*U*	*1*	0.197	*U*	*1*	0.203	*U*	*1*	0.199	*U*	*1*	0.197	*U*	*1*	0.175	*J*	*1*
PFEESA	NA	NA	0.37	*U*	*1*	0.394	*U*	*1*	0.406	*U*	*1*	0.399	*U*	*1*	0.394	*U*	*1*	0.41	*U*	*1*
PFMBA	NA	NA	0.37	*U*	*1*	0.394	*U*	*1*	0.406	*U*	*1*	0.399	*U*	*1*	0.394	*U*	*1*	0.41	*U*	*1*
PFMPA	NA	NA	0.37	*U*	*1*	0.394	*U*	*1*	0.406	*U*	*1*	0.399	*U*	*1*	0.394	*U*	*1*	0.41	*U*	*1*

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 7: PFAS in Soil

All data in µg/Kg (ppb)		Sample	SB-25 0-1			SB-25 1-2			SB-25 13-15			SB-25 33-35			DUP2-20260408		
U= Not Detected ≥ value		Date	2026-04-08			2026-04-08			2026-04-08			2026-04-08			2026-04-08		
PFAS (1633)	**UU Guidance**	**RRU Guidance**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	NA	0.778	*U*	*1*	0.788	*U*	*1*	0.779	*U*	*1*	0.814	*U*	*1*	0.782	*U*	*1*
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	NA	0.778	*U*	*1*	0.788	*U*	*1*	0.779	*U*	*1*	0.814	*U*	*1*	0.782	*U*	*1*
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	NA	NA	0.778	*U*	*1*	0.788	*U*	*1*	0.779	*U*	*1*	0.814	*U*	*1*	0.782	*U*	*1*
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	NA	0.778	*U*	*1*	0.788	*U*	*1*	0.779	*U*	*1*	0.814	*U*	*1*	0.782	*U*	*1*
3:3FTCA	NA	NA	0.973	*U*	*1*	0.985	*U*	*1*	0.973	*U*	*1*	1.02	*U*	*1*	0.977	*U*	*1*
5:3FTCA	NA	NA	4.86	*U*	*1*	4.93	*U*	*1*	4.87	*U*	*1*	5.09	*U*	*1*	4.88	*U*	*1*
7:3FTCA	NA	NA	4.86	*U*	*1*	4.93	*U*	*1*	4.87	*U*	*1*	5.09	*U*	*1*	4.88	*U*	*1*
9Cl-PF3ONS	NA	NA	0.778	*U*	*1*	0.788	*U*	*1*	0.779	*U*	*1*	0.814	*U*	*1*	0.782	*U*	*1*
ADONA	NA	NA	0.778	*U*	*1*	0.788	*U*	*1*	0.779	*U*	*1*	0.814	*U*	*1*	0.782	*U*	*1*
HFPO-DA	NA	NA	0.778	*U*	*1*	0.788	*U*	*1*	0.779	*U*	*1*	0.814	*U*	*1*	0.782	*U*	*1*
NEtFOSA	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
NEtFOSAA	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
NEtFOSE	NA	NA	1.94	*U*	*1*	1.97	*U*	*1*	1.95	*U*	*1*	2.04	*U*	*1*	1.95	*U*	*1*
NFDHA	NA	NA	0.389	*U*	*1*	0.394	*U*	*1*	0.389	*U*	*1*	0.407	*U*	*1*	0.391	*U*	*1*
NMeFOSA	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
NMeFOSAA	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
NMeFOSE	NA	NA	1.94	*U*	*1*	1.97	*U*	*1*	1.95	*U*	*1*	2.04	*U*	*1*	1.95	*U*	*1*
Perfluoro-1-decanesulfonic acid (PFDS)	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluoro-1-octanesulfonamide (FOSA)	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluorobutanesulfonic acid (PFBS)	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluorodecanoic acid (PFDA)	NA	NA	0.0637	*J*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluorododecanoic acid (PFDoA)	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluoroheptanoic acid (PFHpA)	NA	NA	0.118	*J*	*1*	0.131	*J*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluorohexanesulfonic Acid (PFHxS)	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluorohexanoic acid (PFHxA)	NA	NA	0.0771	*J*	*1*	0.165	*J*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluoro-n-butanoic acid (PFBA)	NA	NA	0.224	*J*	*1*	0.181	*J*	*1*	0.779	*U*	*1*	0.814	*U*	*1*	0.782	*U*	*1*
Perfluorononanesulfonic Acid (PFNS)	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluorononanoic acid (PFNA)	NA	NA	0.163	*J*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluorooctanesulfonic Acid (PFOS)	0.88	44	0.69		*1*	0.258		*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluorooctanoic acid (PFOA)	0.66	33	0.33		*1*	0.31		*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluoropentanesulfonic Acid (PFPeS)	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluoropentanoic acid (PFPeA)	NA	NA	0.0924	*J*	*1*	0.0953	*J*	*1*	0.389	*U*	*1*	0.407	*U*	*1*	0.391	*U*	*1*
Perfluorotetradecanoic acid (PFTA)	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluorotridecanoic acid (PFTrDA)	NA	NA	0.194	*U*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
Perfluoroundecanoic acid (PFUnA)	NA	NA	0.0567	*J*	*1*	0.197	*U*	*1*	0.195	*U*	*1*	0.204	*U*	*1*	0.195	*U*	*1*
PFEESA	NA	NA	0.389	*U*	*1*	0.394	*U*	*1*	0.389	*U*	*1*	0.407	*U*	*1*	0.391	*U*	*1*
PFMBA	NA	NA	0.389	*U*	*1*	0.394	*U*	*1*	0.389	*U*	*1*	0.407	*U*	*1*	0.391	*U*	*1*
PFMPA	NA	NA	0.389	*U*	*1*	0.394	*U*	*1*	0.389	*U*	*1*	0.407	*U*	*1*	0.391	*U*	*1*

value ≤ UU Guidance/SCO
value > UU Guidance/SCO

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 8: VOCs in Groundwater

All data in µg/L (ppb)	**Sample**	**GMW-01-20260428**			**GMW-02-20260428**			**GMW-03-20260428**			**DUP-20260428**			**GMW-04-20260428**		
U= Not Detected ≥ value	Date	2026-04-28			2026-04-28			2026-04-28			2026-04-28			2026-04-28		
VOCs (8260)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,1,1-trichloroethane (TCA)	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
1,1,2,2-tetrachloroethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,1,2-trichloro-1,2,2-trifluoroethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,1,2-trichloroethane	1	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,1-dichloroethane	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
1,1-dichloroethylene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,2,3-Trichlorobenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,2,3-Trichloropropane	0.04	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
1,2,4-Trichlorobenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,2,4-Trimethylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,2-Dibromo-3-chloropropane	0.04	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*
1,2-dibromoethane	5	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
1,2-dichlorobenzene	3	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,2-dichloroethane	0.6	0.6	*U*	*1*	0.6	*U*	*1*	0.6	*U*	*1*	0.6	*U*	*1*	0.6	*U*	*1*
1,2-dichloropropane	1	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,3,5-trimethylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,3-dichlorobenzene	3	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,4-dichlorobenzene	3	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,4-dioxane	0.35	100	*U*	*1*	100	*U*	*1*	100	*U*	*1*	100	*U*	*1*	100	*U*	*1*
2-butanone (MEK)	50	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*
2-hexanone (MBK)	50	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*
4-methyl-2-pentanone	NA	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*
acetone	50	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
acrolein	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
acrylonitrile	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
benzene	1	0.7	*U*	*1*	0.7	*U*	*1*	0.7	*U*	*1*	0.7	*U*	*1*	0.7	*U*	*1*
bromochloromethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
bromodichloromethane	50	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
Bromoform	50	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
bromomethane	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
carbon disulfide	NA	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
carbon tetrachloride	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
chlorobenzene	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
chloroethane	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
chloroform	7	2.2	*J*	*1*	1.2	*J*	*1*	0.5	*J*	*1*	0.58	*J*	*1*	0.67	*J*	*1*
chloromethane	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
cis-1,2-dichloroethylene (DCE)	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
cis-1,3-dichloropropylene	0.4	0.4	*U*	*1*	0.4	*U*	*1*	0.4	*U*	*1*	0.4	*U*	*1*	0.4	*U*	*1*
cyclohexane	NA	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
dibromochloromethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
dibromomethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
dichlorodifluoromethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
ethyl benzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
hexachlorobutadiene	0.5	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*
isopropylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
m- & p- xylenes	5	50	*U*	*1*	50	*U*	*1*	50	*U*	*1*	50	*U*	*1*	50	*U*	*1*
methyl tert-butyl ether (MTBE)	10	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
methylacetate	NA	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
methylcyclohexane	NA	3	*U*	*1*	3	*U*	*1*	3	*U*	*1*	3	*U*	*1*	3	*U*	*1*
methylene chloride	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
n-butylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
n-propylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
o-xylene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
p-isopropyltoluene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
sec-butylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
styrene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
tert-butyl alcohol	NA	50	*U*	*1*	50	*U*	*1*	50	*U*	*1*	50	*U*	*1*	50	*U*	*1*
tert-butylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
tetrachloroethylene (PCE)	5	1	*U*	*1*	1.6		*1*	0.87	*J*	*1*	0.82	*J*	*1*	1	*U*	*1*
toluene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
trans-1,2-dichloroethylene (DCE)	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
trans-1,3-dichloropropylene	0.4	0.4	*U*	*1*	0.4	*U*	*1*	0.4	*U*	*1*	0.4	*U*	*1*	0.4	*U*	*1*
trichloroethylene (TCE)	5	1	*U*	*1*	0.75	*J*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
trichlorofluoromethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
vinyl chloride (VC)	2	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
xylenes, total	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
VOC TICs	AWQS															
Total	NA	ND			ND			ND			ND			ND		

value ≤ AWQS

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 8: VOCs in Groundwater

All data in µg/L (ppb)	**Sample**	**GMW-05-20260429**			**GMW-0620260429**			**GMW-07-20260429**		
U= Not Detected ≥ value	Date	2026-04-29			2026-04-29			2026-04-29		
VOCs (8260)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1,1,2-tetrachloroethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,1,1-trichloroethane (TCA)	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
1,1,2,2-tetrachloroethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,1,2-trichloro-1,2,2-trifluoroethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,1,2-trichloroethane	1	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,1-dichloroethane	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
1,1-dichloroethylene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,2,3-Trichlorobenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,2,3-Trichloropropane	0.04	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
1,2,4-Trichlorobenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,2,4-Trimethylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,2-Dibromo-3-chloropropane	0.04	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*
1,2-dibromoethane	5	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
1,2-dichlorobenzene	3	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,2-dichloroethane	0.6	0.6	*U*	*1*	0.6	*U*	*1*	0.6	*U*	*1*
1,2-dichloropropane	1	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,3,5-trimethylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,3-dichlorobenzene	3	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,4-dichlorobenzene	3	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
1,4-dioxane	0.35	100	*U*	*1*	100	*U*	*1*	100	*U*	*1*
2-butanone (MEK)	50	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*
2-hexanone (MBK)	50	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*
4-methyl-2-pentanone	NA	2.5	*U*	*1*	2.5	*U*	*1*	2.5	*U*	*1*
acetone	50	5	*U*	*1*	5	*U*	*1*	3.2	*JS*	*1*
acrolein	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
acrylonitrile	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
benzene	1	0.7	*U*	*1*	0.7	*U*	*1*	0.7	*U*	*1*
bromochloromethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
bromodichloromethane	50	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
Bromoform	50	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
bromomethane	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
carbon disulfide	NA	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
carbon tetrachloride	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
chlorobenzene	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
chloroethane	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
chloroform	7	0.37	*J*	*1*	5	*U*	*1*	1.2	*J*	*1*
chloromethane	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
cis-1,2-dichloroethylene (DCE)	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
cis-1,3-dichloropropylene	0.4	0.4	*U*	*1*	0.4	*U*	*1*	0.4	*U*	*1*
cyclohexane	NA	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
dibromochloromethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
dibromomethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
dichlorodifluoromethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
ethyl benzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
hexachlorobutadiene	0.5	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*
isopropylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
m- & p- xylenes	5	50	*U*	*1*	50	*U*	*1*	50	*U*	*1*
methyl tert-butyl ether (MTBE)	10	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
methylacetate	NA	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
methylcyclohexane	NA	3	*U*	*1*	3	*U*	*1*	3	*U*	*1*
methylene chloride	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
n-butylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
n-propylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
o-xylene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
p-isopropyltoluene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
sec-butylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
styrene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
tert-butyl alcohol	NA	50	*U*	*1*	50	*U*	*1*	50	*U*	*1*
tert-butylbenzene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
tetrachloroethylene (PCE)	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
toluene	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
trans-1,2-dichloroethylene (DCE)	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
trans-1,3-dichloropropylene	0.4	0.4	*U*	*1*	0.4	*U*	*1*	0.4	*U*	*1*
trichloroethylene (TCE)	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
trichlorofluoromethane	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
vinyl chloride (VC)	2	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
xylenes, total	5	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
VOC TICs	AWQS									
Total	NA	ND			ND			ND		

value ≤ AWQS

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 9: SVOCs in Groundwater

All data in µg/L (ppb)	Sample	GMW-01-20260428			GMW-02-20260428			GMW-03-20260428			DUP-20260428			GMW-04-20260428		
U= Not Detected ≥ value	Date	2026-04-28			2026-04-28			2026-04-28			2026-04-28			2026-04-28		
SVOCs (8270)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1-biphenyl	NA	3.3	U	1	3.3	U	1	3.3	U	1	3.4	U	1	3.5	U	1
1,2,4,5-tetrachlorobenzene	NA	3.3	U	1	3.3	U	1	3.3	U	1	3.4	U	1	3.5	U	1
1,2,4-trichlorobenzene	5	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
1,2-dichlorobenzene	3	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
1,2-diphenylhydrazine (azobenzene)	ND	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
1,3-dichlorobenzene	3	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
1,4-dichlorobenzene	3	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
1,4-dioxane	0.35	0.2	U	1	0.2	U	1	0.2	U	1	0.2	U	1	0.2	U	1
2,2'-Oxybis(1-Chloropropane)	5	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5	U	1
2,3,4,6-tetrachlorophenol	NA	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
2,4,5-trichlorophenol	1	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
2,4,6-trichlorophenol	1	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
2,4-dichlorophenol	5	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
2,4-dimethylphenol	50	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
2,4-dinitrophenol	10	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
2,4-dinitrotoluene	5	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5	U	1
2,6-dinitrotoluene	5	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5	U	1
2-chloronaphthalene	10	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
2-chlorophenol	1	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
2-methylnaphthalene	NA	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
2-methylphenol	1	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
2-nitroaniline	5	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5	U	1
2-nitrophenol	1	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
3- & 4-methylphenols	1	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
3,3-dichlorobenzidine	5	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5	U	1
3-nitroaniline	5	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5	U	1
4,6-dinitro-2-methylphenol	NA	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
4-bromophenyl phenyl ether	NA	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
4-chloro-3-methylphenol	1	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
4-chloroaniline	5	3.3	U	1	3.3	U	1	3.3	U	1	3.4	U	1	3.5	U	1
4-chlorophenyl phenyl ether	NA	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
4-nitroaniline	5	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5	U	1
4-nitrophenol	1	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
acenaphthene	20	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
acenaphthylene	NA	0.47	U	1	0.47	U	1	0.47	U	1	0.49	U	1	0.51	U	1
acetophenone	NA	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
aniline	5	3.3	U	1	3.3	U	1	3.3	U	1	3.4	U	1	3.5	U	1
anthracene	50	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
atrazine	NA	3.3	U	1	3.3	U	1	3.3	U	1	3.4	U	1	3.5	U	1
benzaldehyde	NA	3.3	U	1	3.3	U	1	3.3	U	1	3.4	U	1	3.5	U	1
benzidine	NA	4.2	U	1	4.2	U	1	4.2	U	1	4.4	U	1	4.5	U	1
benzo(a)anthracene	0.002	0.02	U	1	0.02	U	1	0.02	U	1	0.02	U	1	0.02	U	1
benzo(a)pyrene	ND	0.03		1	0.02		1	0.02		1	0.02	U	1	0.02		1
benzo(b)fluoranthene	0.002	0.04		1	0.03		1	0.03		1	0.02	U	1	0.02		1
benzo(g,h,i)perylene	NA	0.47	U	1	0.47	U	1	0.47	U	1	0.49	U	1	0.51	U	1
benzo(k)fluoranthene	0.002	0.04		1	0.02		1	0.02		1	0.02	U	1	0.02	U	1
benzoic acid	NA	24	U	1	24	U	1	24	U	1	24	U	1	25	U	1
benzoic acid	NA	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
benzyl butyl phthalate	50	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
bis(2-chloroethoxy)methane	5	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5	U	1
bis(2-chloroethyl)ether	1	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
bis(2-ethylhexyl)phthalate	5	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
caprolactam	NA	3.3	U	1	3.3	U	1	3.3	U	1	3.4	U	1	3.5	U	1
carbazole	NA	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
chrysene	0.002	0.02	U	1	0.02	U	1	0.02	U	1	0.02	U	1	0.02	U	1
dibenzo(a,h)anthracene	NA	0.47	U	1	0.47	U	1	0.47	U	1	0.49	U	1	0.51	U	1
dibenzofuran	NA	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5	U	1
diethyl phthalate	50	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
dimethyl phthalate	50	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
di-n-butyl phthalate	50	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
di-n-octyl phthalate	50	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
fluoranthene	50	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
fluorene	50	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
hexachlorobenzene	0.04	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1	0.04	U	1
hexachlorobutadiene	0.5	0.47	U	1	0.47	U	1	0.47	U	1	0.49	U	1	0.5	U	1
hexachlorocyclopentadiene	5	0.47	U	1	0.47	U	1	0.47	U	1	0.49	U	1	0.51	U	1
hexachloroethane	5	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
indeno(1,2,3-cd)pyrene	0.002	0.02		1	0.02		1	0.02		1	0.02	U	1	0.02		1
isophorone	50	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
naphthalene	10	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5	U	1
nitrobenzene	0.4	0.38	U	1	0.38	U	1	0.38	U	1	0.39	U	1	0.4	U	1
n-nitrosodimethylamine	NA	0.09	U	1	0.09	U	1	0.09	U	1	0.1	U	1	0.1	U	1
n-nitroso-di-n-propylamine	NA	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
n-nitrosodiphenylamine	50	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
pentachlorophenol	1	0.47	U	1	0.47	U	1	0.47	U	1	0.49	U	1	0.51	U	1
phenanthrene	50	0.47	U	1	0.47	U	1	0.47	U	1	0.49	U	1	0.51	U	1
phenol	1	0.94	U	1	0.94	U	1	0.94	U	1	0.97	U	1	1	U	1
pyrene	50	4.7	U	1	4.7	U	1	4.7	U	1	4.9	U	1	5.1	U	1
SVOC TICs	AWQS															
unknown hydrocarbon	NA	ND			ND			ND			ND			ND		
Total	NA	ND			ND			ND			ND			ND		

value ≤ AWQS
value > AWQS
TICs detected

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 9: SVOCs in Groundwater

All data in µg/L (ppb)	Sample	GMW-05-20260429			GMW-0620260429			GMW-07-20260429		
U= Not Detected ≥ value	Date	2026-04-29			2026-04-29			2026-04-29		
SVOCs (8270)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL
1,1-biphenyl	NA	3.3	*U*	*1*	3.7	*U*	*1*	3.3	*U*	*1*
1,2,4,5-tetrachlorobenzene	NA	3.3	*U*	*1*	3.7	*U*	*1*	3.3	*U*	*1*
1,2,4-trichlorobenzene	5	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
1,2-dichlorobenzene	3	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
1,2-diphenylhydrazine (azobenzene)	ND	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
1,3-dichlorobenzene	3	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
1,4-dichlorobenzene	3	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
1,4-dioxane	0.35	0.2	*U*	*1*	0.2	*U*	*1*	0.2	*U*	*1*
2,2'-Oxybis(1-Chloropropane)	5	4.7	*U*	*1*	5	*U*	*1*	4.8	*U*	*1*
2,3,4,6-tetrachlorophenol	NA	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
2,4,5-trichlorophenol	1	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
2,4,6-trichlorophenol	1	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
2,4-dichlorophenol	5	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
2,4-dimethylphenol	50	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
2,4-dinitrophenol	10	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
2,4-dinitrotoluene	5	4.7	*U*	*1*	5	*U*	*1*	4.8	*U*	*1*
2,6-dinitrotoluene	5	4.7	*U*	*1*	5	*U*	*1*	4.8	*U*	*1*
2-chloronaphthalene	10	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
2-chlorophenol	1	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
2-methylnaphthalene	NA	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
2-methylphenol	1	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
2-nitroaniline	5	4.7	*U*	*1*	5	*U*	*1*	4.8	*U*	*1*
2-nitrophenol	1	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
3- & 4-methylphenols	1	0.94	*U*	*1*	1.1	*U*	*1*	0.95	*U*	*1*
3,3-dichlorobenzidine	5	4.7	*U*	*1*	5	*U*	*1*	4.8	*U*	*1*
3-nitroaniline	5	4.7	*U*	*1*	5	*U*	*1*	4.8	*U*	*1*
4,6-dinitro-2-methylphenol	NA	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
4-bromophenyl phenyl ether	NA	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
4-chloro-3-methylphenol	1	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
4-chloroaniline	5	3.3	*U*	*1*	3.7	*U*	*1*	3.3	*U*	*1*
4-chlorophenyl phenyl ether	NA	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
4-nitroaniline	5	4.7	*U*	*1*	5	*U*	*1*	4.8	*U*	*1*
4-nitrophenol	1	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
acenaphthene	20	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
acenaphthylene	NA	0.47	*U*	*1*	0.53	*U*	*1*	0.48	*U*	*1*
acetophenone	NA	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
aniline	5	3.3	*U*	*1*	3.7	*U*	*1*	3.3	*U*	*1*
anthracene	50	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
atrazine	NA	3.3	*U*	*1*	3.7	*U*	*1*	3.3	*U*	*1*
benzaldehyde	NA	3.3	*U*	*1*	3.7	*U*	*1*	3.3	*U*	*1*
benzidine	NA	4.2	*U*	*1*	4.7	*U*	*1*	4.3	*U*	*1*
benzo(a)anthracene	0.002	0.02	*U*	*1*	0.02	*U*	*1*	0.02	*U*	*1*
benzo(a)pyrene	ND	0.02		*1*	0.02	*U*	*1*	0.05	*U*	*1*
benzo(b)fluoranthene	0.002	0.02	*U*	*1*	0.02	*U*	*1*	0.05	*U*	*1*
benzo(g,h,i)perylene	NA	0.47	*U*	*1*	0.53	*U*	*1*	0.48	*U*	*1*
benzo(k)fluoranthene	0.002	0.02	*U*	*1*	0.02	*U*	*1*	0.05	*U*	*1*
benzoic acid	NA	24	*U*	*1*	26	*U*	*1*	24	*U*	*1*
benzoic acid	NA	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
benzyl butyl phthalate	50	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
bis(2-chloroethoxy)methane	5	4.7	*U*	*1*	5	*U*	*1*	4.8	*U*	*1*
bis(2-chloroethyl)ether	1	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
bis(2-ethylhexyl)phthalate	5	0.94	*U*	*1*	1.1	*U*	*1*	0.95	*U*	*1*
caprolactam	NA	3.3	*U*	*1*	3.7	*U*	*1*	3.3	*U*	*1*
carbazole	NA	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
chrysene	0.002	0.02	*U*	*1*	0.02	*U*	*1*	0.02	*U*	*1*
dibenzo(a,h)anthracene	NA	0.47	*U*	*1*	0.53	*U*	*1*	0.48	*U*	*1*
dibenzofuran	NA	4.7	*U*	*1*	5	*U*	*1*	4.8	*U*	*1*
diethyl phthalate	50	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
dimethyl phthalate	50	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
di-n-butyl phthalate	50	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
di-n-octyl phthalate	50	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
fluoranthene	50	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
fluorene	50	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
hexachlorobenzene	0.04	0.04	*U*	*1*	0.04	*U*	*1*	0.04	*U*	*1*
hexachlorobutadiene	0.5	0.47	*U*	*1*	0.5	*U*	*1*	0.48	*U*	*1*
hexachlorocyclopentadiene	5	0.47	*U*	*1*	0.53	*U*	*1*	0.48	*U*	*1*
hexachloroethane	5	0.94	*U*	*1*	1.1	*U*	*1*	0.95	*U*	*1*
indeno(1,2,3-cd)pyrene	0.002	0.02		*1*	0.02	*U*	*1*	0.05	*U*	*1*
isophorone	50	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
naphthalene	10	4.7	*U*	*1*	5	*U*	*1*	4.8	*U*	*1*
nitrobenzene	0.4	0.38	*U*	*1*	0.4	*U*	*1*	0.38	*U*	*1*
n-nitrosodimethylamine	NA	0.09	*U*	*1*	0.11	*U*	*1*	0.1	*U*	*1*
n-nitroso-di-n-propylamine	NA	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
n-nitrosodiphenylamine	50	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
pentachlorophenol	1	0.47	*U*	*1*	0.53	*U*	*1*	0.48	*U*	*1*
phenanthrene	50	0.47	*U*	*1*	0.53	*U*	*1*	0.5		*1*
phenol	1	0.94	*U*	*1*	1	*U*	*1*	0.95	*U*	*1*
pyrene	50	4.7	*U*	*1*	5.3	*U*	*1*	4.8	*U*	*1*
SVOC TICs	AWQS									
unknown hydrocarbon	NA	ND			7.1	*J*	*1*	9.5	*J*	*1*
Total	NA	ND			7.1			9.5		

value ≤ AWQS
value > AWQS
TICs detected

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 10: TAL Metals (total) in Groundwater

All data in µg/L (ppb)	**Sample**	**GMW-01-20260428**			**GMW-02-20260428**			**GMW-03-20260428**			**DUP-20260428**			**GMW-04-20260428**		
U= Not Detected ≥ value	Date	2026-04-28			2026-04-28			2026-04-28			2026-04-28			2026-04-28		
Metals (6010/7473)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	20	*U*	*1*	136		*1*	20	*U*	*1*	117		*1*	25		*1*
Antimony	3	3	*U*	*5*	3	*U*	*5*	3	*U*	*5*	3	*U*	*5*	3	*U*	*5*
Arsenic	25	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*
Barium	1,000	117		*1*	65		*1*	60		*1*	59		*1*	80		*1*
Beryllium	3	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
Cadmium	5	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*
Calcium	NA	152,000		*10*	104,000		*1*	174,000		*10*	168,000		*10*	109,000		*1*
Chromium (trivalent)	50	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	6		*1*	1	*U*	*1*
Chromium (hexavalent)	50	0.01	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*
Cobalt	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
Copper	200	1	*J*	*1*	3	*J*	*1*	5	*U*	*1*	2	*J*	*1*	1	*J*	*1*
Iron	300	20		*1*	240		*1*	10		*1*	170		*1*	50		*1*
Lead	25	1	*U*	*1*	1		*1*	1	*U*	*1*	3		*1*	1	*U*	*1*
Magnesium	35,000	28,900		*1*	16,400		*1*	28,300		*1*	27,100		*1*	20,200		*1*
Manganese	300	38		*1*	26		*1*	586		*1*	509		*1*	202		*1*
Mercury	0.7	0.2	*U*		0.2	*U*		0.2	*U*		0.3			0.2	*U*	
Nickel	100	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*
Potassium	NA	1,600		*1*	1,800		*1*	2,800		*1*	2,700		*1*	3,100		*1*
Selenium	10	0.01	*U*	*5*	0.01	*U*	*5*	0.01	*U*	*5*	0.01	*U*	*5*	0.01	*U*	*5*
Silver	50	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
Sodium	20,000	184,000		*10*	177,000		*10*	69,100		*10*	72,000		*10*	137,000		*10*
Thallium	0.5	0.5	*U*	*5*	0.5	*U*	*5*	0.5	*U*	*5*	0.5	*U*	*5*	0.5	*U*	*5*
Vanadium	14	10	*U*	*1*	10	*U*	*1*	10	*U*	*1*	10	*U*	*1*	10	*U*	*1*
Zinc	2,000	1	*J*	*1*	3	*J*	*1*	1	*J*	*1*	5	*J*	*1*	1	*J*	*1*
Cyanide (total)	200	0.01	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*

value ≤ AWQS
value > AWQS

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 10: TAL Metals (total) in Groundwater

All data in µg/L (ppb)	**Sample**	**GMW-05-20260429**			**GMW-0620260429**			**GMW-07-20260429**		
U= Not Detected ≥ value	Date	2026-04-29			2026-04-29			2026-04-29		
Metals (6010/7473)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	31		*1*	256		*1*	911		*1*
Antimony	3	3	*U*	*5*	3	*U*	*5*	1	*U*	*5*
Arsenic	25	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*
Barium	1,000	66		*1*	67		*1*	75		*1*
Beryllium	3	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
Cadmium	5	4	*U*	*1*	4	*U*	*1*	1	*J*	*1*
Calcium	NA	111,000		*1*	125,000		*1*	82,700		*1*
Chromium (trivalent)	50	1		*1*	1		*1*	50		*1*
Chromium (hexavalent)	50	0.01	*U*	*1*	0.01	*U*	*1*	0.02		*1*
Cobalt	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
Copper	200	2	*J*	*1*	2	*J*	*1*	3	*J*	*1*
Iron	300	60		*1*	420		*1*	1,180		*1*
Lead	25	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
Magnesium	35,000	19,400		*1*	21,100		*1*	11,300		*1*
Manganese	300	20		*1*	16		*1*	38		*1*
Mercury	0.7	0.2	*U*		0.3			0.2	*U*	
Nickel	100	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*
Potassium	NA	2,900		*1*	11,500		*10*	11,400		*10*
Selenium	10	0.01	*U*	*5*	0.024		*5*	0.01	*U*	*5*
Silver	50	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
Sodium	20,000	105,000		*10*	14,600		*1*	10,500		*1*
Thallium	0.5	0.5	*U*	*5*	0.5	*U*	*5*	0.5	*U*	*5*
Vanadium	14	10	*U*	*1*	10	*U*	*1*	5	*J*	*1*
Zinc	2,000	1	*J*	*1*	2	*J*	*1*	6	*J*	*1*
Cyanide (total)	200	0.01	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*

value ≤ AWQS
value > AWQS

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 11: TAL Metals (dissolved) in Groundwater

All data in µg/L (ppb)	**Sample**	**GMW-01-20260428**			**GMW-02-20260428**			**GMW-03-20260428**			**DUP-20260428**			**GMW-04-20260428**		
U= Not Detected ≥ value	Date	2026-04-28			2026-04-28			2026-04-28			2026-04-28			2026-04-28		
Metals (6010/7473)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	11	*U*	*1*	11	*U*	*1*	11	*U*	*1*	11	*U*	*1*	11	*U*	*1*
Antimony	3	0.6	*U*	*2*	0.6	*U*	*2*	0.6	*U*	*2*	0.6	*U*	*2*	0.6	*U*	*2*
Arsenic	25	16		*1*	14		*1*	15		*1*	16		*1*	11		*1*
Barium	1,000	116		*1*	65		*1*	60		*1*	59		*1*	78		*1*
Beryllium	3	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
Cadmium	5	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*
Calcium	NA	149,000		*1*	101,000		*1*	175,000		*10*	164,000		*10*	98,300		*1*
Chromium (trivalent)	50	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
Chromium (hexavalent)	50	0.01	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*
Cobalt	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
Copper	200	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	1	*J*	*1*
Iron	300	10	*U*	*1*	10	*U*	*1*	10	*U*	*1*	10	*U*	*1*	10	*U*	*1*
Lead	25	2	*U*	*1*	2	*U*	*1*	1	*J*	*1*	2	*U*	*1*	2	*U*	*1*
Magnesium	35,000	27,700		*1*	16,200		*1*	27,500		*1*	26,600		*1*	18,700		*1*
Manganese	300	36		*1*	1	*J*	*1*	577		*1*	500		*1*	154		*1*
Mercury	0.7	0.2	*U*		0.2	*U*		0.2	*U*		0.2	*U*		0.2	*U*	
Nickel	100	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*
Potassium	NA	1,600		*1*	1,700		*1*	2,700		*1*	2,700		*1*	3,000		*1*
Selenium	10	10	*U*	*2*	4	*U*	*2*	10	*U*	*2*	6	*U*	*2*	4	*U*	*2*
Silver	50	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
Sodium	20,000	174,000		*10*	168,000		*10*	62,500		*10*	67,600		*10*	131,000		*10*
Thallium	0.5	0.5	*U*	*2*	0.5	*U*	*2*	0.5	*U*	*2*	0.5	*U*	*2*	0.5	*U*	*2*
Vanadium	14	11	*U*	*1*	11	*U*	*1*	11	*U*	*1*	11	*U*	*1*	11	*U*	*1*
Zinc	2,000	3	*J*	*1*	4	*J*	*1*	3	*J*	*1*	3	*J*	*1*	3	*J*	*1*

value ≤ AWQS
value > AWQS

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 11: TAL Metals (dissolved) in Groundwater

All data in µg/L (ppb)	**Sample**	**GMW-05-20260429**			**GMW-0620260429**			**GMW-07-20260429**		
U= Not Detected ≥ value	Date	2026-04-29			2026-04-29			2026-04-29		
Metals (6010/7473)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL
Aluminum	NA	11	*U*	*1*	11	*U*	*1*	226		*1*
Antimony	3	0.6	*U*	*2*	0.6	*U*	*2*	1	*U*	*2*
Arsenic	25	20		*1*	18		*1*	11		*1*
Barium	1,000	69		*1*	66		*1*	51		*1*
Beryllium	3	1	*U*	*1*	1	*U*	*1*	1	*U*	*1*
Cadmium	5	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*
Calcium	NA	108,000		*1*	121,000		*1*	51,900		*1*
Chromium (trivalent)	50	1	*U*	*1*	1	*U*	*1*	43		*1*
Chromium (hexavalent)	50	0.01	*U*	*1*	0.01	*U*	*1*	0.11		*1*
Cobalt	5	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
Copper	200	5	*U*	*1*	1	*J*	*1*	1	*J*	*1*
Iron	300	10	*U*	*1*	10	*U*	*1*	10	*U*	*1*
Lead	25	2	*U*	*1*	2	*U*	*1*	2	*U*	*1*
Magnesium	35,000	18,900		*1*	20,200		*1*	10,300		*1*
Manganese	300	15		*1*	5	*J*	*1*	2	*J*	*1*
Mercury	0.7	0.2	*U*		0.2	*U*		0.2	*U*	
Nickel	100	4	*U*	*1*	4	*U*	*1*	4	*U*	*1*
Potassium	NA	3,000		*1*	10,000		*10*	10,300		*10*
Selenium	10	4	*U*	*2*	22		*2*	10	*U*	*2*
Silver	50	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
Sodium	20,000	95,800		*10*	14,700		*1*	10,500		*1*
Thallium	0.5	0.5	*U*	*2*	0.5	*U*	*2*	0.5	*U*	*2*
Vanadium	14	11	*U*	*1*	11	*U*	*1*	5	*J*	*1*
Zinc	2,000	3	*J*	*1*	5	*J*	*1*	3	*J*	*1*

value ≤ AWQS
value > AWQS

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 12: Pesticides, PCBs and Herbicides in Groundwater

Vanguard Village I+II
BCP ID: C704063

All data in µg/L (ppb)	**Sample**	**GMW-01-20260428**			**GMW-02-20260428**			**GMW-03-20260428**			**DUP-20260428**		
U= Not Detected ≥ value	Date	2026-04-28			2026-04-28			2026-04-28			2026-04-28		
Pesticides (8081)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*
4,4' -DDE	0.2	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*
4,4' -DDT	0.2	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*
a-BHC	0.01	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*
a-Chlordane	0.05	0.01	*U*	*1*	0.01	*U*	*1*	0.009	*U*	*1*	0.01	*U*	*1*
Alachlor	0.5	0.072	*U*	*1*	0.071	*U*	*1*	0.071	*U*	*1*	0.074	*U*	*1*
Aldrin	ND	0.001	*U*	*1*	0.001	*U*	*1*	0.001	*U*	*1*	0.002	*U*	*1*
b-BHC	0.04	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*
Chlordane	0.05	0.019	*U*	*1*	0.019	*U*	*1*	0.019	*U*	*1*	0.02	*U*	*1*
d-BHC	0.04	0.024	*U*	*1*	0.024	*U*	*1*	0.024	*U*	*1*	0.025	*U*	*1*
Dieldrin	0.004	0.001	*U*	*1*	0.001	*U*	*1*	0.001	*U*	*1*	0.002	*U*	*1*
Endosulfan I	NA	0.048	*U*	*1*	0.048	*U*	*1*	0.047	*U*	*1*	0.049	*U*	*1*
Endosulfan II	NA	0.048	*U*	*1*	0.048	*U*	*1*	0.047	*U*	*1*	0.049	*U*	*1*
Endosulfan sulfate	NA	0.048	*U*	*1*	0.048	*U*	*1*	0.047	*U*	*1*	0.049	*U*	*1*
Endrin	ND	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*
Endrin aldehyde	5	0.048	*U*	*1*	0.048	*U*	*1*	0.047	*U*	*1*	0.049	*U*	*1*
Endrin ketone	5	0.048	*U*	*1*	0.048	*U*	*1*	0.047	*U*	*1*	0.049	*U*	*1*
g-BHC	0.05	0.024	*U*	*1*	0.024	*U*	*1*	0.024	*U*	*1*	0.025	*U*	*1*
g-Chlordane	0.05	0.01	*U*	*1*	0.01	*U*	*1*	0.009	*U*	*1*	0.01	*U*	*1*
Heptachlor	0.04	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*
Heptachlor epoxide	0.03	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*
Methoxychlor	35	0.096	*U*	*1*	0.095	*U*	*1*	0.094	*U*	*1*	0.098	*U*	*1*
Toxaphene	0.06	0.19	*U*	*1*	0.19	*U*	*1*	0.19	*U*	*1*	0.2	*U*	*1*

	Sample	**GMW-01-20260428**			**GMW-02-20260428**			**GMW-03-20260428**			**DUP-20260428**		
	Date	2026-04-28			2026-04-28			2026-04-28			2026-04-28		
PBCs (8082)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*
PCB-1221	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*
PCB-1232	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*
PCB-1242	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*
PCB-1248	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*
PCB-1254	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*
PCB-1260	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*
PCB-1262	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*
PCB-1268	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*	0.09	*U*	*1*
Total PCBs	0.09	ND			ND			ND			ND		

	Sample	**GMW-01-20260428**			**GMW-02-20260428**			**GMW-03-20260428**			**DUP-20260428**		
	Date	2026-04-28			2026-04-28			2026-04-28			2026-04-28		
Herbicides (8151)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	35	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
2,4,5-TP (Silvex)	0.26	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
2,4-D	50	0.5	*U*	*1*	0.49	*U*	*1*	0.49	*U*	*1*	0.5	*U*	*1*
2,4-DB	NA	5	*U*	*1*	4.9	*U*	*1*	4.9	*U*	*1*	5	*U*	*1*
Dalapon	50	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
Dicamba	0.44	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
Dichloroprop	NA	0.5	*U*	*1*	0.49	*U*	*1*	0.49	*U*	*1*	0.5	*U*	*1*
Dinoseb	1	0.5	*U*	*1*	0.49	*U*	*1*	0.49	*U*	*1*	0.5	*U*	*1*

value ≤ AWQS

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 12: Pesticides, PCBs and Herbicides in Groundwater

Vanguard Village I+II
BCP ID: C704063

All data in µg/L (ppb)	**Sample**	**GMW-04-20260428**			**GMW-05-20260429**			**GMW-0620260429**			**GMW-07-20260429**		
U= Not Detected ≥ value	Date	2026-04-28			2026-04-29			2026-04-29			2026-04-29		
Pesticides (8081)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
4,4' -DDD	0	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*	0.005	*U*	*1*
4,4' -DDE	0.2	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*	0.005	*U*	*1*
4,4' -DDT	0.2	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*	0.005	*U*	*1*
a-BHC	0.01	0.002	*U*	*1*	0.002	*U*	*1*	0.002	*U*	*1*	0.005	*U*	*1*
a-Chlordane	0.05	0.009	*U*	*1*	0.009	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*
Alachlor	0.5	0.071	*U*	*1*	0.071	*U*	*1*	0.075	*U*	*1*	0.071	*U*	*1*
Aldrin	ND	0.001	*U*	*1*	0.001	*U*	*1*	0.002	*U*	*1*	0.001	*U*	*1*
b-BHC	0.04	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*
Chlordane	0.05	0.019	*U*	*1*	0.019	*U*	*1*	0.02	*U*	*1*	0.048	*U*	*1*
d-BHC	0.04	0.024	*U*	*1*	0.024	*U*	*1*	0.025	*U*	*1*	0.005	*U*	*1*
Dieldrin	0.004	0.001	*U*	*1*	0.001	*U*	*1*	0.002	*U*	*1*	0.001	*U*	*1*
Endosulfan I	NA	0.047	*U*	*1*	0.047	*U*	*1*	0.05	*U*	*1*	0.01	*U*	*1*
Endosulfan II	NA	0.047	*U*	*1*	0.047	*U*	*1*	0.05	*U*	*1*	0.01	*U*	*1*
Endosulfan sulfate	NA	0.047	*U*	*1*	0.047	*U*	*1*	0.05	*U*	*1*	0.01	*U*	*1*
Endrin	ND	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*	0.01	*U*	*1*
Endrin aldehyde	5	0.047	*U*	*1*	0.047	*U*	*1*	0.05	*U*	*1*	0.01	*U*	*1*
Endrin ketone	5	0.047	*U*	*1*	0.047	*U*	*1*	0.05	*U*	*1*	0.01	*U*	*1*
g-BHC	0.05	0.024	*U*	*1*	0.024	*U*	*1*	0.025	*U*	*1*	0.005	*U*	*1*
g-Chlordane	0.05	0.009	*U*	*1*	0.009	*U*	*1*	0.01	*U*	*1*	0.01	*U*	*1*
Heptachlor	0.04	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*	0.01	*U*	*1*
Heptachlor epoxide	0.03	0.005	*U*	*1*	0.005	*U*	*1*	0.005	*U*	*1*	0.01	*U*	*1*
Methoxychlor	35	0.094	*U*	*1*	0.094	*U*	*1*	0.1	*U*	*1*	0.095	*U*	*1*
Toxaphene	0.06	0.19	*U*	*1*	0.19	*U*	*1*	0.2	*U*	*1*	0.19	*U*	*1*

	Sample	**GMW-04-20260428**			**GMW-05-20260429**			**GMW-0620260429**			**GMW-07-20260429**		
	Date	2026-04-28			2026-04-29			2026-04-29			2026-04-29		
PBCs (8082)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
PCB-1016	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.05	*U*	*1*	0.048	*U*	*1*
PCB-1221	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.05	*U*	*1*	0.048	*U*	*1*
PCB-1232	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.05	*U*	*1*	0.048	*U*	*1*
PCB-1242	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.05	*U*	*1*	0.048	*U*	*1*
PCB-1248	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.05	*U*	*1*	0.048	*U*	*1*
PCB-1254	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.05	*U*	*1*	0.048	*U*	*1*
PCB-1260	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.05	*U*	*1*	0.048	*U*	*1*
PCB-1262	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.05	*U*	*1*	0.048	*U*	*1*
PCB-1268	0.09	0.09	*U*	*1*	0.09	*U*	*1*	0.05	*U*	*1*	0.048	*U*	*1*
Total PCBs	0.09	ND			ND			ND			ND		

	Sample	**GMW-04-20260428**			**GMW-05-20260429**			**GMW-0620260429**			**GMW-07-20260429**		
	Date	2026-04-28			2026-04-29			2026-04-29			2026-04-29		
Herbicides (8151)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
2,4,5-T	35	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
2,4,5-TP (Silvex)	0.26	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
2,4-D	50	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*
2,4-DB	NA	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*	5	*U*	*1*
Dalapon	50	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
Dicamba	0.44	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*	0.25	*U*	*1*
Dichloroprop	NA	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*
Dinoseb	1	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*	0.5	*U*	*1*

value ≤ AWQS

Q = Laboratory Qualifier DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 13: PFAS in Groundwater

All data in ng/L (ppt)	Sample	GMW-01-20260428			GMW-02-20260428			GMW-03-20260428			DUP-20260428			GMW-04-20260428		
U= Not Detected ≥ value	Date	2026-04-28			2026-04-28			2026-04-28			2026-04-28			2026-04-28		
PFAS (1633)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	7.64	*U*	*1*	7.22	*U*	*1*	7.45	*U*	*1*	7.72	*U*	*1*	7.76	*U*	*1*
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	7.64	*U*	*1*	7.22	*U*	*1*	7.45	*U*	*1*	7.72	*U*	*1*	7.76	*U*	*1*
1H,1H,2H,2H-Perfluorohexanesulfonic acid	NA	7.64	*U*	*1*	7.22	*U*	*1*	7.45	*U*	*1*	7.72	*U*	*1*	7.76	*U*	*1*
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	7.64	*U*	*1*	7.22	*U*	*1*	7.45	*U*	*1*	7.72	*U*	*1*	7.76	*U*	*1*
3:3FTCA	NA	9.55	*U*	*1*	9.02	*U*	*1*	9.32	*U*	*1*	9.64	*U*	*1*	9.7	*U*	*1*
5:3FTCA	NA	47.8	*U*	*1*	45.1	*U*	*1*	46.6	*U*	*1*	48.2	*U*	*1*	48.5	*U*	*1*
7:3FTCA	NA	47.8	*U*	*1*	45.1	*U*	*1*	46.6	*U*	*1*	48.2	*U*	*1*	48.5	*U*	*1*
9Cl-PF3ONS	NA	7.64	*U*	*1*	7.22	*U*	*1*	7.45	*U*	*1*	7.72	*U*	*1*	7.76	*U*	*1*
ADONA	NA	7.64	*U*	*1*	7.22	*U*	*1*	7.45	*U*	*1*	7.72	*U*	*1*	7.76	*U*	*1*
HFPO-DA	NA	7.64	*U*	*1*	7.22	*U*	*1*	7.45	*U*	*1*	7.72	*U*	*1*	7.76	*U*	*1*
NEtFOSA	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
NEtFOSAA	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
NEtFOSE	NA	19.1	*U*	*1*	18	*U*	*1*	18.6	*U*	*1*	19.3	*U*	*1*	19.4	*U*	*1*
NFDHA	NA	3.82	*U*	*1*	3.61	*U*	*1*	3.73	*U*	*1*	3.86	*U*	*1*	3.88	*U*	*1*
NMeFOSA	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
NMeFOSAA	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
NMeFOSE	NA	19.1	*U*	*1*	18	*U*	*1*	18.6	*U*	*1*	19.3	*U*	*1*	19.4	*U*	*1*
Perfluoro-1-decanesulfonic acid (PFDS)	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
Perfluoro-1-octanesulfonamide (FOSA)	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
Perfluorobutanesulfonic acid (PFBS)	NA	4.15		*1*	3.82		*1*	1.79	*J*	*1*	1.63	*J*	*1*	2.22		*1*
Perfluorodecanoic acid (PFDA)	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
Perfluorododecanoic acid (PFDoA)	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
Perfluoroheptanoic acid (PFHpA)	NA	3.37		*1*	1.83		*1*	1.69	*J*	*1*	1.71	*J*	*1*	1.8	*J*	*1*
Perfluorohexanesulfonic Acid (PFHxS)	NA	2.35		*1*	2.36		*1*	1.1	*J*	*1*	1.15	*J*	*1*	1.37	*J*	*1*
Perfluorohexanoic acid (PFHxA)	NA	7.88		*1*	3.79		*1*	3.89		*1*	3.75		*1*	3.53		*1*
Perfluoro-n-butanoic acid (PFBA)	NA	6.53	*J*	*1*	4.84	*J*	*1*	5.5	*J*	*1*	5.37	*J*	*1*	4.12	*J*	*1*
Perfluorononanesulfonic Acid (PFNS)	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
Perfluorononanoic acid (PFNA)	NA	0.595	*J*	*1*	1.8	*U*	*1*	1.5	*J*	*1*	1.35	*J*	*1*	0.642	*J*	*1*
Perfluorooctanesulfonic Acid (PFOS)	2.7	3.93		*1*	4.84		*1*	2.2		*1*	2.22		*1*	1.99		*1*
Perfluorooctanoic acid (PFOA)	6.7	11.2		*1*	8.39		*1*	4.85		*1*	4.84		*1*	6.42		*1*
Perfluoropentanesulfonic Acid (PFPeS)	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
Perfluoropentanoic acid (PFPeA)	NA	9.75		*1*	5.39		*1*	6.92		*1*	6.62		*1*	4.76		*1*
Perfluorotetradecanoic acid (PFTA)	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
Perfluorotridecanoic acid (PFTrDA)	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
Perfluoroundecanoic acid (PFUnA)	NA	1.91	*U*	*1*	1.8	*U*	*1*	1.86	*U*	*1*	1.93	*U*	*1*	1.94	*U*	*1*
PFEESA	NA	3.82	*U*	*1*	3.61	*U*	*1*	3.73	*U*	*1*	3.86	*U*	*1*	3.88	*U*	*1*
PFMBA	NA	3.82	*U*	*1*	3.61	*U*	*1*	3.73	*U*	*1*	3.86	*U*	*1*	3.88	*U*	*1*
PFMPA	NA	3.82	*U*	*1*	3.61	*U*	*1*	3.73	*U*	*1*	3.86	*U*	*1*	3.88	*U*	*1*

value ≤ AWQS
value > AWQS

Q = Laboratory Qualifier DL = Dilution NA = not available (additional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 13: PFAS in Groundwater

All data in ng/L (ppt)	Sample	GMW-05-20260429			GMW-0620260429			GMW-07-20260429		
U= Not Detected ≥ value	Date	2026-04-29			2026-04-29			2026-04-29		
PFAS (1633)	**AWQS**	Result	Q	DL	Result	Q	DL	Result	Q	DL
11Cl-PF3OUdS	NA	7.53	*U*	*1*	8.25	*U*	*1*	7.48	*U*	*1*
1H,1H,2H,2H-Perfluorodecanesulfonic acid	NA	7.53	*U*	*1*	8.25	*U*	*1*	7.48	*U*	*1*
1H,1H,2H,2H-Perfluorohexanesulfonic acid	NA	7.53	*U*	*1*	8.25	*U*	*1*	7.48	*U*	*1*
1H,1H,2H,2H-Perfluorooctanesulfonic acid	NA	7.53	*U*	*1*	8.25	*U*	*1*	4.74	*J*	*1*
3:3FTCA	NA	9.41	*U*	*1*	10.3	*U*	*1*	9.35	*U*	*1*
5:3FTCA	NA	47.1	*U*	*1*	51.5	*U*	*1*	46.7	*U*	*1*
7:3FTCA	NA	47.1	*U*	*1*	51.5	*U*	*1*	46.7	*U*	*1*
9Cl-PF3ONS	NA	7.53	*U*	*1*	8.25	*U*	*1*	7.48	*U*	*1*
ADONA	NA	7.53	*U*	*1*	8.25	*U*	*1*	7.48	*U*	*1*
HFPO-DA	NA	7.53	*U*	*1*	8.25	*U*	*1*	7.48	*U*	*1*
NEtFOSA	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
NEtFOSAA	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
NEtFOSE	NA	18.8	*U*	*1*	20.6	*U*	*1*	18.7	*U*	*1*
NFDHA	NA	3.76	*U*	*1*	4.12	*U*	*1*	3.74	*U*	*1*
NMeFOSA	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
NMeFOSAA	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
NMeFOSE	NA	18.8	*U*	*1*	20.6	*U*	*1*	18.7	*U*	*1*
Perfluoro-1-decanesulfonic acid (PFDS)	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluoro-1-heptanesulfonic acid (PFHpS)	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluoro-1-octanesulfonamide (FOSA)	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluorobutanesulfonic acid (PFBS)	NA	6.91		*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluorodecanoic acid (PFDA)	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluorododecane Sulfonic Acid (PFDoDS)	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluorododecanoic acid (PFDoA)	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluoroheptanoic acid (PFHpA)	NA	2.74		*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluorohexanesulfonic Acid (PFHxS)	NA	2.06		*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluorohexanoic acid (PFHxA)	NA	4.36		*1*	2.06	*U*	*1*	1.33	*J*	*1*
Perfluoro-n-butanoic acid (PFBA)	NA	5.07	*J*	*1*	8.25	*U*	*1*	2.4	*J*	*1*
Perfluorononanesulfonic Acid (PFNS)	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluorononanoic acid (PFNA)	NA	0.527	*J*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluorooctanesulfonic Acid (PFOS)	2.7	6.53		*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluorooctanoic acid (PFOA)	6.7	10		*1*	2.06	*U*	*1*	0.383	*J*	*1*
Perfluoropentanesulfonic Acid (PFPeS)	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluoropentanoic acid (PFPeA)	NA	4.67		*1*	4.12	*U*	*1*	2.62	*J*	*1*
Perfluorotetradecanoic acid (PFTA)	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluorotridecanoic acid (PFTrDA)	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
Perfluoroundecanoic acid (PFUnA)	NA	1.88	*U*	*1*	2.06	*U*	*1*	1.87	*U*	*1*
PFEESA	NA	3.76	*U*	*1*	4.12	*U*	*1*	3.74	*U*	*1*
PFMBA	NA	3.76	*U*	*1*	4.12	*U*	*1*	3.74	*U*	*1*
PFMPA	NA	3.76	*U*	*1*	4.12	*U*	*1*	3.74	*U*	*1*

value ≤ AWQS
value > AWQS

Q = Laboratory Qualifier DL = Dilution NA = not available (additional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 14: VOCs in Soil Vapor

All data in µg/m³ **Sample**	**SV-01**			**SV-02**			**SV-03**			**SV-04**			**SV-05**		
U= Not Detected ≥ value Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
VOCs, TO-15	Result	FL	DIL	Result	FL	DIL	Result	FL	DIL	Result	FL	DIL	Result	FL	DIL
1,1,1,2-tetrachloroethane	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
1,1,1-trichloroethane (TCA)	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
1,1,2,2-tetrachloroethane	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
1,1,2-trichloroethane	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
1,1-dichloroethane	5.02	*U*	*5*	5.02	*U*	*5*	5.02	*U*	*5*	5.02	*U*	*5*	5.02	*U*	*5*
1,1-dichloroethene (1,1-DCE)	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*
1,2,4-trichlorobenzene	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
1,2,4-trimethylbenzene	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
1,2-dibromoethane (EDB)	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
1,2-dichlorobenzene	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
1,2-dichloroethane	5.02	*U*	*5*	5.02	*U*	*5*	5.02	*U*	*5*	5.02	*U*	*5*	5.02	*U*	*5*
1,2-dichloropropane	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*
1,2-dichlorotetrafluoroethane	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
1,3,5-trimethylbenzene	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
1,3-butadiene	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
1,3-dichlorobenzene	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
1,4-dichlorobenzene	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
1,4-dioxane	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
2-hexanone (MBK)	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*
4-ethyltoluene	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
4-isopropyltoluene	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
4-methyl-2-pentanone (MIBK)	4.99	*U*	*5*	7.29		*5*	9.42		*5*	4.99	*U*	*5*	4.99	*U*	*5*
acetone	27.5		*5*	79.5		*5*	77.2		*5*	49.4		*5*	37.7		*5*
acrylonitrile	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
benzene	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
benzyl chloride	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
bromodichloromethane	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
bromoform	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
bromomethane	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
carbon disulfide	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
carbon tetrachloride	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*
chlorobenzene	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
chloroethane	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
chloroform	6.49		*5*	4.98	*U*	*5*	4.98	*U*	*5*	4.98	*U*	*5*	4.98	*U*	*5*
chloromethane	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*
cis-1,2-dichloroethene (cis-DCE)	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*
cis-1,3-dichloropropene	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*
cyclohexane	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*
dibromochloromethane	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
dichlorodifluoromethane	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*
ethanol	40.5		*5*	44.3		*5*	144		*5*	38.2		*5*	36.3		*5*
ethyl acetate	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
ethylbenzene	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*
heptane	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
hexachlorobutadiene	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
hexane	5	*U*	*5*	17.2		*5*	10.7		*5*	11.7		*5*	17.9		*5*
isooctane	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*
isopropyl alcohol	5.01	*U*	*5*	5.01	*U*	*5*	5.01		*5*	190		*5*	5.01	*U*	*5*
isopropylbenzene	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
m,p-xylene	5.21		*5*	7.98		*5*	5.47		*5*	6.99		*5*	6.42		*5*
methyl ethyl ketone	5.01	*U*	*5*	7.75		*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
methyl tert-butyl ether (MTBE)	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*	5.01	*U*	*5*
methylene chloride	15	*U*	*5*	15	*U*	*5*	15	*U*	*5*	15	*U*	*5*	15	*U*	*5*
naphthalene	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
n-butylbenzene	5.23	*U*	*5*	5.23	*U*	*5*	5.23	*U*	*5*	5.23	*U*	*5*	5.23	*U*	*5*
o-xylene	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*
propylene	28.4		*5*	5.01	*U*	*5*	5.01	*U*	*5*	23.6		*5*	5.01	*U*	*5*
sec-butylbenzene	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
styrene	4.98	*U*	*5*	4.98	*U*	*5*	4.98	*U*	*5*	4.98	*U*	*5*	4.98	*U*	*5*
tetrachloroethene (PCE)	5.96		*5*	15.9		*5*	3.73		*5*	3.8		*5*	5.35		*5*
tetrahydrofuran	5.01	*U*	*5*	19		*5*	6.45		*5*	11.2		*5*	17.9		*5*
toluene	5.01	*U*	*5*	6.36		*5*	5.69		*5*	5.01	*U*	*5*	5.16		*5*
trans-1,2-dichloroethene (trans-DCE)	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*
trans-1,3-dichloropropene	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*	4.99	*U*	*5*
trichloroethene (TCE)	0.99	*U*	*5*	0.99	*U*	*5*	0.99	*U*	*5*	0.99	*U*	*5*	0.99	*U*	*5*
trichlorofluoromethane	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
trichlorotrifluoroethane	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*	5	*U*	*5*
vinyl chloride	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*	1	*U*	*5*

Detected concentrations

FL = Laboratory Flag DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 14: VOCs in Soil Vapor

All data in µg/m³ Sample	SV-06			SV-07			SV-08			SV-09			SV-10		
U= Not Detected ≥ value Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01			2026-04-01		
VOCs, TO-15	Result	FL	DIL	Result	FL	DIL	Result	FL	DIL	Result	FL	DIL	Result	FL	DIL
1,1,1,2-tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
1,1,1-trichloroethane (TCA)	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
1,1-dichloroethane	5.02	U	5	5.02	U	5	5.02	U	5	5.02	U	5	5.02	U	5
1,1-dichloroethene (1,1-DCE)	1	U	5	1	U	5	1	U	5	1	U	5	1	U	5
1,2,4-trichlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
1,2,4-trimethylbenzene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
1,2-dibromoethane (EDB)	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
1,2-dichlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
1,2-dichloroethane	5.02	U	5	5.02	U	5	5.02	U	5	5.02	U	5	5.02	U	5
1,2-dichloropropane	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
1,2-dichlorotetrafluoroethane	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
1,3,5-trimethylbenzene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
1,3-butadiene	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
1,3-dichlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
1,4-dichlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
1,4-dioxane	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
2-hexanone (MBK)	4.99	U	5	4.99	U	5	11.2		5	4.99	U	5	4.99	U	5
4-ethyltoluene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
4-isopropyltoluene	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
4-methyl-2-pentanone (MIBK)	5.2		5	4.99	U	5	6.92		5	4.99	U	5	4.99	U	5
acetone	44.2		5	24.9		5	52.2		5	53.9		5	65.5		5
acrylonitrile	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
benzene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
benzyl chloride	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
bromoform	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
bromomethane	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
carbon disulfide	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
carbon tetrachloride	1	U	5	1	U	5	1	U	5	1	U	5	1	U	5
chlorobenzene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
chloroethane	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
chloroform	4.98	U	5	4.98	U	5	4.98	U	5	4.98	U	5	4.98	U	5
chloromethane	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
cis-1,2-dichloroethene (cis-DCE)	1	U	5	1	U	5	1	U	5	1	U	5	1	U	5
cis-1,3-dichloropropene	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
cyclohexane	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
dichlorodifluoromethane	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
ethanol	63.6		5	36.7		5	49.3		5	77.4		5	36.2		5
ethyl acetate	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
ethylbenzene	7.72		5	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
heptane	6.8		5	5	U	5	9.26		5	5	U	5	5.24		5
hexachlorobutadiene	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
hexane	23.7		5	16.7		5	22.4		5	17.5		5	25.5		5
isooctane	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
isopropyl alcohol	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
isopropylbenzene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
m,p-xylene	36.6		5	6.81		5	10.6		5	7.51		5	6.21		5
methyl ethyl ketone	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
methyl tert-butyl ether (MTBE)	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
methylene chloride	15	U	5	15	U	5	15	U	5	15	U	5	15	U	5
naphthalene	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
n-butylbenzene	5.23	U	5	5.23	U	5	5.23	U	5	5.23	U	5	5.23	U	5
o-xylene	11.1		5	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
propylene	19.3		5	5.01	U	5	20		5	5.01	U	5	605		20
sec-butylbenzene	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
styrene	4.98	U	5	4.98	U	5	4.98	U	5	4.98	U	5	4.98	U	5
tetrachloroethene (PCE)	6.44		5	11.4		5	3.9		5	3.66		5	3.46		5
tetrahydrofuran	18.4		5	14.2		5	17.7		5	18.2		5	13.3		5
toluene	8.17		5	5.88		5	19.8		5	7.16		5	5.31		5
trans-1,2-dichloroethene (trans-DCE)	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
trans-1,3-dichloropropene	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
trichloroethene (TCE)	0.99	U	5	0.99	U	5	0.99	U	5	0.99	U	5	0.99	U	5
trichlorofluoromethane	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
trichlorotrifluoroethane	5	U	5	5	U	5	5	U	5	5	U	5	5	U	5
vinyl chloride	1	U	5	1	U	5	1	U	5	1	U	5	1	U	5

Detected concentrations

FL = Laboratory Flag DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Vanguard Village I+II
BCP ID: C704063

Table 14: VOCs in Soil Vapor

All data in µg/m³ Sample	SV-11			SV-12			SV-13			SV-14		
U= Not Detected ≥ value Date	2026-04-01			2026-04-01			2026-04-01			2026-04-01		
VOCs, TO-15	Result	FL	DIL	Result	FL	DIL	Result	FL	DIL	Result	FL	DIL
1,1,1,2-tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,1-trichloroethane (TCA)	17.1		5	5	U	5	5	U	5	5	U	5
1,1,2,2-tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-dichloroethane	5.02	U	5	5.02	U	5	5.02	U	5	5.02	U	5
1,1-dichloroethene (1,1-DCE)	1	U	5	1	U	5	1	U	5	1	U	5
1,2,4-trichlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
1,2,4-trimethylbenzene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
1,2-dibromoethane (EDB)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-dichlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-dichloroethane	5.02	U	5	5.02	U	5	5.02	U	5	5.02	U	5
1,2-dichloropropane	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
1,2-dichlorotetrafluoroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,3,5-trimethylbenzene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
1,3-butadiene	5	U	5	5	U	5	5	U	5	5	U	5
1,3-dichlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
1,4-dichlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
1,4-dioxane	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
2-hexanone (MBK)	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
4-ethyltoluene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
4-isopropyltoluene	5	U	5	5	U	5	5	U	5	7.3		5
4-methyl-2-pentanone (MIBK)	5.49		5	7.94		5	4.99	U	5	4.99	U	5
acetone	29		5	24		5	33.7		5	30.6		5
acrylonitrile	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
benzene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
benzyl chloride	5	U	5	5	U	5	5	U	5	5	U	5
bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
bromoform	5	U	5	5	U	5	5	U	5	5	U	5
bromomethane	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
carbon disulfide	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
carbon tetrachloride	1	U	5	1	U	5	1	U	5	1	U	5
chlorobenzene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
chloroethane	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
chloroform	4.98	U	5	4.98	U	5	4.98	U	5	4.98	U	5
chloromethane	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
cis-1,2-dichloroethene (cis-DCE)	1	U	5	1	U	5	1	U	5	1	U	5
cis-1,3-dichloropropene	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
cyclohexane	4.99	U	5	4.99	U	5	4.99	U	5	6.33		5
dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
dichlorodifluoromethane	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
ethanol	50.3		5	47.5		5	44.6		5	53.5		5
ethyl acetate	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
ethylbenzene	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
heptane	5	U	5	5.08		5	5	U	5	5.65		5
hexachlorobutadiene	5	U	5	5	U	5	5	U	5	5	U	5
hexane	7.33		5	13		5	11.5		5	19.1		5
isooctane	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
isopropyl alcohol	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
isopropylbenzene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
m,p-xylene	6.81		5	4.99	U	5	5.47		5	5.86		5
methyl ethyl ketone	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
methyl tert-butyl ether (MTBE)	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
methylene chloride	15	U	5	15	U	5	15	U	5	15	U	5
naphthalene	5	U	5	5	U	5	5	U	5	5	U	5
n-butylbenzene	5.23	U	5	5.23	U	5	5.23	U	5	5.23	U	5
o-xylene	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
propylene	5.01	U	5	5.01	U	5	5.01	U	5	5.01	U	5
sec-butylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
styrene	4.98	U	5	4.98	U	5	4.98	U	5	4.98	U	5
tetrachloroethene (PCE)	7.05		5	2.37		5	5.19		5	3.9		5
tetrahydrofuran	5.92		5	5.01	U	5	14.5		5	13.2		5
toluene	5.76		5	5.01	U	5	5.01	U	5	5.01	U	5
trans-1,2-dichloroethene (trans-DCE)	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
trans-1,3-dichloropropene	4.99	U	5	4.99	U	5	4.99	U	5	4.99	U	5
trichloroethene (TCE)	0.99	U	5	0.99	U	5	0.99	U	5	0.99	U	5
trichlorofluoromethane	5	U	5	5	U	5	5	U	5	5	U	5
trichlorotrifluoroethane	5	U	5	5	U	5	5	U	5	5	U	5
vinyl chloride	1	U	5	1	U	5	1	U	5	1	U	5

Detected concentrations

FL = Laboratory Flag DL = Dilution NA = not available (addtional flags: B-in blank, D-diluted, E-estimated, J-approximate)

Table 15: Soil SCOs

All values in parts per million (ppm), except PFAS in parts per billion (ppb)

VOCs	UU SCO	RRU SCO	RCU SCO	RIU SCO	POG SCO
1,1,1-trichloroethane (TCA)	0.68	100	500	1,000	0.68
1,1-dichloroethane	0.27	47	240	240	0.27
1,1-dichloroethylene	0.24	0.98	5.1	5.1	0.24
1,2,4-Trimethylbenzene	5.9	100	500	1,000	5.9
1,2-dichlorobenzene	1.1	100	500	1,000	1.1
1,2-dichloroethane	0.02	5.8	30	30	0.02
1,3,5-trimethylbenzene	3.1	100	500	1,000	3.1
1,3-dichlorobenzene	2.6	38	280	280	2.6
1,4-dichlorobenzene	1.8	24	130	130	1.8
1,4-dioxane	0.1	5.7	36	36	0.1
2-butanone (MEK)	0.1	100	500	1,000	0.1
acetone	0.03	100	500	1,000	0.03
benzene	0.06	3.7	20	20	0.06
carbon tetrachloride	0.76	7.1	41	41	0.76
chlorobenzene	4.5	100	500	1,000	4.5
chloroform	0.37	24	180	180	0.37
cis-1,2-dichloroethylene (DCE)	0.19	41	500	590	0.19
ethyl benzene	1	76	390	390	1
isopropylbenzene	2.3	100	NA	NA	2.3
methyl tert-butyl ether (MTBE)	0.1	100	500	890	0.1
methylene chloride	0.05	81	500	1,000	0.05
n-butylbenzene	18	100	500	1,000	18
n-propylbenzene	5	100	500	1,000	5
o-xylene	0.26	100	500	1,000	1.2
p- & m- xylenes	0.26	100	500	1,000	1.2
p-isopropyltoluene	10	NA	NA	NA	10
sec-butylbenzene	25	100	500	1,000	25
tert-butylbenzene	11	100	500	1,000	11
tetrachloroethylene (PCE)	1.3	18	81	81	1.3
toluene	0.7	100	500	1,000	0.7
trans-1,2-dichloroethylene (DCE)	0.19	100	500	1,000	0.19
trichloroethylene (TCE)	0.47	6.4	54	54	0.47
vinyl chloride (VC)	0.03	0.48	7.1	7.1	0.03
xylenes, total	0.26	100	500	1,000	1.2

SVOCs	UU SCO	RRU SCO	RCU SCO	RIU SCO	POG SCO
1,4-dioxane	0.1	5.7	36	36	0.1
2-Methylphenol (o-cresol)	0.33	100	500	1,000	0.33
3&4-Methylphenol (m&p-cresol)	0.33	100	500	1,000	0.33
acenaphthene	20	100	500	1,000	98
acenaphthylene	100	100	500	1,000	365
aniline	0.04	8.1	8.1	8.1	0.04
anthracene	100	100	500	1,000	1,000
benzo(a)anthracene	1	1.4	37	37	1
benzo(a)pyrene	1	1	3.7	3.7	22
benzo(b)fluoranthene	1	1.4	37	37	2.1
benzo(g,h,i)perylene	0.64	4.9	47	78	1,000
benzo(k)fluoranthene	0.8	4.9	47	78	2
chrysene	1	4.9	47	78	1
dibenzo(a,h)anthracene	0.33	0.33	3.7	3.7	1,000
dibenzofuran	2.1	18	180	290	110
fluoranthene	85	100	500	1,000	1,000
fluorene	30	100	500	1,000	386
hexachlorobenzene	0.33	0.33	1.8	2.9	3.2
indeno(1,2,3-cd)pyrene	0.5	1.4	37	37	6.6
naphthalene	12	100	500	1,000	12
nitrobenzene	0.08	1.8	8.9	9	0.08
pentachlorophenol	0.8	1.3	6.9	7	0.08
phenanthrene	1.1	4.9	47	78	1,000
phenol	0.33	100	500	1,000	0.33
pyrene	64	100	500	1,000	1,000

Table 15: Soil SCOs

All values in parts per million (ppm), except PFAS in parts per billion (ppb)

Metals and Cyanide	UU SCO	RRU SCO	RCU SCO	RIU SCO	POG SCO
Arsenic	13	16	16	16	16
Barium	410	410	410	10,000	820
Beryllium	4.4	43	670	750	47
Cadmium	2.5	2.5	3.7	4.4	7.5
Chromium (hexavalent)	1	1	11	11	19
Chromium (trivalent)	30	110	700	2,000	NA
Copper	50	280	280	10,000	1,720
Lead	63	400	1,000	3,900	450
Manganese	1,600	2,000	10,000	10,000	2,000
Mercury	0.18	0.3	1.1	1	0.73
Nickel	30	320	320	5,900	130
Selenium	3.9	110	1,700	2,000	4
Silver	2	110	1,700	2,000	8.3
Zinc	109	6,600	10,000	10,000	2,480
Cyanide (total)	2.3	13	28	240	40

Pesticides	UU SCO	RRU SCO	RCU SCO	RIU SCO	POG SCO
4,4' -DDD	0.0033	5	33	33	14
4,4' -DDE	0.0033	3.4	22	22	9.3
4,4' -DDT	0.0033	3.8	27	27	135
a-BHC	0.0048	0.044	0.33	0.33	0.19
a-Chlordane	0.014	0.65	8.2	11	4.5
Aldrin	0.0048	0.044	0.33	0.33	0.19
b-BHC	0.021	0.18	1.8	2.9	0.09
d-BHC	0.04	100	500	1,000	0.1
Dieldrin	0.005	0.075	0.48	0.48	0.1
Endosulfan I	4.3	35	36	580	65
Endosulfan II	4.3	35	36	580	44
Endosulfan sulfate	4.3	35	36	580	47
Endrin	0.014	5.3	55	87	0.06
g-BHC	0.025	0.21	1	4	5
Heptachlor	0.013	0.53	5.1	5.1	0.38

PCBs	UU SCO	RRU SCO	RCU SCO	RIU SCO	POG SCO
Total PCBs	0.1	1	1	25	3.2

PFAS (1633)	UU Guidance	RRU Guidance
Perfluorooctanesulfonic Acid (PFOS)	0.88	44
Perfluorooctanoic acid (PFOA)	0.66	33

APPENDIX A – Proposed Development Plans

187 CLINTON ST.

PHASE 1B + 2



ZONING REGULATIONS		
MUNICIPALITY	CITY OF BINGHAMTON	
ZONED	"C-4" NEIGHBORHOOD COMMERCIAL DISTRICT	
PERMITTED USE	DWELLING, MULTIPLE-UNIT	
ITEM	**REQUIRED**	**PROPOSED**
MAX. LOT COVERAGE	70%	72%
MAX. BLDG. HEIGHT	45	60
MIN. FRONT SETBACK	0	0
MIN. SIDE SETBACK	0	0
MIN. REAR SETBACK	20	20
PARKING SPACES (PRIVATE)	292	292
HANDICAP (PRIVATE)	7	8
EV CHARGING (PRIVATE)	5 (HCR)	6
PARKING SPACES (RETAIL)	13	13
HANDICAP (RETAIL)	1	2
CODE ENFORCEMENT	CHRISTOPHER SCHLEIDER 38 HAWLEY STREET, BINGHAMTON NY 13901 607-772-7004	

#	KEY NOTES
1	PROVIDE STANDARD DUTY ASPHALT.
2	PROVIDE CONCRETE SIDEWALK.
3	PROVIDE LANDSCAPING.
4	PROVIDE LAWN TREATMENT.
5	PROVIDE HEAVY DUTY ASPHALT.
6	PROVIDE STORMWATER TREATMENT.
7	PROVIDE PAVERS AND LANDSCAPE PLANTERS. SEE LANDSCAPE DRAWINGS BY PASSERO FOR MORE INFORMATION.
8	PROVIDE 4" WHITE STRIPING AT DIMENSIONS SHOWN.
9	PROVIDE 4" WHITE STRIPING AT 45° ANGLE AT 2' ON CENTER.
10	PROVIDE HANDICAP PARKING SYMBOL.
11	PROVIDE EV PARKING SYMBOL.
12	PROVIDE EXTERIOR LOT LIGHTING.
13	PROVIDE PLAYGROUND AREA.
14	PROVIDE CHAIN LINK FENCE WITH PRIVACY SLATS.
15	PROVIDE W-BEAM GUIDE RAIL.
16	PROVIDE METAL HAND RAIL.
17	PROVIDE FENCED DUMPSTER AREA.
18	PROVIDE CONCRETE DRIVEWAY APRON AND DROP CURB.
19	PROVIDE CONCRETE CURB.
20	PROVIDE ADA COMPLIANT RAMP WITH DETECTABLE WARNING UNIT.
21	PROVIDE SIGN.
22	PROVIDE DOUBLE CHAIN LINK FENCE GATE WITH 16' OPENING.
23	PROVIDE CONCRETE PARKING/ACCESS PAD.
24	PROVIDE CONCRETE PAD FOR TRANSFORMER AND ELECTRIC GENERATOR.
25	PROVIDE GRAVEL AREA.
26	PROVIDE RETAINING WALL.
27	PROVIDE RETAINING WALL.
28	PROVIDE MONUMENT SIGNING.



1 C-201 **SITE PLAN** SCALE: 1" = 50'

NORTH

SITE PLAN LEGEND:	
STANDARD DUTY ASPHALT PAVEMENT	
HEAVY DUTY ASPHALT PAVEMENT	
BUILDING	
CONCRETE PAVEMENT	
GRASS AREA	
WATER TREATMENT AREA WITH PLANTING	
LANDSCAPE AREA	
HARDSCAPE AREA	
GRAVEL AREA	
CONCRETE CURB	
PAVEMENT STRIPING	
CHAIN LINK FENCE	X
GUARDRAIL	
HANDICAP SYMBOL	
EV PARKING SYMBOL	
SIGN	
LIGHT POLE	
PARKING SPACE COUNT	#

EXISTING CONDITIONS LEGEND:	
IRON ROD	
IRON PIPE	
SET IRON ROD	SIR
MAG NAIL	MAG
SET METAL SURVEY MARKER	SSM
CONCRETE MONUMENT	CMON
MONITORING WELL	MW
METAL FENCE POST	MFP
WOODEN FENCE POST	WFP
GAS VALVE	GV
WATER VALVE	WV
POWER POLE	
FIRE HYDRANT	FH
POST INDICATOR VALVE	PIV
MANHOLE	MH
ELECTRIC MANHOLE	EMH
TELEPHONE MANHOLE	TMH
TRAFFIC SIGNAL BOX	TSB
AIR CONDITIONING UNIT	AC
ELECTRIC METER	EM
GAS METER	GM
SQUARE CATCH BASIN	CB
ROUND CATCH BASIN	CB
BOLLARD	
TRAFFIC SIGN	
FINISH FLOOR ELEVATION	FFE
PROPERTY LINE	
FENCE LINE	X
WATER LINE	W
STORM SEWER LINE	ST
SANITARY SEWER LINE	SA
GAS LINE	G
OVERHEAD POWER POLE LINE	OH
GROUND CONTOUR	855
RAILROAD TRACK	
GRAVEL AREA	
CONCRETE AREA	
PAVEMENT AREA	
TREE	

0' 25' 50' 100'

SCALE: 1" = 50'

NOT FOR CONSTRUCTION

No.	Revision	Date

Project Name

VANGUARD VILLAGE

BINGHAMTON, NY 13905

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS
860 Hooper Road
Endwell, New York 13760
Tel: 607.231.6600
Fax: 607.231.6650
Email: mail@delta-eas.com
www.delta-eas.com
CERTIFICATE OF AUTHORIZATION#: 019598

Seal

Phase: PLANNING BOARD

Project No.: 2023.678.001

UNAUTHORIZED ALTERATION OF THIS DRAWING IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, SECTION 7209, SUBDIVISION 2.

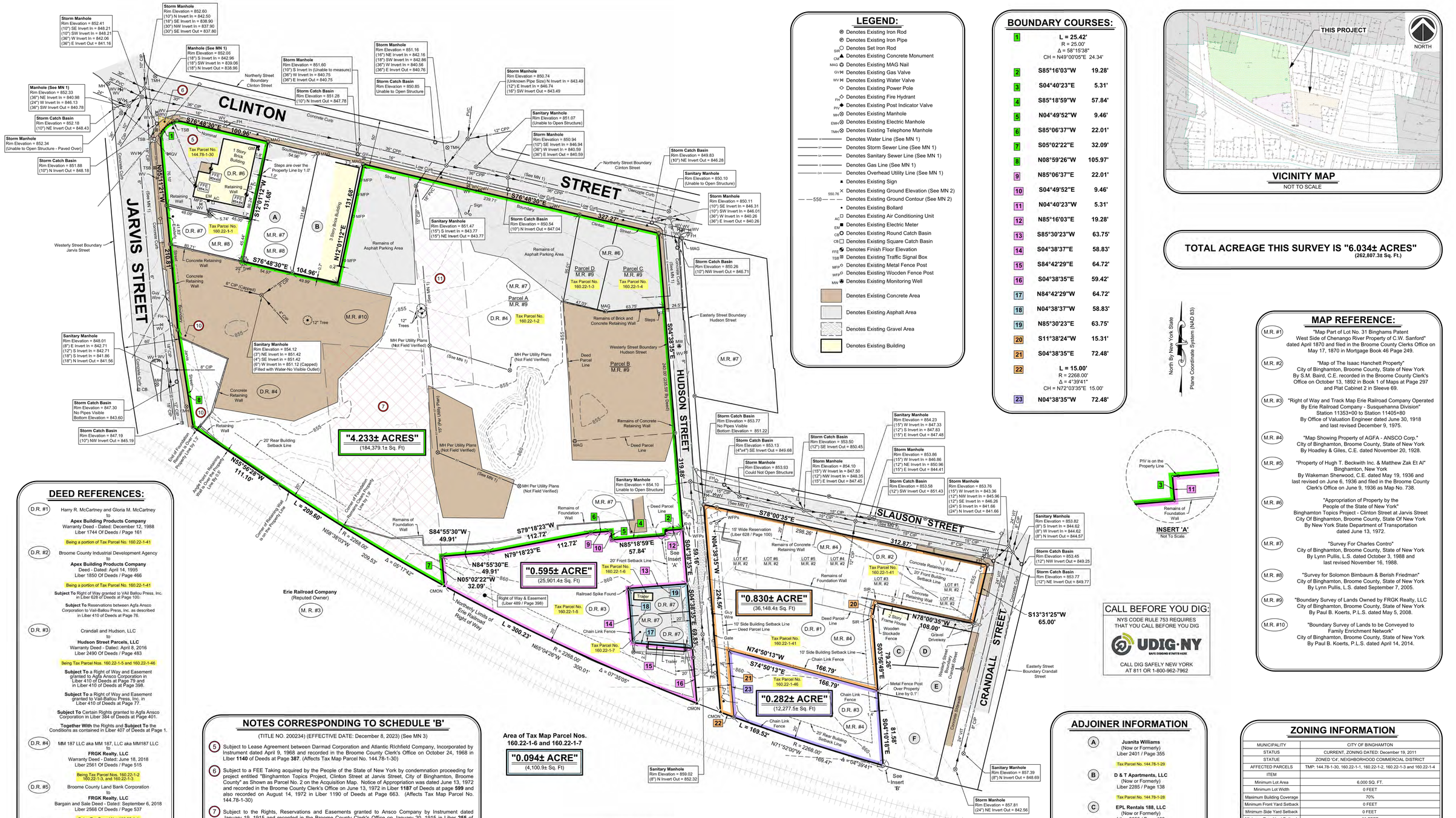
Date: APRIL 7, 2026

Drawing Title

SITE PLAN

Drawing No.

C-201



LEGEND:

- Denotes Existing Iron Rod
- Denotes Existing Iron Pipe
- SIR Denotes Set Iron Rod
- CM Denotes Existing Concrete Monument
- MAG Denotes Existing MAG Nail
- GV Denotes Existing Gas Valve
- WV Denotes Existing Water Valve
- Denotes Existing Power Pole
- FH Denotes Existing Fire Hydrant
- PIV Denotes Existing Post Indicator Valve
- MH Denotes Existing Manhole
- EMH Denotes Existing Electric Manhole
- TMH Denotes Existing Telephone Manhole
- W Denotes Water Line (See MN 1)
- ST Denotes Storm Sewer Line (See MN 1)
- SA Denotes Sanitary Sewer Line (See MN 1)
- G Denotes Gas Line (See MN 1)
- OH Denotes Overhead Utility Line (See MN 1)
- Denotes Existing Sign
- 550.76 Denotes Existing Ground Elevation (See MN 2)
- 550 Denotes Existing Ground Contour (See MN 2)
- Denotes Existing Bollard
- AC Denotes Existing Air Conditioning Unit
- EM Denotes Existing Electric Meter
- CB Denotes Existing Round Catch Basin
- CB Denotes Existing Square Catch Basin
- FFE Denotes Finish Floor Elevation
- TSB Denotes Existing Traffic Signal Box
- MFP Denotes Existing Metal Fence Post
- WFP Denotes Existing Wooden Fence Post
- MW Denotes Existing Monitoring Well
- Denotes Existing Concrete Area
- Denotes Existing Asphalt Area
- Denotes Existing Gravel Area
- Denotes Existing Building

BOUNDARY COURSES:

1	L = 25.42' R = 25.00' Δ = 58°15'38" CH = N49°00'05"E	24.34'
2	S85°16'03"W	19.28'
3	S04°40'23"E	5.31'
4	S85°18'59"W	57.84'
5	N04°49'52"W	9.46'
6	S85°06'37"W	22.01'
7	S05°02'22"E	32.09'
8	N08°59'26"W	105.97'
9	N85°06'37"E	22.01'
10	S04°49'52"E	9.46'
11	N04°40'23"W	5.31'
12	N85°16'03"E	19.28'
13	S85°30'23"W	63.75'
14	S04°38'37"E	58.83'
15	S84°42'29"E	64.72'
16	S04°38'35"E	59.42'
17	N84°42'29"W	64.72'
18	N04°38'37"W	58.83'
19	N85°30'23"E	63.75'
20	S11°38'24"W	15.31'
21	S04°38'35"E	72.48'
22	L = 15.00' R = 2268.00' Δ = 4°39'41" CH = N72°03'35"E	15.00'
23	N04°38'35"W	72.48'

VICINITY MAP

NOT TO SCALE

TOTAL ACREAGE THIS SURVEY IS "6.034± ACRES"
(262,807.3± Sq. Ft.)

North By New York State Plane Coordinate System (NAD 83)

MAP REFERENCE:

- M.R. #1 "Map Part of Lot No. 31 Binghams Patent West Side of Chenango River Property of C.W. Sanford" dated April 1870 and filed in the Broome County Clerks Office on May 17, 1870 in Mortgage Book 46 Page 249.
- M.R. #2 "Map of The Isaac Hanchett Property" City of Binghamton, Broome County, State of New York By S.M. Baird, C.E. recorded in the Broome County Clerk's Office on October 13, 1892 in Book 1 of Maps at Page 297 and Plat Cabinet 2 in Sleeve 69.
- M.R. #3 "Right of Way and Track Map Erie Railroad Company Operated By Erie Railroad Company - Susquehanna Division" Station 11353+00 to Station 11405+80 By Office of Valuation Engineer dated June 30, 1918 and last revised December 9, 1975.
- M.R. #4 "Map Showing Property of AGFA - ANSCO Corp." City of Binghamton, Broome County, State of New York By Hoadley & Giles, C.E. dated November 20, 1928.
- M.R. #5 "Property of Hugh T. Beckwith Inc. & Matthew Zak Et Al" Binghamton, New York By Wakeman Sherwood, C.E. dated May 19, 1936 and last revised on June 6, 1936 and filed in the Broome County Clerk's Office on June 9, 1936 as Map No. 738.
- M.R. #6 "Appropriation of Property by the People of the State of New York" Binghamton Topics Project - Clinton Street at Jarvis Street City Of Binghamton, Broome County, State Of New York By New York State Department of Transportation dated June 13, 1972.
- M.R. #7 "Survey For Charles Contro" City of Binghamton, Broome County, State of New York By Lynn Pullis, L.S. dated October 3, 1988 and last revised November 16, 1988.
- M.R. #8 "Survey for Solomon Birnbaum & Berish Friedman" City of Binghamton, Broome County, State of New York By Lynn Pullis, L.S. dated September 7, 2005.
- M.R. #9 "Boundary Survey of Lands Owned by FRGK Realty, LLC City of Binghamton, Broome County, State of New York By Paul B. Koerts, P.L.S. dated May 5, 2008.
- M.R. #10 "Boundary Survey of Lands to be Conveyed to Family Enrichment Network" City of Binghamton, Broome County, State of New York By Paul B. Koerts, P.L.S. dated April 14, 2014.

DEED REFERENCES:

- D.R. #1 Harry R. McCartney and Gloria M. McCartney to **Apex Building Products Company** Warranty Deed - Dated: December 12, 1988 Liber 1744 Of Deeds / Page 161
  Being a portion of Tax Parcel No. 160.22-1-41
- D.R. #2 Broome County Industrial Development Agency to **Apex Building Products Company** Deed - Dated: April 14, 1995 Liber 1850 Of Deeds / Page 466
  Being a portion of Tax Parcel No. 160.22-1-41
  Subject To Right of Way granted to Vail Ballou Press, Inc. in Liber 628 of Deeds at Page 100.
  Subject To Reservations between Agfa Ansco Corporation to Vail-Ballou Press, Inc. as described in Liber 410 of Deeds at Page 76.
- D.R. #3 Crandall and Hudson, LLC to **Hudson Street Parcels, LLC** Warranty Deed - Dated: April 8, 2016 Liber 2490 Of Deeds / Page 483
  Being Tax Parcel Nos. 160.22-1-5 and 160.22-1-46
  Subject To a Right of Way and Easement granted to Agfa Ansco Corporation in Liber 410 of Deeds at Page 79 and in Liber 410 of Deeds at Page 388.
  Subject To a Right of Way and Easement granted to Vail-Ballou Press, Inc. in Liber 410 of Deeds at Page 77.
  Subject To Certain Rights granted to Agfa Ansco Corporation in Liber 384 of Deeds at Page 401.
  Together With the Rights and **Subject To** the Conditions as contained in Liber 407 of Deeds at Page 1.
- D.R. #4 MM 187 LLC aka MM 187, LLC aka MM187 LLC to **FRGK Realty, LLC** Warranty Deed - Dated: June 18, 2018 Liber 2561 Of Deeds / Page 515
  Being Tax Parcel Nos. 160.22-1-2 160.22-1-3, and 160.22-1-3
- D.R. #5 Broome County Land Bank Corporation to **FRGK Realty, LLC** Bargain and Sale Deed - Dated: September 6, 2018 Liber 2568 Of Deeds / Page 537
  Being Tax Parcel No. 160.22-1-1
- D.R. #6 NET2000 Computers LLC to **FRGK Realty, LLC** Warranty Deed - Dated: September 20, 2021 Liber 2665 Of Deeds / Page 94
  Being Tax Parcel No. 144.78-1-30
- D.R. #7 The County of Broome to **Benjamin Durham** Deed - Dated: May 4, 2022 Liber 2690 Of Deeds / Page 120
  Being Tax Parcel Nos. 160.22-1-6 and 160.22-1-7

NOTES CORRESPONDING TO SCHEDULE 'B'

(TITLE NO. 200234) (EFFECTIVE DATE: December 8, 2023) (See MN 3)

5. Subject to Lease Agreement between Darmad Corporation and Atlantic RIchfield Company, Incorporated by Instrument dated April 9, 1968 and recorded in the Broome County Clerk's Office on October 24, 1968 in LIber **1140** of Deeds at Page **387**. (Affects Tax Map Parcel No. 144.78-1-30)
6. Subject to a FEE Taking acquired by the People of the State of New York by condemnation proceeding for project entitled "Binghamton Topics Project, Clinton Street at Jarvis Street, City of Binghamton, Broome County" as Shown as Parcel No. 2 on the Acquisition Map. Notice of Appropriation was dated June 13, 1972 and recorded in the Broome County Clerk's Office on June 13, 1972 in Liber **1187** of Deeds at page **599** and also recorded on August 14, 1972 in Liber 1190 of Deeds at Page 663. (Affects Tax Map Parcel No. 144.78-1-30)
7. Subject to the Rights, Reservations and Easements granted to Ansco Company by Instrument dated January 19, 1915 and recorded in the Broome County Clerk's Office on January 20, 1915 in Liber **255** of Deeds at Page **419**. (Affects Tax Map Parcel No. 160.22-1-2)
8. Subject to the Reservations between Agfa Ansco Corporation and Vail Ballou Press, Inc. by Instrument dated November 14, 1930 and recorded in the Broome County Clerk's Office on February 23, 1929 in Liber 391 of Deeds at Page 436. (May Affect Tax Map Parcel No. 160.22-1-2 - Not Plotted Hereon)
9. Subject to the Reservations between Agfa Ansco Corporation and Vail Ballou Press, Inc. by Instrument dated November 19, 1930 and recorded in the Broome County Clerk's Office on November 21, 1930 in Liber 410 of Deeds at Page 77. (May Affect Tax Map Parcel No. 160.22-1-2 - Not Plotted Hereon)
10. Subject to Easements granted to the State of New York by Instrument dated July 1, 1935 and recorded in the Broome County Clerk's Office on July 2, 1935 in Liber 455 of Deeds at Page 49. (Affects Tax Map Parcel No. 160.22-1-2)
11. Subject to the Reservations between The City of Binghamton and Vail Ballou Press, Inc. by Instrument dated June 10, 1955 and recorded in the Broome County Clerk's Office on June 22, 1955 in Liber 899 of Deeds at Page 154. (Affects Tax Map Parcel No. 160.22-1-2 - Not Plotted Hereon)
12. Terms, Conditions and Provisions as contained in unrecorded Agreements dated November 22, 1905. Said unrecorded Agreements are mentioned by Instrument recorded in the Broome County Clerk's Office in Liber 1165 of Deeds at Page 366. (Affects Tax Map Parcel No. 160.22-1-2 - Not Plotted Hereon)

MISCELLANEOUS NOTES:

- MN 1 Underground facilities, structures and utilities have been placed on this drawing from field locations, where visible or from recorded drawings provided to the undersigned. Therefore, locations should be considered approximate only. There may be other facilities or utilities, the existence of which are not known: for this reason, UDig NY shall be contacted a minimum of 48 hours prior to any underground excavation.
- MN 2 Elevations are tied into the North American Vertical Datum of 1988 (NAVD 88). Elevations shown are based on field measurements. Contours are merely interpolation and should be considered as such only.
- MN 3 Title Report No. 200234 by Stewart Title Insurance Company bearing an effective date of December 8, 2023 was provided at the time of this survey This title report covered Deed References #3, #4 and #5, being Tax Map Parcel Nos. 144.78-1-30, 160.22-1-1, 160.22-1-2, 160.22-1-3, 160.22-1-3 and 160.22-1-4.
- MN 4 No Abstract of Title was provided for Tax Map Parcel Nos. 160.22-1-41 and 160.22-1-46 at the time of this survey, which may contain specific title information not shown hereon.

ADJOINER INFORMATION

- A **Juanita Williams** (Now or Formerly) Liber 2401 / Page 355 — Tax Parcel No. 144.78-1-29
- B **D & T Apartments, LLC** (Now or Formerly) Liber 2285 / Page 138 — Tax Parcel No. 144.78-1-28
- C **EPL Rentals 188, LLC** (Now or Formerly) Liber 2655 / Page 469 — Tax Parcel No. 160.22-1-42
- D **Patricia Alikokas and Patricia Alikokas,** as Trustee for Anastasia Alexia Garroway (Now or Formerly) Liber 2033 / Page 96 — Tax Parcel No. 160.22-1-43
- E **Eagle Properties Corp.** (Now or Formerly) Liber 1835 / Page 185 — Tax Parcel No. 160.22-1-44
- F **Okaloosa Sands, LLC** (Now or Formerly) Liber 2490 / Page 490 — Tax Parcel No. 160.22-1-45

ZONING INFORMATION

MUNICIPALITY	CITY OF BINGHAMTON
STATUS	CURRENT, ZONING DATED: December 19, 2011
STATUE	ZONED 'C4', NEIGHBORHOOD COMMERCIAL DISTRICT
AFFECTED PARCELS	TMP: 144.78-1-30, 160.22-1-1, 160.22-1-2, 160.22-1-3 and 160.22-1-4
ITEM	
Minimum Lot Area	6,000 SQ. FT.
Minimum Lot Width	0 FEET
Maximum Building Coverage	70%
Minimum Front Yard Setback	0 FEET
Minimum Side Yard Setback	0 FEET
Minimum Rear Yard Setback	20 FEET
Maximum Building Hsight	45 FEET
STATUE	ZONED 'I-2', LIGHT AND MEDIUM INDUSTRIAL DISTRICT
AFFECTED PARCELS	TMP: 160.22-1-5, 160.22-1-6, 160.22-1-7, 160.22-1-46 and 160.22-1-41
ITEM	
Minimum Lot Area	6,000 SQ. FT.
Minimum Lot Width	50 FEET
Maximum Building Coverage	75%
Minimum Front Yard Setback	20 FEET
Minimum Side Yard Setback	10 FEET + 5 FEET Per 15 Feet of Building Height
Minimum Rear Yard Setback	20 FEET
Maximum Building Hsight	65 FEET
Source Information	Christopher Schleider, Code Enforcement Officer
Address	Binghamton City Hall, 38 Hawley Street, Binghamton, NY 13901
Phone	(607)772-7004
Notes	Hours: 9:00 am - 5:00 pm, Monday - Friday Closed Weekends And Holidays



INSERT 'A'
Not To Scale



INSERT 'B'
Not To Scale

CALL BEFORE YOU DIG:
NYS CODE RULE 753 REQUIRES THAT YOU CALL BEFORE YOU DIG
UDIG-NY
CALL DIG SAFELY NEW YORK AT 811 OR 1-800-962-7962

SCALE: 1" = 40 FEET

40 0 40 80 120

Unauthorized Alteration Or Addition To A Survey Map Bearing A Licensed Land Surveyor's Seal Is A Violation Of Section 7209-2, Of The New York State Education Law.

Only Copies From The Original Of This Survey Marked With The Land Surveyor's Signature And An Original Embossed Or Ink Seal Shall Be Considered Valid True Copies.

TO: The Metro Group Properties, Inc.; BellRow Title Agency; Stewart Title Insurance Company, their assigns and any future lender

"Boundary and Topographic Survey"

NO.	DATE	REVISION	BY	NO.	DATE	REVISION	BY

THE UNDERSIGNED HEREBY CERTIFIES THAT THIS IS AN ACCURATE MAP OF AN ACTUAL FIELD SURVEY DATED; February 27, 2024 AND THAT BOTH MAP AND SURVEY ARE CORRECT.

BRIAN J. BUSH L.S. #051072

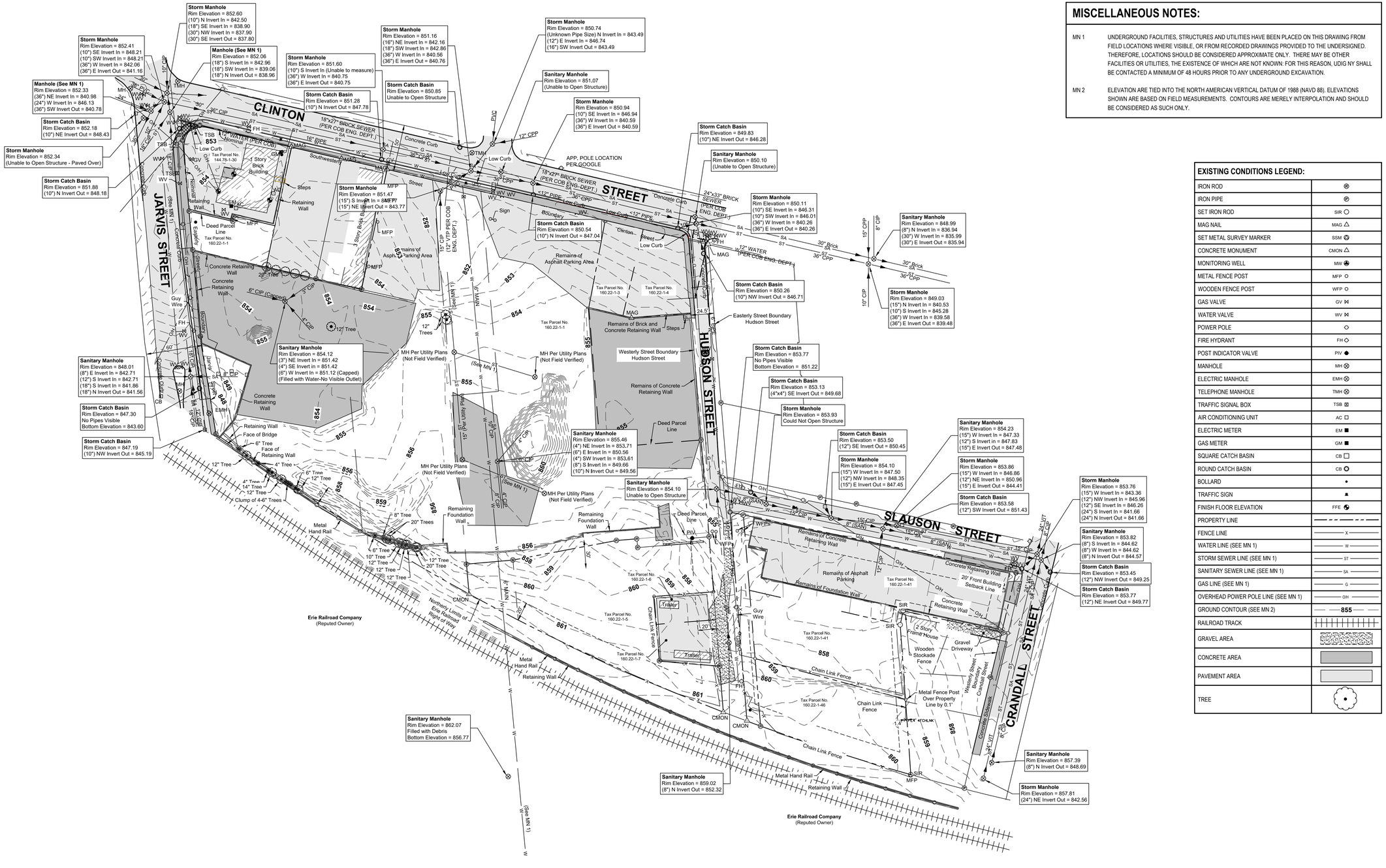
STATE OF NEW YORK * BRIAN JAMES BUSH * 051072 LICENSED LAND SURVEYOR

Lands of
Apex Building Company, Benjamin Durham, Hudson Street Parcels, LLC, & FRGK Realty, LLC
Jarvis Street, Clinton Street, Hudson Street, Slauson Street and Crandall Street
City Of Binghamton - Broome County - State of New York

DELTA
ENGINEERS, ARCHITECTS, & LAND SURVEYORS
860 Hooper Road, Endwell, NY 13760
Tel: 607.231.6600
Fax: 607.231.6650
Website: www.delta-eas.com

Designed by:	N/A
Drawn by:	S. Pickett
Reviewed by:	M. Frailey
Date:	February 27, 2024
Last Revised:	
Scale:	1" = 40 Feet
Project Number:	2023.678.001

SHEET 1 OF 1



MISCELLANEOUS NOTES:

MN 1 UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLACED ON THIS DRAWING FROM FIELD LOCATIONS WHERE VISIBLE, OR FROM RECORDED DRAWINGS PROVIDED TO THE UNDERSIGNED. THEREFORE, LOCATIONS SHOULD BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHER FACILITIES OR UTILITIES, THE EXISTENCE OF WHICH ARE NOT KNOWN: FOR THIS REASON, UDIG NY SHALL BE CONTACTED A MINIMUM OF 48 HOURS PRIOR TO ANY UNDERGROUND EXCAVATION.

MN 2 ELEVATION ARE TIED INTO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). ELEVATIONS SHOWN ARE BASED ON FIELD MEASUREMENTS. CONTOURS ARE MERELY INTERPOLATION AND SHOULD BE CONSIDERED AS SUCH ONLY.

EXISTING CONDITIONS LEGEND:

IRON ROD	⊗
IRON PIPE	⊗
SET IRON ROD	SIR ○
MAG NAIL	MAG △
SET METAL SURVEY MARKER	SSM ⊗
CONCRETE MONUMENT	CMON △
MONITORING WELL	MW ⊗
METAL FENCE POST	MFP ○
WOODEN FENCE POST	WFP ○
GAS VALVE	GV ⋈
WATER VALVE	WV ⋈
POWER POLE	○
FIRE HYDRANT	FH ⬡
POST INDICATOR VALVE	PIV ⬟
MANHOLE	MH ⊗
ELECTRIC MANHOLE	EMH ⊗
TELEPHONE MANHOLE	TMH ⊗
TRAFFIC SIGNAL BOX	TSB ⊠
AIR CONDITIONING UNIT	AC ☐
ELECTRIC METER	EM ■
GAS METER	GM ■
SQUARE CATCH BASIN	CB ☐
ROUND CATCH BASIN	CB ○
BOLLARD	•
TRAFFIC SIGN	▲
FINISH FLOOR ELEVATION	FFE
PROPERTY LINE	———
FENCE LINE	——— X ———
WATER LINE (SEE MN 1)	——— W ———
STORM SEWER LINE (SEE MN 1)	——— ST ———
SANITARY SEWER LINE (SEE MN 1)	——— SA ———
GAS LINE (SEE MN 1)	——— G ———
OVERHEAD POWER POLE LINE (SEE MN 1)	——— OH ———
GROUND CONTOUR (SEE MN 2)	— 855 —
RAILROAD TRACK	
GRAVEL AREA	
CONCRETE AREA	
PAVEMENT AREA	
TREE	

0' 25' 50' 100'

SCALE: 1" = 50'

1 C-101 **EXISTING CONDITIONS PLAN**

SCALE: 1" = 50'

NORTH

NOT FOR CONSTRUCTION

No.	Revision	Date

Project Name

VANGUARD VILLAGE

BINGHAMTON, NY 13905

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS
860 Hooper Road
Endwell, New York 13760
Tel: 607.231.6600
Fax: 607.231.6650
Email: mail@delta-eas.com
www.delta-eas.com
CERTIFICATE OF AUTHORIZATION#: 019598

Seal

Phase: PLANNING BOARD

Project No.: 2023.678.001

UNAUTHORIZED ALTERATION OF THIS DRAWING IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, SECTION 7209, SUBDIVISION 2.

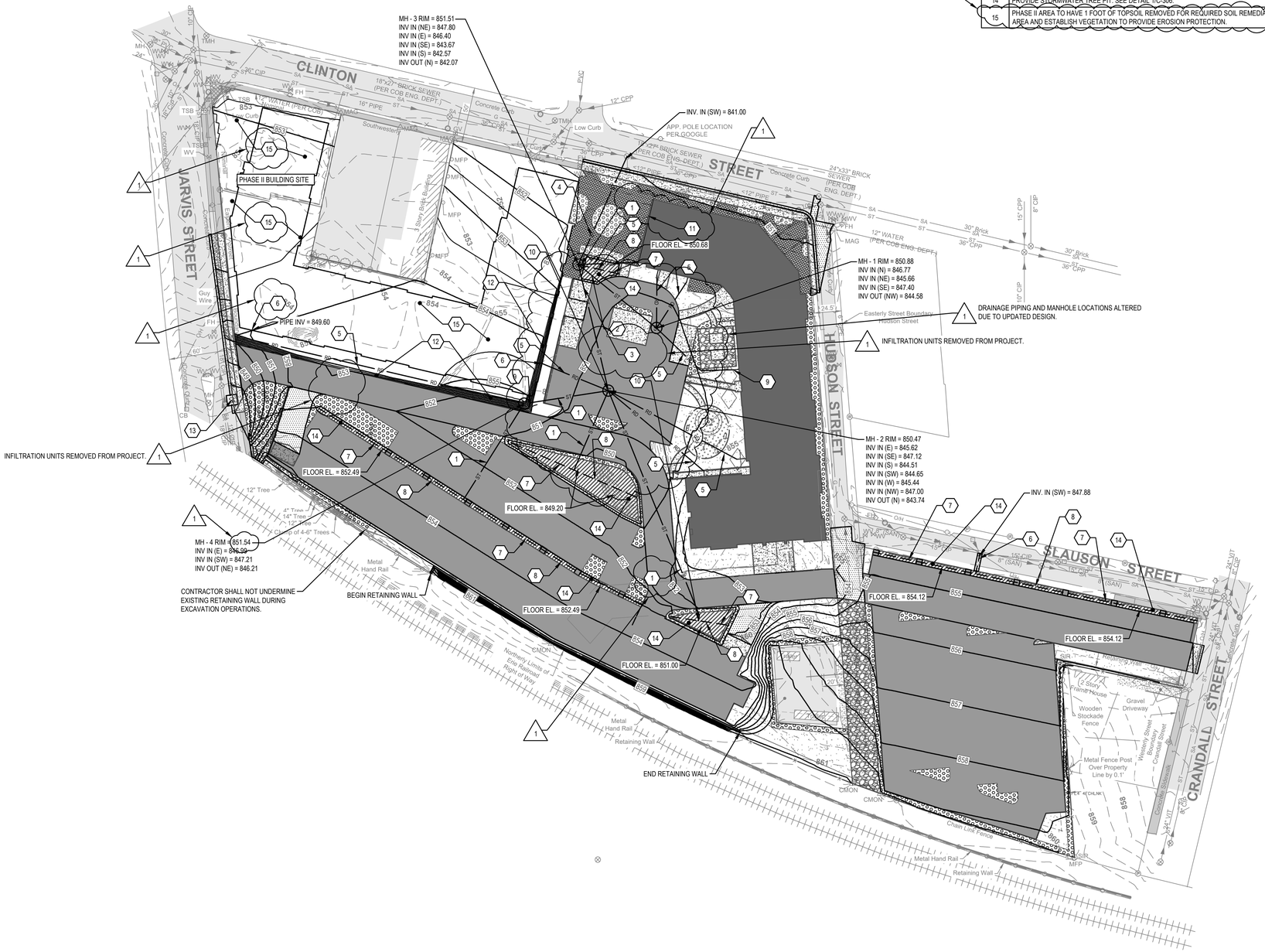
Date: APRIL 7, 2026

Drawing Title

EXISTING CONDITIONS PLAN

Drawing No.

C-101



#	KEY NOTES
1	PROVIDE 12" SMOOTH INTERIOR CORRUGATED PLASTIC PIPE. SEE DETAIL3/C-302.
2	PROVIDE 15" SMOOTH INTERIOR CORRUGATED PLASTIC PIPE. SEE DETAIL 3/C-302.
3	PROVIDE 18" SMOOTH INTERIOR CORRUGATED PLASTIC PIPE. SEE DETAIL 3/C-302.
4	PROVIDE 24" SMOOTH INTERIOR CORRUGATED PLASTIC PIPE. SEE DETAIL 3/C-302.
5	PROVIDE 6" SCHEDULE 40 PVC PIPE. SEE DETAIL 3/C-302.
6	PROVIDE 6" SCHEDULE TO PVC PIPE AND CAP END FOR FUTURE CONNECTION. SEE DETAIL 3/C-302.
7	PROVIDE 12" PERFORATED UNDERDRAIN PIPE. SEE DETAIL 1/C-306.
8	PROVIDE STAND PIPE FOR STORMWATER TREATMENT. SEE DETAIL 1/C-306.
9	PROVIDE 4' STORMWATER MANHOLE. SEE DETAIL 7/C-302.
10	PROVIDE 6' STORMWATER MANHOLE. SEE DETAIL 7/C-302.
11	PROVIDE TRENCH DRAIN WITH ADA COMPLIANT GRATE. SEE DETAIL 1/C-309.
12	GRADE BETWEEN PROPOSED ASPHALT AND PHASE II BUILDING SITE AT 2:1 (H:V) SLOPE MAXIMUM.
13	REMOVE EXISTING CURB BOX GRATE AND REPLACE WITH A #3 GRATE. SEE DETAIL 2/C-306.
14	PROVIDE STORMWATER TREE PIT. SEE DETAIL 1/C-306.
15	PHASE II AREA TO HAVE 1 FOOT OF TOPSOIL REMOVED FOR REQUIRED SOIL REMEDIATION. SEED AREA AND ESTABLISH VEGETATION TO PROVIDE EROSION PROTECTION.

SITE PLAN LEGEND:	
STANDARD DUTY ASPHALT PAVEMENT	
HEAVY DUTY ASPHALT PAVEMENT	
BUILDING	
CONCRETE PAVEMENT	
WATER TREATMENT AREA WITH PLANTING	
LANDSCAPE AREA	
HARDSCAPE AREA	
GRAVEL AREA	
CONCRETE CURB	
STORM PIPE	ST
UNDERDRAIN PIPE	
ROOFDRAIN PIPE	RD
STORMWATER MANHOLE	ST
STORMWATER STAND PIPE	
EV PARKING SYMBOL	
HANDICAP SYMBOL	
INVERT ELEVATION	INV.

EXISTING CONDITIONS LEGEND:	
IRON ROD	
IRON PIPE	
SET IRON ROD	SIR
MAG NAIL	MAG
SET METAL SURVEY MARKER	SSM
CONCRETE MONUMENT	CMON
MONITORING WELL	MW
METAL FENCE POST	MFP
WOODEN FENCE POST	WFP
GAS VALVE	GV
WATER VALVE	WV
POWER POLE	
FIRE HYDRANT	FH
POST INDICATOR VALVE	PIV
MANHOLE	MH
ELECTRIC MANHOLE	EMH
TELEPHONE MANHOLE	TMH
TRAFFIC SIGNAL BOX	TSB
AIR CONDITIONING UNIT	AC
ELECTRIC METER	EM
GAS METER	GM
SQUARE CATCH BASIN	CB
ROUND CATCH BASIN	CB
BOLLARD	
TRAFFIC SIGN	
FINISH FLOOR ELEVATION	FFE
PROPERTY LINE	
FENCE LINE	X
WATER LINE	W
STORM SEWER LINE	ST
SANITARY SEWER LINE	SA
GAS LINE	G
OVERHEAD POWER POLE LINE	OH
GROUND CONTOUR	855
RAILROAD TRACK	
GRAVEL AREA	
CONCRETE AREA	
PAVEMENT AREA	
TREE	

1 C-203 **GRADING AND DRAINAGE PLAN**
SCALE: 1" = 50'

NORTH

0' 25' 50' 100'
SCALE: 1" = 50'

HCR SUBMISSION SET

No.	Revision	Date
	HCR SUBMISSION SET	02/27/26
1	DRAWING UPDATES	01/23/26
	PERMIT SET	08/15/25
	HCR SUBMISSION SET	07/18/25
	DESIGN DEVELOPMENT SET	04/18/25

Project Name

VANGUARD VILLAGE

BINGHAMTON, NY 13905

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS
860 Hooper Road
Endwell, New York 13760
Tel: 607.231.6600
Fax: 607.231.6650
Email: mail@delta-eas.com
www.delta-eas.com
CERTIFICATE OF AUTHORIZATION#: 019598

Seal

STATE OF NEW YORK · ANTHONY ROCCO PANCARI · 079303 · LICENSED PROFESSIONAL ENGINEER
2026.02.26
REGISTRATION EXPIRATION: 09.30.2026

Phase
PERMIT DRAWING SET

Project No.
2023.678.001

UNAUTHORIZED ALTERATION OF THIS DRAWING IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, SECTION 7209, SUBDIVISION 2.

Date
FEBRUARY 27, 2026

Drawing Title

GRADING AND DRAINAGE PLAN

Drawing No.

C-203

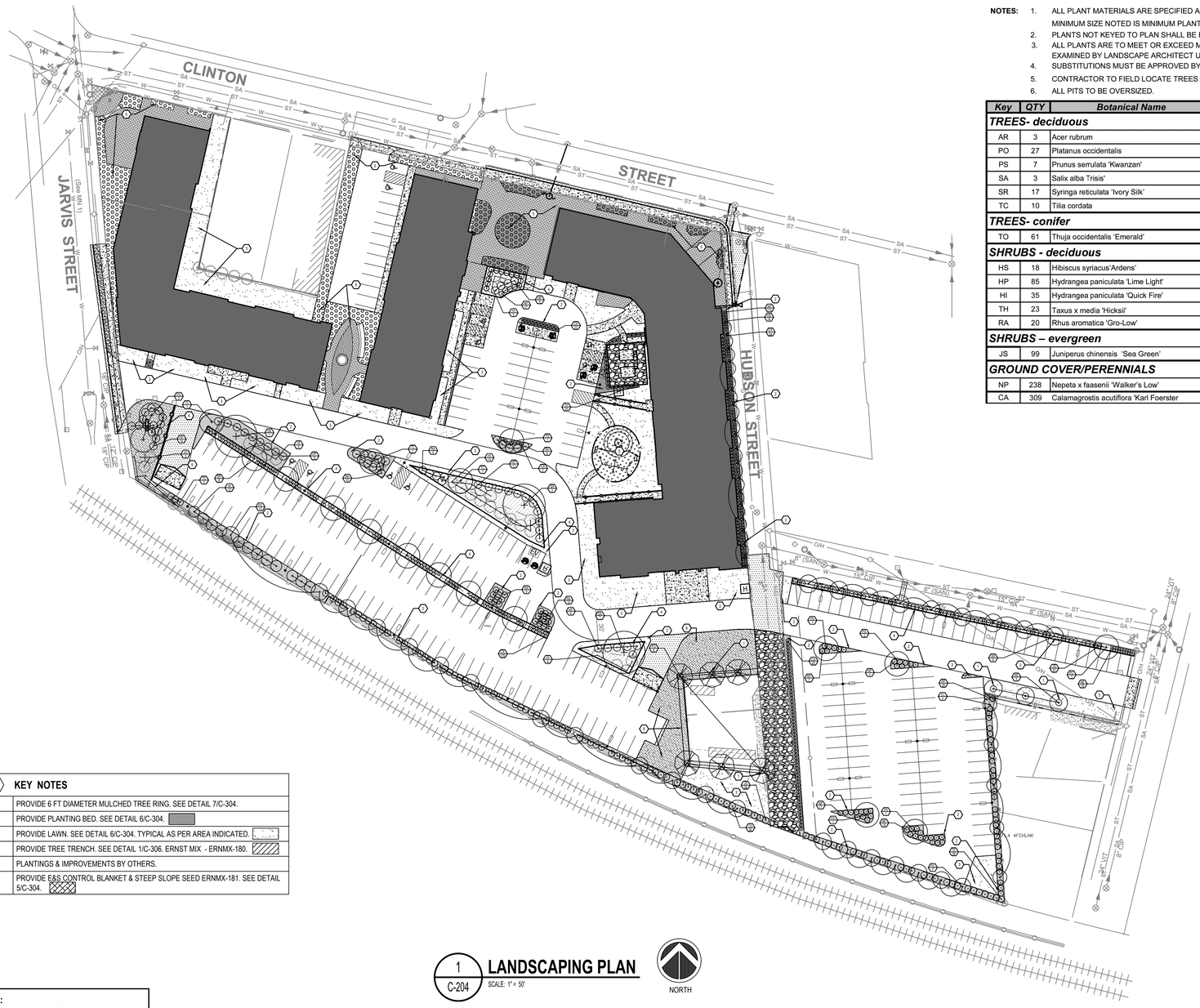
8/14/2025

PLANT MATERIAL SCHEDULE

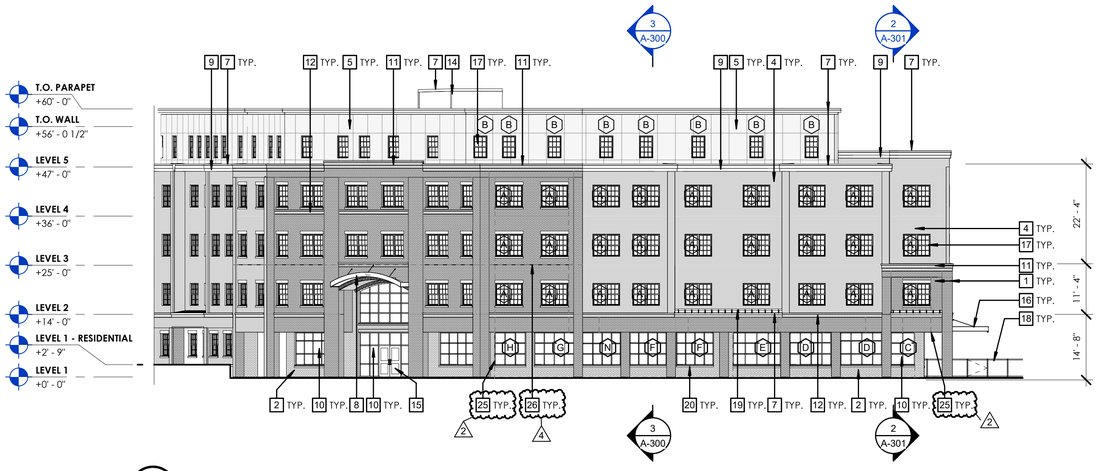
Clinton Street

NOTES:
1. ALL PLANT MATERIALS ARE SPECIFIED ACCORDING TO LATEST AAN EDITION OF AMERICAN STANDARDS FOR NURSERY STOCK. MINIMUM SIZE NOTED IS MINIMUM PLANTED SIZE.
2. PLANTS NOT KEYED TO PLAN SHALL BE FIELD LOCATED BY LANDSCAPE ARCHITECT.
3. ALL PLANTS ARE TO MEET OR EXCEED MINIMUM SIZES SPECIFIED. QUALITY, FORM, BRANCHING, AND CONDITION WILL BE CAREFULLY EXAMINED BY LANDSCAPE ARCHITECT UPON DELIVERY. UNACCEPTABLE PLANTS WILL BE REJECTED AND MUST BE REPLACED.
4. SUBSTITUTIONS MUST BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO ORDER CONFIRMATION.
5. CONTRACTOR TO FIELD LOCATE TREES WITH FLAGGING FOR APPROVAL BY LANDSCAPE ARCHITECT BEFORE INSTALLATION.
6. ALL PITS TO BE OVERSIZED.

Key	QTY	Botanical Name	Common Name	Min Ht.	Min Sprd.	Min Cal.	Root Size	Type	Comments
TREES- deciduous									
AR	3	Acer rubrum	Red Maple	12'-14' ht.		2"	28"	B&B	Single trunk
PO	27	Platanus occidentalis	Sycamore	14'-16' ht.		2"-2.5"	28"	B&B	Single trunk
PS	7	Prunus serrulata 'Kwanzan'	Kwanzan Cherry	6'-8' ht.		1.75"-2"	24"	B&B	Tree form
SA	3	Salix alba 'Trisis'	Gold Weeping Willow	10'-12' ht.		1.5"	24"	B&B	
SR	17	Syringa reticulata 'Ivory Silk'	Ivory Silk Tree Lilac	8'-10' ht.		2"	24"	B&B	Multistem clump (min. 3)
TC	10	Tilia cordata	Little Leaf Linden	10'-12' ht.		2"	24"	B&B	Street tree branching
TREES- conifer									
TO	61	Thuja occidentalis 'Emerald'	Emerald Arborvitae	6' ht.			22"	B&B	var. 'Nigra','Techny'
SHRUBS - deciduous									
HS	18	Hibiscus syriacus'Ardens'	'Ardens' Rose of Sharon	4'-5' ht.			No. 7	Cont.	Purple 6 Canes min.
HP	85	Hydrangea paniculata 'Lime Light'	Limelight Hydrangea	24"-30" ht.			No. 3	Cont.	
HI	35	Hydrangea paniculata 'Quick Fire'	Tree Hydrangea	4'-5' ht.			No. 10	Cont.	Stake
TH	23	Taxus x media 'Hicksii'	Yew	18"			No.3	Cont.	Equal spacing
RA	20	Rhus aromatica 'Gro-Low'	Fragrant Sumac	2' ht.	24" spr.		No. 3	Cont.	Creeping; Red Fall color
SHRUBS – evergreen									
JS	99	Juniperus chinensis 'Sea Green'	Sea Green Pfitzer Juniper	3' ht.	18"-24" spr.		No. 3	Cont.	Spring Planting
GROUND COVER/PERENNIALS									
NP	238	Nepeta x faasenii 'Walker's Low'	Walker's Low Catmint				No. 1	Cont.	Pale blue fl; 18" o.c.
CA	309	Calamagrostis acutiflora 'Karl Foerster	Feather reed grass				No.1	Cont.	Equal spacing

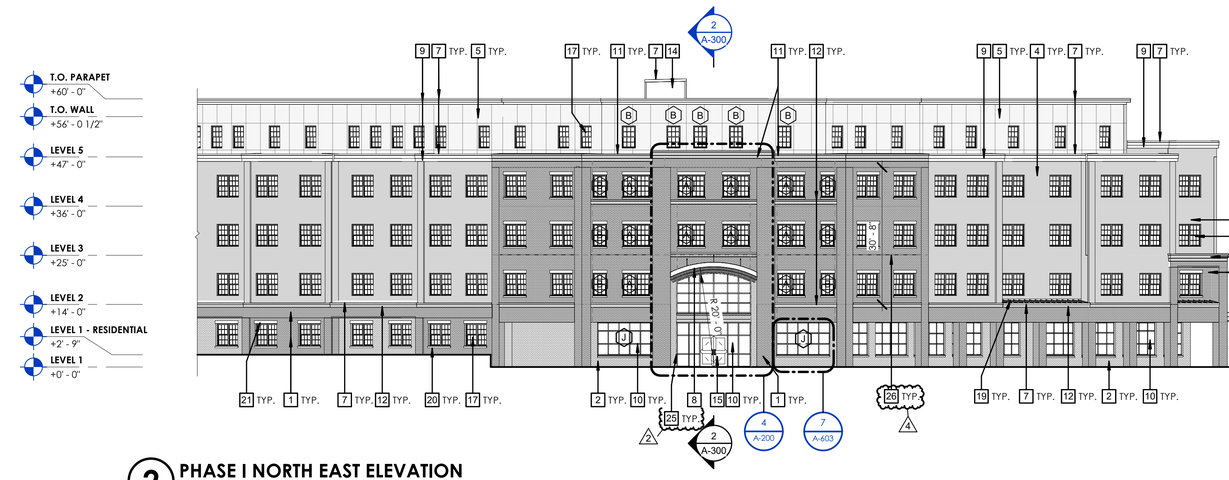

CLINTON STREET
JARVIS STREET
(See M-1)
HUDSON STREET
8" SAN
15" CIP
8" SAN
8" SAN
24" OUT
8" CIP
24" OUT
8" CIP
4" CIP
4" CIP
4


CLINTON STREET
JARVIS STREET
HUDSON STREET
SLAUSON STREET
CRANDALL STREET
Storm Manhole
Rim Elevation = 852.60
(10") N Invert In = 842.50
(18") SE Invert In = 838.90
(30") NW Invert In = 837.90
(30") SE Invert Out = 837.80
Storm Manhole
Rim Elevation = 852.41
(10") SE Invert In = 848.21
(10") SW Invert In = 848.21
(36") W Invert In = 842.06
(36") E Invert Out = 841.16
Manhole (See MN 1)
Rim Elevation = 852.06
(18") S Invert In = 842.96
(18") SW Invert In = 839.06
(18") N Invert Out = 838.96
Storm Manhole
Rim Elevation = 851.16
(16") NE Invert In = 842.16
(18") SW Invert In = 842.86
(36") W Invert In = 840.56
(36") E Invert Out = 840.76
Storm Manhole
Rim Elevation = 851.60
(10") S Invert In (Unable to measure)
(36") W Invert In = 840.75
(36") E Invert Out = 840.75
Storm Catch Basin
Rim Elevation = 851.28
(10") N Invert Out = 847.78
Storm Catch Basin
Rim Elevation = 850.85
Unable to Open Structure
Storm Manhole
Rim Elevation = 850.74
(Unknown Pipe Size) N Invert In = 843.49
(12") E Invert In = 846.74
(16") SW Invert Out = 843.49
Sanitary Manhole
Rim Elevation = 851.07
(Unable to Open Structure)
Storm Manhole
Rim Elevation = 850.94
(10") SE Invert In = 846.94
(36") W Invert In = 840.59
(36") E Invert Out = 840.59
Storm Catch Basin
Rim Elevation = 849.83
(10") NE Invert Out = 846.28
Sanitary Manhole
Rim Elevation = 850.10
(Unable to Open Structure)
Storm Manhole
Rim Elevation = 850.11
(10") SE Invert In = 846.31
(10") SW Invert In = 846.01
(36") W Invert In = 840.26
(36") E Invert Out = 840.26
Sanitary Manhole
Rim Elevation = 848.99
(8") N Invert In = 836.94
(30") W Invert In = 835.99
(30") E Invert Out = 835.94
Storm Manhole
Rim Elevation = 849.03
(15") N Invert In = 840.53
(10") S Invert In = 845.28
(36") W Invert In = 839.58
(36") E Invert Out = 839.48
Storm Catch Basin
Rim Elevation = 850.26
(10") NW Invert Out = 846.71
Storm Catch Basin
Rim Elevation = 853.77
No Pipes Visible
Bottom Elevation = 851.22
Storm Catch Basin
Rim Elevation = 853.13
(4"x4") SE Invert Out = 849.68
Storm Manhole
Rim Elevation = 853.93
Could Not Open Structure
Storm Catch Basin
Rim Elevation = 853.50
(12") SE Invert Out = 850.45
Storm Manhole
Rim Elevation = 854.10
(15") W Invert In = 847.50
(12") NW Invert In = 848.35
(15") E Invert Out = 847.45
Storm Manhole
Rim Elevation = 853.86
(15") W Invert In = 846.86
(12") NE Invert In = 850.96
(15") E Invert Out = 844.41
Storm Catch Basin
Rim Elevation = 853.58
(12") SW Invert Out = 851.43
Sanitary Manhole
Rim Elevation = 854.23
(15") W Invert In = 847.33
(12") S Invert in = 847.83
(15") E Invert Out = 847.48
Storm Manhole
Rim Elevation = 853.76
(15") W Invert In = 843.36
(12") NW Invert In = 845.96
(12") SE Invert In = 846.26
(24") S Invert In = 841.66
(24") N Invert Out = 841.66
Sanitary Manhole
Rim Elevation = 853.82
(8") S Invert In = 844.62
(8") W Invert In = 844.62
(8") N Invert Out = 844.57
Storm Catch Basin
Rim Elevation = 853.45
(12") NW Invert Out = 849.25
Storm Catch Basin
Rim Elevation = 853.77
(12") NE Invert Out = 849.77
Sanitary Manhole
Rim Elevation = 857.39
(8") N Invert Out = 848.69
Storm Manhole
Rim Elevation = 857.81
(24") NE Invert Out = 842.56
Sanitary Manhole
Rim Elevation = 859.02
(8") N Invert Out = 852.32
Sanitary Manhole
Rim Elevation = 862.07
Filled with Debris
Bottom Elevation = 856.77
Sanitary Manhole
Rim Elevation = 854.12
(3") NE Invert In = 851.42
(4") SE Invert In = 851.42
(6") W Invert In = 851.12 (Capped)
(Filled with Water-No Visible Outlet)
Sanitary Manhole
Rim Elevation = 848.01
(8") E Invert In = 842.71
(12") S Invert In = 842.71
(18") S Invert In = 841.86
(18") N Invert Out = 841.56
Storm Catch Basin
Rim Elevation = 847.30
No Pipes Visible
Bottom Elevation = 843.60
Storm Catch Basin
Rim Elevation = 847.19
(10") NW Invert Out = 845.19
Storm Catch Basin
Rim Elevation = 848.18
(10") N Invert Out = 848.18
Storm Manhole
Rim Elevation = 852.34
(Unable to Open Structure - Paved Over)
Manhole (See MN 1)
Rim Elevation = 852.33
(36") NE Invert In = 840.98
(24") W Invert In = 846.13
(36") SW Invert Out = 840.78
Storm Catch Basin
Rim Elevation = 852.18
(10") NE Invert Out = 848.43
Storm Manhole
Rim Elevation = 850.54
(10") N Invert Out = 847.04
Storm Manhole
Rim Elevation = 854.46
(4") NE Invert In = 853.71
(6") E Invert In = 850.56
(4") SW Invert In = 853.61
(8") S Invert In = 849.66
(10") N Invert Out = 849.56
Sanitary Manhole
Rim Elevation = 854.10



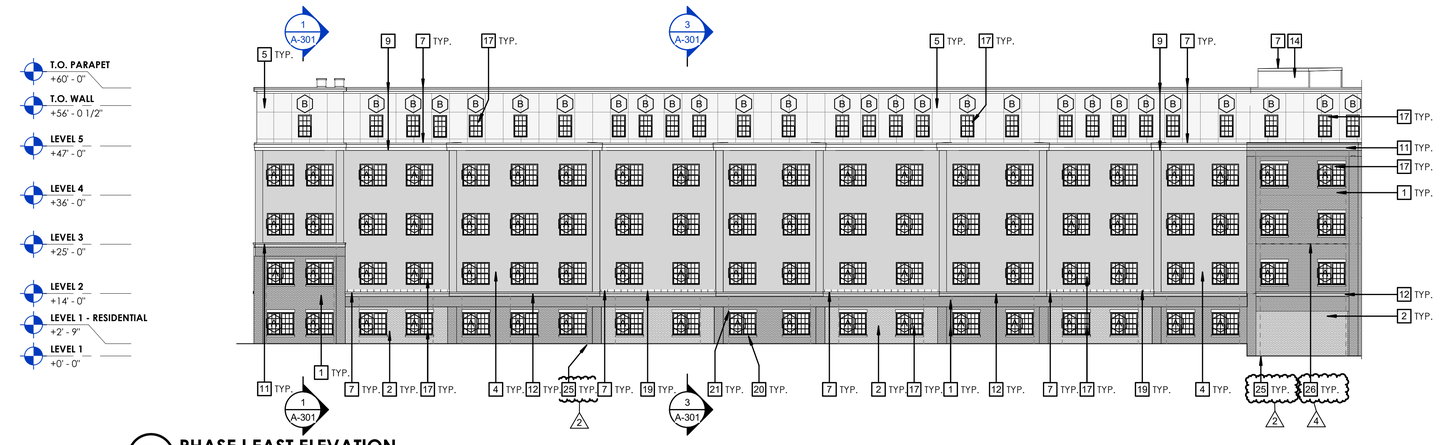
1 PHASE I NORTH ELEVATION

0' 4' 8' 16' 32'
1/16" = 1'-0"



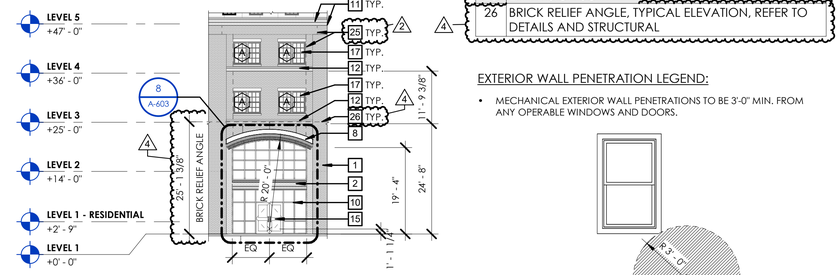
2 PHASE I NORTH EAST ELEVATION

0' 4' 8' 16' 32'
1/16" = 1'-0"



3 PHASE I EAST ELEVATION

0' 4' 8' 16' 32'
1/16" = 1'-0"



4 ENLARGED ELEVATION AT ENTRY

0' 4' 8' 16' 32'
1/16" = 1'-0"

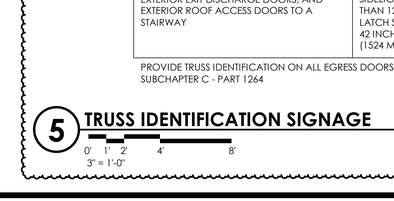
EXTERIOR ELEVATION GENERAL NOTES:

- ALL FIBERCEMENT PANELS AND LAP SIDING TO HAVE 'EZ TRIM' REVEALS, SEE TYPICAL DETAILS
- SEE WALL SECTIONS AND FLOOR PLANS FOR ADDITIONAL INFORMATION

EXTERIOR ELEVATION KEYNOTES	
1	BRICK, FINISH #1
2	BRICK, FINISH #2
3	FIBERCEMENT LAP SIDING, FINISH #1
4	FIBERCEMENT PANEL SIDING, FINISH #1
5	FIBERCEMENT PANEL SIDING, FINISH #2
6	1X8 HORIZONTAL FIBERCEMENT TRIM - BLACK
7	ALUMINUM WRAPPED FASCIA OVER 2X P.T. WOOD SUB-FASCIA PER DETAILS - BLACK
8	MANUFACTURED ALUMINUM CANOPY
9	1X8 HORIZONTAL FIBERCEMENT TRIM - BLACK
10	STOREFRONT SYSTEM PER SCHEDULE
11	BRICK ROWLOCK CORNICE
12	BRICK ROWLOCK WATER TABLE PER DETAILS
13	BRICK ROWLOCK CORNICE PER DETAILS
14	ELEVATOR PENTHOUSE
15	DOOR PER SCHEDULE
16	MANUFACTURED ALUMINUM CANOPY - BASIS OF DESIGN 'MAPES CANOPIES'
17	WINDOW PER SCHEDULE, SEE WINDOW DETAILS FOR TRIM
18	DECORATIVE FENCE BEYOND PER L- DRAWINGS AND DETAILS
19	STANDING SEAM METAL ROOF
20	PRECAST CONCRETE SILL, TYPICAL AT BRICK WINDOW OPENINGS
21	PRECAST CONCRETE HEADER, TYPICAL AT ALL BRICK OPENINGS
22	PREFINISHED ALUMINUM DOWNSPOUT
23	OVERHEAD DOOR PER SCHEDULE
24	PERGOLA BY OTHERS, GC TO PROVIDE BLOCKING AS NECESSARY PER MANUFACTURER REQUIREMENTS/ SPECIFICATIONS.
25	EXPANSION JOINT
26	BRICK RELIEF ANGLE, TYPICAL ELEVATION, REFER TO DETAILS AND STRUCTURAL

EXTERIOR WALL PENETRATION LEGEND:

- MECHANICAL EXTERIOR WALL PENETRATIONS TO BE 3'-0" MIN. FROM ANY OPERABLE WINDOWS AND DOORS.



"F"	FLOOR FRAMING, INCLUDING GIRDERS AND BEAMS
"R"	ROOF FRAMING
"FR"	FLOOR AND ROOF FRAMING

SIGN LOCATION	SIGN PLACEMENT
EXTERIOR BUILDING ENTRANCE DOORS, EXTERIOR EXIT DISCHARGE DOORS, AND EXTERIOR ROOF ACCESS DOORS TO A STAIRWAY	ATTACHED TO THE DOOR, OR ATTACHED TO A SIDELIGHT OR THE FACE OF THE BUILDING, NOT MORE THAN 12 INCHES (305MM) HORIZONTALLY FROM THE LATCH SIDE OF THE DOOR JAMB, AND NOT LESS THAN 42 INCHES (1067 MM), NOR MORE THAN 60 INCHES (1524 MM) ABOVE THE ADJOINING WALKING SURFACE.

PROVIDE TRUSS IDENTIFICATION ON ALL EGRESS DOORS PER TITLE 19 (NYCRR) - CHAPTER XXXIII SUBCHAPTER C - PART 1264

5 TRUSS IDENTIFICATION SIGNAGE

0' 1' 2' 4' 8'
3" = 1'-0"

HCR SUBMISSION SET

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engineering architecture

STAMP:

REGISTERED ARCHITECT
BRIAN WEITBRECHT
022703
STATE OF NEW YORK

Reg. Exp: 08/31/2026
Cert of Authorization: 021475

CLIENT:
THE METRO GROUP LLC
P.O. BOX 10
BLUE POINT, NY 14614

Passero Associates
242 WEST MAIN ST., SUITE 100 (585) 325-1000
ROCHESTER, NY 14614 FAX: (585) 325-1691

PROJECT MANAGER DUSTIN WELCH, AIA
PROJECT ARCHITECT THOMAS BUTTON, ASSOC. AIA
DESIGNER TYLER BEERSE, ASSOC. AIA

NO.	DATE	BY	DESCRIPTION
	07/18/25		HCR SUBMISSION SET
	08/15/25		PERMIT SET
	02/27/26		HCR SUBMISSION SET
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3	01/23/26		PERMIT COMMENT REV.
4	02/27/26		ADD. COORDINATION

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EXTERIOR ELEVATIONS

187 CLINTON ST.

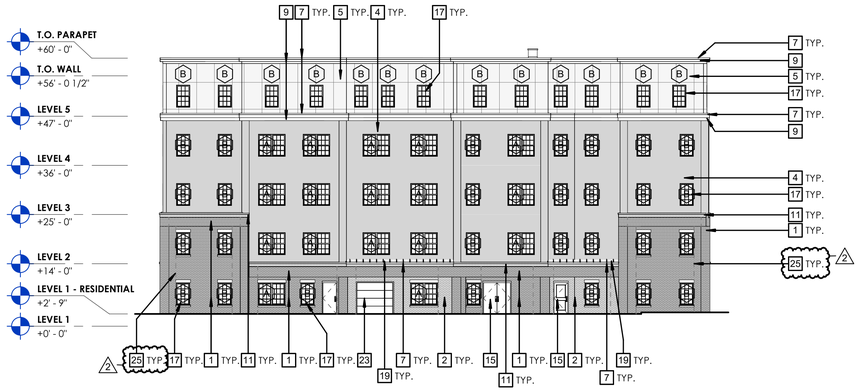
VANGUARD VILLAGE

TOWN/CITY: BINGHAMTON
COUNTY: BROOME STATE: NY

PROJECT NO.:
20243779.0001

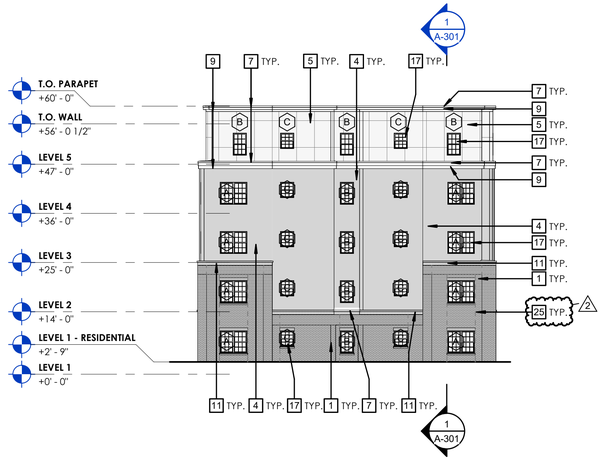
DRAWING NO.:
A-200

DATE:
FEBRUARY 27, 2026



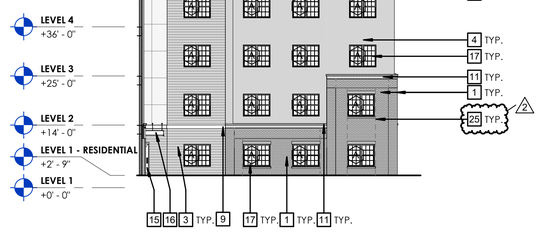
1 PHASE I SOUTH ELEVATION

0' 4' 8' 16' 32'
1/16" = 1'-0"



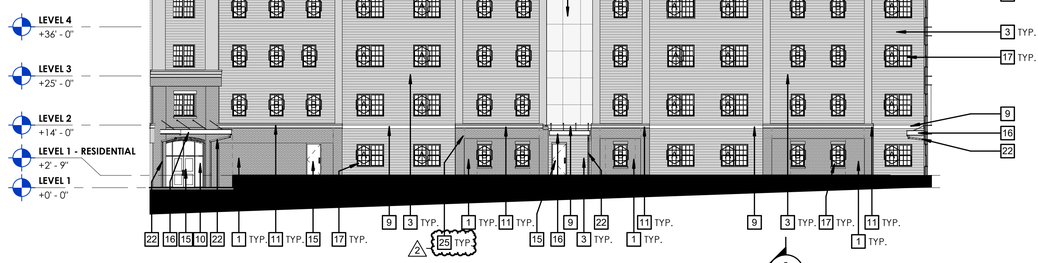
2 PHASE I WEST ELEVATION

0' 4' 8' 16' 32'
1/16" = 1'-0"



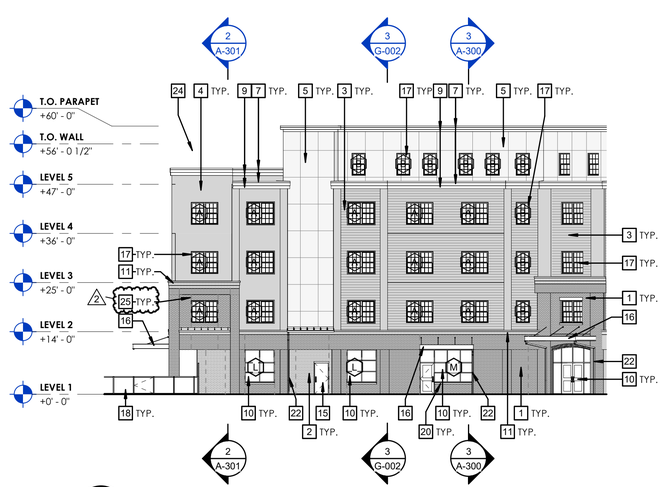
3 PHASE I NORTH ELEVATION (COURTYARD)

0' 4' 8' 16' 32'
1/16" = 1'-0"



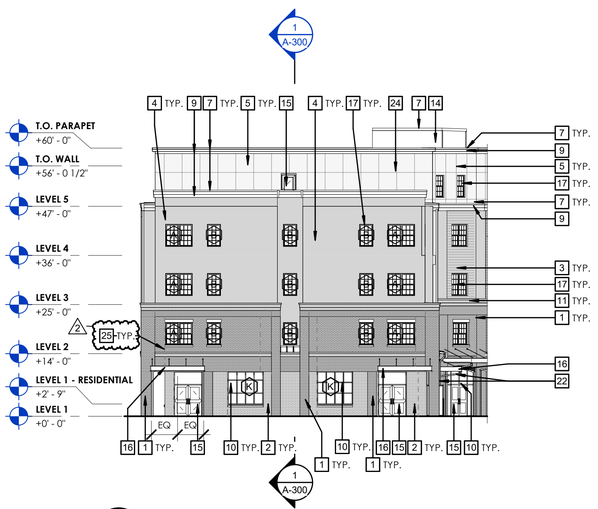
4 PHASE I WEST ELEVATION (COURTYARD)

0' 4' 8' 16' 32'
1/16" = 1'-0"



5 PHASE I SOUTH ELEVATION (COURTYARD)

0' 1' 2' 4' 8'
1/16" = 1'-0"



6 PHASE I WEST ELEVATION (PLAZA)

0' 4' 8' 16' 32'
1/16" = 1'-0"

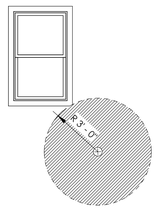
EXTERIOR ELEVATION GENERAL NOTES:

- ALL FIBERCEMENT PANELS AND LAP SIDING TO HAVE 'EZ TRIM' REVEALS, SEE TYPICAL DETAILS
- SEE WALL SECTIONS AND FLOOR PLANS FOR ADDITIONAL INFORMATION

EXTERIOR ELEVATION KEYNOTES	
1	BRICK, FINISH #1
2	BRICK, FINISH #2
3	FIBERCEMENT LAP SIDING, FINISH #1
4	FIBERCEMENT PANEL SIDING, FINISH #1
5	FIBERCEMENT PANEL SIDING, FINISH #2
6	1X8 HORIZONTAL FIBERCEMENT TRIM - BLACK
7	ALUMINUM WRAPPED FASCIA OVER 2X P.T. WOOD SUB-FASCIA PER DETAILS - BLACK
8	MANUFACTURED ALUMINUM CANOPY
9	1X8 HORIZONTAL FIBERCEMENT TRIM - BLACK
10	STOREFRONT SYSTEM PER SCHEDULE
11	BRICK ROWLOCK CORNICE
12	BRICK ROWLOCK WATER TABLE PER DETAILS
13	BRICK ROWLOCK CORNICE PER DETAILS
14	ELEVATOR PENTHOUSE
15	DOOR PER SCHEDULE
16	MANUFACTURED ALUMINUM CANOPY - BASIS OF DESIGN 'MAPES CANOPIES'
17	WINDOW PER SCHEDULE, SEE WINDOW DETAILS FOR TRIM
18	DECORATIVE FENCE BEYOND PER L- DRAWINGS AND DETAILS
19	STANDING SEAM METAL ROOF
20	PRECAST CONCRETE SILL, TYPICAL AT BRICK WINDOW OPENINGS
21	PRECAST CONCRETE HEADER, TYPICAL AT ALL BRICK OPENINGS
22	PREFINISHED ALUMINUM DOWNSPOUT
23	OVERHEAD DOOR PER SCHEDULE
24	PERGOLA BY OTHERS, GC TO PROVIDE BLOCKING AS NECESSARY PER MANUFACTURER REQUIREMENTS/ SPECIFICATIONS.
25	EXPANSION JOINT
26	BRICK RELIEF ANGLE, TYPICAL ELEVATION, REFER TO DETAILS AND STRUCTURAL

EXTERIOR WALL PENETRATION LEGEND:

- MECHANICAL EXTERIOR WALL PENETRATIONS TO BE 3'-0" MIN. FROM ANY OPERABLE WINDOWS AND DOORS.



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STAMP:

REGISTERED ARCHITECT
BRIAN WEITBRECHT
022703
STATE OF NEW YORK

Reg. Exp: 08/31/2026
Cert of Authorization: 021475

CLIENT:
THE METRO GROUP LLC
P.O. BOX 10
BLUE POINT, NY 14614

Passero Associates
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ROCHESTER, NY 14614
(585) 325-1000
FAX: (585) 325-1691
PROJECT MANAGER: DUSTIN WELCH, AIA
PROJECT ARCHITECT: THOMAS BUTTON, ASSOC. AIA
DESIGNER: TYLER BEERSE, ASSOC. AIA

NO.	DATE	BY	DESCRIPTION
	07/18/25		HCR SUBMISSION SET
	08/15/25		PERMIT SET
	02/27/26		HCR SUBMISSION SET
1	08/15/25		PERMIT SUBMISSION
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3	01/23/26		PERMIT COMMENT REV.
4	02/27/26		ADD. COORDINATION

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EXTERIOR ELEVATIONS

187 CLINTON ST.

VANGUARD VILLAGE

TOWN/CITY: BINGHAMTON
COUNTY: BROOME STATE: NY

PROJECT NO.: 20243779.0001

DRAWING NO.: A-201

DATE: FEBRUARY 27, 2026

HCR SUBMISSION SET



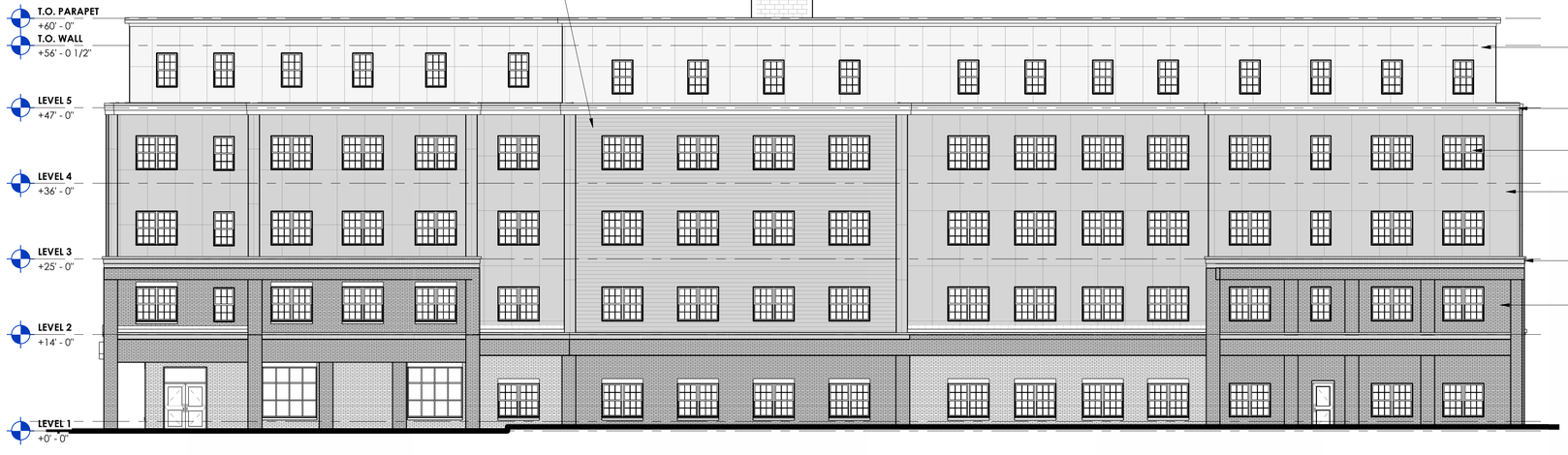
1 PHASE 1B EAST ELEVATION

0" 4' 8' 16' 32'
3/32" = 1'-0"



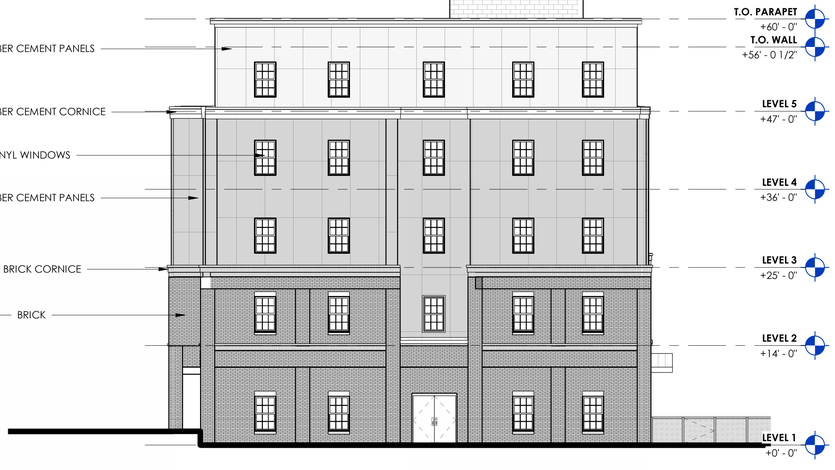
2 PHASE 1B NORTH ELEVATION

0" 4' 8' 16' 32'
3/32" = 1'-0"



3 PHASE 1B WEST ELEVATION

0" 4' 8' 16' 32'
3/32" = 1'-0"



4 PHASE 1B SOUTH ELEVATION

0" 4' 8' 16' 32'
3/32" = 1'-0"

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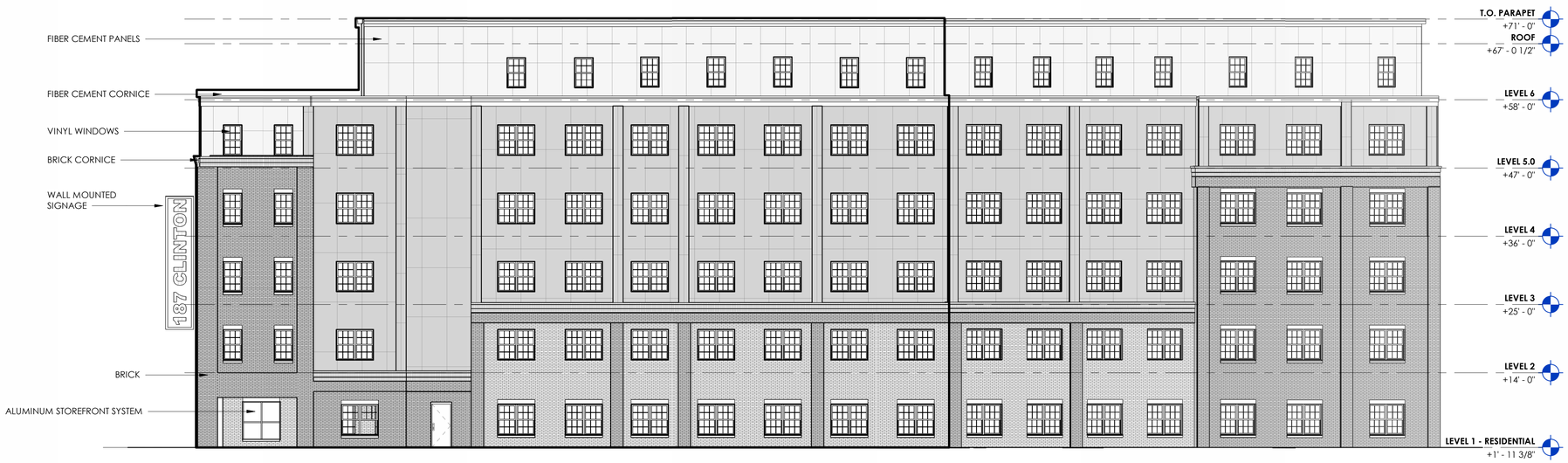
187 CLINTON
EXTERIOR ELEVATIONS

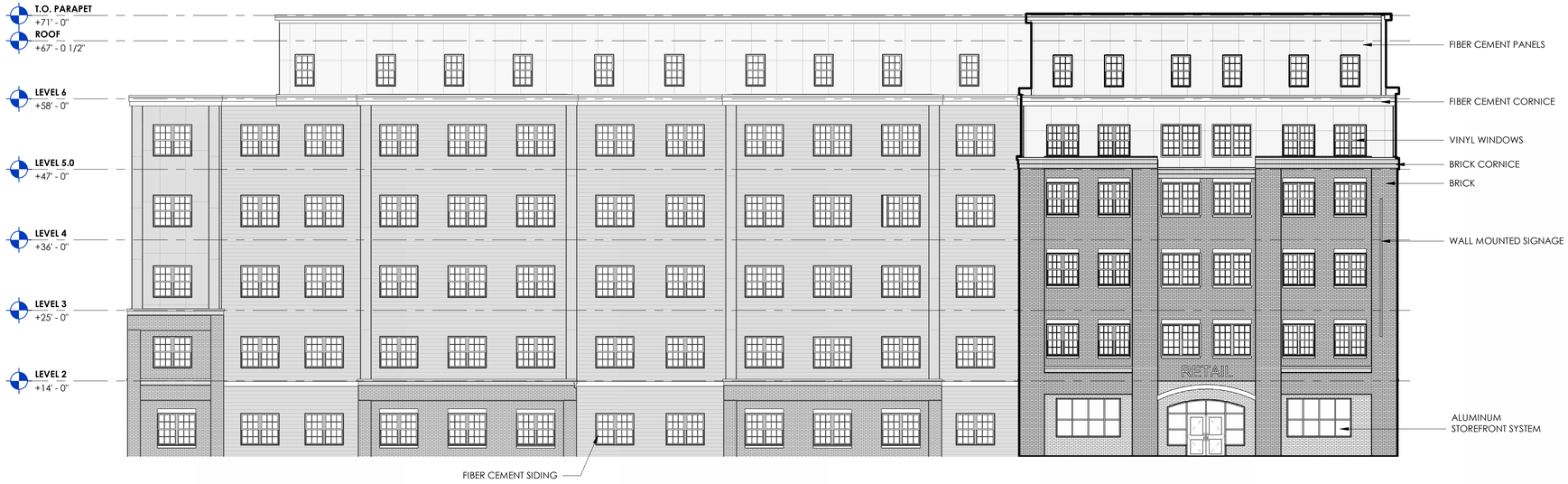
20243779.0001
APRIL 7, 2026
BINGHAMTON, NY

02



2 PHASE II - WEST ELEVATION

0" 4' 8' 16' 32'
3/32" = 1'-0"



1 PHASE II - NORTH ELEVATION

0" 4' 8' 16' 32'
3/32" = 1'-0"

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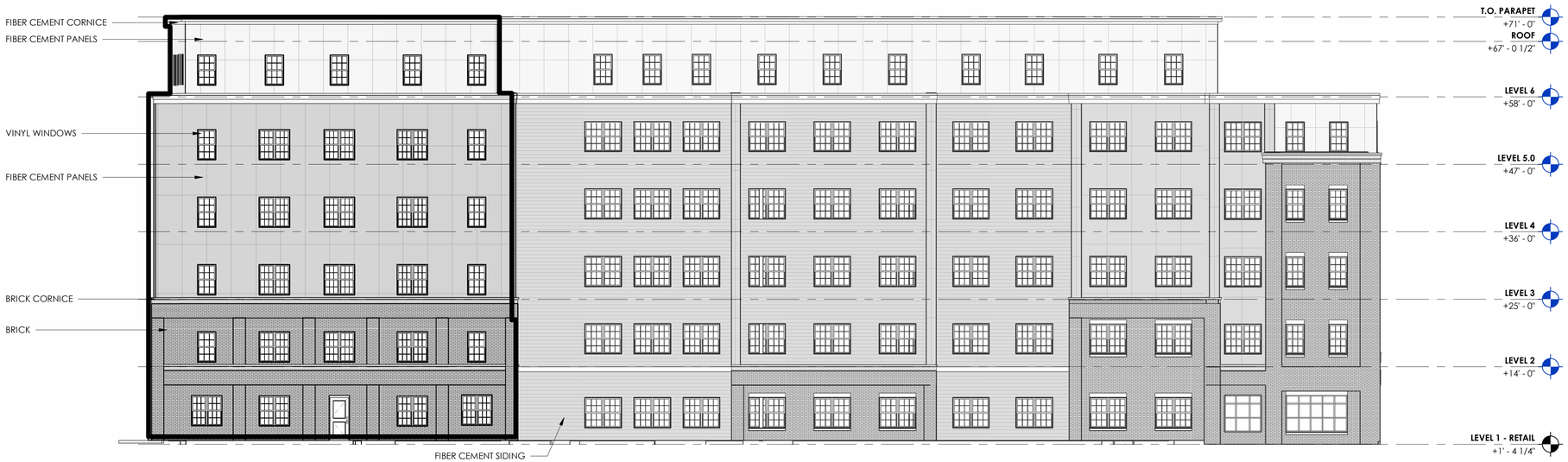
187 CLINTON

PHASE 2 ELEVATIONS

20243779.0001
APRIL 7, 2026
BINGHAMTON, NY

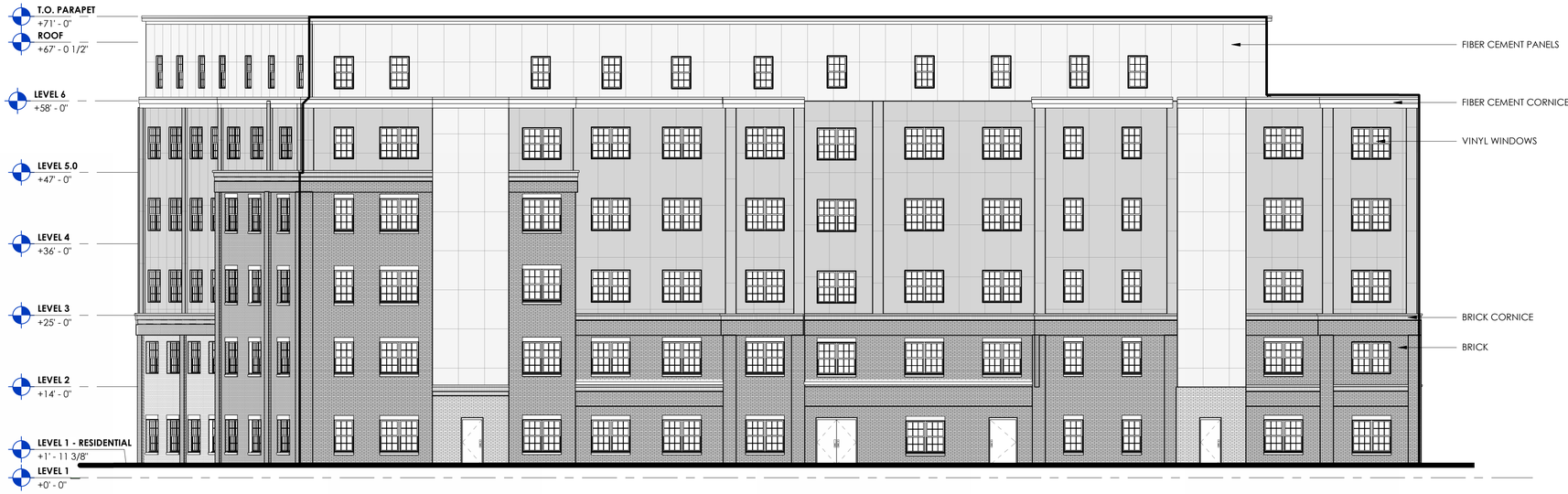
03



2 PHASE II - EAST ELEVATION

0" 4' 8' 16' 32'

3/32" = 1'-0"



1 PHASE II - SOUTH ELEVATION

0" 4' 8' 16' 32'

3/32" = 1'-0"

APPENDIX B – Cost Estimates

APPENDIX C – Public Participation Plan

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Brownfield Cleanup Program

Public Participation Plan

for

Vanguard Village I+II

NYSDEC BCP Site: C704063

February 2026

DRAFT

NYSDEC BCP Site: C704063

Vanguard Village I+II

City of Binghamton, Broome County, New York

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2. Public Participation Activities 3
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5. Investigation and Cleanup Process 8

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Appendix D – Brownfield Cleanup Program Process 17

* * * * *

Note: The information presented in this Public Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation.Portions of this Public Participation Plan may be revised during the site's investigationand cleanup process.

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Applicant: **The Metro Group Properties, Inc. ("Applicant")**
Site Name: **Vanguard Village I+II ("Site")**
Site Address: **181, 185, and 187 Clinton Street, 34 Jarvis Street, and 7 Hudson Street, City of Binghamton**
Site County: **Broome**
Site Number: **C704063**

1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as "brownfields" so that can be reused and developed. These uses include recreation, housing, and business.

A *brownfield* is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants who conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met,the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at:
http://www.dec.ny.gov/chemical/8450.html

2. Public Participation Activities

Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well-being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision-makers form or adopt final positions.

Involving citizens affected and interested in site investigation and cleanup programs is important for many reasons. These include:

Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment;

Improving public access to, and understanding of, issues and information related toa particular site and that site's investigation and cleanup process;

DRAFT

Providing citizens with early and continuing opportunities to participate in NYSDEC'ssite investigation and cleanup process;

Ensuring that NYSDEC makes site investigation and cleanup decisions that benefitfrom input that reflects the interests and perspectives found within the affected community; and

Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and communityissues and concerns, and improves decision-making.

This Public Participation (PP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this PP Plan and the PP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web-site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.

The site contact list includes, at a minimum:

- Chief executive officer and planning board chairperson of each county, city, town and village in which the site is located;
- Residents, owners, and occupants of the site and properties adjacent to the site;
- The public water supplier which services the area in which the site is located;
- Any person who has requested to be placed on the site contact list;
- The administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility; and,
- Location(s) of reports and information.

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The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

Note: The first site fact sheet (usually related to the draft Remedial Investigation Work Plan) is distributed both by paper mailing through the postal service and through DEC Delivers, its email listserv service. The fact sheet includes instructions for signing up with the appropriate county listserv to receive future notifications about the site.

See http://www.dec.ny.gov/chemical/61092.html.

Subsequent fact sheets about the site will be distributed exclusively through the listserv, except for households without internet access that have indicated the need to continue to receive site information in paper form. Please advise the NYSDEC site project manager identified in Appendix A if that is the case. Paper mailings may continue during the investigation and cleanup process for some sites, based on public interest and need.

PP Activities

The table at the end of this section identifies the PP activities, at a minimum, that have been and will be conducted during the site's investigation and cleanup program. The flowchart in Appendix D shows how these PP activities integrate with the site investigation and cleanup process. The public is informed about these PP activities through fact sheets and notices distributed at significant points during the program.

Elements of the investigation and cleanup process that match up with the PP activities are explained briefly in Section 5.

Notices and fact sheets help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.

Public forums, comment periods and contact with project managers provide opportunities for the public to contribute information, opinions, and perspectives that have potential to influence decisions about a site's investigation and cleanup.

The public is encouraged to contact project staff at any time during the site's investigation and cleanup process with questions, comments, or requests for information.

This PP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities. Modifications may include additions to the site contact list and changes in planned public participation activities.

Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

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If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development and implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site.

As of the date the declaration (page 2) was signed by the NYSDEC project manager, the significant threat determination for the site had not yet been made. To verify the significant threat status of the site, the interested public may contact the NYSDEC project manager identified in Appendix A.

For more information about TAGs, go online at

http://www.dec.ny.gov/regulations/2590.html

Note: The table identifying the public participation activities related to the site's investigation and cleanup program follows on the next page.

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Public Participation Activities	Timing of Public Participation Activity(ies)
Application Process:	
• Prepare site contact list • Establish document repository(ies)	At time of preparation of application to participate in theBCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period	When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement (BCA):	
• Prepare Public Participation (PP) Plan	Before start of Remedial Investigation **Note:** Applicant must submit PP Plan to NYSDEC for review and approval within 20 days of the effective dateof the BCA.
Before NYSDEC Approves Remedial Investigation (RI) Work Plan:	
• Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined and public notice will include fact sheet. 30-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes Remedial Investigation:	
• Distribute fact sheet to site contact list that describesRI results	Before NYSDEC approves RI Report
Before NYSDEC Approves Remedial Work Plan (RWP):	
• Distribute fact sheet to site contact list about draft RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	Before NYSDEC approves RWP. 45-day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45- day public comment period.
Before Applicant Starts Cleanup Action:	
• Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.
After Applicant Completes Cleanup Action:	
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that NYSDEC is reviewing the Final EngineeringReport • Distribute fact sheet to site contact list announcing NYSDEC approval of Final Engineering Report and issuance of Certificate of Completion (COC)	At the time the cleanup action has been completed. **Note:** The two fact sheets are combined when possibleif there is not a delay in issuing the COC.

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3. Major Issues of Public Concern

This section of the PP Plan identifies major issues of public concern that relate to the site. Additional major issues of public concern may be identified during the course of the site's investigation and cleanup process.

The primary contaminants of concern at the Site are elevated levels of metals and polycyclic aromatic hydrocarbons (PAHs) in soil. Public health concerns are currently unknown. Site contamination is not affecting community activities and there are no known uses of groundwater at or near the Site (the surrounding area utilizes public water). During the cleanup of the Site, there may be issues such as odor, noise, or truck-related traffic.

4. Site Information

Appendix C contains a map identifying the location of the site.

Site Description

The Site consists of a 4.79-acre parcel located at 181, 185, and 187 Clinton Street, 34 Jarvis Street, and 7 Hudson Street. The property is a vacant, former industrial site. Development plans include construction of two new five-story residential buildings, with several small commercial spaces fronting Clinton Street, with associated infrastructure and landscaping. New construction will require soil excavation. The Site is in an urban setting comprised primarily of residential and commercial uses. Adjoining properties contain residential, small commercial, and mixed-use buildings (residential and commercial), a filling station (to the west), and railroad tracks (to the south).

History of Site Use, Investigation, and Cleanup

Development occurred at the property in the 1800s, and the Site formerly contained multiple structures including commercial and industrial facilities, with major demolition occurring in the 1990s, and final removal of the last buildings between 2018 and 2019.

Previous subsurface investigations documented poor-quality fill materials contaminated by metals, including arsenic, lead, and mercury, as well as PAHs, at levels above NYSDEC Soil Clean-up Objectives for Restricted-Residential Use.

Site cleanup actions will likely involve removal of soils containing metals and PAHs above Restricted-Residential Use criteria, and installation of a protective cover system, resulting in a final remediation that is protective of human health and the environment.

5. Investigation and Cleanup Process

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program **as Volunteer**. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a

“qualitative exposure assessment,” a process that characterizes the actual or potential exposures of people, fish, and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for residential purposes, and will meet (at a minimum) the criteria for a Restricted-Residential Use cleanup (dependent on the final remediation plan, an Unrestricted Use cleanup may be pursued). To achieve this goal, the Applicant will conduct investigation and cleanupactivities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities ofeach party in conducting these activities at the site.

Investigation

The Applicant will conduct an investigation of the site officially called a “remedial investigation” (RI). This investigation will be performed with NYSDEC oversight. The Applicant must develop a remedial investigation work plan, which is subject to public comment. The site investigation has several goals:

1) Define the nature and extent of contamination in soil, surface water, groundwater and any other parts of the environment that may be affected;
2) Identify the source(s) of the contamination;
3) Assess the impact of the contamination on public health and the environment; and
4) Provide information to support the development of a proposed remedy to address the contamination or the determination that cleanup is not necessary.

The Applicant submits a draft “Remedial Investigation Work Plan” to NYSDEC for review and approval. NYSDEC makes the draft plan available to the public review during a 30-day public comment period.

When the investigation is complete, the Applicant will prepare and submit a report that summarizes the results. This report also will recommend whether cleanup action is needed to address site-related contamination. The investigation report is subject to review and approval by NYSDEC.

NYSDEC will use the information in the investigation report to determine if the site poses a significant threat to public health or the environment. If the site is a “significant threat,” it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

Interim Remedial Measures

An Interim Remedial Measure (IRM) is an action that can be undertaken at a site when a source of contamination or exposure pathway can be effectively addressed before the site investigation and analysis of alternatives are completed. If an IRM is likely to represent all or a significant part of the final remedy, NYSDEC will require a 30-day public comment period.

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Remedy Selection

When the investigation of the site has been determined to be complete, the project likely would proceed in one of two directions:

1) The Applicant may recommend in its investigation report that no action is necessaryat the site. In this case, NYSDEC would make the investigation report available for public comment for 45 days. NYSDEC then would complete its review, make any necessary revisions, and, if appropriate, approve the investigation report. NYSDEC would then issue a "Certificate of Completion" (described below) to the Applicant.

or

2) The Applicant may recommend in its investigation report that action needs to be taken to address site contamination. After NYSDEC approves the investigation report, the Applicant may then develop a cleanup plan, officially called a "Remedial Work Plan". The Remedial Work Plan describes the Applicant's proposed remedy for addressing contamination related to the site. When the Applicant submits a draft Remedial Work Plan for approval, NYSDEC would announce the availability of the draft plan for public review during a 45-day public comment period.

Cleanup Action

NYSDEC will consider public comments, and revise the draft cleanup plan if necessary, before approving the proposed remedy. The New York State Department of Health (NYSDOH) must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy. The selected remedy is formalized in the site Decision Document.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH oversee the activities. When the Applicant completes cleanup activities, it will prepare a Final Engineering Report (FER) that certifies that cleanup requirements have been achieved or will be achieved within aspecific time frame. NYSDEC will review the report to be certain that the cleanup isprotective of public health and the environment for the intended use of the site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the FER. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant.

The COC states that cleanup goals have been achieved, and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

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Site Management

The purpose of site management is to ensure the safe reuse of the property if contamination will remain in place. Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An institutional control is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An engineering control is a physical barrier or method to manage contamination. Examples include: caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that pumps and treats groundwater. Site management continues until NYSDEC determines that it is no longer needed.

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Appendix A – Project Contacts and Locations of Reports and Information

Project Contacts

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Thea Barbelet
Project Manager, NYSDEC
1679 US-11
Kirkwood, NY 13795
thea.barbelet@dec.ny.gov
(607) 727-6253

Region 7 Communications
NYSDEC Region 7
5786 Widewaters Parkway
Syracuse, New York 13214
info.r7@dec.ny.gov
(315) 426-7400

New York State Department of Health (NYSDOH):

Jacob Tyler
Project Manager, NYSDOH
Empire State Plaza – Corning Tower, Rm 1787
Albany, NY 12237
Jacob.tyler@health.ny.gov

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

Broome County Public Library
Josias Bartram, Library Director
185 Court Street
Binghamton, NY 13901
josias.bartram@broomecountyny.gov
(607) 778-6407

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Appendix B – Site Contact List

Public Officials:

City of Binghamton – Mayor
Jared M. Kraham
38 Hawley Street, Suite 4, Binghamton, NY 13901
(607) 772-7001

City of Binghamton – City Clerk
Sarah Dinhofer
38 Hawley Street, Suite 3, Binghamton, NY 13901
(607) 772-7005

City of Binghamton – Engineering Department
Ronald Lake, P.E.
38 Hawley Street, Binghamton, NY 13901
(607) 772-7007

City of Binghamton – Building Department
Christopher Schleider
38 Hawley Street, Binghamton, NY 13901
(607) 772-7004

NYS Assembly District 123 – Donna A. Lupardo
44 Hawley Street, Binghamton, NY 13901
(607) 723-9047
LupardoD@nyassembly.gov

NYS Senate District 52 – Lea Webb
44 Hawley Street, Binghamton, NY 13901
(607) 773-8771
leawebb@nysenate.gov

Local Schools and Daycare Centers

Catholic Schools of Broome County
70 Seminary Ave, Binghamton, NY 13905
(607) 723-1547
jfox@syrdiocese.org

Thomas Jefferson Elementary School
151 Helen St, Binghamton, NY 13905
(607) 763-8430
pr@binghamtonschools.org

Horace Mann Elementary School
30 College St, Binghamton, NY 13905
(607) 762-8270
pr@binghamtonschools.org

Media

Local	**Vestal Town Crier** P.O. Box 208, Conklin, NY 13748 editor2@tiernews.com (607) 444-NEWS
General Circulation	**Press & Sun-Bulletin** 33 Lewis Road, Binghamton, NY 13905 Website: pressconnects.com (607) 798-1234

Public Water Supplier

City of Binghamton Water Department
Jeffrey Kruger, Superintendent
38 Hawley Street, Binghamton, New York
(607) 772-7210

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Community, Civic, Religious and Other Environmental Organizations

The Boys and Girls Club of Binghamton
90 Clinton St, Binghamton, NY 13905
(607) 203-1266
ExecutiveDirector@bgcbinghamton.org

First Ward Senior Recreation Center
226 Clinton St, Binghamton, NY 13905
(607) 797-2307

St. Michaels American Carpatho-Russian Orthodox Church
296 Clinton St, Binghamton, NY 13905
(607) 729-3112
st.michaels.churchoffice@gmail.com

St. Cyril & Methodius
148 Clinton St, Binghamton, NY 13905
(607) 724-1372

Adjacent Properties

Address and Tax ID (section – block – lot)	**Owner Name and Address**	**Current Use**
197 Clinton Street (144.78-1-28)	D&T Apartments LLC 218 Jamaica Blvd, Endicott, NY 13760	multi-family residential
201 Clinton Street (144.78-1-29)	Juanita Williams 218 Jamaica Blvd, Endicott, NY 13760	multi-family residential
34 Jarvis Street (160.22-1-1)	FRGK Realty 245 Clinton Street, Binghamton, NY 13905	vacant
215 Clinton Street (144.77-1-11)	Mirabito Propco LLC 49 Court Street, Binghamton, NY 13901	commercial
3 Hudson Street (160.22-1-7)	William Durham 115 Park Avenue, Binghamton, NY 13903	vacant
5 Hudson Street (160.22-1-6)	William Durham 115 Park Avenue, Binghamton, NY 13903	vacant
9 Slauson Avenue (160.22-1-41)	City of Binghamton 38 Hawley Street, Binghamton, NY 13901	vacant
14 Slauson Avenue (160.22-1-13)	Keith Williams 14 Slauson Avenue, Binghamton, NY 13901	single-family residential
16 Hudson Street (160.22-1-14)	CPAD Inc 167 Clinton Street, Binghamton, NY 13901	commercial
179 Clinton Street (160.22-1-8)	First Antique Center 167 Clinton Street, Binghamton, NY 13901	commercial
181 Clinton Street (160.22-1-4)	FRGK Realty LLC 245 Clinton Street, Binghamton, NY 13901	vacant
185 Clinton Street (160.22-1-3)	FRGK Realty LLC 245 Clinton Street, Binghamton, NY 13901	vacant
194 Clinton Street (144.78-2-12)	Family Quan An Buddist & of Broome Association 194 Clinton Street, Binghamton, NY 13901	community services

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Address and Tax ID (section – block – lot)	**Owner Name and Address**	**Current Use**
196 Clinton Street (144.78-2-13)	Ake Group Corporation 304 W Benita Boulevard, Vestal, NY 13850	commercial
200 Clinton Street (144.78-2-14)	200 Clinton Street, LLC 124 N McKinley Avenue, Endicott, NY 13760	commercial
204 Clinton Street (144.78-1-27)	Legacy Parcels, LLC 91 Lathrop Road, Binghamton, NY 13903	commercial
206 Clinton Street (144.78-1-26)	Legacy Parcels, LLC 91 Lathrop Road, Binghamton, NY 13903	multi-family residential

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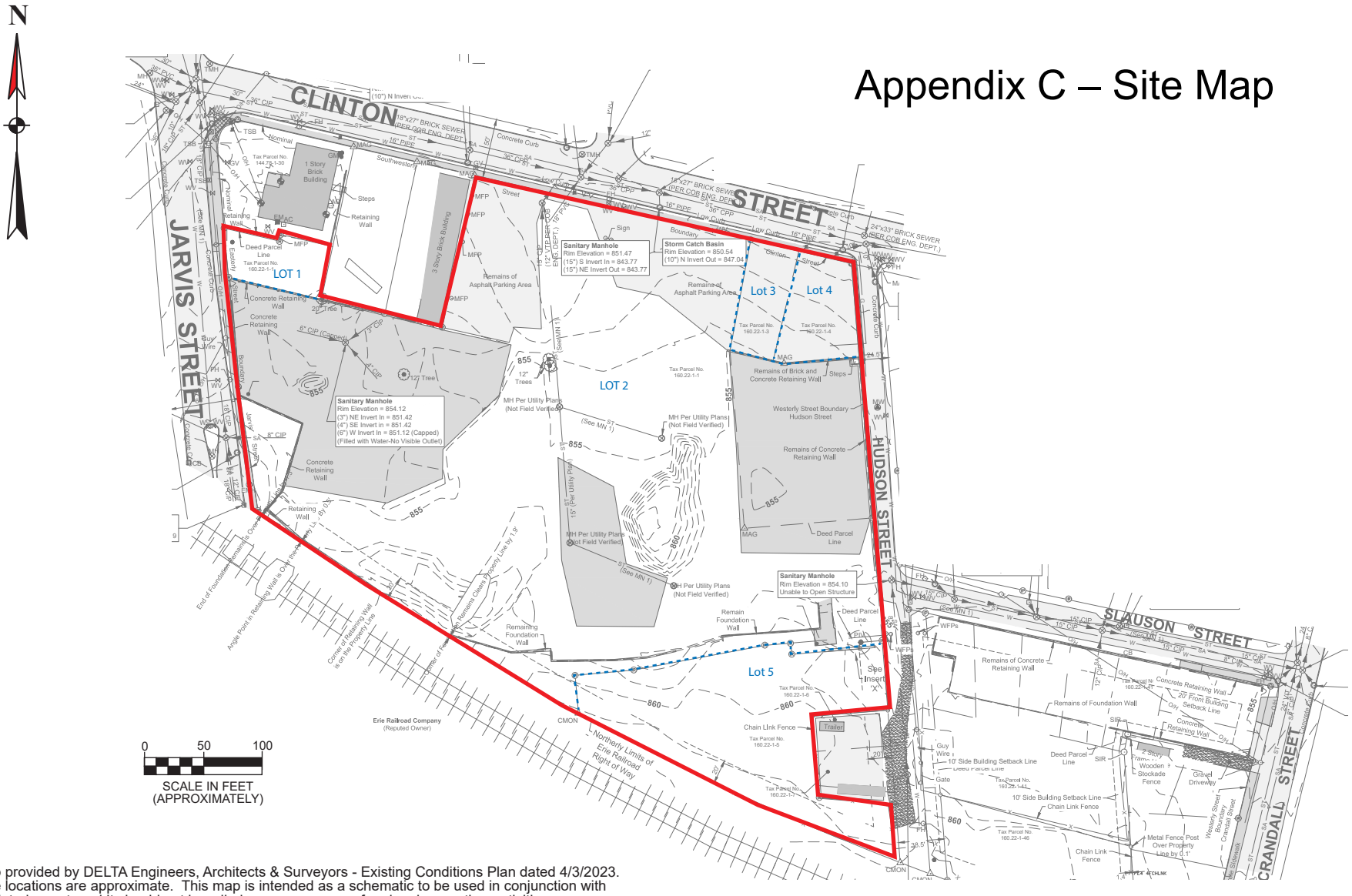
Appendix C – Site Map



Base map provided by DELTA Engineers, Architects & Surveyors - Existing Conditions Plan dated 4/3/2023. All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

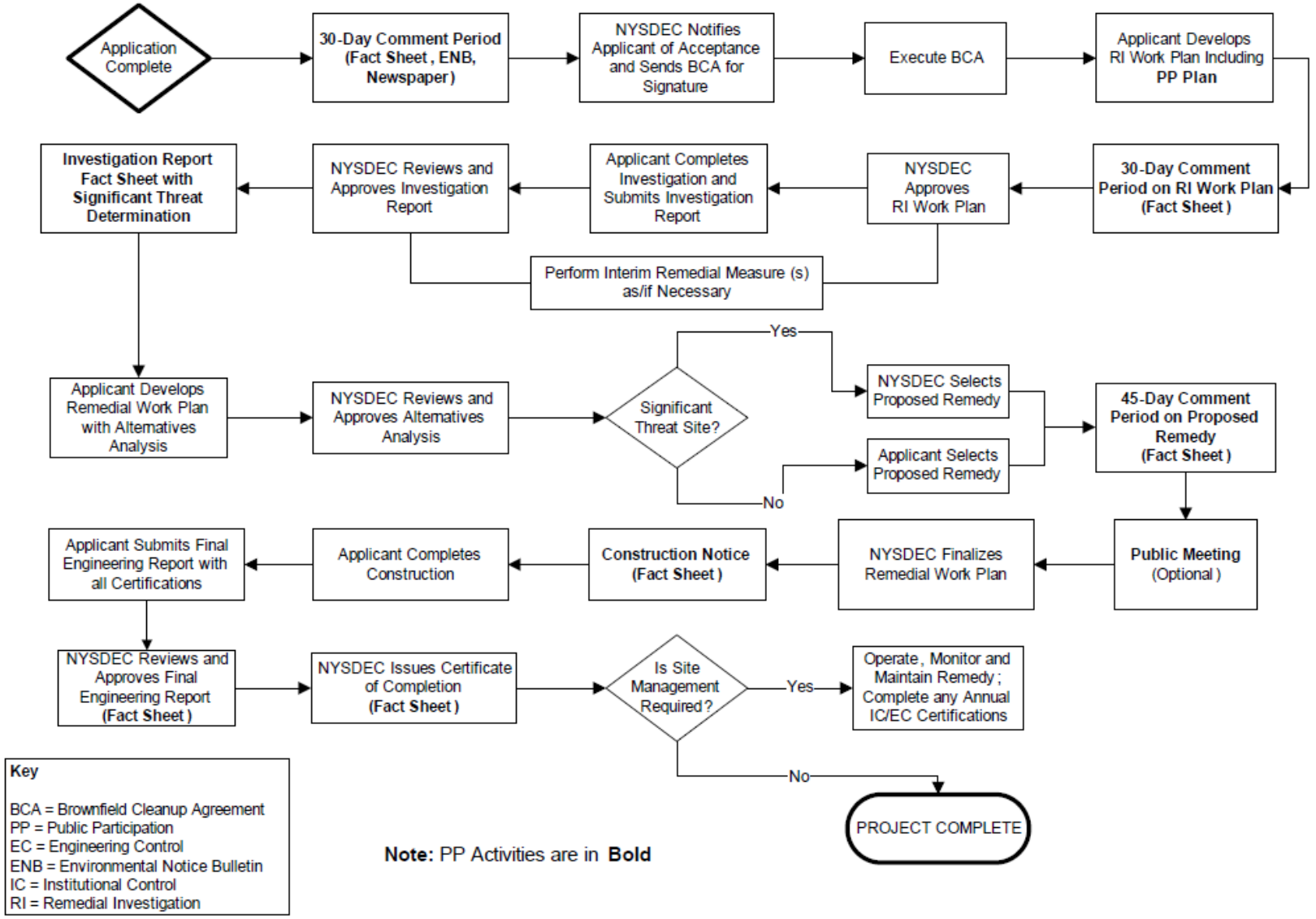
Figure: Site Map

Vanguard Village I+II (BCP: C704063)
Clinton, Hudson and Jarvis Streets
City of Binghamton, New York

Legend:
- BCP Site Boundary
- lot lines
- remains of building foundations
- remains of asphalt parking area

File: 23003-0060
February 2026
Scale as shown

Appendix D – Brownfield Cleanup Program Process



APPENDIX D – Health and Safety Plan

BELLUCCI ENGINEERING, PLLC

HEALTH AND SAFETY PLAN
FOR SITE REMEDIATION

Vanguard Village I+II

Clinton, Hudson, and Jarvis Streets

City of Binghamton, Broome County, New York

NYSDEC BCP Site: C704063

July 2026

Bellucci Engineering, PLLC
West Hartford, Connecticut

BELLUCCI ENGINEERING, PLLC

HEALTH AND SAFETY PLAN
FOR SITE REMEDIATION

July 2026

Prepared By:

Bellucci Engineering, PLLC
West Hartford, Connecticut

Prepared For:

The Metro Group Properties, Inc.
P.O. Box 10
Blue Point, New York 11715

The undersigned have reviewed this Health and Safety Plan for Site Remediation and certify to The Metro Group Properties, Inc. and to the New York State Department of Environmental Conservation that the information provided in this document is accurate as of the date of issuance by this office.

_____

Daniel Bellucci, PE
Bellucci Engineering, PLLC

BELLUCCI ENGINEERING, PLLC

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1.0 INTRODUCTION

1.1 Purpose

This Health and Safety Plan for Site Remediation (HASP) has been developed to provide the requirements and general procedures to be followed by the Remedial Engineer (RE; Bellucci Engineering, PLLC), Qualified Environmental Professional (QEP), and all on-site subcontractors while performing site remediation services at the Vanguard Village I+II BCP Site (ID: C704063) in the City of Binghamton, New York.

This HASP incorporates policies, guidelines and procedures intended to protect the public health of the community during fieldwork activities and therefore serves as a Community Health and Safety Plan. The objectives of the HASP are met by establishing guidelines to minimize potential exposures during fieldwork, and by planning for and responding to emergencies affecting the public adjacent to the site.

This HASP describes the responsibilities, training requirements, protective equipment and standard operating procedures to be utilized by all personnel while on the site. All on-site personnel and visitors shall follow the guidelines, rules, and procedures contained in this HASP. The Project Manager or Site Health and Safety Officer (SHSO) may impose any other procedures or prohibitions necessary for safe operations. This HASP incorporates by reference applicable Occupational Safety and Health Administration (OSHA) requirements in 29 CFR 1910 and 1926.

The requirements and guidelines in this HASP are based on a review of available information and evaluation of potential on-site hazards. This HASP will be discussed with site personnel and will be available on-site for review while work is underway. On-site personnel will report to the SHSO in matters of health and safety. The on-site project supervisor(s) are responsible for the enforcement and implementation of this HASP, which is applicable to all on-site field personnel, including contractors and subcontractors.

This HASP is specifically intended for the conduct of activities within the defined scope of work in specified areas of the site. Changes in conditions or future actions that may be conducted at the site may necessitate the modification of the requirements of the HASP. Although this HASP can be made available to interested persons for informational purposes, the RE and QEP cannot be held accountable for the interpretations or activities of any other persons or entities other than the employees of the RE, QEP, and their respective subcontractors.

1.2 Site Location and Description

The site is located at 181, 185, and 187 Clinton Street, 7 Hudson Street, and 34 Jarvis Street, City of Binghamton, Broome County, New York. A Site Map illustrating the site configuration is included as an Attachment to this HASP.

1.3 Work Activities

Fieldwork activities to be conducted at the site are detailed in the NYSDEC-approved Remedial Action Work Plan (RAWP; July 2026), which specifies the remedy for the required environmental remediation of the site.

2.0 HEALTH AND SAFETY HAZARDS

2.1 Hazard Overview for On-Site Personnel

Urban fill materials at the site have elevated concentrations of metals and polycyclic aromatic hydrocarbons (PAHs), elevated metals and per- and polyfluoroalkyl substances (PFAS) are in site groundwater, and volatile organic compounds (VOCs) have been documented in soil vapor. The possibility exists for on-site personnel to have contact with contaminated soils, groundwater and/or vapor during remediation activities. Contact with contaminated substances may present a skin contact, inhalation and/or ingestion hazard. These potential hazards are addressed in Sections 3.0 through 11.0, below.

2.2 Potential Hazards to the Public from Fieldwork Activities

The potential exists for the public to be exposed to contaminated media (soils, groundwater and/or vapor), which may present a skin contact, inhalation and/or ingestion hazard. Additional potential hazards associated with fieldwork activities include mechanical and physical hazards, traffic hazards from fieldwork vehicles, and noise impacts from operation of equipment.

Impacts to public health and safety are expected to be limited to hazards that could directly affect on-site visitors and/or trespassers. These effects will be mitigated through site access and control measures (see Section 6.0, below). Specific actions taken to protect the public health (presented in Sections 3.0 through 11, below) are anticipated to minimize any potential off-site impacts from contaminant migration, noise and traffic hazards.

3.0 PERSONAL PROTECTIVE EQUIPMENT

The levels of protection identified for the services specified in the RAWP represent a best estimate of exposure potential and protective equipment needed for that exposure. Determination of levels was based on data provided by previous studies of the site and information reviewed on current and past site usage.

The SHSO may recommend revisions to these levels based on an assessment of actual exposures and may at any time require site workers, supervisors and/or visitors to use specific safety equipment.

The level of protective clothing and equipment selected for this project is Level D. Level D PPE provides minimal skin protection and no respiratory protection and is used when the atmosphere contains no known hazard, oxygen concentrations are not less than 19.5%, and work activities exclude splashes, immersion or the potential for unexpected inhalation or contact with hazardous levels of chemicals. Workers will wear Level D protective clothing including, but not limited to, a hard hat, steel-toed boots, nitrile gloves (when handling soils and/or groundwater), hearing protection (foam ear plugs or earmuffs, as required), and safety goggles (in areas of exposed groundwater and when decontaminating equipment). Personal protective equipment (PPE) will be worn at all times, as designated by this HASP.

Disposable gloves will be changed immediately following the handling of contaminated soils, water, or equipment. Tyvek suits will be worn during activities likely to excessively expose work clothing to contaminated dust or soil (chemically-resistant over garments will be required in situations where exposures could lead to penetration of clothing and direct dermal contact by contaminants).

The requirement for the use of PPE by official on-site visitors shall be determined by the SHSO, based on the most restrictive PPE requirement for a particular Work Zones (see Section 6 for Work Zone definitions). All on-site visitors shall, at a minimum, be required to wear an approved hardhat and be provided with appropriate hearing protection as necessary.

The need for an upgrade in PPE will be determined based upon encountered site conditions, including measurements taken in the breathing zone of the work area using a photo-ionization detector (PID). An upgrade to a higher level of protection (Level C) will begin when specific action levels are reached (see Section 5.0, below), or as otherwise required by the SHSO. Level C PPE includes a full-face or half-mask air-purifying respirator (NIOSH approved for compound[s] of concern), hooded chemical-resistant clothing, outer and inner chemical-resistant gloves, and (as needed) coveralls, outer boots/boot covers, escape mask, and face shield. Level C PPE may be used only when: oxygen concentrations are not less than 19.5%; contaminant contact will not adversely affect exposed skin; types of air contaminants have been identified, concentrations measured, and a cartridge/canister is available that can remove the contaminant; atmospheric contaminant concentrations do not exceed immediately dangerous to life or health (IDLH) levels; and job functions do not require self-contained breathing apparatus (SCBAs). The need for Level B or Level A PPE is not anticipated for the planned remedial activities at this site.

If any equipment fails and/or any employee experiences a failure or other alteration of their protective equipment that may affect its protective ability, that person will immediately leave the work area. The Project Manager and the SHSO will be notified and, after reviewing the situation, determine the effect of the failure on the continuation of on-going operations. If the failure affects the safety of personnel, the work site, or the surrounding environment, personnel will be evacuated until appropriate corrective actions have been taken.

4.0 CONTAMINANT CONTROL

Precautions will be taken during dry weather (e.g., wetting or covering exposed soils) to avoid generating and breathing dust-generated from soils. A PID (or equivalent equipment) will be used to monitor potential contaminant levels. Response to the monitoring will be in accordance with the action levels provided in Section 5.0.

5.0 MONITORING AND ACTION LEVELS

Concentrations of petroleum compounds in the air are expected to be below the OSHA Permissible Exposure Limits (PELs). Air monitoring will be conducted for VOCs and dust according to the NYSDOH Generic Community Air Monitoring Plan (provided as an Attachment), and in accordance with the special requirements presented below. Monitoring will be conducted at all times that fieldwork activities which are likely to generate emissions are occurring. PID and dust readings consistently in excess of CAMP limits will be used as an indication of the need to initiate personnel monitoring, increase worker protective measures, and/or modify or cease on-site operations in order to mitigate off-site community exposure.

PID readings that consistently exceed background in the breathing zone (during any proposed tasks) will necessitate moving away from the source or implementing a higher PPE level.

Special Requirements for Work within 20 Feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be predetermined). Background readings in the occupied spaces must be taken and discussed with NYSDOH prior to commencement of the work.

If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m^3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m^3 or less at the monitoring point.

Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, and carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

Special Requirements for Indoor Work with Co-Located Residences or Facilities:

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under "Special Requirements for Work within 20 Feet of Potentially Exposed Individuals or Structures" except that in this instance "nearby/occupied structures" would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g., weekends or evenings) when building occupancy is at a minimum.

6.0 SITE CONTROL/WORK ZONES

Site control procedures will be established to reduce the possibility of worker/visitor contact with environmental contaminants, to protect the public in the area surrounding the site and to limit access to the site to only those persons required to be in the work zone. Notices placed near the site will warn the public not to enter fieldwork areas and direct visitors to report to the Project Manager or SHSO. Measures will be taken to limit the entry of unauthorized personnel into the specific areas of field activity and to safely direct and control all vehicular traffic in and near the site (e.g., placement of traffic cones and warning tape).

Work Areas are defined as follows:

Exclusion Zone - The exclusion zone will be that area immediately surrounding the work being performed to accomplish fieldwork activities involving the handling or potential exposures to contaminated media. Only individuals with appropriate PPE and training are allowed into this zone. It is the responsibility of the SHSO to prevent unauthorized personnel from entering the exclusion zone. When necessary (e.g., high traffic areas) the exclusion zone will be delineated with barricade tape, cones and/or barricades.

Dedicated Decontamination Area - A dedicated decontamination area for personnel and equipment (including contamination reduction and support zones) is not anticipated to be required during completion of fieldwork activities, but will be established and utilized, as warranted, based on changes in site conditions. Care will be taken at all times to remove gloves, excess soil from boots, and soiled clothing (if necessary) before entering the Intermediate Zone.

Intermediate Zone - The intermediate zone, also known as the decontamination zone, is where patient decontamination should take place, if necessary. A degree of contamination still is found in this zone and some PPE is required, although it is usually of a lesser degree than that required for the exclusion zone.

Command Zone - The command zone is located outside the decontamination zone. All exposed individuals and equipment from the exclusion zone and the decontamination zone should be decontaminated before entering the command zone. Access to all zones must be controlled. Keeping onlookers, media, and others well away from the site is critical and will be the responsibility of both the SHSO and the Project Manager, and other site personnel as appropriate.

7.0 NOISE CONTROL

All fieldwork activities will be conducted in a manner designed to reduce unnecessary noise generation, and to minimize the potential for both on-site and off-site harmful noise levels. The Project Manager and SHSO will establish noise reduction procedures (as appropriate to the site and the work) to meet these requirements.

8.0 PERSONNEL TRAINING

Work zones that will accomplish the general objective stated above will be established by the Project Manager and the SHSO. Site access will be monitored by the SHSO, who will maintain a log-in sheet for personnel that will include, at the minimum, personnel on the site, their arrival and departure times and their destination on the site. All workers will be properly trained in accordance with OSHA requirements (29 CFR 1910). Personnel exiting the work zone(s) will be decontaminated prior to exiting the site.

Site-specific training will be provided to each employee. Personnel will be briefed by the SHSO as to the potential hazards to be encountered. Topics will include:

- Availability of this HASP;
- General site hazards and specific hazards in the work areas, including those attributable to known of suspect on-site contaminants;
- Selection, use, testing, and care of the body, eye, hand, and foot protection being worn, with the limitations of each;
- Decontamination procedures for personnel, their personal protective equipment, and other equipment used on the site;
- Emergency response procedures and requirements;
- Emergency alarm systems and other forms of notification, and evacuation routes to be followed; and,
- Methods to obtain emergency assistance and medical attention.

9.0 DECONTAMINATION

The SHSO will establish a decontamination system and procedures (appropriate to the site and the work) that will prevent potentially hazardous materials from leaving the site. Vehicles will be brushed to remove materials adhering to surfaces. Sampling equipment will be segregated, decontaminated, and stored separately from PPE. All decontaminated or clean sampling equipment not in use will be protected and stored in a designated, controlled storage area.

10.0 EMERGENCY RESPONSE

10.1 Notification of Site Emergencies

In the event of an emergency, the SHSO will be immediately notified of the nature and extent of the emergency (the names and contact information for key site safety and management personnel, as well as other site safety contact telephone numbers, shall be posted at the site).

Table 1 in this HASP contains Emergency Response Telephone Numbers, and immediately following is a map detailing the directions to the nearest hospital emergency room. This information will be maintained at the work site by the SHSO. The location of the nearest telephone will be determined prior to the initiation of on-site activities. In addition to any permanent phone lines, a cellular phone will be in the possession of the SHSO, or an authorized designee, at all times.

10.2 Responsibilities

Prior to the initiation of on-site work activities, the SHSO will:

- Notify individuals, authorities and/or health care facilities of the potentially hazardous activities and potential wastes that may develop as a result of the remedial activities;
- Confirm that first aid supplies and a fire extinguisher are available on-site;
- Have a working knowledge of safety equipment available; and,
- Confirm that a map detailing the most direct route to the hospital is prominently posted with the emergency telephone numbers.

The SHSO will be responsible for directing notification, response and follow-up actions and for contacting outside response personnel (ambulance, fire department, or others). In the case of an evacuation, the SHSO will account for personnel. A log of individuals entering and leaving the site will be kept so that everyone can be accounted for in an emergency.

Upon notification of an exposure incident, the SHSO will contact the appropriate emergency response personnel for recommended medical diagnosis and, if necessary, treatment. The SHSO will determine whether and at what levels exposure actually occurred, the cause of such exposure, and the means to prevent similar incidents from occurring.

10.3 Accidents and Injuries

In the event of an accident or injury, measures will be taken to assist those who have been injured or exposed and to protect others from hazards. If an individual is transported to a hospital or doctor, a copy of the HASP will accompany the individual.

The SHSO will be notified and respond according to the severity of the incident. The SHSO will investigate the incident and prepare a signed and dated report documenting the investigation. An exposure-incident report will also be completed by the SHSO and the exposed individual. The form will be filed with the employee's medical and safety records to serve as documentation of the incident and the actions taken.

10.4 Communication

No special hand signals will be utilized within the work zone. Field personnel will utilize standard hand signals during the operation of heavy equipment.

10.5 Safe Refuge

Vehicles and on-site structures will serve as the immediate place of refuge in the event of an emergency. If evacuation from the area is necessary, project vehicles will be used to transport on-site personnel to safety.

10.6 Site Security and Control

Site security and control during emergencies, accidents and incidents will be monitored by the SHSO. The SHSO is responsible for limiting access to the site to authorized personnel and for oversight of reaction activities.

10.7 Emergency Evacuation

In case of an emergency, personnel will evacuate to the safe refuge identified by the SHSO, both for their personal safety and to prevent the hampering of response/rescue efforts.

10.8 Resuming Work

A determination that it is safe to return to work will be made by the SHSO and/or any personnel assisting in the emergency, e.g., fire department, police department, utility company, etc. No personnel will be allowed to return to the work areas until a full determination has been made by the above-identified personnel that all field activities can continue unobstructed. Such a determination will depend upon the nature of the emergency (e.g., downed power lines -- removal of all lines from the property; fire -- extinguished fire; injury -- safe transport of the injured party to a medical facility with either assurance of acceptable medical care present or completion of medical care; etc.). Before on-site work is resumed following an emergency, necessary emergency equipment will be recharged, refilled or replaced. Government agencies will be notified as appropriate. An Incident Report Form will be filed.

10.9 Fire Fighting Procedures

A fire extinguisher will be available in the work zone during on-site activities. This extinguisher is intended for small fires. When a fire cannot be controlled with the extinguisher, the area will be evacuated immediately. The SHSO will be responsible for directing notification, response and follow-up actions and for contacting ambulance and fire department personnel.

10.10 Emergency Decontamination Procedure

The extent of emergency decontamination depends on the severity of the injury or illness and the nature of the contamination. Whenever possible, minimum decontamination will consist of washing, rinsing and/or removal of contaminated outer clothing and equipment. If time does not permit decontamination, the person will be given first aid treatment and then wrapped in plastic or a blanket prior to transport.

10.11 Emergency Equipment

The SHSO will maintain a dedicated vehicle containing the following on-site equipment for safety and emergency response: fire extinguisher; first-aid kit; and, extra copy of this HASP.

11.0 SPECIAL PRECAUTIONS AND PROCEDURES

The activities associated with this remediation may involve potential risks of exposure to both chemical and physical hazards. The potential for chemical exposure to hazardous or regulated substances will be significantly reduced through the use of monitoring, personal protective clothing, engineering controls, and implementation of safe work practices.

11.1 Heat/Cold Stress

Training in prevention of heat/cold stress will be provided as part of the site-specific training. The timing of this project is such that heat/cold stress may pose a threat to the health and safety of personnel. Work/rest regimens will be employed, as necessary, so that personnel do not suffer adverse effects from heat/cold stress. Special clothing and appropriate diet and fluid intake regimens will be recommended to personnel to further reduce this temperature-related hazard. Rest periods will be recommended in the event of high/low temperatures and/or humidity to counter the negative effects of heat/cold stress.

11.2 Heavy Equipment

Working in the vicinity of heavy equipment is the primary safety hazard at the site. Physical hazards in working near heavy construction equipment include the following: overhead hazards, slips/trip/falls, hand and foot injuries, moving part hazards, improper lifting/back injuries and noise. All workers will be properly trained in accordance with OSHA requirements (29 CFR 1910).

No workers will be permitted within any excavated areas without proper personal protective equipment (PPE), including, as warranted, any necessary Level C equipment (e.g., respirators and protective suits).

Air monitoring in excavation areas will be conducted for VOCs in accordance with Section 5.0.

11.3 Additional Safety Practices

The following are important safety precautions which will be enforced during the remedial activities.

- Medicine and alcohol can aggravate the effect of exposure to certain compounds. Controlled substances and alcoholic beverages will not be consumed during remedial activities. Consumption of prescribed drugs will only be at the discretion of a physician familiar with the person's work.
- Eating, drinking, chewing gum or tobacco, smoking, or other practices that increase the probability of hand-to-mouth transfer and ingestion of material is prohibited except in areas designated by the SHSO.
- Contact with potentially contaminated surfaces will be avoided whenever possible. Workers will not unnecessarily walk through puddles, mud or other discolored surfaces; kneel on the ground; or lean, sit, or place equipment on drums, containers, vehicles, or the ground.
- Personnel and equipment in the work areas will be minimized, consistent with effective site operations.
- Unsafe, unattended equipment will be identified by a "DANGER, DO NOT OPERATE" tag.
- Work areas for various operational activities will be established.

11.4 Daily Log Contents

The SHSO will establish a system appropriate to the site, the work and the work zones that will record, at a minimum, the following information:

- Personnel on the site (arrival and departure times) and their destination on the site;
- Incidents and unusual activities site such as (but not limited to) accidents, spills, breaches of security, injuries, equipment failures and weather-related problems;
- Changes to the HASP; and,
- Daily information, such as: changes to work and health and safety plans, work accomplished and the current site status, and monitoring results.

12.0 EMERGENCY INFORMATION

12.1 Emergency Contact Information

The following table presents emergency contact information. This table should be copied and freely distributed and/or posted at the site to ensure ready access.

Emergency Contact Information

Emergency Agencies	Phone Numbers
EMERGENCY	**911**
HOSPITAL Guthrie Lourdes Hospital	**(607) 763-6311 or 911**
POLICE 38 Hawley Street Binghamton	**(607) 723-5321 or 911**
FIRE	**(607) 772-7016 or 911**
City Hall	**(607) 772-7001**
Water and Sewer Services	**(607) 772-7021**
Site Health and Safety Officer, Richard Hooker Gallagher Bassett Technical Services	(845) 452-1658

12.2 Directions to Hospital

Approximately 5 minutes travel time – 1.3 mile

South on Jarvis Street (0.1 mile)

Right on Charlotte Street (436 feet)

Left on Florence Street (404 feet)

Continue Onto Beethoven Street (0.9 mile)

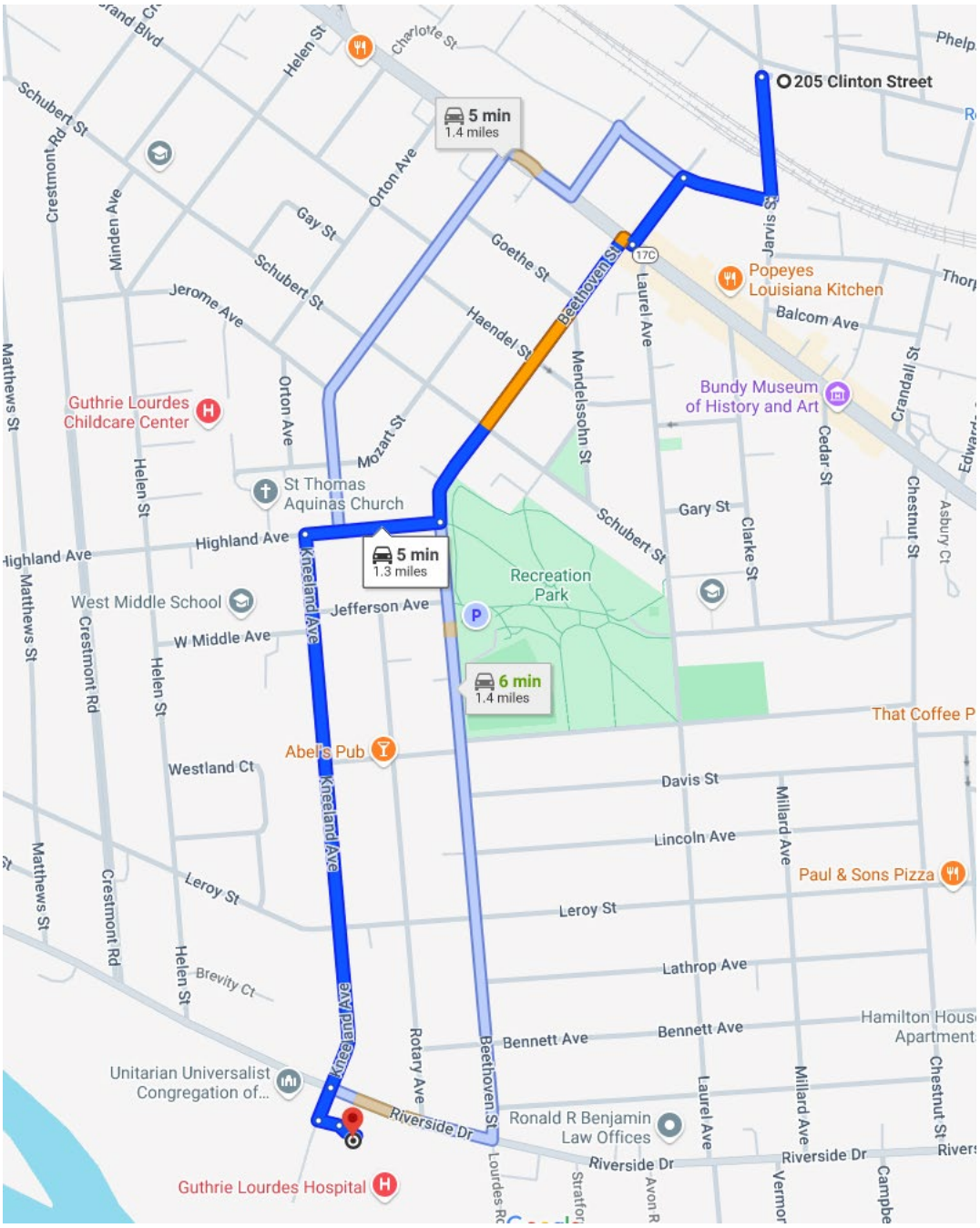
Right on Highland Avenue (0.1 mile)

Left on Kneeland Avenue (0.5 mile)

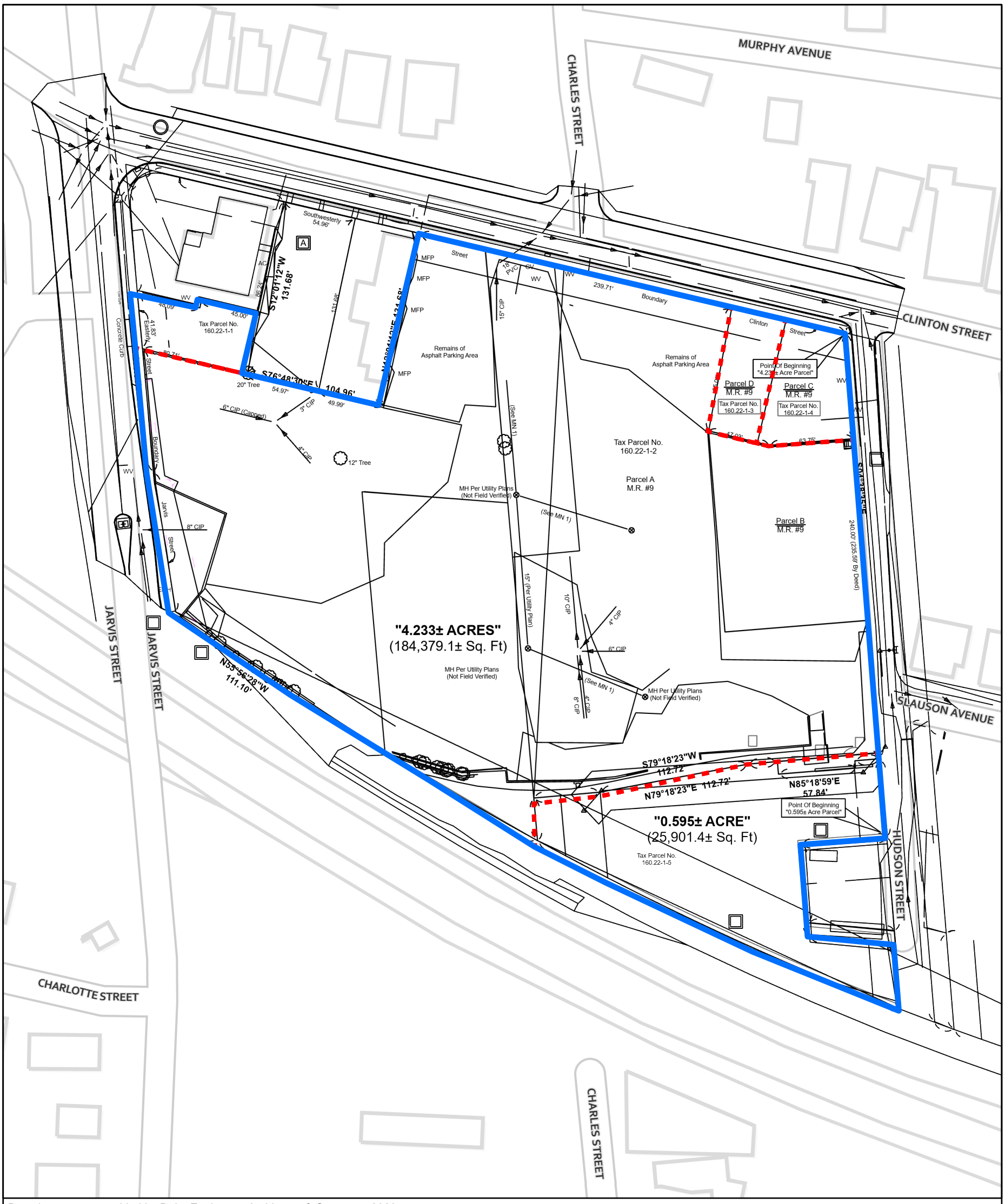
Continue Onto Lourdes Hospital Drive

Hospital on Left, follow signs to Emergency Room

12.3 Map to Hospital



GALLAGHER BASSETT | TECHNICAL SERVICES



Based on survey provided by Delta Engineers, Architects, & Surveyors 2023.
All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

0 50 100 200

SCALE IN FEET

Site Map

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

- BCP Site Boundary
- Lot Lines

N

File: 23003-0060

July 2026

Scale as shown

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

APPENDIX E – Community Air Monitoring Plan

BELLUCCI ENGINEERING, PLLC

COMMUNITY AIR MONITORING PLAN

Vanguard Village I+II

Clinton, Hudson, and Jarvis Streets

City of Binghamton, Broome County, New York

NYSDEC BCP Site: C704063

July 2026

Bellucci Engineering, PLLC
West Hartford, Connecticut

BELLUCCI ENGINEERING, PLLC

COMMUNITY AIR MONITORING PLAN

July 2026

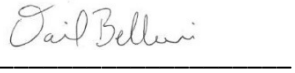
Prepared By:

Bellucci Engineering, PLLC
West Hartford, Connecticut

Prepared For:

The Metro Group Properties, Inc.
P.O. Box 10
Blue Point, New York 11715

The undersigned have reviewed this Community Air Monitoring Plan and certify to The Metro Group Properties, Inc. and to the New York State Department of Environmental Conservation that the information provided in this document is accurate as of the date of issuance by this office.



Daniel Bellucci, PE
Bellucci Engineering, PLLC

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Site Map

NYSDOH Generic CAMP

1.0 INTRODUCTION

1.1 Purpose

This Community Air Monitoring Plan (CAMP) has been developed to provide the requirements and general procedures to be followed by the Remedial Engineer (RE; Bellucci Engineering, PLLC), Qualified Environmental Professional (QEP), and on-site subcontractors while performing remediation services at Vanguard Village I+II BCP Site (ID: C704063) in the City of Binghamton, New York.

This CAMP requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area and is intended to provide protection for the downwind receptors, including off-site properties and on-site workers not directly involved in the handling of contaminated materials. Implementation of the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The Project Manager or Site Health and Safety Officer (SHSO) may impose other requirements necessary for safe site operations and protection of potential receptors.

1.2 Site Location and Description

The site is defined as the property located at 181, 185, and 187 Clinton Street, 7 Hudson Street, and 34 Jarvis Street, City of Binghamton, Broome County, New York. A site map is included as an attachment to this CAMP.

1.3 Work Activities

Environmental management activities are detailed in the NYSDEC-approved Remedial Action Work Plan (RAWP; July 2026). The specific tasks detailed in the RAWP are wholly incorporated by reference into this CAMP. The RAWP describes the tasks required to remediate environmental contamination at the site.

1.4 Health and Safety Hazards

Urban fill materials at the site have elevated concentrations of metals and polycyclic aromatic hydrocarbons (PAHs), elevated metals and per- and polyfluoroalkyl substances (PFAS) are in site groundwater, and volatile organic compounds (VOCs) have been documented in soil vapor.

The possibility exists for on-site personnel to have contact with contaminated soils and/or vapor during site remediation work; it is not anticipated that groundwater will be encountered during site development activities. Contact with contaminated substances may present a skin contact, inhalation and/or ingestion hazard.

2.0 AIR MONITORING

2.1 General Requirements

The implementation of the CAMP will document the presence or absence of VOCs and dust in the air surrounding the work zone, which may migrate off-site due to fieldwork activities. Monitoring will be conducted at all times that fieldwork activities which are likely to generate emissions are occurring. This plan provides guidance on the need for implementing more stringent dust and emission controls based on air quality data.

2.1.1 Continuous Monitoring

Real-time air monitoring for VOCs and particulate levels at the perimeter of the exclusion zone or work area will be performed according to the NYSDOH Generic Community Air Monitoring Plan (provided as an Attachment), and in accordance with the special requirements presented below, during all ground intrusive activities and any other fieldwork that is reasonably likely to generate significant dust or vapors from known or suspected contaminated soils. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pit excavation or trenching, and the installation of soil borings or monitoring wells.

2.1.2 Periodic Monitoring

Periodic monitoring for VOCs will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection, for instance, will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

2.1.3 Health and Safety

Photoionization detector (PID) and dust readings consistently in excess of CAMP limits will be used as an indication of the need to initiate personnel monitoring, increase worker protective measures, and/or modify or cease on-site operations in order to mitigate off-site community exposure. PID readings that consistently exceed background in the breathing zone (during any proposed tasks) will necessitate moving away from the source or implementing a higher level of personal protective equipment (concentrations of VOCs in the air are expected to be below the OSHA Permissible Exposure Limits [PELs]).

2.1.4 VOC Monitoring, Response Levels, and Actions

VOCs will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during invasive work. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. Monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present.

The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.

If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or occupied structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shut down.

All 15-minute readings must be recorded and be available for NYSDEC personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

2.1.5 Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level.

The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter (µg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed and work will continue provided that downwind PM-10 particulate levels do not exceed 150 µg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 µg/m^3 above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 µg/m^3 of the upwind level and in preventing visible dust migration.

All readings will be recorded and will be available for NYSDEC personnel to review.

2.2 Special Requirements

2.2.1 Work within 20 Feet of Potential Receptors

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be predetermined). Background readings in the occupied spaces must be taken and discussed with NYSDOH prior to commencement of the work.

If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m^3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m^3 or less at the monitoring point.

Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, and carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

2.2.2 Special Requirements for Indoor Work

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under Section 2.2.1, except that in this instance "nearby/occupied structures" would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g., weekends or evenings) when building occupancy is at a minimum.

2.3 Contaminant Control

Mitigation measures may be required to control the generation of vapors and/or dust.

2.3.1 Dust Control

Mitigation measures may include reducing the surface area of contaminated soil being disturbed at one time, wetting heavy equipment and exposed soils to reduce fugitive dust, using covered stockpiles/trucks, or stopping excavation and/or other soil disturbing activities. Dust suppression will be conducted during construction activities that will disturb on-site soils and may include misting, reduction in soil movement, reducing vehicle speeds, or cessation of excavation.

2.3.2 Vapor Control

Mitigation measures include all controls used for dust suppression, as well as specific techniques for reducing releases of vapors, such as spraying commercial odor control products (e.g., BioSolve) or limiting work to cooler or less windy times of day.

3.0 QUALITY ASSURANCE

All instruments will be properly calibrated before the start of fieldwork, with periodic calibration checks as necessary. All equipment will be operated in accordance with the manufacturer's recommendations and the operator's manual. The fieldwork manager will review all data and take appropriate actions based on the requirements in Section 2 of this CAMP. A record of all calibration events, and any unusual occurrence that affect CAMP data, will be recorded in the project field logbook. Instrument calibration shall be documented in the designated field logbook. Exceedances of action levels observed during performance of the CAMP will be reported to the NYSDEC Project Manager and included in the Daily Report.

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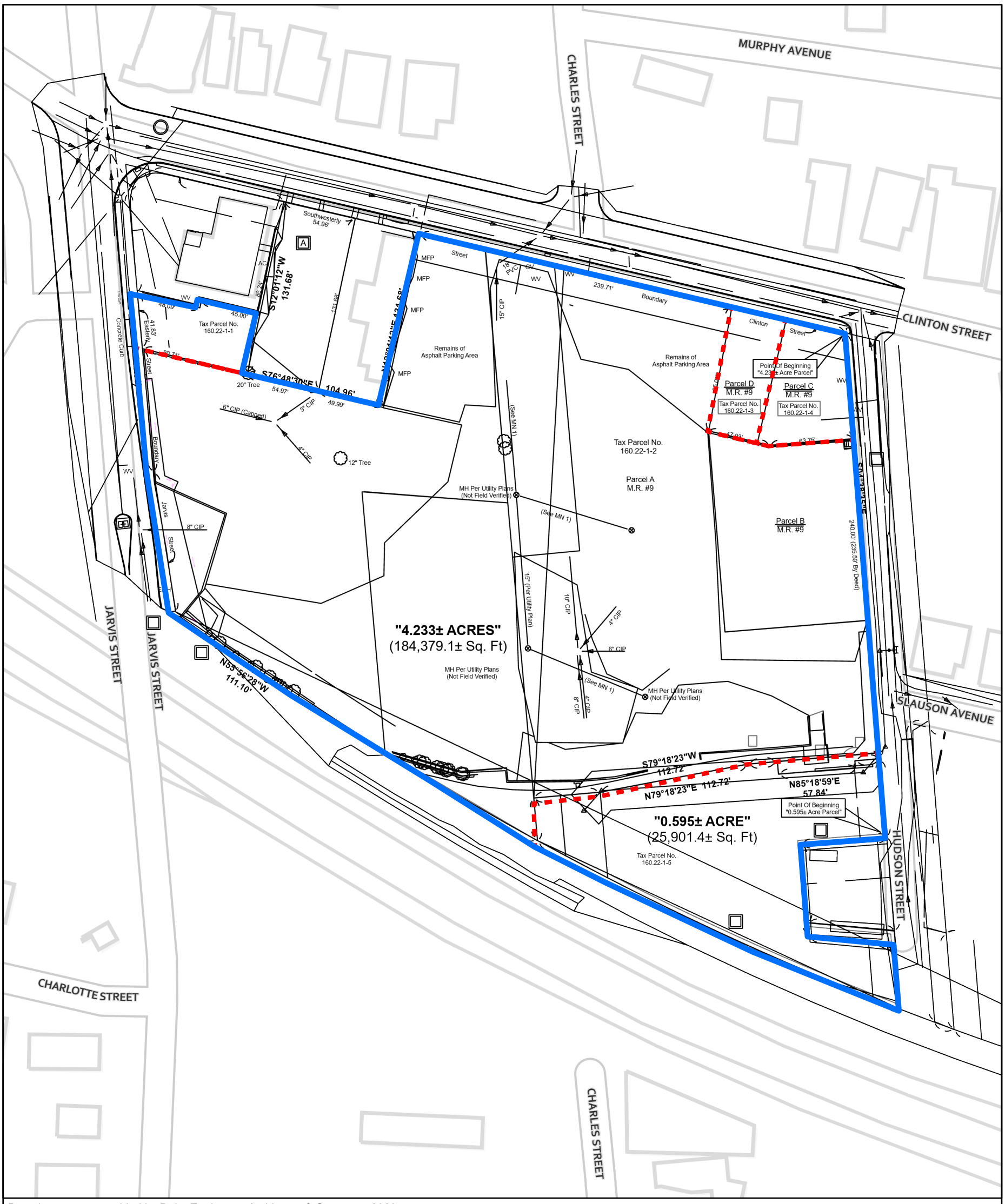

Based on survey provided by Delta Engineers, Architects, & Surveyors 2023.
All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

0 50 100 200

SCALE IN FEET

Site Map

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

- BCP Site Boundary
- Lot Lines

N

File: 23003-0060

July 2026

Scale as shown

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

APPENDIX F – Quality Assurance Project Plan

BELLUCCI ENGINEERING, PLLC

SITE REMEDIATION
QUALITY ASSURANCE PROJECT PLAN

Vanguard Village I+II

Clinton, Hudson, and Jarvis Streets

City of Binghamton, Broome County, New York

NYSDEC BCP Site: C704063

July 2026

Bellucci Engineering, PLLC
West Hartford, Connecticut

BELLUCCI ENGINEERING, PLLC

SITE REMEDIATION
QUALITY ASSURANCE PROJECT PLAN

July 2026

Prepared By:

Bellucci Engineering, PLLC
West Hartford, Connecticut

Prepared For:

The Metro Group Properties, Inc.
P.O. Box 10
Blue Point, New York 11715

The undersigned have reviewed this Site Remediation Quality Assurance Project Plan and certify to The Metro Group Properties, Inc. and to the New York State Department of Environmental Conservation that the information provided in this document is accurate as of the date of issuance by this office.

_____

Daniel Bellucci, PE
Bellucci Engineering, PLLC

BELLUCCI ENGINEERING, PLLC

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1.0 PROJECT MANAGEMENT

1.1 Project/Task Organization

Major participants in the project are shown below along with their specific responsibilities and authorities. Resumes for the Remedial Engineer, technical staff, and the Data Validator are provided in Attachment D this Quality Assurance Project Plan (QAPP).

Thea Barbelet New York State Department of Environmental Conservation (NYSDEC)

Thea Barbelet is the project manager for the NYSDEC, responsible for review and approval of all project submittals.

Daniel Bellucci, PE Bellucci Engineering, PLLC

Daniel Bellucci, PE is the Remedial Engineer (RE) for the project, responsible for overview of all project activities. Mr. Bellucci has authority over all GBTS personnel and subcontractors and will be responsible for final review and approval of all project submittals prior to submission to the NYSDEC.

Scott Spitzer Technical Director, Environmental Consulting, GBTS

Scott Spitzer will be the Project Manager, responsible for directing and coordinating all project activities, reviewing all project documents, and ensuring that project plans are followed. Mr. Spitzer has authority to direct the activities of the field team (OSC and subcontractors).

Richard Hooker Quality Assurance Officer (QAO), GBTS

Richard Hooker, PhD will be responsible for reviewing all sampling procedures and certifying that the data was collected and analyzed using the appropriate procedures and will assist in the development of the sampling and analytical portion of a site-specific quality assurance project plan (QAPP).

Erick Salazar, CHMM Qualified Environmental Professional / On-Site Coordinator, GBTS

Erick Salazar, CHMM is the Qualified Environmental Professional (QEP) and On-Site Coordinator (OSC), responsible for the completion of all on-site fieldwork, collection of all samples, completion of the field log, and chains of custody. The OSC will have authority over all on-site subcontractors.

Laboratory York Analytical Laboratories

York Analytical Laboratories, will be responsible for analysis of samples, and is New York State Department of Health (NYSDOH) Environmental Laboratory Approved Program (ELAP) certified in the appropriate categories, including PFOA and PFOS in drinking water by EPA Method 537.1 or ISO 25101.

1.2 Principal Data Users

The principal users of the generated data in this project are listed below.

1. Residents of the City of Binghamton, especially those residing in the vicinity of the site
2. The Metro Group Properties, Inc. (the Volunteer)
3. NYSDEC

1.3 Problem Definition/Background

The Site (see Site Map in Attachment A) is being remediated under the NYSDEC Brownfields Cleanup Program (BCP ID: C704063) to address documented contamination in site media. The Remedial Investigation Report for the site documented the presence of fill soils containing elevated levels of metals and polycyclic aromatic hydrocarbons (PAHs), groundwater impacted by metals and per- and polyfluoroalkyl substances (PFAS), and volatile organic compounds (VOCs) in soil vapor.

1.4 Project/Task Description

The project will meet its objective through compliance with applicable requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, and with this QAPP. Proposed remedial actions include collection of confirmatory endpoint soil samples from excavations, and potentially documentation groundwater and/or soil vapor samples.

1.5 Quality Objectives and Criteria

The data collected in this project will be used for the following purposes:

- To document post-remediation site environmental conditions.

In order to meet data quality objectives of precision, accuracy, representation, comparability, and completeness the following actions will be implemented:

- All media sampling will be conducted in accordance with the NYSDEC-approved Remedial Action Work Plan (RAWP) and QAPP Sections 2 and 3.
- Final data generated during the remedial action will be submitted for review by a third, independent party (see Section 3.2.1, below).

Prior to field activities, the QEP, Project Manager, and the OSC will review the RAWP to ensure that the data quality objectives of precision, accuracy, representation, comparability, and completeness will be met during the field activities.

At the completion of field activities, the Project Manager will review field logs and chains of custody to ensure that field activities met the intent of the RIWP. If a problem is identified, the Project Manager and the QAO will meet to determine any necessary corrective measures to meet the data quality objectives.

1.6 Documents and Records

Electronic and paper copies of all fieldwork observations and measurements will be retained by the Remedial Engineer and QEP, which will be provided in the Final Engineering Report (FER).

2.0 SAMPLING AND ANALYSIS PLAN

Sample collection, handling, and laboratory analysis is summarized below. A Fieldwork Map indicating Site features and planned fieldwork locations is provided as Attachment A.

2.1 Sampling Overview

Confirmatory endpoint soil samples will be collected following excavation of contaminated soil. Contingency media samples (soil, groundwater and/or soil vapor) may be collected based on the conditions encountered during remedial construction.

2.2 Fieldwork and Sampling Methodology

All fieldwork activities, including collection and handling of media samples, will be in accordance with the Standard Operating Procedures (SOPs) provided in Attachment B, including specific guidelines for PFAS, which will be strictly followed by all field and laboratory personnel. Basic SOP components are summarized below.

2.2.1 General Fieldwork

The OSC will be responsible for compliance with the SOPs, including:

- Documentation of all fieldwork activities in logbooks for inclusion in final reports;
- Assessment of media characteristics (soil type, presence or absence of foreign materials, field indications of contamination), and instrument readings using properly calibrated and operated precision instruments;
- Identification of materials requiring special handling (media that may contain elevated concentrations of contaminants or is grossly contaminated, hazardous materials, etc.) and ensuring proper secure on-site storage, pending characterization and disposition;
- Ensuring that unforeseen environmental conditions are managed in accordance with applicable federal and state regulations;
- Sample collection, including procedures to minimize potential cross-contamination; and,
- Implementation of decontamination procedures.

Sample collection and laboratory analysis for PFAS will comply with current NYSDEC guidance (*Sampling, Analysis, and Assessment of Per-and Polyfluoroalkyl Substances [PFAS] Under NYSDEC's Part 375 Remedial Programs*, April 2023), provided in Attachment B (SOPs), which includes a target list of PFAS compounds (see also Section 2.4, Analytical Methods).

Guidelines for sampling of soil and/or groundwater for PFAS include the following (detailed protocols, including lists of prohibited behaviors and materials, are provided in the SOP):

- Sampling for PFAS will be conducted prior to sampling for other analytes, as practicable, to minimize cross contamination from sample containers utilized for other methods;
- Sampling personnel will comply with specific prohibitions in regard to field equipment, PPE, rain gear, personal clothing and body-care, food, etc.;
- Sample coolers will be held at low temperature using only water ice (plastic freezer packs are prohibited);
- Decontamination protocols specific to PFAS will be followed, including use of "PFAS free" water and approved cleaning agents (Liquinox is prohibited); and,
- Compliance with laboratory requirements for sampling containers, field blanks, etc. (laboratory fieldwork SOPs for PFAS are included in Attachment B).

2.2.2 Soil Sampling

It is anticipated that approximately 234 confirmatory samples will be collected from excavation floors and walls (the final number will be determined in consultation with NYSDEC). Samples will be collected from remaining soil at excavation areas using hand-held equipment or may be manually collected directly from exposed soil or the sampling instrument using dedicated disposable latex gloves. Soil sampling for VOCs will follow USEPA Method 5035 protocols, using disposable 5-gram plastic syringes to place material into laboratory-supplied glass vials (prepared with stirs bars and appropriate preservatives).

2.2.3 Soil Vapor Sampling

Soil vapor sampling, if required, will be in accordance with applicable NYSDOH guidance, including use of a tracer gas to confirm adequate surface seals. Purge rates will not exceed 0.2 liters per minute. For this project, soil vapor samples will be collected over a two-hour period (rate not exceeding 0.2 liters per minute) into individual laboratory-certified clean Summa canisters equipped with two-hour flow regulators.

2.2.4 Other Materials

Any non-soil solid materials requiring laboratory analysis will be placed into laboratory supplied glassware when possible or alternatively be placed into double locking plastic bags and then boxed in order to prevent a tear or other breach in the bags. Liquid samples from excavations, collection pits, or drums/tanks, etc., will be sampled using a dedicated disposal sampling device.

Any required sampling for other media will be in compliance with fieldwork protocols specified in the RAWP.

2.3 Sample Handling and Custody

2.3.1 Sample Containers

The following laboratory-supplied containers will be used for sample collection (as applicable):

Media	Analyte Class	Collection Container (subject to laboratory requirements)	Preservation
Soil	PFAS	1, 250-ml HDPE plastic (fill halfway)	6° C
Soil	VOCs	Laboratory prepared 5035 VOA kit, (4, 40-ml glass vials)	Method 5035
Soil	SVOCs, metals, pesticides, herbicides, PCBs, cyanide	1, 8-oz. glass jar	4° C
Soil	PFAS MS/MSD	1, 250-ml HDPE plastic (fill halfway), (may use soil from a sample container)	6° C
Soil	All other MS/MSD	additional 8-oz. glass jar	4° C
Water	PFAS	2, 250-ml HDPE plastic (fill to neck)	6° C
Water	VOCs	4, 40-ml prepared glass vials	4° C, HCl
Water	SVOCs, pesticides, herbicides, PCBs	1-liter amber glass (jar quantity per laboratory requirements)	4° C
Water	Metals - total	1, 500-ml HDPE plastic	4° C
Water	Metals - dissolved	1, 500-ml HDPE plastic	4° C, HNO_3
Water	Cyanide	1, 500-ml HDPE plastic	4° C, NaOH
Water	Field blank (PFAS)	1, 250-ml HDPE plastic (fill to neck)	4° C
Water	Trip blank (VOCs)	3, 40-ml prepared glass vials	4° C, HCl
Water	Field blank (other analytes)	As per sample collection requirements	See above
Vapor	VOCs	1, 6-liter Summa canister (or equivalent)	none

2.3.2 Sampling Frequency

Soil samples will be analyzed for NYSDEC Part 375-6.8 parameters, including USEPA Target Compound List (TCL) VOCs and semi-volatile organic compounds (SVOCs) plus 30 tentatively identified compounds (TICs), USEPA Target Analyte List (TAL) metals, Cr^{+6}, polychlorinated biphenyls (PCBs), pesticides, herbicides and cyanide, as well as 1,4-dioxane and PFAS in accordance with the most current NYSDEC guidance. Sample analysis may be modified in consultation with the NYSDEC Project Manager based on previous sampling results.

Additional soil analysis may be performed based repository requirements for waste characterization prior to off-site disposal.

Sampling requirements and USEPA Methods are outlined below.

Media /QC Parameter	Number of Samples [a]	Analytes (USEPA Method) [b, c]
Soil, full parameters as required	*Estimated 234 (final number TBD)*	PFAS: NYSDEC target list (1633) TCL: VOCs +10 and SVOCs +20 (8260C/8270D) TAL: total metals (6010D and 7473); chromium^{+6} (7196A); cyanide (9010C) Other: pesticides (8081); herbicides (8151A); PCBs (8082)
Groundwater; Soil Vapor	*Contingency, only*	Groundwater as per soil; Vapor (VOCs TO-15)
Trip Blank (VOCs)	1 per sample cooler (each day of sampling)	TCL VOCs +10 (8260)
Field Blank (PFAS)	1 per sample day (serves as trip blank)	PFAS NYSDEC target list (1633)
Equipment Blank (PFAS)	1 per sampling day (non-dedicated)	PFAS NYSDEC target list (1633)
Field Blank (other)	1 for every 20 samples (non-dedicated)	As per sample collection requirements
Duplicates, MS/MSD	1 for every 20 samples (minimum 1/week)	As per sample collection requirements; PFAS soil MS/MSD may be from same container as sample

Notes

a Equipment blanks (when required) to be collected at a minimum of one per day for each matrix.

b PFAS will be analyzed using methodologies based on EPA Method 1633; additional laboratory methods may include Synthetic Precipitation Leaching Procedure (SPLP, by 1312, and/or Total Oxidizable Precursor Assay (TOP Assay); 1,4-dioxane by 8270 SIM

2.3.3 Sample Custody

Samples will be handled by the OSC and kept at cold temperatures (per Table 2.3.1) as warranted.

Upon the completion of each day of sample collection activities, all samples will be shipped via either courier or overnight delivery (per laboratory requirements) to a NYSDOH ELAP certified laboratory under proper chain of custody.

Laboratory personnel will record cooler temperature upon receipt and analyze the samples prior to the expiration of the hold times as specified in the NYSDEC Analytical Services Protocols (ASP).

2.4 Analytical Methods

Media samples will be analyzed as indicated in Section 2.3.2. Analytical methods for the samples will be implemented as follows:

Matrix	Sample Analysis (Holding Time)	USEPA Analytical Method
Soil	PFAS (28 days)	1633 (reporting limit 0.5 µg/kg)
Soil	TCL VOCs+10 (14 days)	8260C; 8270 for 1,4-dioxane (1,4-dioxane reporting limit 0.1 mg/kg) [a]
Soil	TCL SVOCs+20 (14 days)	8270B

Matrix	Sample Analysis (Holding Time)	USEPA Analytical Method
Soil	TAL metals (180 days; mercury 28 days)	6010C/7471B
Soil	cyanide (14 days)	9010C
Soil	pesticides/PCBs/herbicides (14 days [b])	8081A/8082/8151A
Water	PFAS (28 days)	1633 (reporting limit 2 ng/L)
Water	TCL VOCs+10 (14 days)	8260C; 8270 SIM for 1,4-dioxane (1,4-dioxane reporting limit 0.35 µg/L) [a]
Water	TCL SVOCs+20 (7 days [b])	8270B
Water	TAL metals (180 days; mercury 28 days)	6010C/7471B
Water	Cyanide (14 days)	9010C
Water	pesticides/PCBs/herbicides (7 days [b])	8081A/8082/8151A
Vapor	VOCs (30 days)	TO-15
a Laboratory will meet required reporting limits running standard USEPA Method 8270 b Days for extraction, 40 days after extraction for laboratory analysis		

NYSDEC PFAS target compounds are shown below. Laboratory reporting limits for PFOA and PFOS should not exceed 0.50 µg/kg for soil and 2.00 ng/l for water (reporting limits for all other PFAS in soil and water should be as close to these limits as possible). The NYSDEC PFAS target list is shown below, and laboratory SOPs for collection analysis of PFAS are provided in Attachment E.

Group	Chemical Name	Abbreviation	CAS Number
perfluoroalkyl sulfonic acids	perfluorobutanesulfonic acid	PFBS	375-73-5
	perfluoropentanesulfonic acid	PFPeS	2706-91-4
	perfluorohexanesulfonic acid	PFHxS	355-46-4
	perfluoroheptanesulfonic acid	PFHpS	375-92-8
	perfluorooctanesulfonic acid	PFOS	1763-23-1
	perfluorononanesulfonic acid	PFNS	68259-12-1
	perfluorodecanesulfonic acid	PFDS	335-77-3
	perfluorododecanesulfonic acid	PFDoS	79780-39-5
perfluoroalkyl carboxylic acids	perfluorobutanoic acid	PFBA	375-22-4
	perfluoropentanoic acid	PFPeA	2706-90-3
	perfluorohexanoic acid	PFHxA	307-24-4
	perfluoroheptanoic acid	PFHpA	375-85-9
perfluoroalkyl carboxylic acids	perfluorooctanoic acid	PFOA	335-67-1
	perfluorononanoic acid	PFNA	375-95-1
	perfluorodecanoic acid	PFDA	335-76-2
	perfluoroundecanoic acid	PFUnA	2058-94-8
	perfluorododecanoic acid	PFDoA	307-55-1
	perfluorotridecanoic acid	PFTrDA	72629-94-8
	perfluorotetradecanoic acid	PFTeDA	376-06-7
per-and polyfluoroether carboxylic acids	hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
	4,8-dioxa-3h-perfluorononanoic acid	ADONA	919005-14-4
	perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
	perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
	nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6
fluorotelomer sulfonic acids	4:2 fluorotelomer sulfonic acid	4:2-FTS	757124-72-4
	6:2 fluorotelomer sulfonic acid	6:2-FTS	27619-97-2
	8:2 fluorotelomer sulfonic acid	8:2-FTS	39108-34-4
fluorotelomer carboxylic acids	3:3 fluorotelomer carboxylic acid	3:3 FTCA	356-02-5
	5:3 fluorotelomer carboxylic acid	5:3 FTCA	914637-49-3
	7:3 fluorotelomer carboxylic acid	7:3 FTCA	812-70-4

Group	Chemical Name	Abbreviation	CAS Number
perfluorooctane sulfonamides	perfluorooctane sulfonamide	PFOSA	754-91-6
	n-methylperfluorooctane sulfonamide	NMeFOSA	31506-32-8
	n-ethylperfluorooctane sulfonamide	NEtFOSA	4151-50-2
perfluorooctane sulfonamidoacetic acids	n-methylperfluorooctane sulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	n-ethylperfluorooctane sulfonamidoacetic acid	N-EtFOSAA	2991-50-6
perfluorooctane sulfonamide ethanols	n-methylperfluorooctane sulfonamidoethanol	MeFOSE	24448-09-7
	n-ethylperfluorooctane sulfonamidoethanol	EtFOSE	1691-99-2
ether sulfonic acids	9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
	perfluoro(2-ethoxyethane) sulfonic acid	PFEESA	113507-82-7

2.5 Quality Control

Accuracy and precision will be determined by repeated analysis of laboratory standards, and matrix effects and recovery will be determined through use of spiked samples. The laboratory will run standards, blanks, and spiked samples during sample analysis.

Duplicate sampling (for all parameters), and matrix spike (MS)/matrix spike duplicate (MSD) analyses, will be performed in accordance with Section 2.3.2. For each day of sampling, a trip blank will be included with each sample cooler and be analyzed for PFAS or VOCs, as applicable.

Samples will be identified using a unique ID number. This ID will be recorded on the sampling log and/or field record and the sampling container (samples for each day of fieldwork will be assigned to a Sample Delivery Group [SDG] by the laboratory).

In accordance with current best fieldwork practices, permanent marker will not be utilized to label samples planned for analysis for PFAS.

Samples for each day of fieldwork will be shipped via courier to the laboratory under proper chain of custody procedures.

2.6 Quality Assurance

2.6.1 Instrument/Equipment, Testing, Inspection, and Maintenance

Field measurements will be conducted using monitoring equipment specialized for each task, including use of a PID during fieldwork to screen for volatile organic vapors.

All equipment will be properly stored (within buildings or construction trailers when not in use) and calibrated (as warranted) in accordance with the manufacturer's instructions (instrument malfunction is normally apparent during calibration).

In the event of malfunction, equipment will be cleaned and tested. Equipment testing, inspection, and maintenance will be the responsibility of the Project Manager and OSC. Any other equipment selected for field measurements will be similarly managed.

2.6.2 Inspection/Acceptance of Supplies and Consumables

All supplies and consumables will be inspected and tested (if necessary) by either the Project Manager or the OSC upon receipt.

The following supplies and consumables will be used for each sample:

- Laboratory-supplied sampling containers, as specified in Section 2.3.1
- Laboratory-supplied materials for PFAS sampling, including trip blanks and PFAS-free cooler
- Plastic tubing for groundwater and soil vapor sampling
- PFAS-free water for decontamination
- Disposable gloves (nitrile or equivalent)

2.6.3 Data Management

For the purpose of data management, the data can be divided into field and laboratory data.

Field data will be recorded at the time of measurement on written field logs. Laboratory data will be reviewed upon receipt and summarized in data summary tables. The NYSDEC electronic data deliverable format for the analytical data will be requested from the testing laboratory.

NYSDEC ASP Category B Data Deliverables will be requested from the testing laboratory and forwarded to an independent third-party data validator for the development of Data Usability Summary Report (DUSR).

3.0 DATA REVIEW, VALIDATION AND USABILITY

3.1 Field Measurements

If field instruments are determined to function correctly through calibration and measurements of standards, and if there are no inconsistencies between written records and data recorded in the meters, the data will be assumed to be valid and will be accepted as an indication of field conditions.

If instruments malfunction prior to field measurement, they will be restored to proper function prior to re-use. If they malfunction immediately after field measurements are taken, the measurements will be retaken as soon as possible. Inconsistencies between written records and recorded meter data will be resolved by re-testing the material, if possible. If re-testing is not possible, (i.e. the sample has been shipped to the laboratory), the inconsistency will be described in appropriate subsequent reporting, and the laboratory analysis will be utilized to classify the material.

All field data will be reviewed by the Project Manager for consistency and plausibility.

3.2 Laboratory Analysis

A NYSDOH ELAP-certified laboratory will provide a NYSDEC ASP Category B data package and NYSDEC Electronic Data Deliverable format for the determinative sample analyses.

3.3 Standards, Criteria and Guidance

The following Standards, Criteria, and Guidance (SCGs) are applicable for this Site:

SOIL

Soil results are compared to Soil Cleanup Objectives (SCOs) provided in 6 NYCRR Subpart 375 (updated 2025), Table 375-6.8(a) Unrestricted Use SCOs and 6.8(b) Restricted-Residential Use SCOs, and (as needed) Supplemental SCOs and/or Soil Cleanup Levels in NYSDEC CP-51 Soil Cleanup Guidance, Tables 1 to 3. SCOs are provided as Attachment C.

WATER

Water results are compared to NYSDEC Division of Water Ambient Water Quality Standards and Guidance Values (AWQS), provided in Technical and Operational Guidance Series 1.1.1.

VAPOR

The State of New York does not have any SCG for volatile chemicals in subsurface or sub-slab vapors. Laboratory results will be reviewed and evaluated in comparison to Site data as a whole, inclusive of an analysis of potential vapor intrusion concerns, as warranted, in accordance with applicable current NYSDOH guidance.

3.4 Verification and Validation Methods

3.4.1 Verification Method

Laboratory data will go to the Project Manager for review and verification (determination of proper sampling and collection, and completeness of all field and laboratory logs). A DUSR will be prepared by a third, independent party. A current resume of the individual preparing the DUSR (indicating education and relevant experience) is provided in Attachment D.

3.4.2 Authority for Verification

Authority for verification, validation, and resolution of data issues will be distributed among the investigators. Authority to resolve issues regarding verification of field measurements will rest with the Project Manager and the QAO.

4.0 REPORTING REQUIREMENTS

Following review, validation, and verification, all data will be conveyed to users via a Final Engineering Report in accordance with the requirements of NYSDEC DER-10 Section 3.1.4.

The FER will summarize all data collected during implementation of the RIWP (and any additional work), and will include, at a minimum:

- Descriptions of fieldwork activities and observations;
- Summaries of laboratory analytical results from sampling events, described in the report text and provided in data summary tables, as well as DUSRs for all data;
- Characterization of contamination sources (including environmental fate and transport);
- A qualitative human exposure assessment;
- Accounts of any deviations from RIWP procedural requirements;
- Conclusions drawn from applicable, available data; and,
- A summary of required Green and Sustainable Remediation (GSR) metrics.

Attachment A: Figures

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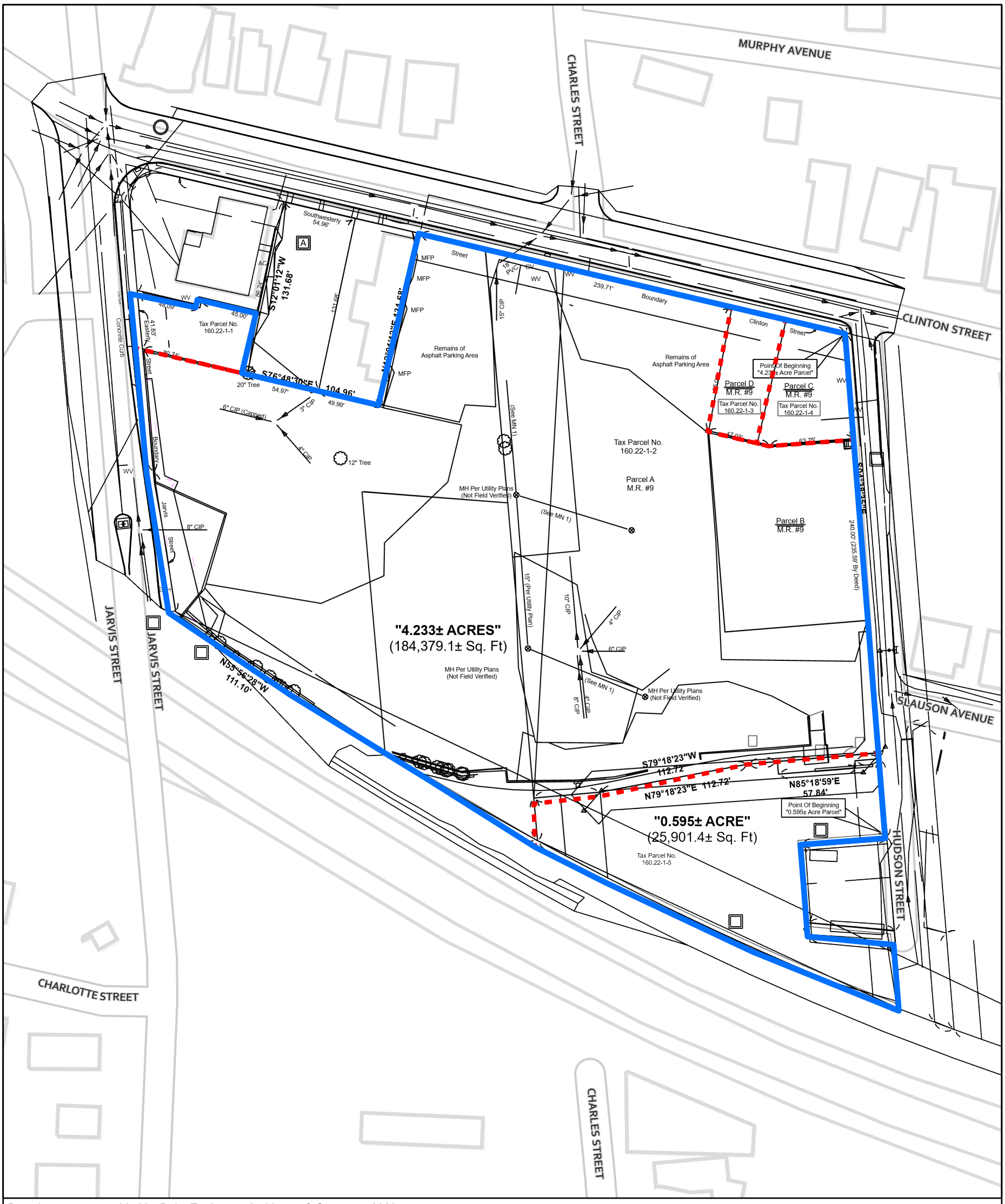

Based on survey provided by Delta Engineers, Architects, & Surveyors 2023.
All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

0 50 100 200

SCALE IN FEET

Site Map

Vanguard Village I + II - BCP Site No. C704063
City of Binghamton
Broome County, NY

Legend:

- BCP Site Boundary
- Lot Lines

N

File: 23003-0060

July 2026

Scale as shown

BELLUCCI ENGINEERING, PLLC

Attachment B: Fieldwork SOPs

BELLUCCI ENGINEERING, PLLC

STANDARD OPERATING PROCEDURES

Fieldwork Sampling
and
Decontamination

Updated June 2026

Bellucci Engineering, PLLC
West Hartford, Connecticut

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I. INTRODUCTION

This document provides Standard Operating Procedures (SOPs) for use by on-site personnel during fieldwork events that require the collection of soil, groundwater, soil vapor and/or air samples. General procedures are presented below; detailed protocols, as available, are provided in the supplemental documentation. Equipment checklists, forms, and calibration documents are maintained at all office locations. All SOPs and supporting documentation are periodically updated.

SOPs are intended to supplement other project-specific documentation, including work plans, sampling and analysis plans, health and safety plans, quality assurance project plans, and additional SOPs found in related documents.

II. RECORD KEEPING AND LOGBOOKS

A. Purpose and Scope

All activities related to fieldwork must be properly documented in accordance with the applicable Work Plan and QAPP. Documentation must be legible, organized, comprehensive, and complete. The primary record keeping methods are use of: field logbook; fieldwork forms (sign-in sheets, calibration logs, sampling records, chain-of-custody, etc); and photographic logs.

Field documentation generally must include project identification, date/times of fieldwork activities, the identification of the person/entity performing the work, and a description of the work being performed.

B. Field Logbook

The field logbook will act as the primary source of documentation for field activities. Only one logbook should be maintained for the fieldwork project (multiple supporting fieldwork data sheets, activity logs, etc., may be used to supplement recorded information, and may be referenced in the logbook).

It is the responsibility of the project manager and the field team leader to ensure that field logbook entries provide sufficient information for the completion of a detailed and accurate description of all field operations. Logbooks should be bound and entries made with indelible ink. All entries must be in English, written in non-cursive lettering, and be legible. The logbook should be stored in a Ziploc bag, as warranted by weather and/or fieldwork conditions, to prevent pages from getting wet or otherwise damaged. The logbook should be checked for completeness/quality control at the end of each day.

Field logbook entries shall be made in the field at the site, as close as possible to the actual observation, not at a later time or different location. Supplemental entries are allowable if properly identified. Logbook pages should be photographed or scanned daily

Record the following on the outside front cover:

- Project name/ID and Fieldwork Activity
- Date of first and last entries in the logbook (e.g. July 17–August 4, 2026)

- Sequential numbering if multiple logbooks are used (e.g., Vol. 1 of 2)
- Name and phone number of person responsible for the logbook
- Reserve and utilize the first page for a table of contents, and several pages at the end of the logbook for important notes not directly related to daily activities, such as contact information.

Daily entries should include:

- Appropriate header information on the first page of notes, including sequential page numbering, date information (yyyy-mm-dd), and fieldwork location/activity
- Weather summary (temperature, wind direction and speed, cloud cover, precipitation conditions)
- Site fieldwork personnel (including all contractors) and visitors, with and arrival/departure times
- Summary of relevant project communications with the client, regulators, or other site visitors
- Documentation of safety meeting, with general topics and attendees
- References to data collection forms
- Description of the fieldwork activities (generally chronological), including sampling methodology and start/stop times, with military time notation (e.g., 2:30 p.m. as 1430 hr)
- Map sketches with approximate scale and orientation (e.g., north arrow, building outline), with relevant notes regarding encountered field conditions
- Description of equipment used and any relevant calibration and/or maintenance information
- Changes/deviations from scope of work and/or fieldwork protocols and reason for the changes
- Problems, downtime, delays, unusual events and the proximate causes
- Applicable HASP and CAMP information, including upgrade or downgrade of PPE

A single line should be drawn through incorrect entries and the corrected entry written next to the original strikeout. Strikeouts are to be initialed and dated by the originator. A diagonal line should be drawn through unused space at the end of a page.

C. Fieldwork Forms

Pre-printed fieldwork forms should be utilized when practical, including any model forms provided in Work Plans, Site Management Plans, Quality Assurance Project Plans, and similar project documents.

D. Photographic Logs

Fieldwork should be documented through representative digital (JPEG or equivalent) photographs, in a quality and resolution that makes all relevant details readily apparent. The photographic log should fully document the site as a whole and all fieldwork elements including each contaminant source area.

III. FIELDWORK SAMPLING

Fieldwork sampling procedures are described below (model field logs are provided in Supplement A). Selection of field equipment will be based on anticipated site conditions (updated check-lists of equipment and supplies required for sampling activities are maintained at the local field office). All equipment operations will be in accordance with applicable operating manuals and specifications, and will be conducted (as needed) by an experienced subcontractor holding applicable permits/licenses. Decontamination procedures will be implemented as warranted during all fieldwork activities. Special requirements for PFAS sampling are noted in Section III.

A. Procedures to be Conducted Prior to Fieldwork

Prior to the initiation of any ground-intrusive fieldwork, a request for a complete utility markout of the fieldwork site will be submitted to an appropriate service, as required by state regulations. Confirmation of underground utility locations will be secured and a field check of the utility markout will be conducted prior to the extension of soil borings[1].

A Fieldwork Map and Work Plan, indicating sampling locations and objectives, will be prepared prior to fieldwork activities, and sampling locations will be confirmed and located prior to starting work.

B. General Fieldwork Methodology

At the start of the work day, all on-site personnel, including environmental subcontractors and observers, will be briefed on planned activities and the contents of the site-specific Health and Safety Plan (HASP). Independent field logs will be utilized to document relevant information, including arrival and departure times of on-site personnel, safety meetings, basic weather conditions, and detailed notes and drawings documenting all fieldwork activities and/or any other relevant events and conditions.

On-site personnel will be properly dressed for the intended activities[2] and the anticipated weather conditions, including use of personnel protective equipment in accordance with the HASP.

Sampling locations will be determined in the field, measured to the nearest 0.5-foot relative to a fixed on-site marker, and will be recorded in logbooks for inclusion in all final maps.

Media will be collected in accordance with the Quality Assurance Project Plan (QAPP) and in a manner consistent with NYSDEC and/or NYSDOH requirements, including protocols for handling and custody. New, dedicated disposable nitrile gloves will be worn at each sampling location, and will be changed frequently based on field conditions. Fieldwork personnel will assess media characteristics (e.g., soil type, presence of debris, indications of contamination, etc.) and record all observations in logbooks.

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[1] Markout requirements apply to any ground intrusive methodologies, including the extension of test pits.

[2] Special care is required when for sampling of PFAS; see Section V

On-site senior personnel will be responsible for: a) identifying any materials that require special handling, such as media that may contain high levels of contaminants or is grossly contaminated or likely to be hazardous; b) ensuring that identified materials are properly securely stored on-site (stockpiled on plastic and covered, or placed in approved containers), pending characterization and proper disposition; and, c) ensuring that unforeseen environmental conditions are managed in accordance with applicable federal and state regulations.

Sample collection from recovered media will be performed without unnecessary delay. Samples will be placed into labeled containers provided by the laboratory, stored in dedicated coolers kept at 4 (+/-2) °C and handled under proper chain of custody. All samples will be shipped to a NYSDOH ELAP certified laboratory via laboratory courier (either upon completion of each day of sample collection activities, or the following day after overnight storage in a dedicated sample refrigerator).

C. Extension of Soil Borings

Soil borings will be extended using either hand-held or mechanized equipment, based on site conditions and Work Plan requirements. Mechanized equipment includes using either direct push technology (DPT) or rotary methods, including hollow stem auger (HSA) and sonic drilling. The small size of DPT rigs allows for sampling in tight spaces and areas that are sensitive to the use of heavy equipment. DPT can be used in overburden soils where the soil texture allows for direct push of sampling equipment. A HSA or sonic rig will be utilized if significant subsurface obstructions (e.g., large cobbles, boulders, concrete, etc) are (or are expected to be) encountered.

Hand borings will be extended (as warranted) using manual DPT equipment (e.g., Geoprobe), which includes a collection barrel lined with disposable acetate sleeves, extension rods and a slide hammer. The barrel will collect samples from discreet intervals of 2 feet. Hand boring methods are generally restricted to shallow soil sampling (0 to 6’ below grade) and may be employed/attempted if access by mechanized equipment is not practical.

DPT will typically be utilized during the extension of borings in overburden soils. The DPT rig will be equipped with a macro-core sampling barrel (minimum diameter 4”) lined with disposable acetate sleeves. The barrel will collect samples from discreet intervals of either 4 or 5 feet. HSA rigs will use a continuous hollow stem auger with a split-spoon (collection interval of 2 feet) or other collection device. This system drives drill cuttings to the surface as drilling progresses, which will require management. Sonic drill rigs will utilize coring barrels of various lengths lined with plastic tubing.

Bore hole openings will be periodically screened with a photoionization detector (PID).

D. Installation and Development of Monitoring wells

Groundwater monitoring wells will be installed by the drilling subcontractor. Unless otherwise specified, monitoring wells will be constructed of two-inch PVC casing with a ten-foot length of 0.01-inch slotted PVC well screening across the water table. No glue will be used to thread the casing lengths. A minimum of 2 feet of screening will extend above the water table, with approximately 8 feet below the water level (depth to water will be inferred based on saturated soils encountered during installation, or from data from existing groundwater monitoring wells).

The annular space between the well screen and the borehole will be backfilled with clean silica sand to approximately two feet above the screen. A seal consisting of at least 12 inches of hydrated bentonite clay will be placed above the sand pack and the remaining annular space will be grouted with cement.

A locked cap with vent will be installed at the top of the PVC riser (well protection will be in accordance with the Work Plan, including use of secure "drive-over" metal cover or stick-up metal outer casing). A surveyor's transit level will be used to determine the elevation of the top of the PVC well riser, relative to a permanent on-site marker, for use in determining relative groundwater elevations. Well locations and relative elevations will be recorded in field logs and indicated on all fieldwork maps.

The wells will be developed one week following installation. The wells will be developed with a properly decontaminated mechanical pump and dedicated polyethylene tubing in order to clear fine-grained material that may have settled around the well screen and to enhance the natural hydraulic connection between the well screen and the surrounding soils. Well development will begin at the top of the screened interval to prevent clogging of the pump within the well casing. Well development will be discontinued when the discharge water is free of obvious sediment, turbidity is below 50 NTUs, and indicator parameters (e.g., dissolved oxygen, temperature, etc.) have stabilized. Upon completion, the pump assembly will be removed from the well while the pump is still running to avoid discharge of purged water back into the well. Development water will be securely stored on-site pending laboratory analysis.

E. Soil Sampling

General Methodology

Recovered sampling equipment will be placed on a clean surface (folding table, plastic sheeting, etc.) and opened (liners will be sliced with a clean razor knife). Recovered soils will be observed for potential contamination through observation and use of properly calibrated field instruments, e.g., PID. Samples will be collected directly from the sampling device. The volume of material collected will be sufficient for the required analyses and for reasonably anticipated potential additional analyses. Soil to be analyzed for volatile organic compounds (VOCs) will be collected following USEPA Method 5035 protocols, using laboratory sampling kits. Samples to be analyzed for parameters other than VOCs will be collected as either grab or composite samples, using disposable plastic trowels or properly decontaminated stainless steel instruments, or directly by the fieldwork technician using dedicated, fresh disposable nitrile gloves.

Sampling in Conformance with NYSDEC DER-10

Soil sampling will be conducted in accordance with the requirements of DER-10 (excerpted in Supplement B), including Sections 3.5 (Soil) and 3.9 (Area Specific Requirements). The number and location of typical required soil samples, consistent with DER-10 requirements, are provided in the table below (see DER-10 for situations not addressed in the table, e.g., tank piping, ecological resources, establishing background concentrations):

Soil Sample Type	Depth Interval	Notes
Surface	0 to 2 inches	Below vegetative cover; if only VOCs being analyzed or if vegetable/fruit garden, use 0 to 6 inches
Subsurface	In accordance with Work Plan	Samples should be collected continuously in discrete increments as grab samples prior to any consolidation of the sample; collect deeper samples when evidence of contamination
Aboveground storage tanks (ASTs)	Minimum of two surface soil samples	Collect from areas of suspect contamination; larger tanks at least one sample per 100 linear feet of tank perimeter, depth of at least 6 inches if VOCs were stored)
Underground storage tanks (USTs) and distribution systems	0 to 2 feet below tank bottom (see DER-10 for saturated soils)	Sampling frequency per Table 3.9 (at least four soil samples from around each tank/group), within two feet of the tank with one at each end, and additional locations along the length of the entire tank, sample from base of excavation is recommended

F. Groundwater Sampling

Groundwater sampling will be conducted using USEPA "Low-Stress" protocols (detailed in Supplement C). Sampling will be conducted using the following general procedures:

1. Groundwater sampling will begin at the potentially least contaminated well (as determined from well location and/or previous data) and proceed to the potentially most contaminated well. The field technician will check and record the condition of all monitoring wells for damage or evidence of tampering before initiating sampling. Plastic will be placed around wells to minimize potential contamination of sampling equipment from the ground surface, and all monitoring, purging, and sampling equipment will be placed on the sheeting.
2. The protective casing on the well will be unlocked, the air in the well head will be screened with a PID, and static water level (from the top of the casing) will be measured with a decontaminated water-level meter. A peristaltic pump with plastic tubing, or a submersible pump attached to tubing (if required by Site conditions, e.g., well depth) will be used for sampling. The tubing (or pump attached to tubing) will be slowly lowered until reaching two to three feet off of the well bottom to prevent disturbance and re-suspension of any remaining sediment.
3. Depth to water will be measured to nearest 0.01 feet, relative to a reference measuring point on the well casing (if no pre-existing reference point is found, a reference point will be marked on the inner casing and noted in the field logbook). The water level will be measured before the pump is started and at intervals of every three to five minutes. Pumping rates will be reduced (as needed)

to the minimum capabilities of the pump to ensure stabilization of the water level (drawdown of 0.3 feet or less).

4. During pumping, field indicator parameters (turbidity, temperature, specific conductance, pH, redox potential, and dissolved oxygen) will be monitored and recorded approximately every five minutes. The well will be considered stabilized when the indicator parameters have stabilized for three consecutive readings (the minimum purge interval will be at least 15 minutes).
5. All groundwater samples will be collected in a manner consistent with the QAPP.
6. The protective cap on the well will be replaced and locked following sampling, and the field sampling crew will move to the next most contaminated well and the process will be repeated.

G. Soil Vapor Sampling

Soil vapor sampling will be conducted consistent with applicable NYSDOH guidance and fieldwork protocols (detailed in Supplement D). Sampling will be conducted using the following general procedures:

Soil vapor samples may be collected from beneath building foundations or paved areas, or from exterior areas not otherwise covered by material that trap soil vapor at the surface. Concrete slabs and exterior pavement will generally be breached with rotary equipment, which produce a small-diameter hole. The hole will be extended into underlying soil/sub-base to a depth required by the sampling technology (typically 6 to 12 inches below the base of the overlying materials for temporary installations). Sampling at exterior areas will require extension of a borehole to at least 3 to 4 feet below the surface (greater depths may be specified by the Work Plan).

Construction details for soil vapor implants are provided in the Supplement D. All soil vapor probes will be installed with a properly sealed surface opening to prevent ambient air from entering the system.

A tracer gas (e.g., helium) will be used at soil vapor sampling locations to verify that adequate sampling techniques are being implemented (i.e. to verify the absence of significant infiltration of outside air), in accordance with applicable NYSDOH guidance. The space around the sampling point will be enclosed and sealed (with a metal hemisphere and clay) in order to introduce a tracer gas (helium) into the area surrounding the probe point. Real-time sampling equipment (Radiodetection Multi-vapor Leak Locator, model MDG 2002, or equivalent) will be utilized to determine when the interior atmosphere in the enclosure reaches a concentration of 80%, and the tubing for the vapor implant will then be sampled for the tracer gas. If helium is detected in vapor at a concentration greater than 10%, the annular seal will be repaired and gas tracing performed again until less than 10% helium is detected.

Vapor in the sampling tubing will be screened with a PID for VOCs prior to purging. For all sampling locations, the exact purge volume will be dependent on the boring depth and subsequent length of tubing. Three borehole and tubing volumes will be purged prior to collection. The purge rate will not exceed 0.2 liters per minute. Following purging of ambient air from the collection device, soil vapor samples will be

(at a rate not exceeding 0.2 liters per minute) into individual laboratory-certified clean Summa canisters equipped with flow regulators (sampling period as specified in the Work Plan).

IV. GENERAL DECONTAMINATION PROTOCOL

Consistent decontamination methods will be used to reduce or eliminate contamination and cross-contamination of samples by field equipment, other samples, or personnel, and to minimize potential exposures caused by the spread of contaminants. Decontamination will occur any time a sampling tool or instrument used in field investigations contacts sampled media or personnel using the equipment. These procedures will be used in conjunction with all non-dedicated (i.e. reusable) equipment used during the handling, sampling or measuring of environmental media, and will be implemented primarily on-site at the point of use or at a designated equipment decontamination station at the project site.

Types of equipment usually requiring decontamination include pumps, gauges, augers, and sampling barrels. Drilling equipment, water level meters, submersible pumping equipment, and any other non-dedicated monitoring and sampling equipment will be decontaminated prior to the start of fieldwork, after the collection of each media sample, and between boring intervals and/or sampling locations. Water quality parameter sensors and flow-through cell will be cleaned between sampling locations in accordance with the manufacturer's recommendations.

Materials and methods for decontamination are provided in Supplement E.

V. PFAS SAMPLING - SPECIAL REQUIREMENTS

Special requirements apply to all fieldwork procedures during sampling for per- and polyfluoroalkyl substances (PFAS). Because of the potential presence of PFAS in common consumer products and in equipment typically used to collect media and the need for very low reporting limits, special handling and care must be taken when collecting samples for PFAS analysis to avoid sample contamination. There is only limited research regarding how the use of various procedures and materials affect sample results, and this SOP therefore represent a conservative approach. Field personnel should take precautions to avoid items that are likely to contain PFAS at the sampling site as well as avoid specific items during the sampling event, and must frequently check for updates to this SOP. The most recent NYSDEC guidance document, as well as a *PFAS Sampling Quick Reference Field Guide* (provided by Michigan Department of Environment, Great Lakes, and Energy), are provided in Supplement F.

A. EQUIPMENT AND SUPPLIES

Avoid personal protective equipment (PPE, including clothing chemically treated for UV protection) and field supplies that may include PFAS and which could cross-contaminate field samples. Personal body products such as shampoos, moisturizers, and cosmetics may contain PFAS and should be used with care the day of sampling.

Sunblock and insect repellent ingredients need to be verified to ensure that they do not contain PFAS before use in the field.

Food and food packaging should not enter the sampling zone.

Water resistant, waterproof, stain-treated, clothing recently washed with fabric softeners, and new clothing should be avoided. If sampling in inclement weather a canopy tent may be a good option (note, however, that water resistant/waterproof material likely contains PFAS and disposable gloves should be worn when putting up and/or moving the tent.

Waterproof field books may contain PFAS and should not be used. Documentation of field activities should be on loose paper on an aluminum clipboard or in a waterproof field book that does not use PFAS. Field notes should be taken with a ball point pen (avoid large felt tip markers; fine and ultra-fine point Sharpie® markers are acceptable). Sticky notes, etc., may contain PFAS and should be avoided (pre-printed labels should be verified PFAS-free.

Disposable, powderless, nitrile gloves must be worn during PFAS sampling and handling activities and should be changed frequently during and between sampling activities.

Sealed laboratory-supplied sampling containers may be placed into LDPE re-sealable storage bags (e.g., Ziploc®) that will not contact the sample media.

Chemical ice packs should not be used unless it is verified that they are PFAS-free. Samples for PFAS analysis should be placed on water ice immediately and should ideally be received by the laboratory at a temperature less than 6º Celsius.

B. GENERAL SAMPLING PROCEDURES

Sampling must be conducted in accordance with the project-specific QAPP, including use of laboratory-supplied sample containers.

If non-dedicated non-disposable equipment is used for sampling, proper decontamination is necessary. Decontamination reagents should be checked to ensure that they do not contain PFAS before use. Similarly, water used for decontamination should be checked (i.e. field equipment blanks) to verify that it does not contain PFAS. It may be necessary to collect samples of decontamination water prior to use to ensure that water being used for decontamination does not contain PFAS.

Soil samples should be collected using stainless steel, acetate, or polypropylene constructed equipment. Liners for soil sampling should not contain PFAS.

If a monitoring well has dedicated tubing that may contain PFAS, the dedicated tubing should be removed, and silicone or HDPE tubing should be used to sample for PFAS following at least one well volume purge prior to sampling for PFAS. The recommended length of time that dedicated tubing should be removed, and the recommended amount of purging conducted prior to sampling where dedicated tubing has been present is variable. If it is anticipated that dedicated tubing may be a source of PFAS cross contamination extra precaution, such as removal of the tubing 14 days prior to sampling or purging of three well volumes, should be considered.

Care should be taken to not cross contaminate PFAS samples if samples for non-PFAS analyses are being collected. For example, if VOCs and PFAS water samples are being collected, the VOCs would be collected using a peristaltic pump with HDPE and silicone tubing, and then a second set of samples would be collected for PFAS after changing gloves and switching sample container sets.

If transfer bottles are necessary for surface water sample collection, they should be PFAS-free and made of the same material as the laboratory provided sample containers.

If a water supply is to be sampled, both a pre- and post-treatment sample may be necessary. Carbon filtration, reverse osmosis, and other filter media may bias laboratory results for PFAS. Water should be allowed to run freely until water quality parameter stabilization has occurred, typically between 3 and 5 minutes. Water flow rate should be reduced for minimal aeration.

Do not filter samples for PFAS analysis.

C. DECONTAMINATION OF PFAS SAMPLING EQUIPMENT

Special requirements apply to decontaminating non-dedicated equipment used for PFAS sampling. Laboratory supplied PFAS-free deionized water is preferred for decontamination (commercially available deionized water in an HDPE container, and municipal drinking water, may be used for decontamination if verified to be PFAS-free. Sampling equipment can be scrubbed using a polyethylene or polyvinyl chloride (PVC) brush to remove particulates. Decontamination procedures should include triple rinsing with PFAS-free water. Note that a QAPP prepared for NYSDEC program sites prohibits use of Liquinox®.

VI. INVESTIGATION DERIVED WASTES

Disposal of any waste materials will be in accordance with provisions of the applicable site-specific Work Plan. If not otherwise specified: 1) discarded personal protective equipment and other fieldwork supplies not significantly impacted by free petroleum or other gross contaminants will be disposed as municipal solid waste; and, 2) well development purge water, spent absorbents or other significantly contaminated materials, and/or any recovered free-petroleum, will be properly stored on-site, in properly labeled and secured containers, pending final off-site disposal at a permitted facility.

Supplement A – Model Fieldwork Logs

Soil Boring Log

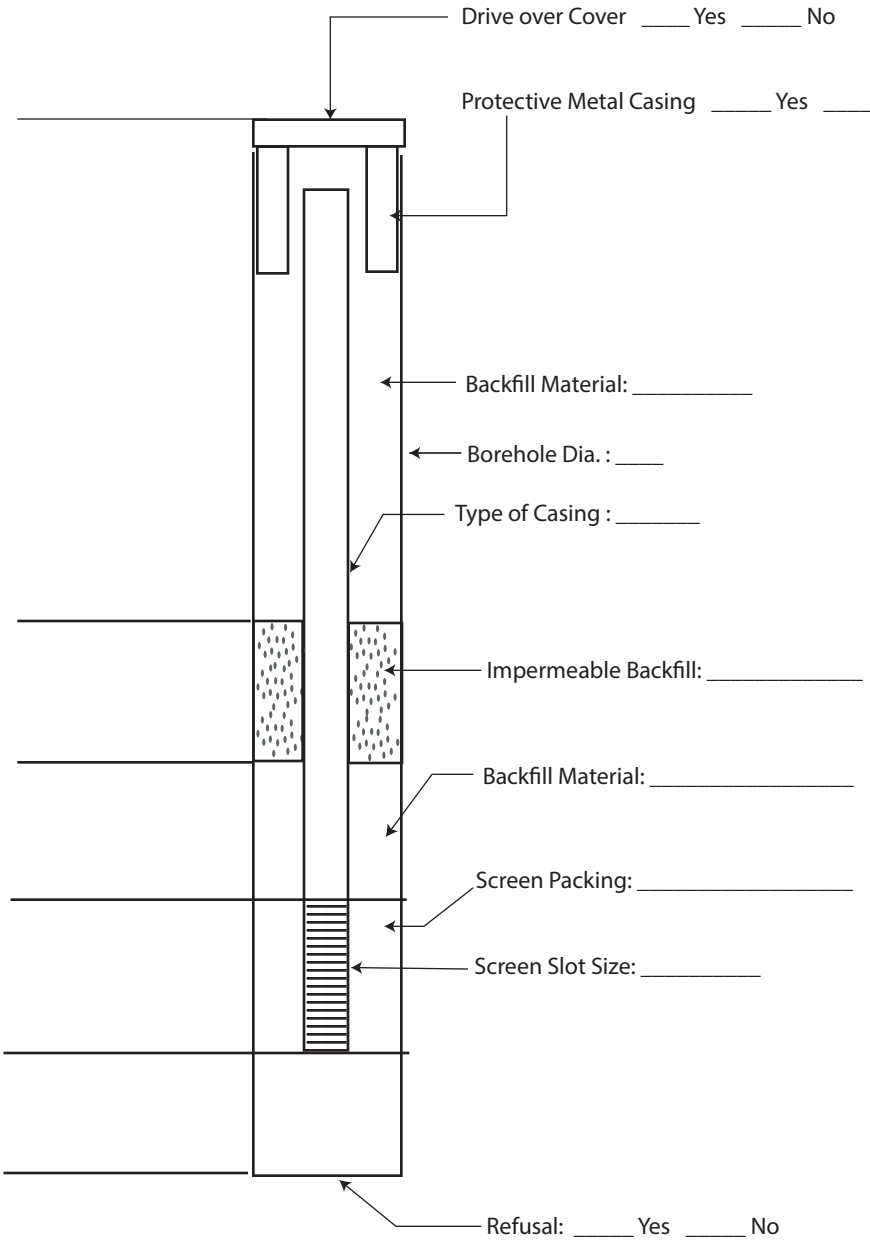
BELLUCCI ENGINEERING, PLLC

Boring ID	**Site ID:**	**GBTS Project**
Page____of____	Date: Driller (Rig) GBTS Staff: Weather:	

Boring Interval (recovery)	Surface Material: **Soil / Material Description**	Moisture	PID (ppm)	Odors	Staining	NAPL	Samples Collected
___–___ (___%)							
___–___ (___%)							
___–___ (___%)							
___–___ (___%)							
___–___ (___%)							
___–___ (___%)							

Notes Fill, water conditions, field evidence of contamination, well installation details, etc

ND (non-detect) **PID** (photoionization detector) **ppm** (parts per million) **NAPL** (non-aqueous phase liquid)
F (fine) **M** (medium) **C** (coarse) **P** (plastic) **LP** (low plastic) **NP** (non-plastic)



Materials Used:

- Screen (PVC)
- Riser (PVC)
- Plug (PVC)
- Silica Sand
- Bentonite clay

Monitor Well Construction Log - Well ID:

Site:

Project:	
Date:	
Appendix:	

GROUNDWATER MONITORING WELL PURGE DATA SHEET

BELLUCCI ENGINEERING, PLLC

Project Name: _____ **Well ID:** _____
GBTS PROJECT #: _____ **PID Reading:** _____
Date: _____ **Depth of well:** _____
Field Personnel: _____ **Depth to water:** _____
Weather: _____ **Pump type:** _____

Time	Temp (°C)	pH	ORP (mv)	Specific Conductivity (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Depth to Water (ft)	Purge Rate (mL/m)	Comments (e.g. color/clarity)

***** STABILIZATION CRITERIA*****

Temp +/- 3% **pH** +/- 0.1 **ORP** +/- 10 **Spec Cond** +/- 3% **Turb** +/- 10% **DO** +/- 10%

NOTES:

*****PURGED WATER DETAILS*****

Start/End time: _____
Total purge time: _____
Total volume: _____
Purge rate: _____

CHARACTERISTICS:

Odor: none | slight | moderate | strong

Sheen: none | slight | moderate | strong

L/DNAPL: Yes | No **L/DNAPL thickness (in.)**:_____

Supplement B – DER-10 Soil Sampling Requirements

3.5 Soil

3.5.1 Site Characterization

(a) SC soil investigations should satisfy the applicable elements of this subsection.

1. Initial site survey. The presence of potential source areas to be considered by the initial site survey are those AOCs identified in subdivision 1.8(c). Where the potential for buried drums, tanks, deposits of waste or other discrete and identifiable AOCs may exist the use test pits, ground penetrating radar, magnetometry, electromagnetic, or other techniques capable of detecting metal containers and other waste to an average depth of 20 feet or deeper should be considered.

2. Based on the findings of this survey and/or other AOCs identified by the records search to be undertaken in accordance with Appendix 3A and reported as set forth in section 3.12, soil sampling to characterize contaminant levels in surface or subsurface soil should be planned where:

i. there have been any indications of buried drums, tanks or waste;

ii. groundwater contamination is detected and no source has been identified;

iii. aerial photographic history of the site indicates the presence of drums, tanks or waste in or adjacent to regraded and/or filled areas;

iv. historic fire insurance maps, or other documentation, has identified the past presence of structures or operations (e.g., former manufactured gas plants) which are likely sources of contamination;

v. there are areas of soil staining;

vi. distressed vegetation exists; or

vii. bare soil is present.

(b) Surface soil sampling. Samples, except those being analyzed for VOCs as noted below, should be collected based upon the type of exposure or disposal to be assessed by the sample.

1. Assessing human exposures to soil. When assessing the human exposure resulting from soil contamination related to:

i. incidental soil ingestion, inhalation of soil or dermal contact with soil; soil samples should be collected from a depth of 0 to 2 inches below the vegetative cover, unless VOCs are the only contaminants of concern in which case the sampling should be from 0 to 6 inches; and/or

ii. vegetable/fruit gardens, soil samples should be collected from a depth of 0 to 6 inches below the vegetative cover.

2. Assessing ecological resource exposure to soil. When assessing the impact of soil

contamination on ecological resources samples should be collected from:

i. surface soil at a depth of 0 to 6 inches below the vegetative cover; and

ii. a deeper soil horizon, typically from 12 to 24 inches below ground surface.

3. Where both human and ecological resource exposures are being evaluated, samples at each depth may be required.

(c) Subsurface soil sampling. Samples should be collected via soil borings and/or test pitting for chemical analysis and to provide a profile of subsurface conditions in identified or suspected AOCs and in other areas as needed to characterize the site.

1. Boring logs should be prepared by a qualified individual, reporting to the site QEP, for all soil samples to document subsurface conditions including, without limitation:

i. soil types and description of non-soil materials;

ii. field instrument measurements;

iii. depth to groundwater, if groundwater is encountered; and

iv. to document physical evidence, if present, including but not limited to:

(1) soil mottling;
(2) presence of odor or vapors;
(3) soil discoloration or staining; and
(4) NAPL, free and/or residual product;

2. Soil should be described using the:

i. New York State Department of Transportation *Soil Description Procedure* (NYSDOT Soil Mechanics Bureau STP-2 dated May 1, 1975, as amended); or

ii. unified soil classification system (USCS) which is set forth in ASTM 2488.

3. Known hazardous waste, concentrated solid or semi-solid substances, soils with free product or NAPL and/or grossly contaminated media will not be returned to the subsurface and must be disposed of in accordance with applicable guidance and regulations. If contaminated materials are returned to the ground, in accordance with subdivision 3.3(e), the remedial party must address the presence of this contamination as part of any remedial action.

4. Soil sample locations should be documented by the use of GPS. They may also be photo-documented.

5. Samples should be collected continuously in discrete increments as grab samples prior to any consolidation of the sample. If less than full recovery is obtained by the sampling technique, an explanation should be provided in the soil log.

6. Additional sampling of soil from boring-depth increments below those specified in a work plan to investigate AOCs or based on observations as set forth in paragraph 3.5.1(a) 2 should be completed in cases where:

i. the surface has been regraded;

ii. evidence is identified in a boring of:

(A) the conditions identified in subparagraph 1.iv above;
(B) LNAPL, from the water table; or
(C) DNAPL, form the top of a confining unit; or

iii. other evidence is found which indicates the possible presence of contamination.

7. If the designated subsurface soil sampling point is within the saturated zone, when sample recovery is possible, a sample of the saturated soil should be collected and analyzed.

(d) The use of expedited site investigation approaches, such as the USEPA Triad, are encouraged.

1. Expedited site investigation involves systematic project planning, use of dynamic work strategies and field screening techniques.

2. Sampling methodologies using field-screening techniques:

i. have similar analytical limitations to laboratory methods, which are addressed in subdivision 2.1(c); and

ii. should be detailed in a work plan and approved by DER before use.

3. Field testing sampling plans should be prepared in accordance with Appendix 2A.

3.5.2 Remedial Investigation

(a) The RI should include provisions to identify all soil which may contain contaminants above the unrestricted use soil SCGs.

1. Soil sampling during the RI is intended to determine the areal and vertical extent of those areas found to be contaminated. Sampling locations should be biased toward locations expected to be contaminated or source areas, but must also provide sufficient coverage of the entire site to allow decisions relative to land use restrictions.

2. In addition, soil data is used in the exposure assessment to identify any actual, or potential for, exposure.

3. The use of the field-screening techniques/investigations (e.g., Triad) as described in subdivision 3.5.1(d) and Appendix 2B are encouraged to focus the location of surface or subsurface soil sampling to the most likely source areas, to minimize multiple mobilizations and obtain more complete data set and to indicate a potential for vapor intrusion into buildings.

4. Geophysical surveys. Geophysical surveys may be used as described in paragraph 3.5.1(a)1 and should also be considered during the RI to:

i. identify subsurface utilities as sources of discharge or preferential pathways;

ii. obtain geologic characterization of bedrock, clay layers, etc.; or

iii. focus test pit and/or soil boring locations to areas of subsurface anomalies.

5. Soil gas surveys may be used to identify areas of soil contamination which are a source of soil vapor, in accordance with section 3.6.

(b) Surface soil investigations.

1. Follow the sampling procedures identified in subdivision 3.5.1(b).

2. For suspected surface discharges. Soil samples to be analyzed/screened for VOCs should be collected to minimize contaminant loss during sampling. Each sample should be field screened with a properly calibrated photoionization detector or flame ionization detector (PID/FID) or other suitable instrument. When field screening is used the following should apply:

i. at a minimum, the initial 24 inches of soil rather than the surface soil sampling depths identified in subdivision 3.5.1(b) should be field screened for the presence of VOCs; and

ii. if field measurement readings are detected above background, the sampling should be extended until background readings are achieved, or groundwater or bedrock is encountered; or

iii. a sample from the interval registering the highest field-measurement reading should be collected and analyzed for VOCs.

(c) Subsurface soil investigations.

1. Subsurface soil sampling from soil borings, geoprobes and/or test pits/trenches, in addition to the areas described in paragraphs 3.5.1(a)2 and (c)6, is required in any area:

i. where it is likely that contaminants have migrated downward from the surface or were released below ground surface; for example, from dry wells, leach fields, injection wells or underground storage tanks;

ii. where the investigation of a geophysical or soil vapor anomaly suggests a possible contaminant source;

iii. where waste was or was reported to have been disposed. Such sampling should delineate the boundaries of the area impacted by the disposal; and

iv. when surficial contamination is known or suspected. Such sampling should determine the vertical extent of that contamination.

2. If VOCs are confirmed in the subsurface, the investigation should evaluate any

subsurface utilities, structures (with both basement and slab on grade) and/or other preferential pathways to identify additional sampling that may be warranted to determine whether actions are needed to address exposures associated with soil vapor intrusion, as a result of the soil contamination.

3. When any soil boring, geoprobe or test pit/trench is installed, written logs of the findings are to be prepared and maintained which include, but are not limited to:

i. the data identified in paragraphs 3.5.1(c)1 and 2;

ii. documentation and/or observations regarding the interface between waste and native soils (if appropriate);

iii. identification of the groundwater table and related observations, such as floating product or LNAPL;

iv. identification of the mobility of any contaminants, NAPL or free product identified; and

v. a photographic record of such excavation areas is also recommended to document subsurface features and observations.

(d) The investigation should gather sufficient data on contamination present in soil to evaluate the need for remediation or mitigation at the site.

3.5.3 Soil Background Evaluation

(a) This guidance is intended for soil background evaluations conducted as a component of a SC, RI or, where appropriate, at another element of the remedial program. Site background evaluations are not considered for use on-site at BCP sites.

1. If a suspected contaminant is identified in soil in excess of the unrestricted soil SCGs, the guidance in this subsection may be followed to demonstrate to DER that the concentration of the element, chemical or contaminant in the soils may be due to background conditions.

2. Area-wide soil background studies, intended to be applied to more than one site, may require an expanded level of effort to be determined after consultation with DEC.

3. Background evaluations typically focus on surface soils, although the same approach is applicable to deeper soil horizons.

(b) The remedial party may evaluate soil background conditions at a site using the approaches discussed in this subdivision. The evaluation of background conditions consists of a two-step process. The first step is gaining an understanding of soil conditions on-site and the second step is understanding the soil conditions off-site.

1. On-site soil conditions. Understanding conditions on-site includes an evaluation of whether:

i. the contaminant(s) of concern was(were) never used, stored, or disposed on or near

the site);

ii. (an) element(s) or chemical concentration detected in the soil at the site are within the ranges reported in appropriate references for naturally or regionally occurring background levels for New York. In doing so, the remedial party needs to consider the applicability of the rural background study (see subparagraph 2.ii, below) to the study area;

iii. the distribution of the element, chemical or contaminant in the soil does not follow a concentration gradient indicative of disposal or a discharge; and

iv. the presence of historic fill material.

2. Off-site soil conditions. The remedial party may employ one of the following three approaches to gain an understanding of off-site soil conditions:

i. use an existing DEC-approved background evaluation which was conducted generally in accordance with subdivision (c) below, for soils near the site to establish the background soil conditions;

ii. use the rural background study conducted by DEC, in collaboration with the New York State Department of Health, as part of the development of the soil cleanup objectives set forth at 6 NYCRR Part 375 as background soil conditions and available in the technical support document [see 6 NYCRR 375-6.2(b)]; or

iii. undertake a site-specific background evaluation, to demonstrate background conditions of the soil in the vicinity of the site, in accordance with subdivision (c) below.

(c) Site-specific background evaluation. A site-specific background evaluation will consider soil samples collected and analyzed from no less than five background sample locations in the vicinity of the site as detailed in this subdivision to assist in the characterization of site-related contamination. An evaluation intended to develop site-specific cleanup objectives is addressed in subdivision (d) below.

1. The background grab samples should be collected from:

i. a depth which conforms to the same depths of the surface soils sampled during the surface soil investigation;

ii. the 0 to 2 foot soil horizon if no surface soil samples were collected at an AOC or from the site.; or

iii. deeper horizons if appropriate based where the contamination is present

2. Background samples should be collected at locations which are:

i. unaffected by current and historic site operations, as documented by the records search;

ii. wherever possible, from locations which are topographically upgradient and upwind of contaminant sources; and

iii. off the site being investigated, unless the site being investigated encompasses a large area which includes separable areas having no identified AOCs.

3. Background samples should not be collected from potentially contaminated areas, including any of the following:

i. areas where materials or wastes were loaded, handled or stored;

ii. identified waste-disposal areas;

iii. areas which receive runoff from areas identified in subparagraphs i or ii above or adjacent contaminated sites;

iv. storm drain outfall discharges or ditches receiving runoff from the site or adjacent contaminated sites; or

v. any other area of concern, as defined by section 1.8;

4. Background samples generally should not be collected from the following areas unless it can be demonstrated that the contamination in the area is due to generally occurring pollution related to the urban or industrial nature (anthropogenic) of the surrounding area and the results will be compared to samples taken from similar areas on the site:

i. parking lots, roads or roadside areas;

ii. areas near railroad tracks;

iii. areas of historic fill material;

iv. storm drains or ditches receiving runoff not impacted by the site or adjacent contaminated sites; or

v. depositional areas outside the influence of known sources.

5. Background studies should use the same sampling and analytical methods as were used for other site samples.

6. Samples collected from a site or an area of concern cannot be averaged for background comparisons, rather the individual samples should be evaluated, in consultation with DEC and the NYSDOH to determine a background level for the site. Except for on-site at a BCP site, if contaminant concentrations are found at any sampling location on the site exceeding the background level developed from the background samples, the RI may delineate the extent of the contamination based on the background level, rather than the applicable unrestricted soil SCG.

7. The background evaluation should be presented in a work plan developed in accordance with section 3.3, if not included in the RI work plan.

(d) Site-specific remediation levels based on background concentrations. If a site-specific

background soil level identified by subdivision (c) above is to be proposed as a remediation level at the site, a more extensive sampling program to allow a statistical analysis of background levels may be required.

1. The remedial party should, after consulting with DER, submit a work plan outlining the proposed methods for the additional sampling and any proposed statistical evaluation of samples.

2. Where a grid or predetermined sample spacing is to be used in a site-specific evaluation , the limitations on the location of samples identified by paragraph (c)3 above are not applicable, because the investigation is intended to assess the impacts from other potential sources of contaminants in the vicinity of the site to the site-specific background.

3. Any statistical analysis should be in designed consistent with the rural background study data analysis methods provided in Appendix D, Section B of the *New York State Brownfield Cleanup Program Development of Soil Cleanup Objectives Technical Support Document (TSD) September 2006* or any subsequently approved applicable document, which is available on DEC's website identified in the table of contents.



3.9 Area Specific Requirements for Tanks, Storage Facilities, Water Treatment, Drainage Structures and Other Systems

(a) Storage tanks and appurtenances. The investigation of bulk storage tanks and appurtenances; should include, without limitation, all in use and out-of-service storage and associated piping, dispensers and fill ports.

1. Aboveground tanks over unpaved soil or broken pavement in contact with the soil. Sampling around tanks with shell or bottom in direct contact with soil now or in the past should meet all the following criteria:

i. a minimum of two surface soil samples should be collected to detect surface contamination around the base of each tank, in accordance with subdivision 3.5.1(b), as follows:

(1) from areas of contamination, based on soil discoloration/odors, history of repairs/replacement, soil beneath valves or low areas where spills or leaks from valves may accumulate;

(2) additional samples should be taken around larger tanks to ensure that there is at least one sample per 100 linear feet (from a depth of at least 6 inches if VOCs were stored) of tank perimeter; and

(3) unless the tank was installed and maintained in compliance with 6 NYCRR Parts 614 or 599:

(A) at least one boring should be located adjacent to or within two feet of the most down gradient tank with continuous two-foot split spoon sampling, or another DER approved comparable sampling technique, performed to four feet below the current water table, or deeper where appropriate; and

(B) the sample in each boring evidencing the highest apparent contamination based on soil discoloration, odor, field-screening result or other field indicator should be analyzed at a laboratory;

ii. if there is no evidence of soil contamination, a groundwater sample should be collected from the zero to one-foot interval below the current water table elevation. The sample should be collected within five feet of the tank on the expected downgradient side. It should then be analyzed following an appropriate laboratory method; and

iii. if there is evidence of groundwater contamination, the groundwater sample must be collected at this location.

2. Aboveground tanks elevated over unpaved soil or broken pavement. Elevated tanks where the shell or bottom is not in contact with ground:

i. require soil sampling when:

(1) there is any physical or documentary evidence of discharges;
(2) soil discoloration is observed; or
(3) field monitoring or other evidence indicates that a discharge has occurred; and

ii. at least one soil sample should be taken below tanks which store, or may have stored, contaminants that do not cause obvious soil discoloration such as VOCs:

(1) the samples should be collected in the area most likely to be contaminated, including without limitation, valve or former leak or rupture areas; or
(2) if samples cannot be obtained from below the tank because soils are not accessible to sampling equipment, the sample may be located within two feet of the tank.

3. Aboveground tanks over unbroken paved surfaces. Soil around aboveground tanks:

i. on paved surfaces or pads should be sampled pursuant to paragraph (b)1 below, if there:

(1) are stained soils adjacent to the paving or pad; or
(2) if the potential contaminant would not cause discoloration such as VOCs, if there is a history of spillage or other evidence that a discharge has occurred;

ii. within a paved containment area should be sampled at the drainage discharge point, if one exists, pursuant to subdivision (d) below (Drainage Areas);

iii. soil sampling below the pavement should be conducted when the pavement has deteriorated so as to allow potential contaminant contact with the soil, or if there is reason to believe that pavement was not present over the life of the tank or former tanks; and

iv. instead of sampling soil beneath pavement, samples around the pad may be taken pursuant to (b)1 below, subject to DER's review of documentation pursuant to subdivision 1.6(c) specifying why boring through pavement was not considered practical (for example, concrete slabs with berms, synthetic liners).

4. Underground storage tanks (USTs). USTs and distribution systems containing potential contaminants should be evaluated to identify any past or present discharges. All USTs must be in

compliance with applicable regulations, upgraded as necessary or closed in accordance with the requirements of section 5.5. All USTs not being closed should be evaluated as follows:

i. at least four soil samples should be collected from around each tank or group of tanks as noted in clause (a)3.i.(2) above. The soil samples should be collected within two feet of the tank with one sampling location located at each end, and additional sampling locations along the length of the entire tank:

(1) if sampling within two feet of the tank is not possible due to the presence of bedding gravel or there are safety considerations (e.g., danger of tank puncture) which have been identified through field investigations or review of as built plans:

(A) soil samples should be taken as close as possible to the tank, with no samples collected further than five feet from the tank or group of tanks; and

(B) a groundwater sample should be collected within five feet and down gradient of the tank or group of tanks; or

(2) when, due to safety considerations, the distance between adjacent tanks precludes locating soil samples between the tanks, a groundwater sample may be collected within five feet and down gradient of the tanks, at the appropriate depth in lieu of the required soil samples between the tanks. Where available, tank field wells may be sampled in lieu of a new well;

ii. the total number of sampling locations required per tank, or group of adjacent tanks, located within the length identified in Table 3.9 for the total tank capacity;

iii. soil samples collected for analysis should be taken at zero to two feet below the tank bottom unless the tank is within the saturated zone (see subparagraph iv below); and

iv. for underground storage tanks (USTs) within the saturated zone based on site-specific water levels:

(1) if the contents of the UST being evaluated have ever had a density less than water, a soil sample should be collected from one foot above to one foot below the current water table surface. A groundwater sample should also be collected at the appropriate depth pursuant to section 3.7. To verify tank contents for out-of-service tanks, one sample should be taken of any product or residue remaining in the tank and analyzed using an appropriate fingerprinting or other analytical method; or

(2) if the contents of the UST being evaluated have ever had a density greater than water, a soil sample should be collected from zero to two feet below the bottom of the tank. A groundwater sample should also be collected at the appropriate depth pursuant to section 3.7. To verify tank contents for out-of-service tanks, one sample should be taken of any product or residue remaining in the tank and analyzed using an appropriate fingerprinting or other analytical method; and

v. if a tank is located on bedrock, a bedrock monitoring well may be necessary.

Table 3.9 Sampling Frequency Based on Tank Capacity and/or Length [from Subparagraph 3.9(a)4.ii]		
Total Tank Capacity (Gallons)	**Approximate Tank Length (Feet)**	**Minimum Number of Samples**
56-2000	Up to 10	4
2001-10,000	Up to 30	6
10001 - 25,000	Up to 40	8
25,000+	Greater than 40	10

5. Above-grade piping. Sampling of soil beneath above-grade piping is necessary if there is evidence of a discharge (for example, discolored soil, etc.) or reports of past discharges. Any sampling conducted should be pursuant to subdivision (e) below (Discharge/Disposal Areas).

6. Below-grade piping. Below-grade piping should be evaluated to identify any past or present discharges using soil samples located zero to six inches below the piping and within two feet of the piping. Additional samples should be collected as follows, for:

i. a total piping length of 1to 15 feet, a minimum of one soil sample should be collected:

(1) an additional soil sample should be collected for each additional 20 linear feet of piping or portion thereof from 16 to 50 feet of piping length; and
(2) sample locations should be biased to include joints, dispensers and other potential discharge areas;

ii. pipe runs within two feet of another pipe run may be considered a single pipe run. Soil samples for multiple pipe lines should be collected midway between/among the lines or biased toward any pipe for which evidence of a discharge exists. For pipes that are separated by a distance greater than two feet vertically, soil samples should be collected below each pipe; or

iii. total piping lengths in excess of 50 feet, sampling frequency may be reduced subject to DER's approval of documentation pursuant to section 1.6 specifying why the reduced number was considered adequate.

7. Loading and unloading areas. For loading or unloading areas located:

i. over exposed soils which are associated with tanks, should be sampled at a minimum rate of one sample per fill connection or valved discharge point; or

ii. over impervious cover, sampling should be conducted pursuant to paragraph (b)1 below.

(b) Storage and staging areas. The investigation for all storage and staging areas, dumpsters and transformers, whether temporary or permanent, including exposed soil areas adjacent to aboveground vessels on pads; tank loading/unloading areas on pads; dumpster staging areas; electrical transformers,

heat exchanger and other outdoor equipment and drum storage pads, should also satisfy the requirements of this subdivision.

1. Pads. The investigation of a pad should:

i. have a minimum of one sampling location per side adjacent to exposed soil for sides:

(1) up to 30 feet long; or
(2) for sides greater than 30 feet long, one additional sample location is required for each additional 30 feet of length;

ii. locate each sampling point immediately adjacent to the pad and biased toward the suspected location of greatest contamination (e.g. joints);

iii. include soil samples beneath the pad, collected pursuant to subparagraph (b)2.ii below, if:

(1) the pad shows evidence of deterioration that may allow contaminant contact with the soil;
(2) the pad or its surface has been modified or repaved; or
(3) aerial photographs or site history indicate potential for previous discharges to the soil beneath the pad; and

iv. sample bermed pads and pads surrounded by impermeable cover at any drainage discharge point pursuant to subdivision (d) below (Drainage Systems).

2. Storage and staging areas over a permeable cover. Storage and staging areas with evidence of discharges which are or were used for storage of contaminants:

i. should be sampled pursuant to subdivision (e) below (Discharge and waste disposal systems);

ii. should be sampled at locations biased toward the suspected location of greatest contamination based on low points, drainage patterns, discoloration, stressed vegetation, field instrument measurements or other field indicators; and

iii. the sample frequency for these areas should be:

(1) at least one surface sample, in accordance with subdivision 3.5.1(b), per 900 square feet of surface area to characterize soils below a storage or staging area up to 300 feet in perimeter; and
(2) sample frequency may be reduced for larger areas subject to DER approval of documentation pursuant to subdivision 1.6(c) specifying why the proposed sample frequency is adequate.

(c) Surface impoundments. The investigation for all surface impoundments, including without limitation, lagoons, fire ponds, waste ponds or waste pits, storm water detention basins, excavations, natural depressions or diked areas, which are designed to hold an accumulation of liquid substances or

substances containing free liquids, should satisfy the requirements of this subdivision.

1. Sediments within any surface impoundments should be sampled if the impoundment receives runoff from areas of potential contaminant sources.

2. Sediment sample locations should be biased towards inflow/outflow areas, and areas where sediments may be expected to accumulate.

3. Core samples should be taken for contaminant analysis and to fully characterize sediment type, thickness of sediment layers and vertical extent of sediment.

4. Distinct layers of sediments thicker than six inches, as evidenced by color, particle size, or other physical characteristics, should be sampled individually.

5. Sediment quantity within the surface impoundment should be estimated.

6. Active surface impoundments with impermeable liners, which may be damaged as a result of sample collection, should have liner integrity verified by physical inspection and/or evaluation of monitoring well water quality data associated with the surface impoundment, if available.

(d) Drainage systems. The SC or RI for all drainage systems should satisfy the sampling requirements of this subdivision.

1. Floor drains and collection systems. If there is reason to believe contaminants were or may have been discharged into the floor drain or collection system:

i the point of discharge for any floor drain or collection system should be sampled if the system discharges were, or may have been, discharged to soil, groundwater or surface water;

ii. if the point of discharge is unknown, tracer tests (for example, dye or smoke) should be conducted to determine the discharge point(s);

iii. collection system integrity should be documented by representative soil sampling at potential leak areas, video inspection, hydrostatic test or pressure test. Other methods may be acceptable, subject to DER approval of documentation pursuant to subdivision 1.6 (c) specifying why the methods are effective; and

iv. sampling soil below floor drains or collection system laterals should be conducted when corrosives (if plastic piping is or was used, organic solvents are considered corrosive) are or were discharged to floor drains or the collection system or there has been a history of collection system discharges, rupture or repairs. In such cases, representative soil sampling at known or suspected leak areas is required for potential contaminants.

2. Roof leader discharge. Soil at each roof leader discharge point should be sampled if storage units or process operations using contaminants of concern vent, or may have vented, to the roof.

3. Swales and culverts. Sampling should be conducted when the swale or culvert receives or received runoff from other contaminated areas of concern:

i. sediment and soil sampling should be conducted at the points where contamination from runoff/spills enter or have entered the drainage system; and

ii. if flow could have scoured sediments from the receiving structure, sampling should be conducted at on-site down gradient structures laden with sediments.

4. Storm sewer and spill containment collection systems. Sampling should be conducted when the collection system is or was the runoff/spill discharge point from other contaminated areas of concern:

i. sediment sampling should be conducted at the manhole, catch basin, sump, or other structure where contaminated runoff or discharges enter the drainage system;

ii. sampling should be conducted in the soils around catch basins, manholes, sumps or other structures which contain or may have contained contaminants, and are not hydraulically sound (that is, water percolates through the floor and walls), through the use of adjacent soil borings:

(1) a single boring located within two feet of the downstream side of the structure should be sampled at a depth corresponding to the bottom of the structure; and

(2) if highly permeable soils are encountered and VOC sampling is required, sample at the next lower permeability soil horizon or zero to six inches above the saturated zone, or at 9.5 to 10 feet, whichever is encountered first; and

iii. groundwater discharging from storm sewer systems which contain dry weather flow (that is, five days following the most recent rainfall) should be sampled at the discharge point and analyzed for potential contaminants discharged or potentially discharged into the system.

5. Boiler and compressor discharges. For all boiler and compressor discharges if there is reason to believe that a potential contaminant discharge has occurred, sampling should be conducted pursuant to subdivision (e) below.

(e) Discharge and waste disposal systems. The SC or RI for all discharge and waste disposal systems and areas should satisfy the sampling requirements of this subdivision.

1. Discharge areas and areas of discolored soil or stressed vegetation. Where specific requirements are not otherwise provided in this section each distinct area should be evaluated independently as an area of concern:

i. initial surface soil samples, in accordance with subdivision 3.5.1(b), should be biased based on field indicators such as soil discoloration, stressed vegetation or field instrument measurements toward those areas of greatest suspected contamination;

ii. sample frequency should be at least 1 sample for every 900 square feet for areas up to 300 feet in perimeter; and

iii. sample frequency may be reduced for larger areas, subject to DER's review of documentation pursuant to subdivision 1.6 (c) specifying why the reduced sample frequency was considered adequate.

2. Aboveground treatment systems. Above ground treatment systems should be sampled pursuant to the requirements for the functional portions of the system pursuant to subdivision (a) above. For example, any aboveground waste treatment tanks over unpaved soil should be sampled pursuant to paragraph (a)1 above.

3. Below-grade wastewater treatment systems:

i. tanks, septic tanks, separators and neutralization pits:

(1) two samples, one aqueous and one sludge sample, should be collected from within the tank etc, for analysis unless documentation acceptable to DER pursuant to subdivision 1.6(c) is provided in the SCR (section 3.13) specifying why such sampling was not considered necessary to confirm that only sanitary waste was discharged to the system during the entire life of the system; and

(2) documentation, based upon diligent inquiry, should be provided to support that only sanitary waste was ever discharged to the system and that no present or former floor drains, sinks or other units in process areas were ever connected to the system;

ii. septic disposal fields:

(1) soil borings and/or test pitting should be completed as specified below for on-site disposal fields unless documentation acceptable to DER is provided as to why soil borings were not considered necessary to confirm that only sanitary waste was discharged to the system pursuant to subparagraph (e)3.i above;

(2) at least one boring or test pit per 500 square feet of field area should be completed, with a minimum of four borings per field;

(3) borings should be located within two feet of the edge of the bed area in active fields but should be angled so that samples are taken below the infiltrative surface and directly below laterals within abandoned fields;

(4) borings should be located to include the first five feet of the infiltrative surface and should be spaced so that samples are representative of the entire disposal field; and

(5) soil samples should be taken at a depth corresponding to zero to six inches below the bottom of the infiltrative surface.

iii. cesspools, seepage pits and dry wells:

(1) sampling should be conducted in accordance with clauses (2) through (5) below, unless documentation acceptable to DER, pursuant to subdivision 1.6(c), is provided in the SCR specifying why sampling was not considered necessary (e.g., to confirm that only sanitary waste or storm water was discharged to the system pursuant to subparagraph (e)3.i above);

(2) one representative sample of sludge/sediment in each pit should be obtained for laboratory analysis;

(3) a soil boring should be placed within the well, pit or pool:

(A) the soil should be cored and inspected for evidence of discharge and samples collected in accordance with paragraphs 3.2.1(c)1 and 2; or

(B) if not possible to core within the suspected structure, the boring should be placed within two feet of the downgradient side of the pit and should extend to a minimum of two feet below the pit bottom;

(4) for structures with perforated sidewalls, perforated rings, brick, block or stone construction, a boring should be placed immediately adjacent to the outside of the structure. If no other

field indicators (e.g., staining) identify a vertical zone to sample, a sample should be collected at the level of any sediment observed inside the structure;

(5) samples obtained for VOC analysis should be collected as follows:

(A) each core should be field screened with a properly calibrated photoionization detector or flame ionization detector (PID/FID) or other suitable instrument;

(B) if field measurement readings are detected above background, coring should be extended until background readings are achieved or groundwater or bedrock is encountered; and

(C) an undisturbed sample from the two-foot interval registering the highest field measurement reading should be collected and analyzed for VOCs;

(6) if the pit bottom is within two feet of the saturated zone or bedrock, a groundwater sample will be obtained within the pit or, if not possible, within two feet of the suspected downgradient side of the pit; and

(7) at a minimum, the laboratory analysis should target the contaminants suspected to have been discharged to the seepage pit.

iv. collection lines, should be sampled pursuant to paragraph (d)1 above.

Supplement C – USEPA Groundwater Sampling

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

LOW STRESS (low flow) PURGING AND SAMPLING PROCEDURE FOR THE COLLECTION OF GROUNDWATER SAMPLES FROM MONITORING WELLS

Quality Assurance Unit
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Revision Page

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1.0 USE OF TERMS

Equipment blank: The equipment blank shall include the pump and the pump's tubing. If tubing is dedicated to the well, the equipment blank needs only to include the pump in subsequent sampling rounds. If the pump and tubing are dedicated to the well, the equipment blank is collected prior to its placement in the well. If the pump and tubing will be used to sample multiple wells, the equipment blank is normally collected after sampling from contaminated wells and not after background wells.

Field duplicates: Field duplicates are collected to determine precision of the sampling procedure. For this procedure, collect duplicate for each analyte group in consecutive order (VOC original, VOC duplicate, SVOC original, SVOC duplicate, etc.).

Indicator field parameters: This SOP uses field measurements of turbidity, dissolved oxygen, specific conductance, temperature, pH, and oxidation/reduction potential (ORP) as indicators of when purging operations are sufficient and sample collection may begin.

Matrix Spike/Matrix Spike Duplicates: Used by the laboratory in its quality assurance program. Consult the laboratory for the sample volume to be collected.

Potentiometric Surface: The level to which water rises in a tightly cased well constructed in a confined aquifer. In an unconfined aquifer, the potentiometric surface is the water table.

QAPP: Quality Assurance Project Plan

SAP: Sampling and Analysis Plan

SOP: Standard operating procedure

Stabilization: A condition that is achieved when all indicator field parameter measurements are sufficiently stable (as described in the "Monitoring Indicator Field Parameters" section) to allow sample collection to begin.

Temperature blank: A temperature blank is added to each sample cooler. The blank is measured upon receipt at the laboratory to assess whether the samples were properly cooled during transit.

Trip blank (VOCs): Trip blank is a sample of analyte-free water taken to the sampling site and returned to the laboratory. The trip blanks (one pair) are added to each sample cooler that contains VOC samples.

2.0 SCOPE & APPLICATION

The goal of this groundwater sampling procedure is to collect water samples that reflect the total mobile organic and inorganic loads (dissolved and colloidal sized fractions) transported through the subsurface under ambient flow conditions, with minimal physical and chemical alterations from sampling operations. This standard operating procedure (SOP) for collecting groundwater samples will help ensure that the project's data quality objectives (DQOs) are met under certain low-flow conditions.

The SOP emphasizes the need to minimize hydraulic stress at the well-aquifer interface by maintaining low water-level drawdowns, and by using low pumping rates during purging and sampling operations. Indicator field parameters (e.g., dissolved oxygen, pH, etc.) are monitored during purging in order to determine when sample collection may begin. Samples properly collected using this SOP are suitable for analysis of groundwater contaminants (volatile and semi-volatile organic analytes, dissolved gases, pesticides, PCBs, metals and other inorganics), or naturally occurring analytes. This SOP is based on Puls, and Barcelona (1996).

This procedure is designed for monitoring wells with an inside diameter (1.5-inches or greater) that can accommodate a positive lift pump with a screen length or open interval ten feet or less and with a water level above the top of the screen or open interval (Hereafter, the "screen or open interval" will be referred to only as "screen interval"). This SOP is not applicable to other well-sampling conditions.

While the use of dedicated sampling equipment is not mandatory, dedicated pumps and tubing can reduce sampling costs significantly by streamlining sampling activities and thereby reducing the overall field costs.

The goal of this procedure is to emphasize the need for consistency in deploying and operating equipment while purging and sampling monitoring wells during each sampling event. This will help to minimize sampling variability.

This procedure describes a general framework for groundwater sampling. Other site specific information (hydrogeological context, conceptual site model (CSM), DQOs, etc.) coupled with systematic planning must be added to the procedure in order to develop an appropriate site specific SAP/QAPP. In addition, the site specific SAP/QAPP must identify the specific equipment that will be used to collect the groundwater samples.

This procedure does not address the collection of water or free product samples from wells containing free phase LNAPLs and/or DNAPLs (light or dense non-aqueous phase

liquids). For this type of situation, the reader may wish to check: Cohen, and Mercer (1993) or other pertinent documents.

This SOP is to be used when collecting groundwater samples from monitoring wells at all Superfund, Federal Facility and RCRA sites in Region 1 under the conditions described herein. Request for modification of this SOP, in order to better address specific situations at individual wells, must include adequate technical justification for proposed changes. All changes and modifications must be approved and included in a revised SAP/QAPP before implementation in field.

3.0 BACKGROUND FOR IMPLEMENTATION

It is expected that the monitoring well screen has been properly located (both laterally and vertically) to intercept existing contaminant plume(s) or along flow paths of potential contaminant migration. Problems with inappropriate monitoring well placement or faulty/improper well installation cannot be overcome by even the best water sampling procedures. This SOP presumes that the analytes of interest are moving (or will potentially move) primarily through the more permeable zones intercepted by the screen interval.

Proper well construction, development, and operation and maintenance cannot be overemphasized. The use of installation techniques that are appropriate to the hydrogeologic setting of the site often prevent "problem well" situations from occurring. During well development, or redevelopment, tests should be conducted to determine the hydraulic characteristics of the monitoring well. The data can then be used to set the purging/sampling rate, and provide a baseline for evaluating changes in well performance and the potential need for well rehabilitation. Note: if this installation data or well history (construction and sampling) is not available or discoverable, for all wells to be sampled, efforts to build a sampling history should commence with the next sampling event.

The pump intake should be located within the screen interval and at a depth that will remain under water at all times. It is recommended that the intake depth and pumping rate remain the same for all sampling events. The mid-point or the lowest historical midpoint of the saturated screen length is often used as the location of the pump intake. For new wells, or for wells without pump intake depth information, the site's SAP/QAPP must provide clear reasons and instructions on how the pump intake depth(s) will be selected, and reason(s) for the depth(s) selected. If the depths to top and bottom of the well screen are not known, the SAP/QAPP will need to describe how the sampling depth will be determined and how the data can be used.

Stabilization of indicator field parameters is used to indicate that conditions are suitable for sampling to begin. Achievement of turbidity levels of less than 5 NTU, and stable drawdowns of less than 0.3 feet, while desirable, are not mandatory. Sample collection

may still take place provided the indicator field parameter criteria in this procedure are met. If after 2 hours of purging indicator field parameters have not stabilized, one of three optional courses of action may be taken: a) continue purging until stabilization is achieved, b) discontinue purging, do not collect any samples, and record in log book that stabilization could not be achieved (documentation must describe attempts to achieve stabilization), c) discontinue purging, collect samples and provide full explanation of attempts to achieve stabilization (note: there is a risk that the analytical data obtained, especially metals and strongly hydrophobic organic analytes, may reflect a sampling bias and therefore, the data may not meet the data quality objectives of the sampling event).

It is recommended that low-flow sampling be conducted when the air temperature is above 32°F (0°C). If the procedure is used below 32°F, special precautions will need to be taken to prevent the groundwater from freezing in the equipment. Because sampling during freezing temperatures may adversely impact the data quality objectives, the need for water sample collection during months when these conditions are likely to occur should be evaluated during site planning and special sampling measures may need to be developed. Ice formation in the flow-through-cell will cause the monitoring probes to act erratically. A transparent flow-through-cell needs to be used to observe if ice is forming in the cell. If ice starts to form on the other pieces of the sampling equipment, additional problems may occur.

4.0 HEALTH & SAFETY

When working on-site, comply with all applicable OSHA requirements and the site's health/safety procedures. All proper personal protection clothing and equipment are to be worn. Some samples may contain biological and chemical hazards. These samples should be handled with suitable protection to skin, eyes, etc.

5.0 CAUTIONS

The following cautions need to be considered when planning to collect groundwater samples when the below conditions occur.

If the groundwater degasses during purging of the monitoring well, dissolved gases and VOCs will be lost. When this happens, the groundwater data for dissolved gases (e.g., methane, ethene, ethane, dissolved oxygen, etc.) and VOCs will need to be qualified. Some conditions that can promote degassing are the use of a vacuum pump (e.g., peristaltic pumps), changes in aperture along the sampling tubing, and squeezing/pinching the pump's tubing which results in a pressure change.

When collecting the samples for dissolved gases and VOCs analyses, avoid aerating the groundwater in the pump's tubing. This can cause loss of the dissolved gases and VOCs in

the groundwater. Having the pump's tubing completely filled prior to sampling will avoid this problem when using a centrifugal pump or peristaltic pump.

Direct sun light and hot ambient air temperatures may cause the groundwater in the tubing and flow-through-cell to heat up. This may cause the groundwater to degas which will result in loss of VOCs and dissolved gases. When sampling under these conditions, the sampler will need to shade the equipment from the sunlight (e.g., umbrella, tent, etc.). If possible, sampling on hot days, or during the hottest time of the day, should be avoided. The tubing exiting the monitoring well should be kept as short as possible to avoid the sun light or ambient air from heating up the groundwater.

Thermal currents in the monitoring well may cause vertical mixing of water in the well bore. When the air temperature is colder than the groundwater temperature, it can cool the top of the water column. Colder water which is denser than warm water sinks to the bottom of the well and the warmer water at the bottom of the well rises, setting up a convection cell. "During low-flow sampling, the pumped water may be a mixture of convecting water from within the well casing and aquifer water moving inward through the screen. This mixing of water during low-flow sampling can substantially increase equilibration times, can cause false stabilization of indicator parameters, can give false indication of redox state, and can provide biological data that are not representative of the aquifer conditions" (Vroblesky 2007).

Failure to calibrate or perform proper maintenance on the sampling equipment and measurement instruments (e.g., dissolved oxygen meter, etc.) can result in faulty data being collected.

Interferences may result from using contaminated equipment, cleaning materials, sample containers, or uncontrolled ambient/surrounding air conditions (e.g., truck/vehicle exhaust nearby).

Cross contamination problems can be eliminated or minimized through the use of dedicated sampling equipment and/or proper planning to avoid ambient air interferences. Note that the use of dedicated sampling equipment can also significantly reduce the time needed to complete each sampling event, will promote consistency in the sampling, and may reduce sampling bias by having the pump's intake at a constant depth.

Clean and decontaminate all sampling equipment prior to use. All sampling equipment needs to be routinely checked to be free from contaminants and equipment blanks collected to ensure that the equipment is free of contaminants. Check the previous equipment blank data for the site (if they exist) to determine if the previous cleaning procedure removed the contaminants. If contaminants were detected and they are a concern, then a more vigorous cleaning procedure will be needed.

6.0 PERSONNEL QUALIFICATIONS

All field samplers working at sites containing hazardous waste must meet the requirements of the OSHA regulations. OSHA regulations may require the sampler to take the 40 hour OSHA health and safety training course and a refresher course prior to engaging in any field activities, depending upon the site and field conditions.

The field samplers must be trained prior to the use of the sampling equipment, field instruments, and procedures. Training is to be conducted by an experienced sampler before initiating any sampling procedure.

The entire sampling team needs to read, and be familiar with, the site Health and Safety Plan, all relevant SOPs, and SAP/QAPP (and the most recent amendments) before going onsite for the sampling event. It is recommended that the field sampling leader attest to the understanding of these site documents and that it is recorded.

7.0 EQUIPMENT AND SUPPLIES

A. Informational materials for sampling event

A copy of the current Health and Safety Plan, SAP/QAPP, monitoring well construction data, location map(s), field data from last sampling event, manuals for sampling, and the monitoring instruments' operation, maintenance, and calibration manuals should be brought to the site.

B. Well keys.

C. Extraction device

Adjustable rate, submersible pumps (e.g., centrifugal, bladder, etc.) which are constructed of stainless steel or polytetrafluoroethylene (PTFE, i.e. Teflon®) are preferred. PTFE, however, should not be used when sampling for per- and polyfluoroalkyl substances (PFAS) as it is likely to contain these substances.

Note: If extraction devices constructed of other materials are to be used, adequate information must be provided to show that the substituted materials do not leach contaminants nor cause interferences to the analytical procedures to be used. Acceptance of these materials must be obtained before the sampling event.

If bladder pumps are selected for the collection of VOCs and dissolved gases, the pump setting should be set so that one pulse will deliver a water volume that is sufficient to fill a 40 mL VOC vial. This is not mandatory, but is considered a "best practice". For the proper operation, the bladder pump will need a minimum amount of water above the pump; consult the manufacturer for the recommended submergence. The pump's recommended submergence value should be determined during the planning stage, since it may influence well construction and placement of dedicated pumps where water-level fluctuations are significant.

Adjustable rate, peristaltic pumps (suction) are to be used with caution when collecting samples for VOCs and dissolved gases (e.g., methane, carbon dioxide, etc.) analyses. Additional information on the use of peristaltic pumps can be found in Appendix A. If peristaltic pumps are used, the inside diameter of the rotor head tubing needs to match the inside diameter of the tubing installed in the monitoring well.

Inertial pumping devices (motor driven or manual) are not recommended. These devices frequently cause greater disturbance during purging and sampling, and are less easily controlled than submersible pumps (potentially increasing turbidity and sampling variability, etc.). This can lead to sampling results that are adversely affected by purging and sampling operations, and a higher degree of data variability.

D. Tubing

PTFE (Teflon®) or PTFE-lined polyethylene tubing are preferred when sampling is to include VOCs, SVOCs, pesticides, PCBs and inorganics. As discussed in the previous section, PTFE tubing should not be used when sampling for PFAS. In this case, a suitable alternative such as high-density polyethylene tubing should be used.

PVC, polypropylene or polyethylene tubing may be used when collecting samples for metal and other inorganics analyses.

Note: If tubing constructed of other materials is to be used, adequate information must be provided to show that the substituted materials do not leach contaminants nor cause interferences to the analytical procedures to be used. Acceptance of these materials must be obtained before the sampling event.

The use of 1/4 inch or 3/8 inch (inside diameter) tubing is recommended. This will help ensure that the tubing remains liquid filled when operating at very low pumping rates when using centrifugal and peristaltic pumps.

Silastic tubing should be used for the section around the rotor head of a peristaltic pump. It should be less than a foot in length. The inside diameter of the tubing used at the pump rotor head must be the same as the inside diameter of tubing placed in the well. A tubing connector is used to connect the pump rotor head tubing to the well tubing. Alternatively, the two pieces of tubing can be connected to each other by placing the one end of the tubing inside the end of the other tubing. The tubing must not be reused.

E. The water level measuring device

Electronic ”tape”, pressure transducer, water level sounder/level indicator, etc. should be capable of measuring to 0.01 foot accuracy. Recording pressure transducers, mounted above the pump, are especially helpful in tracking water levels during pumping operations, but their use must include check measurements with a water level “tape” at the start and end of each sampling event.

F. Flow measurement supplies

Graduated cylinder (size according to flow rate) and stopwatch usually will suffice.

Large graduated bucket used to record total water purged from the well.

G. Interface probe

To be used to check on the presence of free phase liquids (LNAPL, or DNAPL) before purging begins (as needed).

H. Power source (generator, nitrogen tank, battery, etc.)

When a gasoline generator is used, locate it downwind and at least 30 feet from the well so that the exhaust fumes do not contaminate samples.

I. Indicator field parameter monitoring instruments

Use of a multi-parameter instrument capable of measuring pH, oxidation/reduction potential (ORP), dissolved oxygen (DO), specific conductance, temperature, and coupled with a flow-through-cell is required when measuring all indicator field parameters, except turbidity. Turbidity is collected using a separate instrument. Record equipment/instrument identification (manufacturer, and model number).

Transparent, small volume flow-through-cells (e.g., 250 mLs or less) are preferred. This allows observation of air bubbles and sediment buildup in the cell, which can interfere with the operation of the monitoring instrument probes, to be easily detected. A small volume

cell facilitates rapid turnover of water in the cell between measurements of the indicator field parameters.

It is recommended to use a flow-through-cell and monitoring probes from the same manufacturer and model to avoid incompatibility between the probes and flow-through-cell.

Turbidity samples are collected before the flow-through-cell. A "T" connector coupled with a valve is connected between the pump's tubing and flow-through-cell. When a turbidity measurement is required, the valve is opened to allow the groundwater to flow into a container. The valve is closed and the container sample is then placed in the turbidimeter.

Standards are necessary to perform field calibration of instruments. A minimum of two standards are needed to bracket the instrument measurement range for all parameters except ORP which use a Zobell solution as a standard. For dissolved oxygen, a wet sponge used for the 100% saturation and a zero dissolved oxygen solution are used for the calibration.

Barometer (used in the calibration of the Dissolved Oxygen probe) and the conversion formula to convert the barometric pressure into the units of measure used by the Dissolved Oxygen meter are needed.

J. Decontamination supplies

Includes (for example) non-phosphate detergent, distilled/deionized water, isopropyl alcohol, etc.

K. Record keeping supplies

Logbook(s), well purging forms, chain-of-custody forms, field instrument calibration forms, etc.

L. Sample bottles

M. Sample preservation supplies (as required by the analytical methods)

N. Sample tags or labels

O. PID or FID instrument

If appropriate, to detect VOCs for health and safety purposes, and provide qualitative field evaluations.

P. Miscellaneous Equipment

Equipment to keep the sampling apparatus shaded in the summer (e.g., umbrella) and from freezing in the winter. If the pump's tubing is allowed to heat up in the warm weather, the cold groundwater may degas as it is warmed in the tubing.

8.0 EQUIPMENT/INSTRUMENT CALIBRATION

Prior to the sampling event, perform maintenance checks on the equipment and instruments according to the manufacturer's manual and/or applicable SOP. This will ensure that the equipment/instruments are working properly before they are used in the field.

Prior to sampling, the monitoring instruments must be calibrated and the calibration documented. The instruments are calibrated using U.S Environmental Protection Agency Region 1 *Calibration of Field Instruments (temperature, pH, dissolved oxygen, conductivity/specific conductance, oxidation/reduction [ORP], and turbidity),* March 23, 2017, or latest version or from one of the methods listed in 40CFR136, 40CFR141 and SW-846.

The instruments shall be calibrated at the beginning of each day. If the field measurement falls outside the calibration range, the instrument must be re-calibrated so that all measurements fall within the calibration range. At the end of each day, a calibration check is performed to verify that instruments remained in calibration throughout the day. This check is performed while the instrument is in measurement mode, not calibration mode. If the field instruments are being used to monitor the natural attenuation parameters, then a calibration check at mid-day is highly recommended to ensure that the instruments did not drift out of calibration. Note: during the day if the instrument reads zero or a negative number for dissolved oxygen, pH, specific conductance, or turbidity (negative value only), this indicates that the instrument drifted out of calibration or the instrument is malfunctioning. If this situation occurs the data from this instrument will need to be qualified or rejected.

9.0 PRELIMINARY SITE ACTIVITIES (as applicable)

Check the well for security (damage, evidence of tampering, missing lock, etc.) and record pertinent observations (include photograph as warranted).

If needed, lay out a sheet of clean polyethylene for monitoring and sampling equipment, unless equipment is elevated above the ground (e.g., on a table, etc.).

Remove well cap and if appropriate measure VOCs at the rim of the well with a PID or FID instrument and record reading in field logbook or on the well purge form.

If the well casing does not have an established reference point (usually a V-cut or indelible mark in the well casing), make one. Describe its location and record the date of the mark in the logbook (consider a photographic record as well). All water level measurements must be recorded relative to this reference point (and the altitude of this point should be determined using techniques that are appropriate to site's DQOs.

If water-table or potentiometric surface map(s) are to be constructed for the sampling event, perform synoptic water level measurement round (in the shortest possible time) before any purging and sampling activities begin. If possible, measure water level depth (to 0.01 ft.) and total well depth (to 0.1 ft.) the day before sampling begins, in order to allow for re-settlement of any particulates in the water column. This is especially important for those wells that have not been recently sampled because sediment buildup in the well may require the well to be redeveloped. If measurement of total well depth is not made the day before, it should be measured after sampling of the well is complete. All measurements must be taken from the established referenced point. Care should be taken to minimize water column disturbance.

Check newly constructed wells for the presence of LNAPLs or DNAPLs before the initial sampling round. If none are encountered, subsequent check measurements with an interface probe may not be necessary unless analytical data or field analysis signal a worsening situation. This SOP cannot be used in the presence of LNAPLs or DNAPLs. If NAPLs are present, the project team must decide upon an alternate sampling method. All project modifications must be approved and documented prior to implementation.

If available check intake depth and drawdown information from previous sampling event(s) for each well. Duplicate, to the extent practicable, the intake depth and extraction rate (use final pump dial setting information) from previous event(s). If changes are made in the intake depth or extraction rate(s) used during previous sampling event(s), for either portable or dedicated extraction devices, record new values, and explain reasons for the changes in the field logbook.

10.0 PURGING AND SAMPLING PROCEDURE

Purging and sampling wells in order of increasing chemical concentrations (known or anticipated) are preferred.

The use of dedicated pumps is recommended to minimize artificial mobilization and entrainment of particulates each time the well is sampled. Note that the use of dedicated sampling equipment can also significantly reduce the time needed to complete each sampling event, will promote consistency in the sampling, and may reduce sampling bias by having the pump's intake at a constant depth.

A. Initial Water Level

Measure the water level in the well before installing the pump if a non-dedicated pump is being used. The initial water level is recorded on the purge form or in the field logbook.

B. Install Pump

Lower pump, safety cable, tubing and electrical lines slowly (to minimize disturbance) into the well to the appropriate depth (may not be the mid-point of the screen/open interval). The Sampling and Analysis Plan/Quality Assurance Project Plan should specify the sampling depth (used previously), or provide criteria for selection of intake depth for each new well. If possible keep the pump intake at least two feet above the bottom of the well, to minimize mobilization of particulates present in the bottom of the well.

Pump tubing lengths, above the top of well casing should be kept as short as possible to minimize heating the groundwater in the tubing by exposure to sun light and ambient air temperatures. Heating may cause the groundwater to degas, which is unacceptable for the collection of samples for VOC and dissolved gases analyses.

C. Measure Water Level

Before starting pump, measure water level. Install recording pressure transducer, if used to track drawdowns, to initialize starting condition.

D. Purge Well

From the time the pump starts purging and until the time the samples are collected, the purged water is discharged into a graduated bucket to determine the total volume of groundwater purged. This information is recorded on the purge form or in the field logbook.

Start the pump at low speed and slowly increase the speed until discharge occurs. Check water level. Check equipment for water leaks and if present fix or replace the affected equipment. Try to match pumping rate used during previous sampling event(s). Otherwise, adjust pump speed until there is little or no water level drawdown. If the

minimal drawdown that can be achieved exceeds 0.3 feet, but remains stable, continue purging.

Monitor and record the water level and pumping rate every five minutes (or as appropriate) during purging. Record any pumping rate adjustments (both time and flow rate). Pumping rates should, as needed, be reduced to the minimum capabilities of the pump to ensure stabilization of the water level. Adjustments are best made in the first fifteen minutes of pumping in order to help minimize purging time. During pump start-up, drawdown may exceed the 0.3 feet target and then "recover" somewhat as pump flow adjustments are made. Purge volume calculations should utilize stabilized drawdown value, not the initial drawdown. If the initial water level is above the top of the screen do not allow the water level to fall into the well screen. The final purge volume must be greater than the stabilized drawdown volume plus the pump's tubing volume. If the drawdown has exceeded 0.3 feet and stabilizes, calculate the volume of water between the initial water level and the stabilized water level. Add the volume of the water which occupies the pump's tubing to this calculation. This combined volume of water needs to be purged from the well after the water level has stabilized before samples are collected.

Avoid the use of constriction devices on the tubing to decrease the flow rate because the constrictor will cause a pressure difference in the water column. This will cause the groundwater to degas and result in a loss of VOCs and dissolved gasses in the groundwater samples.

Note: the flow rate used to achieve a stable pumping level should remain constant while monitoring the indicator parameters for stabilization and while collecting the samples.

Wells with low recharge rates may require the use of special pumps capable of attaining very low pumping rates (e.g., bladder, peristaltic), and/or the use of dedicated equipment. For new monitoring wells, or wells where the following situation has not occurred before, if the recovery rate to the well is less than 50 mL/min., or the well is being essentially dewatered during purging, the well should be sampled as soon as the water level has recovered sufficiently to collect the volume needed for all anticipated samples. The project manager or field team leader will need to make the decision when samples should be collected, how the sample is to be collected, and the reasons recorded on the purge form or in the field logbook. A water level measurement needs to be performed and recorded before samples are collected. If the project manager decides to collect the samples using the pump, it is best during this recovery period that the pump intake tubing not be removed, since this will aggravate any turbidity problems. Samples in this specific situation may be collected without stabilization of indicator field parameters. Note that field conditions and efforts to overcome problematic situations must be recorded in order to support field decisions to deviate from normal procedures described in this SOP. If this type of problematic situation persists in a well, then water sample collection should be

changed to a passive or no-purge method, if consistent with the site's DQOs, or have a new well installed.

E. Monitor Indicator Field Parameters

After the water level has stabilized, connect the "T" connector with a valve and the flow-through-cell to monitor the indicator field parameters. If excessive turbidity is anticipated or encountered with the pump startup, the well may be purged for a while without connecting up the flow-through-cell, in order to minimize particulate buildup in the cell (This is a judgment call made by the sampler). Water level drawdown measurements should be made as usual. If possible, the pump may be installed the day before purging to allow particulates that were disturbed during pump insertion to settle.

During well purging, monitor indicator field parameters (turbidity, temperature, specific conductance, pH, ORP, DO) at a frequency of five minute intervals or greater. The pump's flow rate must be able to "turn over" at least one flow-through-cell volume between measurements (for a 250 mL flow-through-cell with a flow rate of 50 mLs/min., the monitoring frequency would be every five minutes; for a 500 mL flow-through-cell it would be every ten minutes). If the cell volume cannot be replaced in the five minute interval, then the time between measurements must be increased accordingly. Note: during the early phase of purging, emphasis should be put on minimizing and stabilizing pumping stress, and recording those adjustments followed by stabilization of indicator parameters. Purging is considered complete and sampling may begin when all the above indicator field parameters have stabilized. Stabilization is considered to be achieved when three consecutive readings are within the following limits:

Turbidity (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
Dissolved Oxygen (10% for values greater than 0.5 mg/L, if three Dissolved Oxygen values are less than 0.5 mg/L, consider the values as stabilized),
Specific Conductance (3%),
Temperature (3%),
pH (± 0.1 unit),
Oxidation/Reduction Potential (±10 millivolts).

All measurements, except turbidity, must be obtained using a flow-through-cell. Samples for turbidity measurements are obtained before water enters the flow-through-cell. Transparent flow-through-cells are preferred, because they allow field personnel to watch for particulate build-up within the cell. This build-up may affect indicator field parameter values measured within the cell. If the cell needs to be cleaned during purging operations, continue pumping and disconnect cell for cleaning, then reconnect after cleaning and

continue monitoring activities. Record start and stop times and give a brief description of cleaning activities.

The flow-through-cell must be designed in a way that prevents gas bubble entrapment in the cell. Placing the flow-through-cell at a 45 degree angle with the port facing upward can help remove bubbles from the flow-through-cell (see Appendix B Low-Flow Setup Diagram). Throughout the measurement process, the flow-through-cell must remain free of any gas bubbles. Otherwise, the monitoring probes may act erratically. When the pump is turned off or cycling on/off (when using a bladder pump), water in the cell must not drain out. Monitoring probes must remain submerged in water at all times.

F. Collect Water Samples

When samples are collected for laboratory analyses, the pump's tubing is disconnected from the "T" connector with a valve and the flow-through-cell. The samples are collected directly from the pump's tubing. Samples must not be collected from the flow-through-cell or from the "T" connector with a valve.

VOC samples are normally collected first and directly into pre-preserved sample containers. However, this may not be the case for all sampling locations; the SAP/QAPP should list the order in which the samples are to be collected based on the project's objective(s). Fill all sample containers by allowing the pump discharge to flow gently down the inside of the container with minimal turbulence.

If the pump's flow rate is too high to collect the VOC/dissolved gases samples, collect the other samples first. Lower the pump's flow rate to a reasonable rate and collect the VOC/dissolved gases samples and record the new flow rate.

During purging and sampling, the centrifugal/peristaltic pump tubing must remain filled with water to avoid aeration of the groundwater. It is recommended that 1/4 inch or 3/8 inch (inside diameter) tubing be used to help ensure that the sample tubing remains water filled. If the pump tubing is not completely filled to the sampling point, use the following procedure to collect samples: collect non-VOC/dissolved gases samples first, then increase flow rate slightly until the water completely fills the tubing, collect the VOC/dissolved gases samples, and record new drawdown depth and flow rate.

For bladder pumps that will be used to collect VOC or dissolved gas samples, it is recommended that the pump be set to deliver long pulses of water so that one pulse will fill a 40 mL VOC vial.

Use pre-preserved sample containers or add preservative, as required by analytical methods, to the samples immediately after they are collected. Check the analytical methods

(e.g. EPA SW-846, 40 CFR 136, water supply, etc.) for additional information on preservation.

If determination of filtered metal concentrations is a sampling objective, collect filtered water samples using the same low flow procedures. The use of an in-line filter (transparent housing preferred) is required, and the filter size (0.45 µm is commonly used) should be based on the sampling objective. Pre-rinse the filter with groundwater prior to sample collection. Make sure the filter is free of air bubbles before samples are collected. Preserve the filtered water sample immediately. Note: filtered water samples are not an acceptable substitute for unfiltered samples when the monitoring objective is to obtain chemical concentrations of total mobile contaminants in groundwater for human health or ecological risk calculations.

Label each sample as collected. Samples requiring cooling will be placed into a cooler with ice or refrigerant for delivery to the laboratory. Metal samples after acidification to a pH less than 2 do not need to be cooled.

G. Post Sampling Activities

If a recording pressure transducer is used to track drawdown, re-measure water level with tape.

After collection of samples, the pump tubing may be dedicated to the well for re-sampling (by hanging the tubing inside the well), decontaminated, or properly discarded.

Before securing the well, measure and record the well depth (to 0.1 ft.), if not measured the day before purging began. Note: measurement of total well depth annually is usually sufficient after the initial low stress sampling event. However, a greater frequency may be needed if the well has a “silting” problem or if confirmation of well identity is needed.

Secure the well.

11.0 DECONTAMINATION

Decontaminate sampling equipment prior to use in the first well, and then following sampling of each subsequent well. Pumps should not be removed between purging and sampling operations. The pump, tubing, support cable and electrical wires which were in contact with the well should be decontaminated by one of the procedures listed below.

The use of dedicated pumps and tubing will reduce the amount of time spent on decontamination of the equipment. If dedicated pumps and tubing are used, only the initial sampling event will require decontamination of the pump and tubing.

Note if the previous equipment blank data showed that contaminant(s) were present after using the below procedure or the one described in the SAP/QAPP, a more vigorous procedure may be needed.

Procedure 1

Decontaminating solutions can be pumped from either buckets or short PVC casing sections through the pump and tubing. The pump may be disassembled and flushed with the decontaminating solutions. It is recommended that detergent and alcohol be used sparingly in the decontamination process and water flushing steps be extended to ensure that any sediment trapped in the pump is removed. The pump exterior and electrical wires must be rinsed with the decontaminating solutions, as well. The procedure is as follows:

Flush the equipment/pump with potable water.

Flush with non-phosphate detergent solution. If the solution is recycled, the solution must be changed periodically.

Flush with potable or distilled/deionized water to remove all of the detergent solution. If the water is recycled, the water must be changed periodically.

Optional - flush with isopropyl alcohol (pesticide grade; must be free of ketones {e.g., acetone}) or with methanol. This step may be required if the well is highly contaminated or if the equipment blank data from the previous sampling event show that the level of contaminants is significant.

Flush with distilled/deionized water. This step must remove all traces of alcohol (if used) from the equipment. The final water rinse must not be recycled.

Procedure 2

Steam clean the outside of the submersible pump.

Pump hot potable water from the steam cleaner through the inside of the pump. This can be accomplished by placing the pump inside a three or four inch diameter PVC pipe with end cap. Hot water from the steam cleaner jet will be directed inside the PVC pipe and the pump exterior will be cleaned. The hot water from the steam cleaner will then be pumped from the PVC pipe through the pump and collected into another container. Note: additives or solutions should not be added to the steam cleaner.

Pump non-phosphate detergent solution through the inside of the pump. If the solution is recycled, the solution must be changed periodically.

Pump potable water through the inside of the pump to remove all of the detergent solution. If the solution is recycled, the solution must be changed periodically.

Pump distilled/deionized water through the pump. The final water rinse must not be recycled.

12.0 FIELD QUALITY CONTROL

Quality control samples are required to verify that the sample collection and handling process has not compromised the quality of the groundwater samples. All field quality control samples must be prepared the same as regular investigation samples with regard to sample volume, containers, and preservation. Quality control samples include field duplicates, equipment blanks, matrix spike/matrix spike duplicates, trip blanks (VOCs), and temperature blanks.

13.0 FIELD LOGBOOK

A field log shall be kept to document all groundwater field monitoring activities (see Appendix C, example table), and record the following for each well:

Site name, municipality, state.

Well identifier, latitude-longitude or state grid coordinates.

Measuring point description (e.g., north side of PVC pipe).

Well depth, and measurement technique.

Well screen length.

Pump depth.

Static water level depth, date, time and measurement technique.

Presence and thickness of immiscible liquid (NAPL) layers and detection method.

Pumping rate, drawdown, indicator parameters values, calculated or measured total volume pumped, and clock time of each set of measurements.

Type of tubing used and its length.

Type of pump used.

Clock time of start and end of purging and sampling activity.

Types of sample bottles used and sample identification numbers.

Preservatives used.

Parameters requested for analyses.

Field observations during sampling event.

Name of sample collector(s).

Weather conditions, including approximate ambient air temperature.

QA/QC data for field instruments.

Any problems encountered should be highlighted.

Description of all sampling/monitoring equipment used, including trade names, model number, instrument identification number, diameters, material composition, etc.

14.0 DATA REPORT

Data reports are to include laboratory analytical results, QA/QC information, field indicator parameters measured during purging, field instrument calibration information, and whatever other field logbook information is needed to allow for a full evaluation of data usability.

Note: the use of trade, product, or firm names in this sampling procedure is for descriptive purposes only and does not constitute endorsement by the U.S. EPA.

15.0 REFERENCES

Cohen, R.M. and J.W. Mercer, 1993, *DNAPL Site Evaluation*; C.K. Smoley (CRC Press), Boca Raton, Florida.

Robert W. Puls and Michael J. Barcelona, *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, April 1996 (EPA/540/S-95/504).

U.S. Environmental Protection Agency, 1992, *RCRA Ground-Water Monitoring: Draft Technical Guidance*; Washington, DC (EPA/530-R-93-001).

U.S. Environmental Protection Agency, 1987, *A Compendium of Superfund Field Operations Methods*; Washington, DC (EPA/540/P-87/001).

U.S Environmental Protection Agency, Region 1, *Calibration of Field Instruments (temperature, pH, dissolved oxygen, conductivity/specific conductance, oxidation/reduction [ORP], and turbidity),* March 23, 2017 or latest version.

U.S Environmental Protection Agency, EPA SW-846.

U.S Environmental Protection Agency, 40 CFR 136.

U.S Environmental Protection Agency, 40 CFR 141.

Vroblesky, Don A., Clifton C. Casey, and Mark A. Lowery, Summer 2007, Influence of Dissolved Oxygen Convection on Well Sampling, *Ground Water Monitoring & Remediation* 27, no. 3: 49-58.

APPENDIX A

PERISTALTIC PUMPS

Before selecting a peristaltic pump to collect groundwater samples for VOCs and/or dissolved gases, (e.g., methane, carbon dioxide, etc.) consideration should be given to the following:

- The decision of whether or not to use a peristaltic pump is dependent on the intended use of the data.
- If the additional sampling error that may be introduced by this device is NOT of concern for the VOC/dissolved gases data's intended use, then this device may be acceptable.
- If minor differences in the groundwater concentrations could affect the decision, such as to continue or terminate groundwater cleanup or whether the cleanup goals have been reached, then this device should NOT be used for VOC/dissolved gases sampling. In these cases, centrifugal or bladder pumps are a better choice for more accurate results.

EPA and USGS have documented their concerns with the use of the peristaltic pumps to collect water sample in the below documents.

- "Suction Pumps are not recommended because they may cause degassing, pH modification, and loss of volatile compounds" *A Compendium of Superfund Field Operations Methods*, EPA/540/P-87/001, December 1987.
- "The agency does not recommend the use of peristaltic pumps to sample ground water particularly for volatile organic analytes" *RCRA Ground-Water Monitoring Draft Technical Guidance*, EPA Office of Solid Waste, November 1992.
- "The peristaltic pump is limited to shallow applications and can cause degassing resulting in alteration of pH, alkalinity, and volatiles loss", *Low-flow (Minimal drawdown) Ground-Water Sampling Procedures*, by Robert Puls & Michael Barcelona, April 1996, EPA/540/S-95/504.
- "Suction-lift pumps, such as peristaltic pumps, can operate at a very low pumping rate; however, using negative pressure to lift the sample can result in the loss of volatile analytes", USGS Book 9 Techniques of Water-Resources Investigation, Chapter A4. (Version 2.0, 9/2006).

APPENDIX B

SUMMARY OF SAMPLING INSTRUCTIONS

These instructions are for using an adjustable rate, submersible pump or a peristaltic pump with the pump's intake placed at the midpoint of a 10 foot or less well screen or an open interval. The water level in the monitoring well is above the top of the well screen or open interval, the ambient temperature is above 32°F, and the equipment is not dedicated. Field instruments are already calibrated. The equipment is setup according to the diagram at the end of these instructions.

1. Review well installation information. Record well depth, length of screen or open interval, and depth to top of the well screen. Determine the pump's intake depth (e.g., mid-point of screen/open interval).

2. On the day of sampling, check security of the well casing, perform any safety checks needed for the site, lay out a sheet of polyethylene around the well (if necessary), and setup the equipment. If necessary a canopy or an equivalent item can be setup to shade the pump's tubing and flow-through-cell from the sun light to prevent the sun light from heating the groundwater.

3. Check well casing for a reference mark. If missing, make a reference mark. Measure the water level (initial) to 0.01 ft. and record this information.

4. Install the pump's intake to the appropriate depth (e.g., midpoint) of the well screen or open interval. Do not turn-on the pump at this time.

5. Measure water level and record this information.

6. Turn-on the pump and discharge the groundwater into a graduated waste bucket. Slowly increase the flow rate until the water level starts to drop. Reduce the flow rate slightly so the water level stabilizes. Record the pump's settings. Calculate the flow rate using a graduated container and a stop watch. Record the flow rate. Do not let the water level drop below the top of the well screen.

If the groundwater is highly turbid or discolored, continue to discharge the water into the bucket until the water clears (visual observation); this usually takes a few minutes. The turbid or discolored water is usually from the well-being disturbed during the pump installation. If the water does not clear, then you need to make a choice whether to continue purging the well (hoping that it will clear after a reasonable time) or continue to

the next step. Note, it is sometimes helpful to install the pump the day before the sampling event so that the disturbed materials in the well can settle out.

If the water level drops to the top of the well screen during the purging of the well, stop purging the well, and do the following:

> Wait for the well to recharge to a sufficient volume so samples can be collected. This may take a while (pump may be removed from well, if turbidity is not a problem). The project manager will need to make the decision when samples should be collected and the reasons recorded in the site's log book. A water level measurement needs to be performed and recorded before samples are collected. When samples are being collected, the water level must not drop below the top of the screen or open interval. Collect the samples from the pump's tubing. Always collect the VOCs and dissolved gases samples first. Normally, the samples requiring a small volume are collected before the large volume samples are collected just in case there is not sufficient water in the well to fill all the sample containers. All samples must be collected, preserved, and stored according to the analytical method. Remove the pump from the well and decontaminate the sampling equipment.

If the water level has dropped 0.3 feet or less from the initial water level (water level measure before the pump was installed); proceed to Step 7. If the water level has dropped more than 0.3 feet, calculate the volume of water between the initial water level and the stabilized water level. Add the volume of the water which occupies the pump's tubing to this calculation. This combined volume of water needs to be purged from the well after the water level has stabilized before samples are be collected.

7. Attach the pump's tubing to the "T" connector with a valve (or a three-way stop cock). The pump's tubing from the well casing to the "T" connector must be as short as possible to prevent the groundwater in the tubing from heating up from the sun light or from the ambient air. Attach a short piece of tubing to the other end of the end of the "T" connector to serve as a sampling port for the turbidity samples. Attach the remaining end of the "T" connector to a short piece of tubing and connect the tubing to the flow-through-cell bottom port. To the top port, attach a small piece of tubing to direct the water into a calibrated waste bucket. Fill the cell with the groundwater and remove all gas bubbles from the cell. Position the flow-through-cell in such a way that if gas bubbles enter the cell they can easily exit the cell. If the ports are on the same side of the cell and the cell is cylindrical shape, the cell can be placed at a 45-degree angle with the ports facing upwards; this position should keep any gas bubbles entering the cell away from the monitoring probes and allow the gas bubbles to exit the cell easily (see Low-Flow Setup Diagram). Note:

make sure there are no gas bubbles caught in the probes' protective guard; you may need to shake the cell to remove these bubbles.

8. Turn-on the monitoring probes and turbidity meter.

9. Record the temperature, pH, dissolved oxygen, specific conductance, and oxidation/reduction potential measurements. Open the valve on the "T" connector to collect a sample for the turbidity measurement, close the valve, do the measurement, and record this measurement. Calculate the pump's flow rate from the water exiting the flow-through-cell using a graduated container and a stop watch, and record the measurement. Measure and record the water level. Check flow-through-cell for gas bubbles and sediment; if present, remove them.

10. Repeat Step 9 every 5 minutes or as appropriate until monitoring parameters stabilized. Note: at least one flow-through-cell volume must be exchanged between readings. If not, the time interval between readings will need to be increased. Stabilization is achieved when three consecutive measurements are within the following limits:

Turbidity (10% for values greater than 5 NTUs; if three Turbidity values are less than 5 NTUs, consider the values as stabilized),
Dissolved Oxygen (10% for values greater than 0.5 mg/L, if three Dissolved Oxygen values are less than 0.5 mg/L, consider the values as stabilized),
Specific Conductance (3%),
Temperature (3%),
pH (± 0.1 unit),
Oxidation/Reduction Potential (±10 millivolts).

If these stabilization requirements do not stabilize in a reasonable time, the probes may have been coated from the materials in the groundwater, from a buildup of sediment in the flow-through-cell, or a gas bubble is lodged in the probe. The cell and the probes will need to be cleaned. Turn-off the probes (not the pump), disconnect the cell from the "T" connector and continue to purge the well. Disassemble the cell, remove the sediment, and clean the probes according to the manufacturer's instructions. Reassemble the cell and connect the cell to the "T" connector. Remove all gas bubbles from the cell, turn-on the probes, and continue the measurements. Record the time the cell was cleaned.

11. When it is time to collect the groundwater samples, turn-off the monitoring probes, and disconnect the pump's tubing from the "T" connector. If you are using a centrifugal or peristaltic pump check the pump's tubing to determine if the tubing is completely filled with water (no air space).

All samples must be collected and preserved according to the analytical method. VOCs and dissolved gases samples are normally collected first and directly into pre-preserved sample containers. However, this may not be the case for all sampling locations; the SAP/QAPP should list the order in which the samples are to be collected based on the project's objective(s). Fill all sample containers by allowing the pump discharge to flow gently down the inside of the container with minimal turbulence.

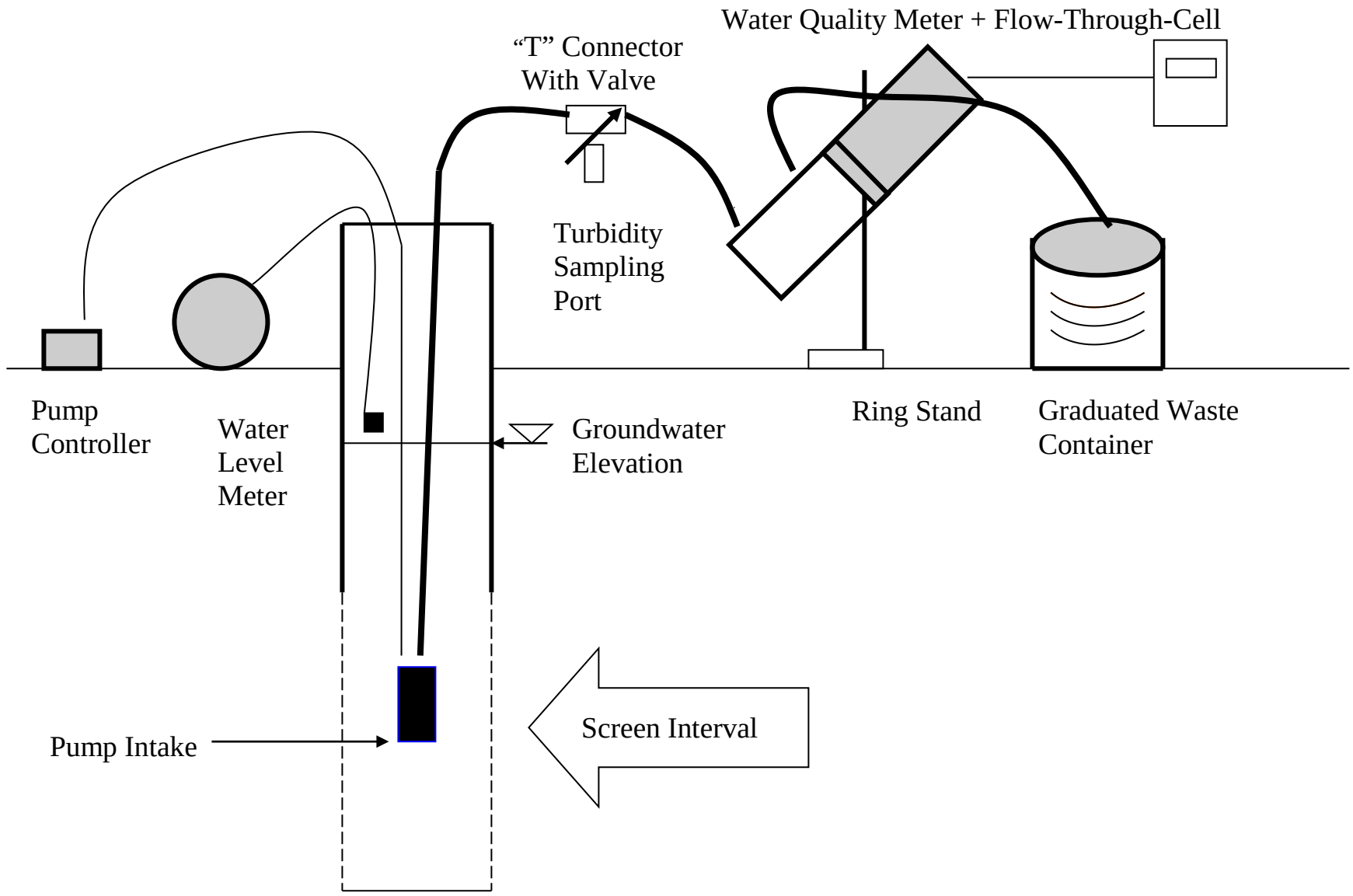
If the pump's tubing is not completely filled with water and the samples are being collected for VOCs and/or dissolved gases analyses using a centrifugal or peristaltic pump, do the following:

> All samples must be collected and preserved according to the analytical method. The VOCs and the dissolved gases (e.g., methane, ethane, ethene, and carbon dioxide) samples are collected last. When it becomes time to collect these samples increase the pump's flow rate until the tubing is completely filled. Collect the samples and record the new flow rate.

12. Store the samples according to the analytical method.

13. Record the total purged volume (graduated waste bucket). Remove the pump from the well and decontaminate the sampling equipment.

Low-Flow Setup Diagram



APPENDIX C

EXAMPLE (Minimum Requirements)

WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name)_____ Depth to _____/_____ of screen
Well Number_____ Date_____ (below MP) top bottom
Field Personnel_____ Pump Intake at (ft. below MP)_____
Sampling Organization_____ Purging Device; (pump type)_____
Identify MP_____ Total Volume Purged _____

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. "C	Spec. Cond.[2] µS/cm	pH	ORP[3] mv	DO mg/L	Tur-bidity NTU	Comments
Stabilization Criteria					3%	3%	±0.1	±10 mv	10%	10%	

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (ORP)

Supplement D – NYSDOH Vapor and Air Sampling

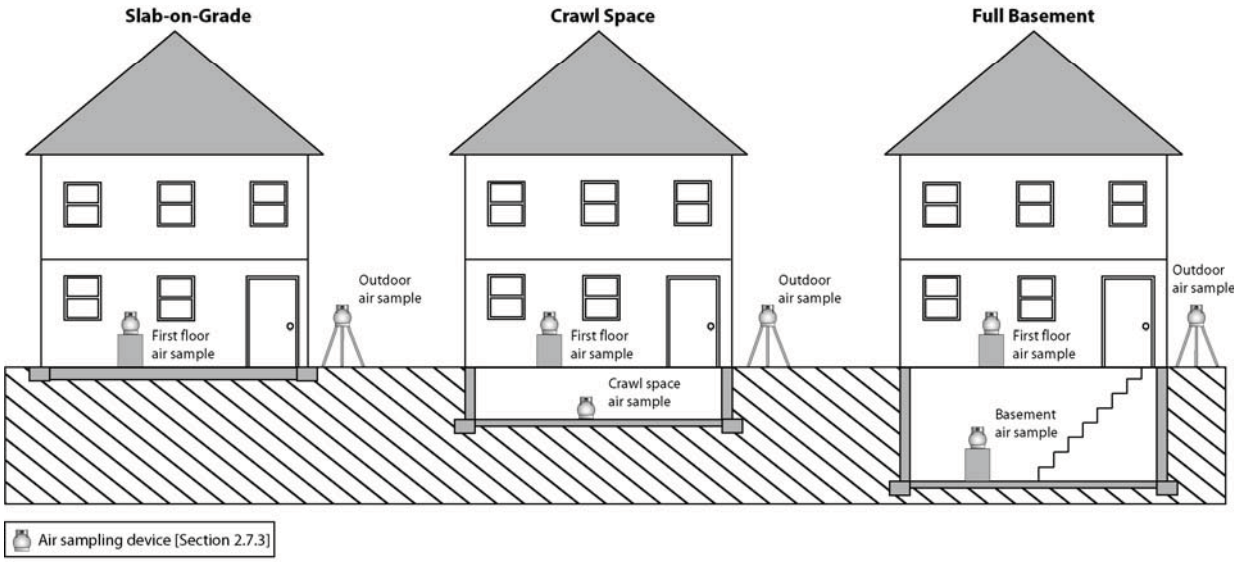


Figure 2.1
Schematic of indoor and outdoor air sampling locations

2.6.4 Outdoor air

Typically, an outdoor air sample is collected outside of each building where an indoor air sample is collected. However, if several buildings are being sampled within a localized area, representative outdoor air samples may be appropriate. For example, one outdoor air sample may be sufficient for three houses being sampled in a cul-de-sac. Outdoor air samples should be collected from a representative upwind location, away from wind obstructions (e.g., trees or bushes), and at a height above the ground to represent breathing zones (3 to 5 feet) [Figure 2.1]. A representative sample is one that is not biased toward obvious sources of volatile chemicals (e.g., automobiles, lawn mowers, oil storage tanks, gasoline stations, industrial facilities, etc.). For buildings with HVAC systems that draw outdoor air into the building, an outdoor air sample collected near the outdoor air intake may be appropriate.

2.7 Sampling protocols

The procedures recommended here may be modified depending on site-specific conditions, the sampling objectives, or emerging technologies and methodologies. Alternative sampling procedures should be described thoroughly and proposed in a work plan submitted for review by the State. The State will review and comment on the proposed procedure and consider the efficacy of the alternative sampling procedure based on the objectives of investigation. In all cases, work plans should thoroughly describe the proposed sampling procedure. Similarly, the procedures that were implemented in the field should be documented and included in the final report of the sampling results.

2.7.1 Soil vapor

Soil vapor probe installations [Figure 2.2] may be permanent, semi-permanent or temporary. In general, permanent or semi-permanent installations are preferred for data consistency reasons and to ensure outdoor air infiltration does not occur. Temporary probes should only be used if measures are taken to ensure that an adequate surface seal is created to prevent outdoor air infiltration and if tracer gas is used at every sampling location. [See Section 2.7.5 for additional information about the use of tracer gas when collecting soil vapor samples.] Soil vapor implants or probes should be constructed in the same manner at all sampling locations to minimize possible discrepancies. The following procedures should be included in any permanent construction protocol:

a. implants should be installed using an appropriate method based on site conditions (e.g., direct push, manually driven, auger — if necessary to attain the desired depth or if sidewall smearing is a concern, etc.);

b. porous, inert backfill material (e.g., glass beads, washed #1 crushed stone, etc.) should be used to create a sampling zone 1 to 2 feet in length;

c. implants should be fitted with inert tubing (e.g., polyethylene, stainless steel, nylon, Teflon®, etc.) of the appropriate size (typically 1/8 inch to 1/4 inch diameter) and of laboratory or food grade quality to the surface;

d. soil vapor probes should be sealed above the sampling zone with a bentonite slurry for a minimum distance of 3 feet to prevent outdoor air infiltration and the remainder of the borehole backfilled with clean material;

e. for multiple probe depths, the borehole should be grouted with bentonite between probes to create discrete sampling zones or separate nested probes should be installed [Figure 2.2]; and

f. steps should be taken to minimize infiltration of water or outdoor air and to prevent accidental damage (e.g., setting a protective casing around the top of the probe tubing and grouting in place to the top of bentonite, sloping the ground surface to direct water away from the borehole like a groundwater monitoring well, etc.).

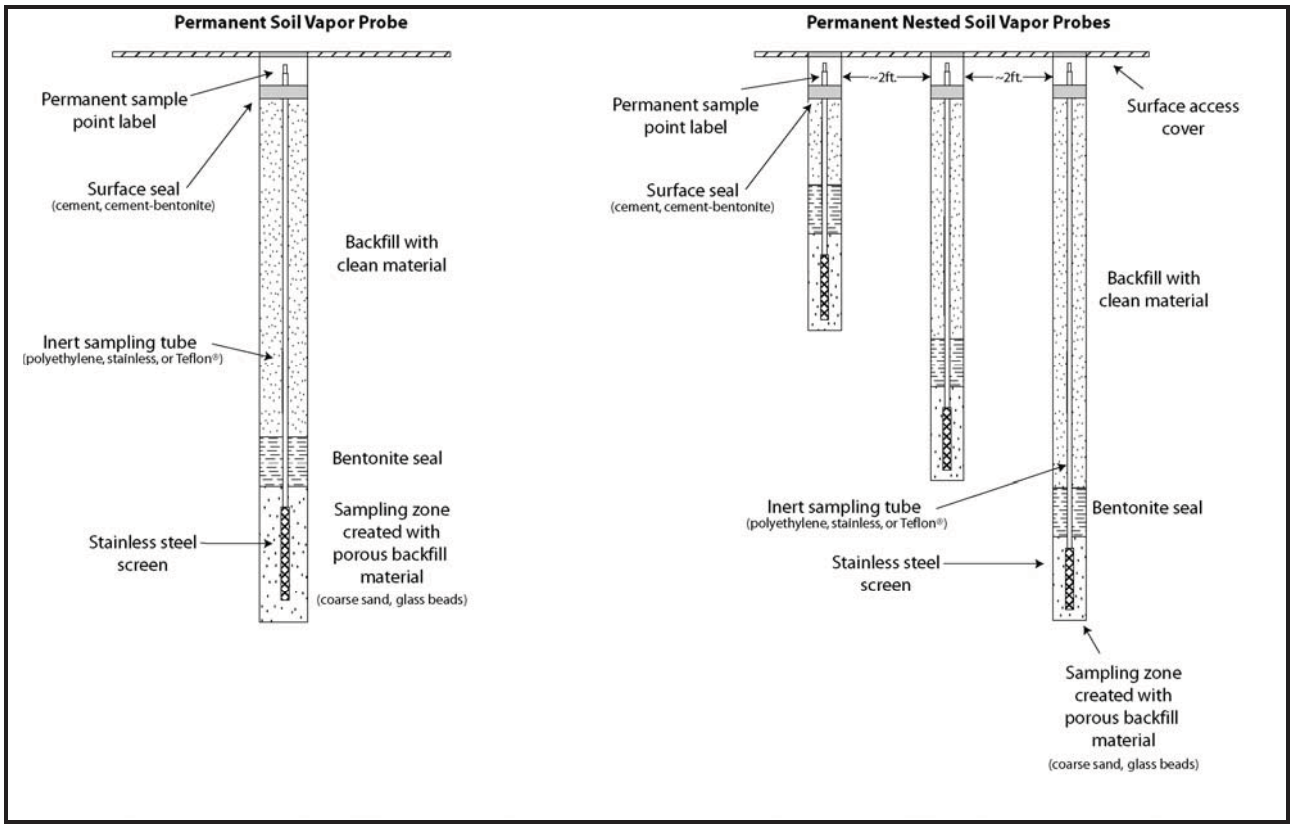


Figure 2.2

Schematics of a generic permanent soil vapor probe
and permanent nested soil vapor probes

[Note: Many variations exist and may be proposed in a work plan. Proposed installations should meet the sampling objectives and requirements of the analytical methods.]

To obtain representative samples and to minimize possible discrepancies, soil vapor samples should be collected in the following manner at all locations:

a. at least 24 hours after the installation of permanent probes and shortly after the installation of temporary probes, one to three implant volumes (i.e., the volume of the sample probe and tube) should be purged prior to collecting the samples;

b. flow rates for both purging and collecting should not exceed 0.2 liters per minute to minimize outdoor air infiltration during sampling;

c. samples should be collected, using conventional sampling methods, in an appropriate container — one which

    i. meets the objectives of the sampling (e.g., investigation of areas where low or high concentrations of volatile chemicals are expected; to minimize losses of volatile chemicals that are susceptible to photodegradation),

    ii. is consistent with the sampling and analytical methods (e.g., low flow rate; Summa® canisters if analyzing by using EPA Method TO-15), and

    iii. is certified clean by the laboratory;

d. sample size depends upon the volume of that will achieve minimum reporting limits [Section 2.9]; and

e. a tracer gas (e.g., helium, butane, sulfur hexafluoride, etc.) should be used when collecting soil vapor samples to verify that adequate sampling techniques are being implemented (i.e., to verify infiltration of outdoor air is not occurring) [Section 2.7.5].

In some cases, weather conditions may present certain limitations on soil vapor sampling. For example, condensation in the sample tubing may be encountered during winter sampling due to low outdoor air temperatures. Devices, such as tube warmers, may be used to address these conditions. Anticipated limitations to the sampling should be discussed prior to the sampling event so appropriate measures can be taken to address these difficulties and produce representative and reliable data.

When soil vapor samples are collected, the following actions should be taken to document local conditions during sampling that may influence interpretation of the results:

a. if sampling near a commercial or industrial building, uses of volatile chemicals during normal operations of the facility should be identified;

b. outdoor plot sketches should be drawn that include the site, area streets, neighboring commercial or industrial facilities (with estimated distance to the site), outdoor air sampling locations (if applicable), and compass orientation (north);

c. weather conditions (e.g., precipitation and outdoor temperature) should be noted for the past 24 to 48 hours; and

d. any pertinent observations should be recorded, such as odors and readings from field instrumentation.

Additional information that could be gathered to assist in the interpretation of the results includes barometric pressure, wind speed and wind direction.

The field sampling team should maintain a sample log sheet summarizing the following:

a. sample identification,

b. date and time of sample collection,

c. sampling depth,

d. identity of samplers,

e. sampling methods and devices,

f. purge volumes,

g. volume of soil vapor extracted,

h. if canisters used, the vacuum before and after samples were collected,

i. apparent moisture content (dry, moist, saturated, etc.) of the sampling zone, and

j. chain of custody protocols and records used to track samples from sampling point to analysis.

2.7.2 Sub-slab vapor

During colder months, heating systems should be operating to maintain normal indoor air temperatures (i.e., 65 – 75 °F) for at least 24 hours prior to and during the scheduled sampling time. Prior to installation of the sub-slab vapor probe, the building floor should be inspected and any penetrations (cracks, floor drains, utility perforations, sumps, etc.) should be noted and recorded. Probes should be installed at locations where the potential for ambient air infiltration via floor penetrations is minimal.

Sub-slab vapor probe installations [Figure 2.3] may be permanent, semi-permanent or temporary. A vacuum should not be used to remove drilling debris from the sampling port. Sub-slab implants or probes should be constructed in the same manner at all sampling locations to minimize possible discrepancies. The following procedures should be included in any construction protocol:

a. permanent recessed probes should be constructed with brass or stainless steel tubing and fittings;

b. temporary probes should be constructed with inert tubing (e.g., polyethylene, stainless steel, nylon, Teflon®, etc.) of the appropriate size (typically 1/8 inch to 1/4 inch diameter), and of laboratory or food grade quality;

c. tubing should not extend further than 2 inches into the sub-slab material;

d. porous, inert backfill material (e.g., glass beads, washed #1 crushed stone, etc.) should be added to cover about 1 inch of the probe tip for permanent installations; and

e. the implant should be sealed to the surface with non-VOC-containing and non-shrinking products for temporary installations (e.g., permagum grout, melted beeswax, putty, etc.) or cement for permanent installations.

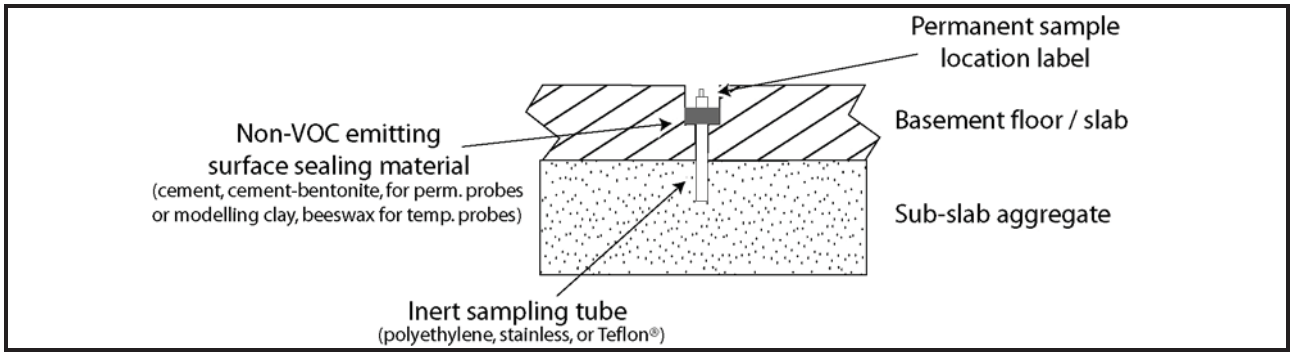


Figure 2.3

Schematic of a generic sub-slab vapor probe

[Note: Many variations exist and may be proposed in a work plan. Proposed installations should meet the sampling objectives and requirements of the analytical methods.]

To obtain representative samples that meet the data quality objectives, sub-slab vapor samples should be collected in the following manner:

a. after installation of the probes, one to three volumes (i.e., the volume of the sample probe and tube) must be purged prior to collecting the samples to ensure samples collected are representative;

b. flow rates for both purging and collecting must not exceed 0.2 liters per minute to minimize ambient air infiltration during sampling; and

c. samples should be collected, using conventional sampling methods, in an appropriate container — one which

    i. meets the objectives of the sampling (e.g., investigation of areas where low or high concentrations of volatile chemicals are expected; to minimize losses of volatile chemicals that are susceptible to photodegradation),

    ii. is consistent with the sampling and analytical methods (e.g., low flow rate; Summa® canisters if analyzing by using EPA Method TO-15), and

    iii. is certified clean by the laboratory;

d. sample size depends upon the volume of that will achieve minimum reporting limits [Section 2.9], the flow rate, and the sampling duration; and

e. ideally, samples should be collected over the same period of time as concurrent indoor and outdoor air samples.

When sub-slab vapor samples are collected, the following actions should be taken to document conditions during sampling and ultimately to aid in the interpretation of the sampling results [Section 3]:

a. historic and current storage and uses of volatile chemicals should be identified, especially if sampling within a commercial or industrial building (e.g., use of volatile chemicals in commercial or industrial processes and/or during building maintenance);

b. the use of heating or air conditioning systems during sampling should be noted;

c. floor plan sketches should be drawn that include the floor layout with sampling locations, chemical storage areas, garages, doorways, stairways, location of basement sumps or subsurface drains and utility perforations through building foundations, HVAC system air supply and return registers, compass orientation (north), footings that create separate foundation sections, and any other pertinent information should be completed;

d. outdoor plot sketches should be drawn that include the building site, area streets, outdoor air sampling locations (if applicable), compass orientation (north), and paved areas;

e. weather conditions (e.g., precipitation and indoor and outdoor temperature) and ventilation conditions (e.g., heating system active and windows closed) should be reported; and

f. any pertinent observations, such as spills, floor stains, smoke tube results, odors and readings from field instrumentation (e.g., vapors via PID, ppbRAE, Jerome Mercury Vapor Analyzer, etc.), should be recorded.

Additional documentation that could be gathered to assist in the interpretation of the results includes information about air flow patterns and pressure relationships obtained by using smoke tubes or other devices (especially between floor levels and between suspected

contaminant sources and other areas), the barometric pressure and photographs to accompany floor plan sketches.

The field sampling team should maintain a sample log sheet summarizing the following:

a. sample identification,
b. date and time of sample collection,
c. sampling depth,
d. identity of samplers,
e. sampling methods and devices,
f. soil vapor purge volumes,
g. volume of soil vapor extracted,
h. if canisters used, vacuum of canisters before and after samples collected,
i. apparent moisture content (dry, moist, saturated, etc.) of the sampling zone, and
j. chain of custody protocols and records used to track samples from sampling point to analysis.

2.7.3 Indoor air

[Reference: NYSDOH's *Indoor Air Sampling & Analysis Guidance (February 1, 2005)*]

During colder months, heating systems should be operating to maintain normal indoor air temperatures (i.e., 65 – 75 °F) for at least 24 hours prior to and during the scheduled sampling time. If possible, prior to collecting indoor samples, a pre-sampling inspection [Section 2.11.1] should be performed to evaluate the physical layout and conditions of the building being investigated, to identify conditions that may affect or interfere with the proposed sampling, and to prepare the building for sampling. This process is described in Section 2.11.1.

In general, indoor air samples should be collected in the following manner:

a. sampling duration should reflect the exposure scenario being evaluated without compromising the detection limit or sample collection flow rate (e.g., an 8 hour sample from a workplace with a single shift versus a 24 hour sample from a workplace with multiple shifts). To ensure that air is representative of the locations sampled and to avoid undue influence from sampling personnel, samples should be collected for at least 1 hour. If the goal of the sampling is to represent average concentrations over longer periods, then longer duration sampling periods may be appropriate. Typically, 24 hour samples are collected from residential settings;
b. personnel should avoid lingering in the immediate area of the sampling device while samples are being collected;
c. sample flow rates must conform to the specifications in the sample collection method and, if possible, should be consistent with the flow rates for concurrent outdoor air and sub-slab samples; and
d. samples must be collected, using conventional sampling methods, in an appropriate container — one which

i. meets the objectives of the sampling (e.g., investigation of areas where low or high concentrations of volatile chemicals are expected; to minimize losses of volatile chemicals that are susceptible to photodegradation),

ii. is consistent with the sampling and analytical methods (e.g., low flow rate; Summa® canisters if analyzing by using EPA Method TO-15), and

iii. is certified clean by the laboratory.

At sites with tetrachloroethene contamination, passive air monitors that are specifically analyzed for tetrachloroethene (i.e., "perc badges") are commonly used to collect indoor and outdoor air samples. If site characterization activities indicate that degradation products of tetrachloroethene also represent a vapor intrusion concern, perc badges may be used to indicate the likelihood of vapor intrusion (i.e., by using tetrachloroethene as a surrogate) followed, as appropriate, by more comprehensive sampling and laboratory analyses to quantify both tetrachloroethene and its degradation products. Perc badge samples ideally should be collected over a twenty-four hour period, but for no less than eight hours.

The following actions should be taken to document conditions during indoor air sampling and ultimately to aid in the interpretation of the sampling results [Section 3]:

a. historic and current uses and storage of volatile chemicals should be identified, especially if sampling within a commercial or industrial building (e.g., use of volatile chemicals in commercial or industrial processes and/or during building maintenance);

b. a product inventory survey documenting sources of volatile chemicals present in the building during the indoor air sampling that could potentially influence the sample results should be completed [Section 2.11.2];

c. the use of heating or air conditioning systems during sampling should be noted;

d. floor plan sketches should be drawn that include the floor layout with sampling locations, chemical storage areas, garages, doorways, stairways, location of basement sumps or subsurface drains and utility perforations through building foundations, HVAC system supply and return registers, compass orientation (north), footings that create separate foundation sections, and any other pertinent information should be completed;

e. outdoor plot sketches should be drawn that include the building site, area streets, outdoor air sampling locations (if applicable), compass orientation (north), and paved areas;

f. weather conditions (e.g., precipitation and indoor and outdoor temperature) and ventilation conditions (e.g., heating system active and windows closed) should be reported; and

g. any pertinent observations, such as spills, floor stains, smoke tube results, odors and readings from field instrumentation (e.g., vapors via PID, ppbRAE, Jerome Mercury Vapor Analyzer, etc.), should be recorded.

Additional documentation that could be gathered to assist in the interpretation of the results includes information about air flow patterns and pressure relationships obtained by using smoke tubes or other devices (especially between floor levels and between suspected contaminant sources and other areas), the barometric pressure and photographs to accompany floor plan sketches.

The field sampling team should maintain a sample log sheet summarizing the following:

a. sample identification,
b. date and time of sample collection,
c. sampling height,
d. identity of samplers,
e. sampling methods and devices,
f. depending upon the method, volume of air sampled,
g. if canisters are used, vacuum of canisters before and after samples collected, and
h. chain of custody protocols and records used to track samples from sampling point to analysis.

2.7.4 Outdoor air

Outdoor air samples should be collected simultaneously with indoor air samples to evaluate the potential influence, if any, of outdoor air on indoor air quality. They may also be collected simultaneously with soil vapor samples to identify potential outdoor air interferences associated with infiltration of outdoor air into the sampling apparatus while the soil vapor was collected. To obtain representative samples that meet the data quality objectives, outdoor air samples should be collected in a manner consistent with that for indoor air samples (described in Section 2.7.3).

The following actions should be taken to document conditions during outdoor air sampling and ultimately to aid in the interpretation of the sampling results [Section 3]:

a. outdoor plot sketches should be drawn that include the building site, area streets, outdoor air sampling locations, the location of potential interferences (e.g., gasoline stations, factories, lawn movers, etc.), compass orientation (north), and paved areas;
b. weather conditions (e.g., precipitation and outdoor temperature) should be reported; and
c. any pertinent observations, such as odors, readings from field instrumentation, and significant activities in the vicinity (e.g., operation of heavy equipment or dry cleaners) should be recorded.

2.7.5 Tracer gas

When collecting soil vapor samples as part of a vapor intrusion evaluation, a tracer gas serves as a quality assurance/quality control measure to verify the integrity of the soil vapor probe seal. Without the use of a tracer, there is no way to verify that a soil vapor sample has not been diluted by outdoor air.

Depending on the nature of the contaminants of concern, a number of different compounds can be used as a tracer. Typically, sulfur hexafluoride (SF_6) or helium are used as tracers because they are readily available, have low toxicity, and can be monitored with portable measurement devices. Butane and propane (or other gases) could also be used as a tracer in some situations. Compounds other than those mentioned here may be appropriate, provided they meet project-specific data quality objectives. Where applicable, steps should

be taken to ensure that the gas used by the laboratory to clean the air sampling container is different from the gas used as a tracer during sampling (e.g., helium).

The protocol for using a tracer gas is straightforward: simply enrich the atmosphere in the immediate vicinity of the area where the probe intersects the ground surface with the tracer gas, and measure a vapor sample from the probe for the presence of high concentrations (> 10%) of the tracer. A cardboard box, a plastic pail, or even a garbage bag can serve to keep the tracer gas in contact with the probe during the testing. If there are concerns about infiltration of ambient air through other parts of the sampling train (such as around the fittings, not just at the probe/ground interface), then consideration should be given to ensuring that the tracer gas is in contact with the entire sampling apparatus. In these cases, field personnel may prefer to use a liquid tracer — soaking paper towels with a liquid tracer and placing the towels around the probe/ground interface, around fittings, and/or in the corner of a shroud.

There are two basic approaches to testing for the tracer gas:

1. include the tracer gas in the list of target analytes reported by the laboratory; or
2. use a portable monitoring device to analyze a sample of soil vapor for the tracer prior to and after sampling for the compounds of concern. (Note that the tracer gas samples can be collected via syringe, Tedlar® bag etc. They need not be collected in Summa® canisters or minicans.)

The advantage of the second approach is that the real time tracer sampling results can be used to confirm the integrity of the probe seals prior to formal sample collection.

Figure 2.4 depicts common methods for using tracer gas. In examples a, b and c, the tracer gas is released in the enclosure prior to initially purging the sample point. Care should be taken to avoid excessive purging prior to sample collection. Care should also be taken to prevent pressure build-up in the enclosure during introduction of the tracer gas. Inspection of the installed sample probe, specifically noting the integrity of the surface seal and the porosity of the soil in which the probe is installed, will help to determine the tracer gas setup. Figure 2.4a may be most effective at preventing tracer gas infiltration, however, it may not be appropriate in some situations depending on site-specific conditions. Figures 2.4b and 2.4c may be sufficient for probes installed in tight soils with well-constructed surface seals. Figure 2d provides an example of using a liquid tracer. In all cases, the same tracer gas application should be used for all probes at any given site.

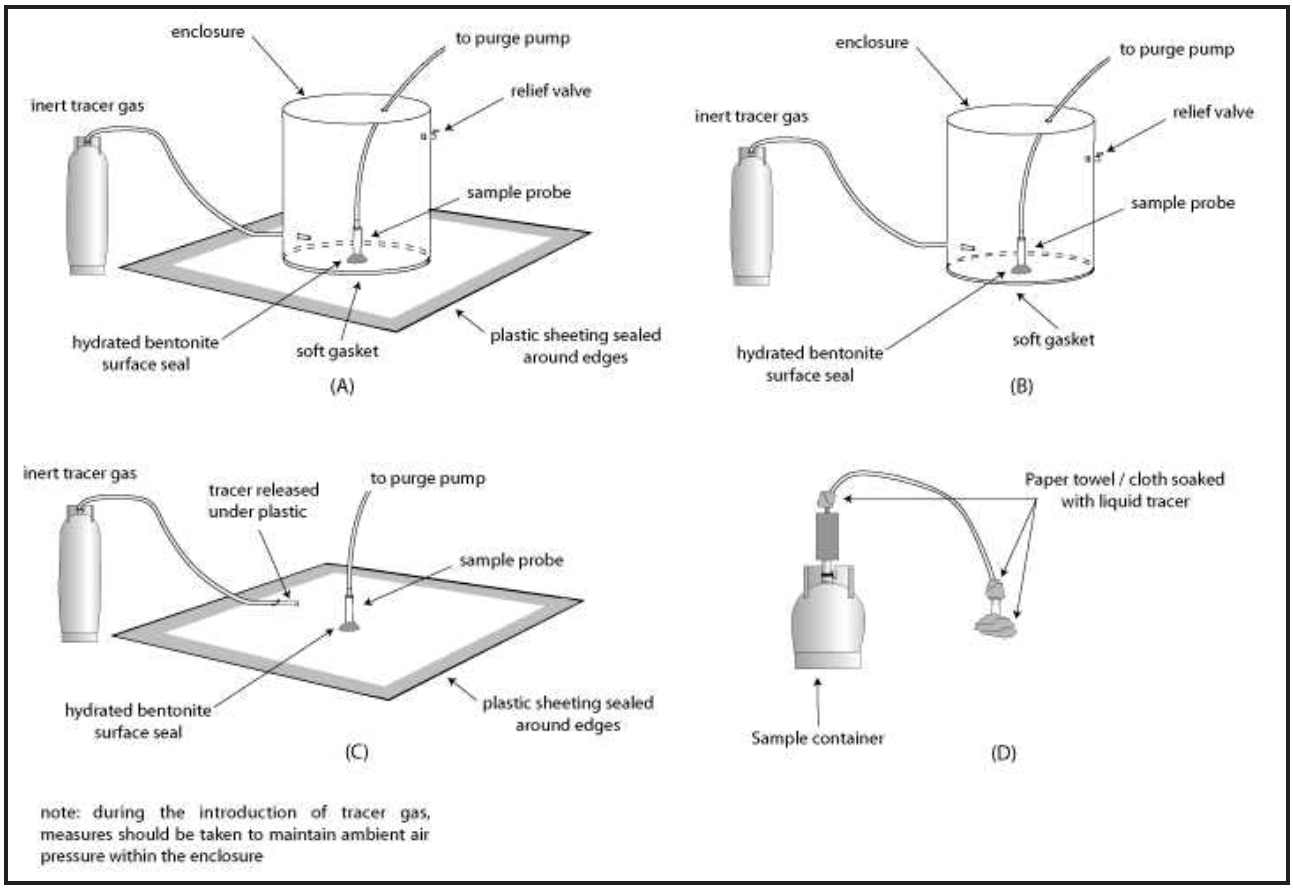


Figure 2.4
Schematics of generic tracer gas applications when collecting soil vapor samples

Because minor leakage around the probe seal should not materially affect the usability of the soil vapor sampling results, the mere presence of the tracer gas in the sample should not be a cause for alarm. Consequently, portable field monitoring devices with detection limits in the low ppm range are more than adequate for screening samples for the tracer. If high concentrations (> 10%) of tracer gas are observed in a sample, the probe seal should be enhanced to reduce the infiltration of outdoor air.

Where permanent or semi-permanent sampling probes are used, tracer gas samples should be collected at each of the sampling probes during the initial stages of a soil vapor sampling program. If the results of the initial samples indicate that the probe seals are adequate, reducing the number of locations at which tracer gas samples are employed may be considered. At a minimum, tracer gas samples should be collected with at least 10% of the soil vapor samples collected in subsequent sampling rounds. When using permanent soil vapor probes as part of a long-term monitoring program, annual testing of the probe integrity is recommended. Where temporary probes are used, tracer gas should be used at every sampling location, every time.

Supplement E – Decontamination

1.0 Purpose and Scope

This SOP supplement provides guidance to project personnel for the decontamination of field equipment, but does not specifically address all of the required procedures, and is intended to be used in conjunction with available operating manuals supplied by equipment manufacturers. Decontamination must be performed in accordance with other relevant project-specific documentation, including work plans, sampling and analysis plans, health and safety plans, quality assurance project plans, and additional SOPs, as appropriate.

2.0 General

Decontamination of sampling and heavy equipment, as well as personal protective equipment (PPE), is performed as a quality assurance measure and a safety precaution. Decontamination prevents cross-contamination between samples, minimizes contaminant transport (it is critical that equipment used in one area not serve as a source of contamination of another), and helps to maintain a clean working environment for the safety of field personnel. General decontamination requirements will be specified in project plans. Note: All decontamination procedures must comply with specific requirements when sampling for per- and polyfluoroalkyl substances (PFAS).

Field personnel will review and be familiar with required decontamination procedures, including those for cleaning field equipment, proper storage of cleaned field equipment, and for properly disposing of waste generated from decontamination procedures. Decontamination conducted on site will be performed in a designated, controlled location that will not impact collected samples. Decontamination activities will be appropriately documented in the field notes. Wastes generated in the field will be collected, stored, and properly disposed in accordance with applicable project requirements.

Decontamination consists of physically removing contaminants from the surface of equipment and/or materials potentially exposed to contaminants. A decontamination plan assumes that protective clothing and equipment that leave the exclusion zone are contaminated, and a system is established to wash and rinse non-disposable equipment and dispose of disposable equipment.

Decontamination procedures will vary depending on project-specific requirements as listed in the project-specific work plan, type of equipment, and the required analytical parameters. The effectiveness of the decontamination procedure is verified by collecting and analyzing equipment blank samples (as required).

To minimize or eliminate the need for decontamination, it is recommended that dedicated disposable equipment be used whenever possible.

Document all decontamination activities, and flag equipment with decontamination issues, in fieldwork log books and related fieldwork forms.

3.0 Responsibilities

3.1 Fieldwork Manager

The Fieldwork Manager (FM), in conjunction with the Project Manager (PM), is responsible for overall compliance with SOPs. The FM, or designee, is responsible for ensuring and verifying that all equipment and materials are decontaminated, as required.

3.2 Site Personnel

Site personnel are required to read SOP documentation before engaging in fieldwork activities. The FM will inform personnel who will be responsible for decontamination of specific equipment.

4.0 Procedures

These are standard (typically applicable) operating procedures, which may be varied or changed as required, dependent on site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented. All decontamination procedures are to be modified, as appropriate, when sampling for PFAS (see applicable sampling SOPs).

Decontaminate non-disposable sampling equipment used at the site both before activities begin and after each sample is collected. Decontaminate drilling and excavation equipment both before activities begin and between each investigation location. Take care that materials and solutions used for decontamination procedures are themselves not hazardous or could potentially contaminate samples (e.g., solvents, acids).

4.1 Decontamination Area

A localized decontamination area should be establish where decontamination fluids and soil wastes can be managed and controlled with minimal risk to the surrounding environment. Decontamination should be performed in a non-contaminated area (as possible), that is large enough to allow temporary storage of cleaned equipment and materials before use, as well as to stage drums of decontamination investigation-derived waste (IDW).

In the case of large decontamination areas (e.g., hollow-stem-auger decontamination), line each area with a heavy-gauge plastic sheeting and include a collection system designed to capture potential decontamination IDW. Decontamination areas will, in all cases, be laid out in such a way as to prevent overspray while performing equipment and personnel decontamination.

Smaller decontamination tasks, such as the cleaning of soil or water sampling equipment, and Geoprobe drive rods and barrels, may take place at the sampling location. In this case, all required decontamination supplies and equipment must be brought to the sampling location. This decontamination will use various containment systems to capture the decontamination IDW, which can then be transferred to larger containers as needed.

4.2 Health and Safety Precautions

Decontamination procedures may involve exposure to contaminants in site media and/or dangerous materials used during decontamination (e.g., solvents or acids), and physical hazards associated with the operation of the decontamination equipment. All work should be performed in accordance with the HASP, including decontamination of PPE. Safety Data Sheets for any solvents/chemical stored or used during fieldwork should be available at the site. At a minimum, eye protection, safety shoes, and gloves are to be worn. There are several types of gloves that may be worn, depending on equipment being cleaned, type and extent of equipment contamination, and cleaning solutions or solvents being used. Nitrile gloves (or similar) may be worn when the equipment to be decontaminated is not heavily coated with constituents such as tars/oils. In cases where heavy accumulations of tars/oils are present on the equipment, neoprene or similar chemically compatible gloves are recommended. If a potential for skin contact exists, protective clothing should be worn.

4.3 General Equipment Decontamination Procedures

All sampling equipment must be decontaminated before use to ensure that contaminants have not been introduced to the sample during the sampling process through contact with the sampling device. Monitoring well riser pipes, screens and drilling augers must also be decontaminated, as appropriate, to prevent the introduction of contaminants.

Unless the decontaminated sampling devices that will come in contact with samples are to be used immediately, they should be wrapped in aluminum foil, shiny side out, and stored in a designated “clean” area. Field equipment can also be stored in plastic bags to eliminate the potential for contamination. Larger size equipment, such drill rods, backhoe buckets, etc. need not be wrapped or covered, but must not be stored directly on the ground surface. Field equipment should be inspected and decontaminated prior to use if the equipment has been stored for long periods of time.

4.4 Decontamination Equipment

The following is a list equipment and materials typically needed to perform decontamination:

- Health and safety equipment, including appropriate PPE
- Plastic sheeting (to serve as secondary containment for liquids and protect equipment)
- Brushes and flat-bladed scrapers
- Garden-type water sprayers (without oil-lubricated, moving parts)
- High-pressure washer or portable steam cleaner
- Sump or collection system for contaminated liquid
- Wash basins and buckets
- Spray and rinse bottles
- Potable water, distilled/deionized water (DIW), and laboratory-grade detergent

- Isopropyl alcohol (free of ketones) or methanol (can be wipes or diluted with DIW)
- Airtight, sealable plastic baggies
- Plastic waste bags
- Leak-tight liquid waste containers (55-gallon drums or similar)
- Bulk solid waste containers (55-gallon drums, or similar)

4.5 Specific Decontamination Procedures

For all procedures, decontamination fluids and other wastes may be transferred from smaller to larger containers (e.g., 55-gallon drums or 5-gallon buckets, with tight fitting lids, and transported to the IDW storage facility.

4.5.1 Sampling Equipment

Conduct consistent decontamination of sampling equipment to ensure the quality of the samples collected. Decontaminate all sampling equipment that comes into contact with potentially contaminated samples. Disposable equipment intended for one-time use that is factory-wrapped generally does not need to be decontaminated before use, unless evidence of contamination is present.

Disposable equipment (e.g., water bailers, plastic scoops, VOC sampling syringes) is preferred over reusable equipment; use wherever appropriate. Decontaminate sampling equipment, including split-spoon samplers, Geoprobe Macro-Core cutting shoes, hand augers, reusable bailers, spoons, trowels, and shovels used to collect samples for chemical analyses before sampling at a new sampling location. All decontamination fluids will be captured in a containment system as appropriate.

Take the following steps to decontaminate non-dedicated, non-disposable sampling equipment:

1. Remove as much gross contamination (such as pieces of soil) as possible off equipment at the sampling site.
2. Wash water-resistant equipment thoroughly and vigorously with potable water containing non-phosphate laboratory-grade detergent such as Liquinox®, Alconox®, or equivalent, and using a bristle brush or similar utensil to remove any remaining residual contamination.
3. Rinse equipment thoroughly with potable water.
4. Repeat the first three steps as necessary until all residue is removed.
5. Rinse equipment thoroughly with DIW.
6. If metals are a constituent of interest, rinse with 10% nitric acid and then with DIW.
7. If organics are constituents of interest, rinse with methanol and allow to air dry on a clean surface.

8. Air dry at a location where dust or other fugitive contaminants may not contact the sample equipment. Alternatively, wet equipment maybe dried with a clean, disposable paper towel to assist the drying process. All equipment should be dry before reuse.
9. If the equipment is not used soon after decontamination, it should be covered or wrapped in new, oil-free aluminum foil or new, unused plastic bags to protect the decontaminated equipment from fugitive contaminants before reuse.
10. Store decontaminated equipment at a secure, unexposed location out of the weather and any potential contaminant exposure.

4.5.2 Groundwater Sampling Pumps

[Note: This procedure does not apply to dedicated submersible pumps which have been permanently installed in wells.] Proper decontamination between wells is essential to avoid introducing contaminants from the sampling equipment to another well. If peristaltic pumps are being used, it is necessary only to replace the pump head tubing after sampling each well. If sampling with submersible pumps that come into direct contact with groundwater, the equipment must be decontaminated. The following procedure will be used to decontaminate submersible pumps and non-dedicated tubing before and between sample collection points, as well as the end of each day of use.

Preparation

Pre-clean appropriately sized buckets and prepare cleaning solutions (detergent solution, tap water rinse, distilled/deionized water rinse) and field blank water.

Detergent wash and tap water rinse

a) Put on disposable, powderless gloves. Rest pump in a washbasin or pail partially filled with detergent solution and clean exterior of pump and tubing with a soft brush. Rinse thoroughly with tap water. (DIW can be used instead of tap water, but is less efficient in detergent removal and requires a greater volume of water than tap water).
b) Place pump into bucket, add detergent solution to level above pump intake, and route the intake and discharge ends of pump tubing into the bucket. Begin pumping. Circulate detergent solution for several minutes. If possible, pump detergent solution through tubing at alternating high and low speeds.
c) Change gloves. Manually rinse detergent from pump, tubing and bucket with tap water.
d) Place pump into bucket, add tap water to level above pump intake, and route the intake and discharge ends of pump tubing into the bucket. Begin pumping. Circulate tap water for several minutes. If possible, pump tap water through tubing at alternating high and low speeds. Replace water in bucket and repeat cycle until no sudsing is observed. Change gloves as needed.

DIW Rinse

If a pump will be used to collect inorganic samples, manually rinse pump and tubing with DIW, then place in clean bucket, add DIW to level above pump intake, and route the discharge end of pump tubing outside the bucket. Begin pumping to rinse DIW through the equipment without recirculating. Collect water for use as a field blank, as required, from the pump discharge.

Equipment Storage

1. Place pump into a clean, non-contaminating storage bag and tie the bag shut.
2. Cover the pump reel and tubing with plastic bags or sheeting for transport to the next site.
3. On reaching the next monitoring well, place the pump in the well casing and wipe dry the power and discharge lines with a chemical-free paper towel as the pump is lowered.
4. For long-term storage (longer than 3 days), the pump and exterior and interior of the tubing must be dry before being placed into plastic bags.

4.5.3 Measurement Devices & Monitoring Equipment

For water quality instruments, oil-water interface indicators, water level indicators, continuous water level data loggers, and other field instruments that have the potential to come into contact with site media, at a minimum, wash with dilute laboratory-grade detergent (e.g., Alconox) and double rinse with tap water and DIW before and after each use or by using a similar procedure as discussed in Section 4.4.1. All decontamination fluids will be captured in a containment system as appropriate.

4.5.4 Subsurface Drilling Equipment

Drilling equipment and associated materials (drill bits, augers, and drilling stems) will be decontaminated by the drilling contractor prior to any drilling operations and between borings. These decontamination activities should be performed in the defined decontamination area as described in Section 4.1.

All down-hole Geoprobe tools (drive rods, Macro-Core barrels, etc.) that come in direct contact with potentially contaminated soil or groundwater shall be decontaminated between each sampling location, and may take place at the sampling location using a mobile decontamination platform with a containment system or other means to capture the decontamination IDW.

Decontamination will be performed using the following basic sequence:

1. Remove as much gross contamination as possible off equipment at the sampling site.
2. Wash equipment thoroughly and vigorously with potable water using a high-pressure washer and/or steam cleaner. A bristle brush is also suggested to remove any persistent gross contamination.
3. Air dry at a location where dust or other contaminants may not contact the sample equipment. All equipment should be dry before reuse.
4. Store decontaminated equipment at a location away from any potential exposure from fugitive contamination.

4.5.5 Heavy Equipment

Wash earthwork equipment (such as excavators and back-hoes) with high-pressure potable water, if possible, before leaving a contaminated area using similar steps as outlined in Section 4.4.4, otherwise the equipment may be moved to the decontamination area discussed in Section 4.1. Hand washing with a brush and detergent, followed by a potable water rinse, can also be used. In some instances, tires and tracks of equipment maybe only need to be thoroughly brushed with a dry brush. Take particular care with the components in direct contact with contaminants, such as tires and backhoe buckets.

Any part of earthwork equipment that may come in direct contact with analytical samples (that is, sampling from the excavator bucket) must be thoroughly decontaminated before excavation activities and between sample locations.

4.6 Quality Assurance/Quality Control

To ensure that sampling equipment is cleaned properly and sample cross-contamination does not occur, field rinsate blanks may be collected if required by project plans. A rinsate blank will consist of pouring deionized organic-free water over the specific sampling device or pouring it through the device after it has been cleaned. The rinsate sample is collected in the field under the same conditions as occurred for the sampling activity, and is handled exactly like any other samples collected that day.

Generally, one rinsate blank is collected each day of sampling or at a rate of 1 per 20 for each parameter, whichever is less, for each matrix being sampled or for each type of sampling instrument decontaminated and reused per day. The rinsate samples are analyzed for the specific parameters of concern (for each matrix). Rinsate blanks should be labeled like a routine environmental sample, and laboratory analysis instructions should be included on the chain-of-custody form. Rinsate blanks are not required if dedicated sampling equipment is used. Additional quality assurance samples may be collected if deemed necessary by project specific requirements.

Supplement F – PFAS Sampling Guidance

NEW YORK STATE OF OPPORTUNITY.

Department of Environmental Conservation

SAMPLING, ANALYSIS, AND ASSESSMENT OF PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Under NYSDEC's Part 375 Remedial Programs

April 2023



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ERRATA SHEET for

SAMPLING, ANALYSIS, AND ASSESSMENT OF PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) Under NYSDEC's Part 375 Remedial Programs Issued January 17, 2020

Citation and Page Number	Current Text	Corrected Text	Date
Title of Appendix I, page 32	Appendix H	Appendix I	2/25/2020
Document Cover, page 1	Guidelines for Sampling and Analysis of PFAS	Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs	9/15/2020
Data Assessment and Application to Site Cleanup Page 3	Until such time as Ambient Water Quality Standards (AWQS) and Soil Cleanup Objectives (SCOs) for PFOA and PFOS are published	Until such time as Soil Cleanup Objectives (SCOs) for PFOA and PFOS are published	3/28/2023
Water Sample Results Page 3	PFOA and PFOS should be further assessed and considered as potential contaminants of concern in groundwater or surface water if PFOA or PFOS is detected in any water sample at or above 10 ng/L (ppt) and is determined to be attributable to the site, either by a comparison of upgradient and downgradient levels, or the presence of soil source areas, as defined below.	NYSDEC has adopted ambient water quality guidance values for PFOA and PFOS. Groundwater samples should be compared to the human health criteria of 6.7 ng/l (ppt) for PFOA and 2.7 ng/l (ppt) for PFOS. These guidance values also include criteria for surface water for PFOS applicable for aquatic life, which may be applicable at some sites. Drinking water sample results should be compared to the NYS maximum contaminant level (MCL) of 10 ng/l (ppt).Analysis to determine if PFOA and PFOS concentrations are attributable to the site should include a comparison between upgradient and downgradient levels, and the presence of soil source areas, as defined below.	3/28/2023
Soil Sample Results Page 3	Soil cleanup objectives for PFOA and PFOS have been proposed in an upcoming revision to 6 NYCRR Part 375-6. Until SCOs are in effect, the following are to be used as guidance values:	NYSDEC will delay adding soil cleanup objectives for PFOA and PFOS to 6 NYCRR Part 375-6 until the PFAS rural soil background study has been completed. Until SCOs are in effect, the following are to be used as guidance values:	3/28/2023
Protection of Groundwater Page 3	PFOA (ppb) 1.1 PFOS (ppb) 3.7	PFOA (ppb) 0.8 PFOS (ppb) 1.0	3/28/2023

Citation and Page Number	Current Text	Corrected Text	Date
Footnote 2 Page 3	The movement of PFAS in the environment is being aggressively researched at this time; that research will eventually result in more accurate models for the behaviors of these chemicals. In the meantime, DEC has calculated the guidance value for the protection of groundwater using the same procedure used for all other chemicals, as described in Section 7.7 of the Technical Support Document (http://www.dec.ny.gov/docs/remediation_hudson_pdf/techsuppdoc.pdf).	The Protection of Groundwater values are based on the above referenced ambient groundwater guidance values. Details on that calculation are available in the following document, prepared for the February 2022 proposed changes to Part 375 (https://www.dec.ny.gov/docs/remediation_hudson_pdf/part375techsupport.pdf). The movement of PFAS in the environment is being aggressively researched at this time; that research will eventually result in more accurate models for the behaviors of these chemicals. In the meantime, DEC has calculated the guidance value for the protection of groundwater using the same procedure used for all other chemicals, as described in Section 7.7 of the Technical Support Document (http://www.dec.ny.gov/docs/remediation_hudson_pdf/techsuppdoc.pdf).	3/28/2023
Testing for Imported Soil Page 4	If the concentrations of PFOA and PFOS in leachate are at or above 10 ppt (the Maximum Contaminant Levels established for drinking water by the New York State Department of Health), then the soil is not acceptable.	If the concentrations of PFOA and PFOS in leachate are at or above the ambient water quality guidance values for groundwater, then the soil is not acceptable.	3/28/2023
Routine Analysis, page 9	"However, laboratories analyzing environmental samples…PFOA and PFOS in drinking water by EPA Method 537, 537.1 or ISO 25101."	"However, laboratories analyzing environmental samples…PFOA and PFOS in drinking water by EPA Method 537, 537.1, ISO 25101, or Method 533."	9/15/2020
Additional Analysis, page 9, new paragraph regarding soil parameters	None	"In cases where site-specific cleanup objectives for PFOA and PFOS are to be assessed, soil parameters, such as Total Organic Carbon (EPA Method 9060), soil pH (EPA Method 9045), clay content (percent), and cation exchange capacity (EPA Method 9081), should be included in the analysis to help evaluate factors affecting the leachability of PFAS in site soils."	9/15/2020

Citation and Page Number	Current Text	Corrected Text	Date
Data Assessment and Application to Site Cleanup Page 10	Until such time as Ambient Water Quality Standards (AWQS) and Soil Cleanup Objectives (SCOs) for PFAS are published, the extent of contaminated media potentially subject to remediation should be determined on a case-by-case basis using the procedures discussed below and the criteria in DER-10. Target levels for cleanup of PFAS in other media, including biota and sediment, have not yet been established by the DEC.	Until such time as Ambient Water Quality Standards (AWQS) and Soil Cleanup Objectives (SCOs) for PFOA and PFOS are published, the extent of contaminated media potentially subject to remediation should be determined on a case-by-case basis using the procedures discussed below and the criteria in DER-10. Preliminary target levels for cleanup of PFOA and PFOS in other media, including biota and sediment, have not yet been established by the DEC.	9/15/2020
Water Sample Results Page 10	PFAS should be further assessed and considered as a potential contaminant of concern in groundwater or surface water (…) If PFAS are identified as a contaminant of concern for a site, they should be assessed as part of the remedy selection process in accordance with Part 375 and DER-10.	PFOA and PFOS should be further assessed and considered as potential contaminants of concern in groundwater or surface water (…) If PFOA and/or PFOS are identified as contaminants of concern for a site, they should be assessed as part of the remedy selection process in accordance with Part 375 and DER-10.	9/15/2020

Citation and Page Number	Current Text	Corrected Text	Date
Soil Sample Results, page 10	"The extent of soil contamination for purposes of delineation and remedy selection should be determined by having certain soil samples tested by Synthetic Precipitation Leaching Procedure (SPLP) and the leachate analyzed for PFAS. Soil exhibiting SPLP results above 70 ppt for either PFOA or PFOS (individually or combined) are to be evaluated during the cleanup phase."	"Soil cleanup objectives for PFOA and PFOS will be proposed in an upcoming revision to 6 NYCRR Part 375-6. Until SCOs are in effect, the following are to be used as guidance values. " [Interim SCO Table] "PFOA and PFOS results for soil are to be compared against the guidance values listed above. These guidance values are to be used in determining whether PFOA and PFOS are contaminants of concern for the site and for determining remedial action objectives and cleanup requirements. Site-specific remedial objectives for protection of groundwater can also be presented for evaluation by DEC. Development of site-specific remedial objectives for protection of groundwater will require analysis of additional soil parameters relating to leachability. These additional analyses can include any or all the parameters listed above (soil pH, cation exchange capacity, etc.) and/or use of SPLP. As the understanding of PFAS transport improves, DEC welcomes proposals for site-specific remedial objectives for protection of groundwater. DEC will expect that those may be dependent on additional factors including soil pH, aqueous pH, % organic carbon, % Sand/Silt/Clay, soil cations: K, Ca, Mg, Na, Fe, Al, cation exchange capacity, and anion exchange capacity. Site-specific remedial objectives should also consider the dilution attenuation factor (DAF). The NJDEP publication on DAF can be used as a reference: https://www.nj.gov/dep/srp/guidance/rs/daf.pdf. "	9/15/2020

Citation and Page Number	Current Text	Corrected Text	Date
Testing for Imported Soil Page 11	Soil imported to a site for use in a soil cap, soil cover, or as backfill is to be tested for PFAS in general conformance with DER-10, Section 5.4(e) for the PFAS Analyte List (Appendix F) using the analytical procedures discussed below and the criteria in DER-10 associated with SVOCs. If PFOA or PFOS is detected in any sample at or above 1 µg/kg, then soil should be tested by SPLP and the leachate analyzed for PFAS. If the SPLP results exceed 10 ppt for either PFOA or PFOS (individually) then the source of backfill should be rejected, unless a site-specific exemption is provided by DER. SPLP leachate criteria is based on the Maximum Contaminant Levels proposed for drinking water by New York State's Department of Health, this value may be updated based on future Federal or State promulgated regulatory standards. Remedial parties have the option of analyzing samples concurrently for both PFAS in soil and in the SPLP leachate to minimize project delays. Category B deliverables should be submitted for backfill samples, though a DUSR is not required.	Testing for PFAS should be included any time a full TAL/TCL analyte list is required. Results for PFOA and PFOS should be compared to the applicable guidance values. If PFOA or PFOS is detected in any sample at or above the guidance values then the source of backfill should be rejected, unless a site-specific exemption is provided by DER based on SPLP testing, for example. If the concentrations of PFOA and PFOS in leachate are at or above 10 ppt (the Maximum Contaminant Levels established for drinking water by the New York State Department of Health), then the soil is not acceptable. PFOA, PFOS and 1,4-dioxane are all considered semi-volatile compounds, so composite samples are appropriate for these compounds when sampling in accordance with DER-10, Table 5.4(e)10. Category B deliverables should be submitted for backfill samples, though a DUSR is not required.	9/15/2020

Citation and Page Number	Current Text	Corrected Text	Date
Footnotes	None	[1] TOP Assay analysis of highly contaminated samples, such as those from an AFFF (aqueous film-forming foam) site, can result in incomplete oxidation of the samples and an underestimation of the total perfluoroalkyl substances. [2] The movement of PFAS in the environment is being aggressively researched at this time; that research will eventually result in more accurate models for the behaviors of these chemicals. In the meantime, DEC has calculated the soil cleanup objective for the protection of groundwater using the same procedure used for all other chemicals, as described in Section 7.7 of the Technical Support Document (http://www.dec.ny.gov/docs/remediation_hudson_pdf/techsuppdoc.pdf).	9/15/2020
Additional Analysis, page 9	In cases… soil parameters, such as Total Organic Carbon (EPA Method 9060), soil…	In cases… soil parameters, such as Total Organic Carbon (Lloyd Kahn), soil…	1/8/2021
Appendix A, General Guidelines, fourth bullet	List the ELAP-approved lab(s) to be used for analysis of samples	List the ELAP- certified lab(s) to be used for analysis of samples	1/8/2021
Appendix E, Laboratory Analysis and Containers	Drinking water samples collected using this protocol are intended to be analyzed for PFAS by ISO Method 25101.	Drinking water samples collected using this protocol are intended to be analyzed for PFAS by EPA Method 537, 537.1, 533, or ISO Method 25101	1/8/2021
Water Sample Results Page 9	"In addition, further assessment of water may be warranted if either of the following screening levels are met: a. any other individual PFAS (not PFOA or PFOS) is detected in water at or above 100 ng/L; or b. total concentration of PFAS (including PFOA and PFOS) is detected in water at or above 500 ng/L"	Deleted	6/15/2021

Citation and Page Number	Current Text	Corrected Text	Date
Routine Analysis, Page XX	Currently, New York State Department of Health's Environmental Laboratory Approval Program (ELAP)… criteria set forth in the DER's laboratory guidelines for PFAS in non-potable water and solids (Appendix H - Laboratory Guidelines for Analysis of PFAS in Non-Potable Water and Solids).	Deleted	5/31/2022
Analysis and Reporting, Page XX	As of October 2020, the United States Environmental Protection Agency (EPA) does not have a validated method for analysis of PFAS for media commonly analyzed under DER remedial programs (non-potable waters, solids). DER has developed the following guidelines to ensure consistency in analysis and reporting of PFAS.	Deleted	5/31/2022
Routine Analysis, Page XX	LC-MS/MS analysis for PFAS using methodologies based on EPA Method 537.1 is the procedure to use for environmental samples. Isotope dilution techniques should be utilized for the analysis of PFAS in all media.	EPA Method 1633 is the procedure to use for environmental samples.	
Soil Sample Results, Page XX	Soil cleanup objectives for PFOA and PFOS will be proposed in an upcoming revision to 6 NYCRR Part 375-6	Soil cleanup objectives for PFOA and PFOS have been proposed in an upcoming revision to 6 NYCRR Part 375-6	
Appendix A	"Include in the text… LC-MS/MS for PFAS using methodologies based on EPA Method 537.1"	"Include in the text ….EPA Method 1633"	
Appendix A	"Laboratory should have ELAP certification for PFOA and PFOS in drinking water by EPA Method 537, 537.1, EPA Method 533, or ISO 25101"	Deleted	
Appendix B	"Samples collected using this protocol are intended to be analyzed for PFAS using methodologies based on EPA Method 537.1"	"Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633"	

Citation and Page Number	Current Text	Corrected Text	Date
Appendix C	"Samples collected using this protocol are intended to be analyzed for PFAS using methodologies based on EPA Method 537.1"	"Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633"	
Appendix D	"Samples collected using this protocol are intended to be analyzed for PFAS using methodologies based on EPA Method 537.1"	"Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633"	
Appendix G		Updated to include all forty PFAS analytes in EPA Method 533	
Appendix H		Deleted	
Appendix I	Appendix I	Appendix H	
Appendix H	"These guidelines are intended to be used for the validation of PFAS analytical results for projects within the Division of Environmental Remediation (DER) as well as aid in the preparation of a data usability summary report."	"These guidelines are intended to be used for the validation of PFAS using EPA Method 1633 for projects within the Division of Environmental Remediation (DER)."	
Appendix H	"The holding time is 14 days…"	"The holding time is 28 days…"	
Appendix H, Initial Calibration	"The initial calibration should contain a minimum of five standards for linear fit…"	"The initial calibration should contain a minimum of six standards for linear fit…"	
Appendix H, Initial Calibration	Linear fit calibration curves should have an R^2 value greater than 0.990.	Deleted	
Appendix H, Initial Calibration Verification	Initial Calibration Verification Section	Deleted	
Appendix H	secondary Ion Monitoring Section	Deleted	
Appendix H	Branched and Linear Isomers Section	Deleted	

Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs

Objective

New York State Department of Environmental Conservation's Division of Environmental Remediation (DER) performs or oversees sampling of environmental media and subsequent analysis of PFAS as part of remedial programs implemented under 6 NYCRR Part 375. To ensure consistency in sampling, analysis, reporting, and assessment of PFAS, DER has developed this document which summarizes currently accepted procedures and updates previous DER technical guidance pertaining to PFAS.

Applicability

All work plans submitted to DEC pursuant to one of the remedial programs under Part 375 shall include PFAS sampling and analysis procedures that conform to the guidelines provided herein.

As part of a site investigation or remedial action compliance program, whenever samples of potentially affected media are collected and analyzed for the standard Target Analyte List/Target Compound List (TAL/TCL), PFAS analysis should also be performed. Potentially affected media can include soil, groundwater, surface water, and sediment. Based upon the potential for biota to be affected, biota sampling and analysis for PFAS may also be warranted as determined pursuant to a Fish and Wildlife Impact Analysis. Soil vapor sampling for PFAS is not required.

Field Sampling Procedures

DER-10 specifies technical guidance applicable to DER's remedial programs. Given the prevalence and use of PFAS, DER has developed "best management practices" specific to sampling for PFAS. As specified in DER-10 Chapter 2, quality assurance procedures are to be submitted with investigation work plans. Typically, these procedures are incorporated into a work plan, or submitted as a stand-alone document (e.g., a Quality Assurance Project Plan). Quality assurance guidelines for PFAS are listed in Appendix A - Quality Assurance Project Plan (QAPP) Guidelines for PFAS.

Field sampling for PFAS performed under DER remedial programs should follow the appropriate procedures outlined for soils, sediments, or other solids (Appendix B), non-potable groundwater (Appendix C), surface water (Appendix D), public or private water supply wells (Appendix E), and fish tissue (Appendix F).

QA/QC samples (e.g. duplicates, MS/MSD) should be collected as specified in DER-10, Section 2.3(c). For sampling equipment coming in contact with aqueous samples only, rinsate or equipment blanks should be collected. Equipment blanks should be collected at a minimum frequency of one per day per site or one per twenty samples, whichever is more frequent.

Analysis and Reporting

The investigation work plan should describe analysis and reporting procedures, including laboratory analytical procedures for the methods discussed below. As specified in DER-10 Section 2.2, laboratories should provide a full Category B deliverable. In addition, a Data Usability Summary Report (DUSR) should be prepared by an independent, third-party data validator. Electronic data submissions should meet the requirements provided at: https://www.dec.ny.gov/chemical/62440.html.

DER has developed a *PFAS Analyte List* (Appendix G) for remedial programs to understand the nature of contamination at sites. It is expected that reported results for PFAS will include, at a minimum, all the compounds listed. If lab and/or matrix specific issues are encountered for any analytes, the DER project manager, in consultation with the DER chemist, will make case-by-case decisions as to whether certain analytes may be temporarily or permanently discontinued from analysis at each site. As with other contaminants that are analyzed for at a site, the *PFAS Analyte List* may be refined for future sampling events based on investigative findings.

Routine Analysis

EPA Method 1633 is the procedure to use for environmental samples. Reporting limits for PFOA and PFOS in aqueous samples should not exceed 2 ng/L. Reporting limits for PFOA and PFOS in solid samples should not exceed 0.5 µg/kg. Reporting limits for all other PFAS in aqueous and solid media should be as close to these limits as possible. If laboratories indicate that they are not able to achieve these reporting limits for the entire *PFAS Analyte List*, site-specific decisions regarding acceptance of elevated reporting limits for specific PFAS can be made by the DER project manager in consultation with the DER chemist. Data review guidelines were developed by DER to ensure data comparability and usability (Appendix H - Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids).

Additional Analysis

Additional laboratory methods for analysis of PFAS may be warranted at a site, such as the Synthetic Precipitation Leaching Procedure (SPLP) and Total Oxidizable Precursor Assay (TOP Assay).

In cases where site-specific cleanup objectives for PFOA and PFOS are to be assessed, soil parameters, such as Total Organic Carbon (Lloyd Kahn), soil pH (EPA Method 9045), clay content (percent), and cation exchange capacity (EPA Method 9081), should be included in the analysis to help evaluate factors affecting the leachability of PFAS in site soils.

SPLP is a technique used to determine the mobility of chemicals in liquids, soils and wastes, and may be useful in determining the need for addressing PFAS-containing material as part of the remedy. SPLP by EPA Method 1312 should be used unless otherwise specified by the DER project manager in consultation with the DER chemist.

Impacted materials can be made up of PFAS that are not analyzable by routine analytical methodology. A TOP Assay can be utilized to conceptualize the amount and type of oxidizable PFAS which could be liberated in the environment, which approximates the maximum concentration of perfluoroalkyl substances that could be generated if all polyfluoroalkyl substances were oxidized. For example, some polyfluoroalkyl substances may degrade or transform to form perfluoroalkyl substances (such as PFOA or PFOS), resulting in an increase in perfluoroalkyl substance concentrations as contaminated groundwater moves away from a source. The TOP Assay converts, through oxidation, polyfluoroalkyl substances (precursors) into perfluoroalkyl substances that can be detected by routine analytical methodology.[1]

[1] TOP Assay analysis of highly contaminated samples, such as those from an AFFF (aqueous film-forming foam) site, can result in incomplete oxidation of the samples and an underestimation of the total perfluoroalkyl substances.

Commercial laboratories have adopted methods which allow for the quantification of targeted PFAS in air and biota. The EPA's Office of Research and Development (ORD) is currently developing methods which allow for air emissions characterization of PFAS, including both targeted and non-targeted analysis of PFAS. Consult with the DER project manager and the DER chemist for assistance on analyzing biota/tissue and air samples.

Data Assessment and Application to Site Cleanup

Until such time as Soil Cleanup Objectives (SCOs) for PFOA and PFOS are published, the extent of contaminated media potentially subject to remediation should be determined on a case-by-case basis using the procedures discussed below and the criteria in DER-10. Preliminary target levels for cleanup of PFOA and PFOS in other media, including biota and sediment, have not yet been established by the DEC.

Water Sample Results

NYSDEC has adopted ambient water quality guidance values for PFOA and PFOS. Groundwater samples should be compared to the human health criteria of 6.7 ng/l (ppt) for PFOA and 2.7 ng/l (ppt) for PFOS. These human health criteria should also be applied to surface water that is used as a water supply. This guidance also includes criteria for surface water for PFOS applicable for aquatic life, which may be applicable at some sites. Drinking water sample results should be compared to the NYS maximum contaminant level (MCL) of 10 ng/l (ppt). Analysis to determine if PFOA and PFOS concentrations are attributable to the site should include a comparison between upgradient and downgradient levels, and the presence of soil source areas, as defined below.

If PFOA and/or PFOS are identified as contaminants of concern for a site, they should be assessed as part of the remedy selection process in accordance with Part 375 and DER-10.

Soil Sample Results

NYSDEC will delay adding soil cleanup objectives for PFOA and PFOS to 6 NYCRR Part 375-6 until the PFAS rural soil background study has been completed. Until SCOs are in effect, the following are to be used as guidance values:

Guidance Values for Anticipated Site Use	PFOA (ppb)	PFOS (ppb)
Unrestricted	0.66	0.88
Residential	6.6	8.8
Restricted Residential	33	44
Commercial	500	440
Industrial	600	440
Protection of Groundwater[2]	0.8	1.0

PFOA and PFOS results for soil are to be compared against the guidance values listed above. These guidance values are to be used in determining whether PFOA and PFOS are contaminants of concern for the site and for determining remedial action objectives and cleanup requirements. Site-specific remedial objectives for protection of groundwater can also be presented for evaluation by DEC. Development of site-specific remedial objectives for protection of groundwater will require analysis of additional soil parameters relating to leachability. These

[2] The Protection of Groundwater values are based on the above referenced ambient groundwater guidance values. Details on that calculation are available in the following document, prepared for the February 2022 proposed changes to Part 375 (https://www.dec.ny.gov/docs/remediation_hudson_pdf/part375techsupport.pdf). The movement of PFAS in the environment is being aggressively researched at this time; that research will eventually result in more accurate models for the behaviors of these chemicals. In the meantime, DEC has calculated the guidance value for the protection of groundwater using the same procedure used for all other chemicals, as described in Section 7.7 of the Technical Support Document (http://www.dec.ny.gov/docs/remediation_hudson_pdf/techsuppdoc.pdf).

additional analyses can include any or all the parameters listed above (soil pH, cation exchange capacity, etc.) and/or use of SPLP.

As the understanding of PFAS transport improves, DEC welcomes proposals for site-specific remedial objectives for protection of groundwater. DEC will expect that those may be dependent on additional factors including soil pH, aqueous pH, % organic carbon, % Sand/Silt/Clay, soil cations: K, Ca, Mg, Na, Fe, Al, cation exchange capacity, and anion exchange capacity. Site-specific remedial objectives should also consider the dilution attenuation factor (DAF). The NJDEP publication on DAF can be used as a reference: https://www.nj.gov/dep/srp/guidance/rs/daf.pdf.

Testing for Imported Soil

Testing for PFAS should be included any time a full TAL/TCL analyte list is required. Results for PFOA and PFOS should be compared to the applicable guidance values. If PFOA or PFOS is detected in any sample at or above the guidance values then the source of backfill should be rejected, unless a site-specific exemption is provided by DER based on SPLP testing, for example. If the concentrations of PFOA and PFOS in leachate are at or above the ambient water quality guidance values for groundwater, then the soil is not acceptable.

PFOA, PFOS and 1,4-dioxane are all considered semi-volatile compounds, so composite samples are appropriate for these compounds when sampling in accordance with DER-10, Table 5.4(e)10. Category B deliverables should be submitted for backfill samples, though a DUSR is not required.

Appendix A - Quality Assurance Project Plan (QAPP) Guidelines for PFAS

The following guidelines (general and PFAS-specific) can be used to assist with the development of a QAPP for projects within DER involving sampling and analysis of PFAS.

General Guidelines in Accordance with DER-10

- Document/work plan section title – Quality Assurance Project Plan
- Summarize project scope, goals, and objectives
- Provide project organization including names and resumes of the project manager, Quality Assurance Officer (QAO), field staff, and Data Validator
    - The QAO should not have another position on the project, such as project or task manager, that involves project productivity or profitability as a job performance criterion
- List the ELAP certified lab(s) to be used for analysis of samples
- Include a site map showing sample locations
- Provide detailed sampling procedures for each matrix
- Include Data Quality Usability Objectives
- List equipment decontamination procedures
- Include an "Analytical Methods/Quality Assurance Summary Table" specifying:
    - Matrix type
    - Number or frequency of samples to be collected per matrix
    - Number of field and trip blanks per matrix
    - Analytical parameters to be measured per matrix
    - Analytical methods to be used per matrix with minimum reporting limits
    - Number and type of matrix spike and matrix spike duplicate samples to be collected
    - Number and type of duplicate samples to be collected
    - Sample preservation to be used per analytical method and sample matrix
    - Sample container volume and type to be used per analytical method and sample matrix
    - Sample holding time to be used per analytical method and sample matrix
- Specify Category B laboratory data deliverables and preparation of a DUSR

Specific Guidelines for PFAS

- Include in the text that sampling for PFAS will take place
- Include in the text that PFAS will be analyzed by EPA Method 1633
- Include the list of PFAS compounds to be analyzed (*PFAS Analyte List*)
- Include the laboratory SOP for PFAS analysis
- List the minimum method-achievable Reporting Limits for PFAS
    - Reporting Limits should be less than or equal to:
        - Aqueous – 2 ng/L (ppt)
        - Solids – 0.5 µg/kg (ppb)
- Include the laboratory Method Detection Limits for the PFAS compounds to be analyzed
-
- Include detailed sampling procedures
    - Precautions to be taken
    - Pump and equipment types
    - Decontamination procedures
    - Approved materials only to be used
- Specify that regular ice only will be used for sample shipment
- Specify that equipment blanks should be collected at a minimum frequency of 1 per day per site for each matrix

Appendix B - Sampling Protocols for PFAS in Soils, Sediments and Solids

General

The objective of this protocol is to give general guidelines for the collection of soil, sediment and other solid samples for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Containers

Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633.

The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in to contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer.

A list of acceptable equipment is provided below, but other equipment may be considered appropriate based on sampling conditions.

- stainless steel spoon
- stainless steel bowl
- steel hand auger or shovel without any coatings

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Sampling is often conducted in areas where a vegetative turf has been established. In these cases, a pre-cleaned trowel or shovel should be used to carefully remove the turf so that it may be replaced at the conclusion of sampling. Surface soil samples (e.g. 0 to 6 inches below surface) should then be collected using a pre-cleaned, stainless steel spoon. Shallow subsurface soil samples (e.g. 6 to ~36 inches below surface) may be collected by digging a hole using a pre-cleaned hand auger or shovel. When the desired subsurface depth is reached, a pre-cleaned hand auger or spoon shall be used to obtain the sample.

When the sample is obtained, it should be deposited into a stainless steel bowl for mixing prior to filling the sample containers. The soil should be placed directly into the bowl and mixed thoroughly by rolling the material into the middle until the material is homogenized. At this point the material within the bowl can be placed into the laboratory provided container.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at 4 ± 2º Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- Request appropriate data deliverable (Category B) and an electronic data deliverable

Documentation

A soil log or sample log shall document the location of the sample/borehole, depth of the sample, sampling equipment, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate. Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appropriate rain gear (PVC, polyurethane, or rubber rain gear are acceptable), bug spray, and sunscreen should be used that does not contain PFAS. Well washed cotton coveralls may be used as an alternative to bug spray and/or sunscreen.

PPE that contains PFAS is acceptable when site conditions warrant additional protection for the samplers and no other materials can be used to be protective. Documentation of such use should be provided in the field notes.

Appendix C - Sampling Protocols for PFAS in Monitoring Wells

General

The objective of this protocol is to give general guidelines for the collection of groundwater samples for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Container

Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633.

The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include: stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials including plumbers tape and sample bottle cap liners with a PTFE layer.

A list of acceptable equipment is provided below, but other equipment may be considered appropriate based on sampling conditions.

- stainless steel inertia pump with HDPE tubing
- peristaltic pump equipped with HDPE tubing and silicone tubing
- stainless steel bailer with stainless steel ball
- bladder pump (identified as PFAS-free) with HDPE tubing

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Monitoring wells should be purged in accordance with the sampling procedure (standard/volume purge or low flow purge) identified in the site work plan, which will determine the appropriate time to collect the sample. If sampling using standard purge techniques, additional purging may be needed to reduce turbidity levels, so samples contain a limited amount of sediment within the sample containers. Sample containers that contain sediment may cause issues at the laboratory, which may result in elevated reporting limits and other issues during the sample preparation that can compromise data usability. Sampling personnel should don new nitrile gloves prior to sample collection due to the potential to contact PFAS containing items (not related to the sampling equipment) during the purging activities.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at 4 ± 2º Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- Collect one equipment blank per day per site and minimum 1 equipment blank per 20 samples. The equipment blank shall test the new and decontaminated sampling equipment utilized to obtain a sample for residual PFAS contamination. This sample is obtained by using laboratory provided PFAS-free water and passing the water over or through the sampling device and into laboratory provided sample containers
- Additional equipment blank samples may be collected to assess other equipment that is utilized at the monitoring well
- Request appropriate data deliverable (Category B) and an electronic data deliverable

Documentation

A purge log shall document the location of the sample, sampling equipment, groundwater parameters, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate. Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appropriate rain gear (PVC, polyurethane, or rubber rain gear are acceptable), bug spray, and sunscreen should be used that does not contain PFAS. Well washed cotton coveralls may be used as an alternative to bug spray and/or sunscreen.

PPE that contains PFAS is acceptable when site conditions warrant additional protection for the samplers and no other materials can be used to be protective. Documentation of such use should be provided in the field notes.

Appendix D - Sampling Protocols for PFAS in Surface Water

General

The objective of this protocol is to give general guidelines for the collection of surface water samples for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Container

Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633.

The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include: stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer.

A list of acceptable equipment is provided below, but other equipment may be considered appropriate based on sampling conditions.

- stainless steel cup

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Where conditions permit, (e.g. creek or pond) sampling devices (e.g. stainless steel cup) should be rinsed with site medium to be sampled prior to collection of the sample. At this point the sample can be collected and poured into the sample container.

If site conditions permit, samples can be collected directly into the laboratory container.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at 4 ± 2º Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- Collect one equipment blank per day per site and minimum 1 equipment blank per 20 samples. The equipment blank shall test the new and decontaminated sampling equipment utilized to obtain a sample for residual PFAS contamination. This sample is obtained by using laboratory provided PFAS-free water and passing the water over or through the sampling device and into laboratory provided sample containers
- Request appropriate data deliverable (Category B) and an electronic data deliverable

Documentation

A sample log shall document the location of the sample, sampling equipment, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate. Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appropriate rain gear (PVC, polyurethane, or rubber rain gear are acceptable), bug spray, and sunscreen should be used that does not contain PFAS. Well washed cotton coveralls may be used as an alternative to bug spray and/or sunscreen.

PPE that contains PFAS is acceptable when site conditions warrant additional protection for the samplers and no other materials can be used to be protective. Documentation of such use should be provided in the field notes.

Appendix E - Sampling Protocols for PFAS in Private Water Supply Wells

General

The objective of this protocol is to give general guidelines for the collection of water samples from private water supply wells (with a functioning pump) for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Container

Drinking water samples collected using this protocol are intended to be analyzed for PFAS by EPA Method 537, 537.1, 533, or ISO Method 25101. The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials (e.g. plumbers tape), including sample bottle cap liners with a PTFE layer.

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Locate and assess the pressure tank and determine if any filter units are present within the building. Establish the sample location as close to the well pump as possible, which is typically the spigot at the pressure tank. Ensure sampling equipment is kept clean during sampling as access to the pressure tank spigot, which is likely located close to the ground, may be obstructed and may hinder sample collection.

Prior to sampling, a faucet downstream of the pressure tank (e.g., washroom sink) should be run until the well pump comes on and a decrease in water temperature is noted which indicates that the water is coming from the well. If the homeowner is amenable, staff should run the water longer to purge the well (15+ minutes) to provide a sample representative of the water in the formation rather than standing water in the well and piping system including the pressure tank. At this point a new pair of nitrile gloves should be donned and the sample can be collected from the sample point at the pressure tank.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at 4 ± 2º Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- If equipment was used, collect one equipment blank per day per site and a minimum 1 equipment blank per 20 samples. The equipment blank shall test the new and decontaminated sampling equipment utilized to obtain a sample for residual PFAS contamination. This sample is obtained by using laboratory provided PFAS-free water and passing the water over or through the sampling device and into laboratory provided sample containers.
- A field reagent blank (FRB) should be collected at a rate of one per 20 samples. The lab will provide a FRB bottle containing PFAS free water and one empty FRB bottle. In the field, pour the water from the one bottle into the empty FRB bottle and label appropriately.
- Request appropriate data deliverable (Category B) and an electronic data deliverable
- For sampling events where multiple private wells (homes or sites) are to be sampled per day, it is acceptable to collect QC samples at a rate of one per 20 across multiple sites or days.

Documentation

A sample log shall document the location of the private well, sample point location, owner contact information, sampling equipment, purge duration, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate and available (e.g. well construction, pump type and location, yield, installation date). Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appendix F - Sampling Protocols for PFAS in Fish

This appendix contains a copy of the current SOP developed by the Division of Fish and Wildlife (DFW) entitled "General Fish Handling Procedures for Contaminant Analysis" (Ver. 8). This SOP should be followed when collecting fish for contaminant analysis. Note, however, that the Bureau of Ecosystem Health will not be supplying bags or tags. All supplies are the responsibility of the collector

Procedure Name: General Fish Handling Procedures for Contaminant Analysis

Number: FW-005

Purpose: This procedure describes data collection, fish processing and delivery of fish collected for contaminant monitoring. It contains the chain of custody and collection record forms that should be used for the collections.

Organization: Environmental Monitoring Section
Bureau of Ecosystem Health
Division of Fish and Wildlife (DFW)
New York State Department of Environmental Conservation (NYSDEC)
625 Broadway
Albany, New York 12233-4756

Version: 8

Previous Version Date: 21 March 2018

Summary of Changes to this Version: Updated bureau name to Bureau of Ecosystem Health. Added direction to list the names of all field crew on the collection record. Minor formatting changes on chain of custody and collection records.

Originator or Revised by: Wayne Richter, Jesse Becker

Date: 26 April 2019

Quality Assurance Officer and Approval Date: Jesse Becker, 26 April 2019

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

GENERAL FISH HANDLING PROCEDURES FOR CONTAMINANT ANALYSES

A. Original copies of all continuity of evidence (i.e., Chain of Custody) and collection record forms must accompany delivery of fish to the lab. A copy shall be directed to the Project Leader or as appropriate, Wayne Richter. All necessary forms will be supplied by the Bureau of Ecosystem Health. Because some samples may be used in legal cases, it is critical that each section is filled out completely. Each Chain of Custody form has three main sections:

   1. The top box is to be filled out **and signed** by the person responsible for the fish collection (e.g., crew leader, field biologist, researcher). This person is responsible for delivery of the samples to DEC facilities or personnel (e.g., regional office or biologist).

   2. The second section is to be filled out **and signed** by the person responsible for the collections while being stored at DEC, before delivery to the analytical lab. This may be the same person as in (1), but it is still required that they complete the section. Also important is the **range of identification numbers** (i.e., tag numbers) included in the sample batch.

   3. Finally, the bottom box is to record any transfers between DEC personnel and facilities. Each subsequent transfer should be **identified, signed, and dated**, until laboratory personnel take possession of the fish.

B. The following data are required on each **Fish Collection Record** form:

   1. Project and Site Name.

   2. DEC Region.

   3. All personnel (and affiliation) involved in the collection.

   4. Method of collection (gill net, hook and line, etc.)

   5. Preservation Method.

C. The following data are to be taken on each fish collected and recorded on the **Fish Collection Record** form:

   1. Tag number - Each specimen is to be individually jaw tagged at time of collection with a unique number. Make sure the tag is turned out so that the number can be read without opening the bag. Use tags in sequential order. For small fish or composite samples place the tag inside the bag with the samples. The Bureau of Ecosystem Health can supply the tags.

   2. Species identification (please be explicit enough to enable assigning genus and species). Group fish by species when processing.

   3. Date collected.

   4. Sample location (waterway and nearest prominent identifiable landmark).

   5. Total length (nearest mm or smallest sub-unit on measuring instrument) and weight (nearest g or

smallest sub-unit of weight on weighing instrument). Take all measures as soon as possible with calibrated, protected instruments (e.g. from wind and upsets) and prior to freezing.

6. Sex - fish may be cut enough to allow sexing or other internal investigation, but do not eviscerate. Make any incision on the right side of the belly flap or exactly down the midline so that a left-side fillet can be removed.

D. General data collection recommendations:

1. It is helpful to use an ID or tag number that will be unique. It is best to use metal striped bass or other uniquely numbered metal tags. If uniquely numbered tags are unavailable, values based on the region, water body and year are likely to be unique: for example, R7CAY11001 for Region 7, Cayuga Lake, 2011, fish 1. If the fish are just numbered 1 through 20, we have to give them new numbers for our database, making it more difficult to trace your fish to their analytical results and creating an additional possibility for errors.

2. Process and record fish of the same species sequentially. Recording mistakes are less likely when all fish from a species are processed together. Starting with the bigger fish species helps avoid missing an individual.

3. If using Bureau of Ecosystem Health supplied tags or other numbered tags, use tags in sequence so that fish are recorded with sequential Tag Numbers. This makes data entry and login at the lab and use of the data in the future easier and reduces keypunch errors.

4. Record length and weight as soon as possible after collection and before freezing. Other data are recorded in the field upon collection. An age determination of each fish is optional, but if done, it is recorded in the appropriate “Age” column.

5. For composite samples of small fish, record the number of fish in the composite in the Remarks column. Record the length and weight of each individual in a composite. All fish in a composite sample should be of the same species and members of a composite should be visually matched for size.

6. Please submit photocopies of topographic maps or good quality navigation charts indicating sampling locations. GPS coordinates can be entered in the Location column of the collection record form in addition to or instead for providing a map. These records are of immense help to us (and hopefully you) in providing documented location records which are not dependent on memory and/or the same collection crew. In addition, they may be helpful for contaminant source trackdown and remediation/control efforts of the Department.

7. When recording data on fish measurements, it will help to ensure correct data recording for the data recorder to call back the numbers to the person making the measurements.

E. Each fish is to be placed in its own individual plastic bag. For small fish to be analyzed as a composite, put all of the fish for one composite in the same bag but use a separate bag for each composite. It is important to individually bag the fish to avoid difficulties or cross contamination when processing the fish for chemical analysis. Be sure to include the fish’s tag number inside the bag, preferably attached to the fish with the tag number turned out so it can be read. Tie or otherwise secure the bag closed. **The Bureau of Ecosystem Health will supply the bags.** If necessary, food grade bags may be procured from a suitable vendor (e.g., grocery store). It is preferable to redundantly label each bag with a manila tag tied between the knot and the body of the bag. This tag should be labeled with the project name, collection location, tag number, collection date, and fish species. If scales are collected, the scale envelope should be labeled with

the same information.

F. Groups of fish, by species, are to be placed in one large plastic bag per sampling location. **The Bureau of Ecosystem Health will supply the larger bags.** Tie or otherwise secure the bag closed. Label the site bag with a manila tag tied between the knot and the body of the bag. The tag should contain: project, collection location, collection date, species and **tag number ranges**. Having this information on the manila tag enables lab staff to know what is in the bag without opening it.

G. Do not eviscerate, fillet or otherwise dissect the fish unless specifically asked to. If evisceration or dissection is specified, the fish must be cut along the exact midline or on the right side so that the left side fillet can be removed intact at the laboratory. If filleting is specified, the procedure for taking a standard fillet (SOP PREPLAB 4) must be followed, including removing scales.

H. Special procedures for PFAS: Unlike legacy contaminants such as PCBs, which are rarely found in day to day life, PFAS are widely used and frequently encountered. Practices that avoid sample contamination are therefore necessary. While no standard practices have been established for fish, procedures for water quality sampling can provide guidance. The following practices should be used for collections when fish are to be analyzed for PFAS:

No materials containing Teflon.
No Post-it notes.
No ice packs; only water ice or dry ice.
Any gloves worn must be powder free nitrile.
No Gore-Tex or similar materials (Gore-Tex is a PFC with PFOA used in its manufacture).
No stain repellent or waterproof treated clothing; these are likely to contain PFCs.
Avoid plastic materials, other than HDPE, including clipboards and waterproof notebooks.
Wash hands after handling any food containers or packages as these may contain PFCs.
Keep pre-wrapped food containers and wrappers isolated from fish handling.
Wear clothing washed at least six times since purchase.
Wear clothing washed without fabric softener.
Staff should avoid cosmetics, moisturizers, hand creams and similar products on the day of sampling as many of these products contain PFCs (Fujii et al. 2013). Sunscreen or insect repellent should not contain ingredients with “fluor” in their name. Apply any sunscreen or insect repellent well downwind from all materials. Hands must be washed after touching any of these products.

I. All fish must be kept at a temperature <45° F (<8° C) immediately following data processing. As soon as possible, freeze at -20° C ± 5° C. Due to occasional freezer failures, daily freezer temperature logs are required. The freezer should be locked or otherwise secured to maintain chain of custody.

J. In most cases, samples should be delivered to the Analytical Services Unit at the Hale Creek field station. Coordinate delivery with field station staff and send copies of the collection records, continuity of evidence forms and freezer temperature logs to the field station. For samples to be analyzed elsewhere, non-routine collections or other questions, contact Wayne Richter, Bureau of Ecosystem Health, NYSDEC, 625 Broadway, Albany, New York 12233-4756, 518-402-8974, or the project leader about sample transfer. Samples will then be directed to the analytical facility and personnel noted on specific project descriptions.

K. A recommended equipment list is at the end of this document.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF FISH AND WILDLIFE
FISH COLLECTION RECORD

Project and Site Name _____ DEC Region _____

Collections made by (include all crew) _____

Sampling Method: □Electrofishing □Gill netting □Trap netting □Trawling □Seining □Angling □Other _____

Preservation Method: □Freezing □Other _____ Notes (SWFDB survey number): _____

FOR LAB USE ONLY- LAB ENTRY NO.	COLLECTION OR TAG NO.	SPECIES	DATE TAKEN	LOCATION	AGE	SEX &/OR REPROD. CONDIT	LENGTH ( )	WEIGHT ( )	REMARKS

richter: revised 2011, 5/7/15, 10/4/16, 3/20/17; becker: 3/23/17, 4/26/19

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CHAIN OF CUSTODY

I, _____, of _____ collected the
(Print Name) (Print Business Address)

following on _____, 20____ from _____
(Date) (Water Body)

in the vicinity of _____
(Landmark, Village, Road, etc.)

Town of _____, in _____ County.

Item(s) _____

_____

Said sample(s) were in my possession and handled according to standard procedures provided to me prior to collection. The sample(s) were placed in the custody of a representative of the New York State Department of Environmental Conservation on _____, 20_____.

_____ _____
Signature Date

I, _____, received the above mentioned sample(s) on the date specified and assigned identification number(s) _____ to the sample(s). I have recorded pertinent data for the sample(s) on the attached collection records. The sample(s) remained in my custody until subsequently transferred, prepared or shipped at times and on dates as attested to below.

_____ _____
Signature Date

SECOND RECIPIENT (Print Name)	TIME & DATE	PURPOSE OF TRANSFER
SIGNATURE	UNIT	
THIRD RECIPIENT (Print Name)	TIME & DATE	PURPOSE OF TRANSFER
SIGNATURE	UNIT	
FOURTH RECIPIENT (Print Name)	TIME & DATE	PURPOSE OF TRANSFER
SIGNATURE	UNIT	
RECEIVED IN LABORATORY BY (Print Name)	TIME & DATE	REMARKS
SIGNATURE	UNIT	
LOGGED IN BY (Print Name)	TIME & DATE	ACCESSION NUMBERS
SIGNATURE	UNIT	

richter: revised 21 April 2014; becker: 23 March 2017, 26 April, 2019

NOTICE OF WARRANTY

By signature to the chain of custody (reverse), the signatory warrants that the information provided is truthful and accurate to the best of his/her ability. The signatory affirms that he/she is willing to testify to those facts provided and the circumstances surrounding the same. Nothing in this warranty or chain of custody negates responsibility nor liability of the signatories for the truthfulness and accuracy of the statements provided.

HANDLING INSTRUCTIONS

On day of collection, collector(s) name(s), address(es), date, geographic location of capture (attach a copy of topographic map or navigation chart), species, number kept of each species, and description of capture vicinity (proper noun, if possible) along with name of Town and County must be indicated on reverse.

Retain organisms in manila tagged plastic bags to avoid mixing capture locations. Note appropriate information on each bag tag.

Keep samples as cool as possible. Put on ice if fish cannot be frozen within 12 hours. If fish are held more than 24 hours without freezing, they will not be retained or analyzed.

Initial recipient (either DEC or designated agent) of samples from collector(s) is responsible for obtaining and recording information on the collection record forms which will accompany the chain of custody. This person will seal the container using packing tape and writing his signature, the time and the date across the tape onto the container with indelible marker. Any time a seal is broken, for whatever purpose, the incident must be recorded on the Chain of Custody (reason, time, and date) in the purpose of transfer block. Container then is resealed using new tape and rewriting signature, with time and date.

EQUIPMENT LIST

Scale or balance of appropriate capacity for the fish to be collected.

Fish measuring board.

Plastic bags of an appropriate size for the fish to be collected and for site bags.

Individually numbered metal tags for fish.

Manila tags to label bags.

Small envelops, approximately 2” x 3.5”, if fish scales are to be collected.

Knife for removing scales.

Chain of custody and fish collection forms.

Clipboard.

Pens or markers.

Paper towels.

Dish soap and brush.

Bucket.

Cooler.

Ice.

Duct tape.

Appendix G – PFAS Analyte List

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonic acids	Perfluorobutanesulfonic acid	PFBS	375-73-5
	Perfluoropentanesulfonic acid	PFPeS	2706-91-4
	Perfluorohexanesulfonic acid	PFHxS	355-46-4
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanesulfonic acid	PFOS	1763-23-1
	Perfluorononanesulfonic acid	PFNS	68259-12-1
	Perfluorodecanesulfonic acid	PFDS	335-77-3
	Perfluorododecanesulfonic acid	PFDoS	79780-39-5
Perfluoroalkyl carboxylic acids	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	PFHpA	375-85-9
	Perfluorooctanoic acid	PFOA	335-67-1
	Perfluorononanoic acid	PFNA	375-95-1
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUnA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTeDA	376-06-7
Per- and Polyfluoroether carboxylic acids	Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
	4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
	Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
	Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
	Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6
Fluorotelomer sulfonic acids	4:2 Fluorotelomer sulfonic acid	4:2-FTS	757124-72-4
	6:2 Fluorotelomer sulfonic acid	6:2-FTS	27619-97-2
	8:2 Fluorotelomer sulfonic acid	8:2-FTS	39108-34-4
Fluorotelomer carboxylic acids	3:3 Fluorotelomer carboxylic acid	3:3 FTCA	356-02-5
	5:3 Fluorotelomer carboxylic acid	5:3 FTCA	914637-49-3
	7:3 Fluorotelomer carboxylic acid	7:3 FTCA	812-70-4
Perfluorooctane sulfonamides	Perfluorooctane sulfonamide	PFOSA	754-91-6
	N-methylperfluorooctane sulfonamide	NMeFOSA	31506-32-8
	N-ethylperfluorooctane sulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamidoacetic acids	N-methylperfluorooctane sulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethylperfluorooctane sulfonamidoacetic acid	N-EtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols	N-methylperfluorooctane sulfonamidoethanol	MeFOSE	24448-09-7
	N-ethylperfluorooctane sulfonamidoethanol	EtFOSE	1691-99-2

Group	Chemical Name	Abbreviation	CAS Number
Ether sulfonic acids	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major)	9Cl-PF3ONS	756426-58-1
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	11Cl-PF3OUdS	763051-92-9
	Perfluoro(2-ethoxyethane) sulfonic acid	PFEESA	113507-82-7

Appendix H - Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids

General

These guidelines are intended to be used for the validation of PFAS using EPA Method 1633 for projects within the Division of Environmental Remediation (DER). Data reviewers should understand the methodology and techniques utilized in the analysis. Consultation with the end user of the data may be necessary to assist in determining data usability based on the data quality objectives in the Quality Assurance Project Plan. A familiarity with the laboratory's Standard Operating Procedure may also be needed to fully evaluate the data. If you have any questions, please contact DER's Quality Assurance Officer, Dana Barbarossa, at dana.barbarossa@dec.ny.gov.

Preservation and Holding Time

Samples should be preserved with ice to a temperature of less than 6°C upon arrival at the lab. The holding time is 28 days to extraction for aqueous and solid samples. The time from extraction to analysis for aqueous samples is 28 days and 40 days for solids.

Temperature greatly exceeds 6ºC upon arrival at the lab*	Use professional judgement to qualify detects and non-detects as estimated or rejected
Holding time exceeding 28 days to extraction	Use professional judgement to qualify detects and non-detects as estimated or rejected if holding time is grossly exceeded

*Samples that are delivered to the lab immediately after sampling may not meet the thermal preservation guidelines. Samples are considered acceptable if they arrive on ice or an attempt to chill the samples is observed.

Initial Calibration

The initial calibration should contain a minimum of six standards for linear fit and six standards for a quadratic fit. The relative standard deviation (RSD) for a quadratic fit calibration should be less than 20%.

The low-level calibration standard should be within 50% - 150% of the true value, and the mid-level calibration standard within 70% - 130% of the true value.

%RSD >20%	J flag detects and UJ non detects

Continuing Calibration Verification

Continuing calibration verification (CCV) checks should be analyzed at a frequency of one per ten field samples. If CCV recovery is very low, where detection of the analyte could be in question, ensure a low level CCV was analyzed and use to determine data quality.

CCV recovery <70 or >130%	J flag results

Blanks

There should be no detections in the method blanks above the reporting limits. Equipment blanks, field blanks, rinse blanks etc. should be evaluated in the same manner as method blanks. Use the most contaminated blank to evaluate the sample results.

Blank Result	Sample Result	Qualification
Any detection	<Reporting limit	Qualify as ND at reporting limit
Any detection	>Reporting Limit and >10x the blank result	No qualification
>Reporting limit	>Reporting limit and <10x blank result	J+ biased high

Field Duplicates

A blind field duplicate should be collected at rate of one per twenty samples. The relative percent difference (RPD) should be less than 30% for analyte concentrations greater than two times the reporting limit. Use the higher result for final reporting.

RPD >30%	Apply J qualifier to parent sample

Lab Control Spike

Lab control spikes should be analyzed with each extraction batch or one for every twenty samples. In the absence of lab derived criteria, use 70% - 130% recovery criteria to evaluate the data.

Recovery <70% or >130% (lab derived criteria can also be used)	Apply J qualifier to detects and UJ qualifier to non detects

Matrix Spike/Matrix Spike Duplicate

One matrix spike and matrix spike duplicate should be collected at a rate of one per twenty samples. Use professional judgement to reject results based on out of control MS/MSD recoveries.

Recovery <70% or >130% (lab derived criteria can also be used)	Apply J qualifier to detects and UJ qualifier to non detects of parent sample only
RPD >30%	Apply J qualifier to detects and UJ qualifier to non detects of parent sample only

Extracted Internal Standards (Isotope Dilution Analytes)

Problematic analytes (e.g. PFBA, PFPeA, fluorotelomer sulfonates) can have wider recoveries without qualification. Qualify corresponding native compounds with a J flag if outside of the range.

Recovery <50% or >150%	Apply J qualifier
Recovery <25% or >150% for poor responding analytes	Apply J qualifier
Isotope Dilution Analyte (IDA) Recovery <10%	Reject results

Signal to Noise Ratio

The signal to noise ratio for the quantifier ion should be at least 3:1. If the ratio is less than 3:1, the peak is discernable from the baseline noise and symmetrical, the result can be reported. If the peak appears to be baseline noise and/or the shape is irregular, qualify the result as tentatively identified.

Reporting Limits

If project-specific reporting limits were not met, please indicate that in the report along with the reason (e.g. over dilution, dilution for non-target analytes, high sediment in aqueous samples).

Peak Integrations

Target analyte peaks should be integrated properly and consistently when compared to standards. Ensure branched isomer peaks are included for PFAS where standards are available. Inconsistencies should be brought to the attention of the laboratory or identified in the data review summary report.

EGLE Michigan Department of Environment, Great Lakes, and Energy

EGLE PFAS Sampling Quick Reference Field Guide[1]

All Items Used During Sampling Event

● Prohibited

• Items or materials that contain fluoropolymers such as
  ○ Polytetrafluoroethylene (PTFE), that includes the trademarks Teflon® and Hostaflon®
  ○ Polyvinylidene fluoride (PVDF), that includes the trademark Kynar®
  ○ Polycholotrifluoroethylene (PCTFE), that includes the trademark Neoflon ®
  ○ Ethylene-tetrafluoro-ethylene (ETFE), that includes the trademark Tefzel®
  ○ Fluorinated ethylene propylene (FEP), that includes the trademarks Teflon® FEP and Hostaflon® FEP
• Items or materials that contain any other fluoropolymer

Pumps, Tubing, and Sampling Equipment

● Prohibited	■ Allowable	▲Needs Screening[2]

• Items or materials containing any fluoropolymer (potential items include tubing, valves, or pipe thread seal tape)	• High-density polyethylene (HDPE)
	• Low-density polyethylene (LDPE) tubing
	• Polypropylene
	• Silicone
	• Stainless-steel
	• Any items used to secure sampling bottles made from:
	  ○ Natural rubber
	  ○ Nylon (cable ties)
	  ○ Uncoated metal springs
	  ○ Polyethylene
		• Any items or materials that will come into direct contact with the sample that have **not** been verified to be PFAS-free
		  ○ Do not assume that any sampling items or materials are PFAS-free based on composition alone

Sample Storage and Preservation

● Prohibited	■ Allowable	▲Needs Screening[2]
• Polytetrafluoroethylene (PTFE): Teflon® lined bottles or caps	• Glass jars[4] • Laboratory-provided PFAS-Free bottles: ○ HDPE or polypropylene • Regular wet ice • Thin HDPE sheeting • LDPE resealable storage bags (i.e. Ziploc®) that will not contact the sample media[6]	• Aluminium foil[4] • Chemical or blue ice[5] • Plastic storage bags other than those listed as ■ Allowable • Low-density polyethylene (LDPE) bottles

Field Documentation

● Prohibited	■ Allowable	▲Needs Screening[2]
• Clipboards coated with PFAS • Notebooks made with PFAS treated paper • PFAS treated loose paper • PFAS treated adhesive paper products	• Loose paper (non-waterproof, non-recycled) • Rite in the Rain® notebooks • Aluminium, polypropylene, or Masonite field clipboards • Ballpoint pens, pencils, and Fine or Ultra-Fine Point Sharpie® markers	• Plastic clipboards, binders, or spiral hard cover notebooks • All markers not listed as ■ Allowable • Post-It® Notes or other adhesive paper products • Waterproof field books

Decontamination

● Prohibited	■ Allowable	▲Needs Screening[2]
• Decon 90® • PFAS treated paper towel	• Alconox®, Liquinox®, or Citranox® • Triple rinse with PFAS-free deionized water • Cotton cloth or untreated paper towel	• Municipal water • Recycled paper towels or chemically treated paper towels

Clothing, Boots, Rain Gear, and PPE

● Prohibited	■ Allowable	▲Needs Screening[2]
• New or unwashed clothing • Anything made of or with: ○ Gore-Tex™ or other water-resistant synthetics • Anything applied with or recently washed with: ○ Fabric softeners ○ Fabric protectors, including UV protection ○ Insect resistant chemicals ○ Water, dirt, and/or stain resistant chemicals	• Powderless nitrile gloves • Well-laundered synthetic or 100% cotton clothing, with most recent launderings not using fabric softeners • Made of or with: ○ Polyurethane ○ Polyvinyl chloride (PVC) ○ Wax coated fabrics ○ Rubber / Neoprene ○ Uncoated Tyvek®	• Latex gloves • Water and/or dirt resistant leather gloves • Any special gloves required by a HASP • Tyvek® suits, clothing that contains Tyvek®, or coated Tyvek®

Food and Beverages

● Prohibited	■ Allowable
• No food should be consumed in the staging or sampling areas, including pre-packaged food or snacks. ■ If consuming food on-site becomes necessary, move to the staging area and remove PPE. After eating, wash hands thoroughly and put on new PPE.	• Brought and consumed only outside the vicinity of the sampling area: ○ Bottled water ○ Hydration drinks (i.e. Gatorade®, Powerade®)

Personal Care Products (PCPs) - for day of sample collection[6]

● Prohibited	■ Allowable	▲Needs Screening[2]
• Any PCPs[6], sunscreen, and insect repellent applied in the sampling area.	PCPs[6], sunscreens, and insect repellents applied in the staging area, away from sampling bottles and equipment followed by thoroughly washing hands: **PCPs[6]:** • Cosmetics, deodorants/antiperspirants, moisturizers, hand creams, and other PCPs[6] **Sunscreens:** • Banana Boat® for Men Triple Defense Continuous Spray Sunscreen SPF 30 • Banana Boat® Sport Performance Coolzone Broad Spectrum SPF 30 • Banana Boat® Sport Performance Sunscreen Lotion Broad Spectrum SPF 30 • Banana Boat® Sport Performance Sunscreen Stick SPF 50 • Coppertone® Sunscreen Lotion Ultra Guard Broad Spectrum SPF 50 • Coppertone® Sport High Performance AccuSpray Sunscreen SPF 30 • Coppertone® Sunscreen Stick Kids SPF 55 • L'Oréal® Silky Sheer Face Lotion 50 • Meijer® Clear Zinc Sunscreen Lotion Broad Spectrum SPF 50 • Meijer® Sunscreen Continuous Spray Broad Spectrum SPF 30 • Meijer® Clear Zinc Sunscreen Lotion Broad Spectrum SPF 15, 30 and 50 • Meijer® Wet Skin Kids Sunscreen Continuous Spray Broad Spectrum SPF 70 • Neutrogena® Beach Defense Water+Sun Barrier Lotion SPF 70 • Neutrogena® Beach Defense Water+Sun Barrier Spray Broad Spectrum SPF 30 • Neutrogena® Pure & Free Baby Sunscreen Broad Spectrum SPF 60+ • Neutrogena® UltraSheer Dry-Touch Sunscreen Broad Spectrum SPF 30 **Insect Repellents:** • OFF® Deep Woods • Sawyer® Permethrin	• Products other than those listed as ■Allowable

[1] This table is not considered to be a complete listing of prohibited or allowable materials. All materials should be evaluated prior to use during sampling. The manufacturers of various products should be contacted in order to determine if PFAS was used in the production of any particular product.

[2] Equipment blank samples should be taken to verify these products are PFAS-free prior to use during sampling.

[3] **For surface water foam samples:** LDPE storage bags may be used in the sampling of foam on surface waters. In this instance, it is allowable for the LDPE bag to come into direct contact with the sample media.

[4] **For fish and other wildlife samples:** Depending on the project objectives, glass jars and aluminum foil might be used for PFAS sampling. PFAS has been found to bind to glass and if the sample is stored in a glass jar, a rinse of the jar is required during the sample analysis. PFAS are sometimes used as a protective layer for some aluminum foils. An equipment blank sample should be collected prior to any aluminum foil use.

[5] Regular ice is recommended as there are concerns that chemical and blue ice may not cool and maintain the sample at or below 42.8°F (6°C) (as determined by EPA 40 CFR 136 – NPDES) during collection and through transit to the laboratory.

[6] Based on evidence, avoidance of PCPs is considered to be precautionary because none have been documented as having cross-contaminated samples due to their use. However, if used, application of PCPs must be done at the staging area and away from sampling bottles and equipment, and hands must be thoroughly washed after the use of any PCPs prior to sampling.

●- Prohibited ■- Allowable ▲- Needs Screening

Attachment C: Soil Cleanup Objectives

Department of Environmental Conservation

Division of Environmental Remediation

6 NYCRR PART 375

Environmental Remediation Programs

Effective December 31, 2025

New York State Department of Environmental Conservation

Subpart 375-6 Remedial Program Soil Cleanup Objectives

375-6.1 Purpose; applicability.
375-6.2 Definitions.
375-6.3 Unrestricted use soil cleanup objectives.
375-6.4 Restricted use soil cleanup objectives for the protection of public health.
375-6.5 Soil cleanup objectives for the protection of groundwater.
375-6.6 Soil cleanup objectives for the protection of ecological resources.
375-6.7 Other considerations and media.
375-6.8 Soil cleanup objective tables.
375-6.9 Development or modification of soil cleanup objectives.

375-6.1 Purpose; applicability.

(a) This Subpart applies to the development and implementation of the remedial programs for soil and other media set forth in Subparts 375-2 through 375-4 of this Part.

(b) This Subpart includes the soil cleanup objective tables developed pursuant to ECL 27-1415(6).

375-6.2 Definitions.

(a) *Contract required quantitation limit* or *CRQL* means the minimum level of quantitation acceptable for department analytical services contracts. The value represents minimum quantitation limits, not absolute detection limits. The minimum quantitation limit is the lowest level at which the analytical instrument can determine the concentration of a chemical that exists in the sample. The detection limit is the minimum level at which the analytical instrument can confirm the presence of the chemical in the sample. At the detection limit, the analytical instrument can confirm that there is some amount of the chemical in the sample but cannot determine the concentration that exists with certainty.

(b) *Technical support document* means the *New York State Brownfield Cleanup Program Development of Soil Cleanup Objectives Technical Support Document* dated September 2006, as amended by the *2019 Soil Cleanup Objective Technical Support Document Update* which is the document that presents the assumptions, rationale, algorithms and calculations utilized by the department and the New York State Department of Health to develop the soil cleanup objectives in ECL 27-1415(6).

375-6.3 Unrestricted use soil cleanup objectives.

(a) Applicability. The unrestricted use soil cleanup objectives represent the concentration of a contaminant in soil which, when achieved at a site, will require no use restrictions on the site for the protection of public health, groundwater and ecological resources due to the presence of contaminants in the soil.

(b) Soil cleanup objectives.

(1) The calculated values for the protection of groundwater, ecological resources and public health were considered in developing the unrestricted use soil cleanup

objectives. The unrestricted soil cleanup objectives in Table 375-6.8(a) of this Subpart represent the lowest of the three values for protection of groundwater, ecological resources and public health developed as set forth in ECL 27-1415(6).

(2) Unrestricted use, as set forth in section 375-1.8(g)(1)(i) of this Part, is achieved when a remedial program for soil meets the unrestricted use soil cleanup objectives in Table 375-6.8(a) of this Subpart.

375-6.4 Restricted use soil cleanup objectives for the protection of public health.

(a) Applicability. A protection of public health soil cleanup objective is applicable for the protection of public health at every restricted use site where contamination has been identified in soil above the residential use soil cleanup objectives for a compound included in Table 375-6.8(b) of this Subpart, and the department has determined that remediation is required to protect public health.

(b) Soil cleanup objectives. Protection of public health soil cleanup objectives have been developed for:

(1) Residential use, as set forth in section 375-1.8(g)(2)(i) of this Part. The residential use soil cleanup objectives are presented in the protection of public health-residential use column of Table 375-6.8(b) of this Subpart.

(2) Restricted-residential use, as set forth in section 375-1.8(g)(2)(ii) of this Part. The restricted-residential use soil cleanup objectives are presented in the protection of public health, restricted-residential use column of Table 375-6.8(b) of this Subpart.

(3) Commercial use, as set forth in section 375-1.8(g)(2)(iii) of this Part. The commercial use soil cleanup objectives are presented in the protection of public health-commercial use column of Table 375-6.8(b) of this Subpart.

(4) Industrial use, as set forth in section 375-1.8(g)(2)(iv) of this Part. The industrial use soil cleanup objectives are presented in the protection of public health-industrial use column of Table 375-6.8(b) of this Subpart.

(c) Selection of the restricted use soil cleanup objectives. In addition to the protection of public health soil cleanup objective for the identified use of the site, protection of groundwater and ecological resources soil cleanup objectives shall be considered where applicable. The contaminant-specific soil cleanup objectives for the soil cleanup component of the remedial program shall be the lowest of the applicable contaminant-specific soil cleanup objectives which are identified for the site as set forth in paragraphs (1) through (3) of this subdivision.

(1) The protection of groundwater soil cleanup objectives in Table 375-6.8(b) of this Subpart will be applicable to the site and evaluated in determining the soil cleanup objectives for a site as set forth in section 375-6.5 of this Title.

(2) The protection of ecological resources soil cleanup objectives in Table 375-6.8(b) of this Subpart will be applicable to the site and evaluated in determining the soil cleanup objectives in section 375-6.6 of this Subpart.

(3) The protection of public health soil cleanup objective for the current, intended and reasonably anticipated future use of the site in Table 375-6.8(b) of this Subpart will

be applicable and evaluated in determining the soil cleanup objectives for every site, unless a site-specific soil cleanup objective is proposed.

375-6.5 Soil cleanup objectives for the protection of groundwater.

(a) Applicability. Except as provided in paragraphs (1) and (2) of this subdivision, the protection of groundwater soil cleanup objectives are applicable at restricted use sites where contamination has been identified in on-site soil by the remedial investigation and groundwater standards are, or are threatened to be, contravened by the presence of soil contamination at concentrations above the protection of groundwater soil cleanup objectives.

(1) The protection of groundwater soil cleanup objectives may not be applicable where:

(i) the groundwater standard contravention is the result of an on-site source which is addressed by the remedial program;

(ii) an environmental easement will be put in place which provides for a groundwater use restriction on the site as set forth in section 375-1.8(h)(2) of this Part;

(iii) the department determines that contaminated groundwater at the site:

(*a*) is not migrating, or likely to migrate, off-site; or

(*b*) is migrating, or is likely to migrate, off-site, however, the remedy includes controls or treatment to address off-site migration; and

(iv) the department determines the groundwater quality will improve over time.

(2) The protection of groundwater soil cleanup objectives are not applicable if the contravention of groundwater standards at the site is determined to be solely the result of an off-site source, as set forth in section 375-1.8(d)(2) of this Part.

(b) Soil cleanup objectives. The protection of groundwater soil cleanup objectives are in Table 375-6.8(b) of this Subpart in the protection of groundwater column.

375-6.6 Soil cleanup objectives for the protection of ecological resources.

(a) Applicability. The soil cleanup objectives for protection of ecological resources must be considered and applied as set forth in this section for the upland soils at sites where terrestrial flora and fauna and the habitats that support them are identified.

(1) Protection of ecological resources soil cleanup objectives apply to sites or portions of sites where the department determines:

(i) ecological resources are present at or adjacent to the site, or will be present under the reasonably anticipated future use of the site, as set forth in subdivision (b) of this section which constitute an important component of the environment

(ii) an impact or threat to the ecological resource has been identified as set forth in subdivision 375-6.6(c) of this section; and

(iii) soil contaminant concentrations exceed the protection of ecological resources soil cleanup objectives, as set forth in subdivision 375-6.6(d) of this section.

(2) Protection of ecological resources soil cleanup objectives do not and/or will not apply to:

(i) sites or portions of sites where the condition of the land (e.g., paved, covered by impervious surfaces, buildings and other structures) precludes the existence of an ecological resource which constitutes an important component of the environment;

(ii) protection of the aquatic environment; or

(iii) such non-wild biota as:

(*a*) pets or livestock;

(*b*) agricultural or horticultural crops; and

(*c*) landscaping in developed areas.

(b) Identification of ecological resources. The presence of ecological resources shall be determined during the investigation of a site.

(1) The remedial party for a remedial program undertaken pursuant to either Subpart 375-2 or 375-4 of this Part shall conduct an ecological resource characterization as part of a fish and wildlife impact analysis according to department guidance to document the presence of fish, wildlife, plants and habitats both on and adjacent to the site.

(2) The remedial party for a remedial program undertaken pursuant to Subpart 375-3 of this Part shall conduct a resource characterization as part of the qualitative exposure assessment required by ECL 27-1415(2)(b) and in accordance with department guidance to document the presence of fish, wildlife, plants and habitats both on and adjacent to the site.

(3) The department shall determine whether the characterization conducted as set forth in paragraphs (1) and (2) of this subdivision:

(i) has identified ecological resources to be present at or adjacent to a site, or a portion thereof; and

(ii) if such ecological resources constitute an important component of the environment at, or in the vicinity of, the site.

(c) Consideration of impact or threat of impact. If ecological resources that constitute an important component of the environment at, or adjacent to, the site are determined to be present the protection of ecological resources soil cleanup objectives must be considered in the remedial program for the site. An impact or threat of impact exists when:

(1) a threat to the environment exists, as set forth in sections 375-2.7(a)(1)(i) to (iv) of this Part, as a result of contaminants in the soil of the site, unless the department determines that a more stringent cleanup is necessary to meet the requirements of sections 375-2.8(a) and 375-2.8(b)(1) of this Part; or

(2) an ecological resource is, or is potentially, impacted by contaminants in the soil of the site.

(d) Soil cleanup objectives. The protection of ecological resources soil cleanup objectives are the same for both unrestricted and restricted use and are incorporated in the soil cleanup objective tables.

(1) For an unrestricted use site, Table 375-6.8(a) of this Subpart presents the lower of the protection of groundwater, ecological resources and unrestricted public health soil cleanup objectives, as calculated and presented in the technical support document.

(2) For a restricted use site, Table 375-6.8(b) of this Subpart includes a protection of ecological resources column, which is applicable to a site regardless of the identified use, as set forth in subdivision (a) of this section.

(3) Protection of ecological resources soil cleanup objectives were not developed for contaminants identified in Table 375-6.8(b) of this Subpart as *NS*. For such contaminants, the applicant may be required to calculate a protection of ecological resources soil cleanup objective for any site, as set forth in section 375-6.9 of this Subpart.

375-6.7 Other considerations and media.

(a) Soil vapor and vapor intrusion.

(1) The soil cleanup objectives presented in this Subpart do not account for the impact of concentrations of contaminants in soil relative to soil vapor or vapor intrusion attributable to a remedial site.

(2) The nature and extent of any contamination of the soil vapor media, if present at the site, will be evaluated by the remedial investigation.

(3) The remedy will be protective for soil vapor and vapor intrusion and shall address through appropriate removal or engineering controls the migration of contaminants in soil and groundwater at levels which could impact the indoor air of buildings.

(b) Surface water and sediments.

(1) The soil cleanup objectives presented in this Subpart do not account for the impact of contaminants in soil relative to surface water and surface water sediments attributable to a remedial site.

(2) The nature and extent of any contamination of the surface water and sediment, if present at the site, will be evaluated by the remedial investigation.

(3) The remedy for a site will eliminate or mitigate the threat to public health and the environment from contaminated surface water and surface water sediments and shall, to the extent feasible:

(i) remove, contain or treat the source of a discharge of contaminants from the site to the surface water and sediments;

(ii) address through appropriate removal or engineering controls the migration of contaminants in soil and groundwater at levels which could impact the water quality or adversely impact the sediments of a surface water body on or adjacent to the site; and

(iii) remove, contain or treat the impacted surface water and surface water sediments based upon the cleanup objectives developed for the remedial program.

(c) Adjacent residential properties.

(1) The soil cleanup objectives presented for commercial or industrial use in this Subpart do not directly account for the impact of concentrations of contaminants in soil relative to adjacent residential properties attributable to a remedial site.

(2) The remedy for a site using the commercial or industrial soil cleanup objectives will be protective of adjacent residential properties and shall address, through appropriate removal or engineering controls, the migration of contaminants in soil which could impact residential properties adjacent to the site.

(d) Soil covers and backfill.

(1) Soil brought to the site for use as a soil cover or backfill must not exceed the applicable soil cleanup objectives for the use of the site, as set forth in Table 375-6.8(a) or (b) of this Subpart, as follows:

(i) for unrestricted use sites, as set forth in Table 375-6.8(a) of this Subpart;

(ii) for residential, restricted-residential, and commercial use sites use the lower of the protection of groundwater or the protection of public health soil cleanup objectives, for the identified use of the site as set forth in Table 375-6.8(b) of this Subpart;

(iii) for industrial use sites, use the lower of the protection of groundwater or the protection of public health soil cleanup objectives for commercial use as set forth in Table 375-6.8(b) of this Subpart;

(iv) for restricted use sites where an ecological resource that constitutes an important component of the environment is determined to be present, the protection of ecological resources soil cleanup objective must also be considered, so as not to preclude the growth and development of plants and soil dwelling organisms nor inhibit the activity of burrowing organisms; or

(v) a site-specific modification to a soil cleanup objective, as set forth in section 375-6.9(e) of this Subpart, may also be utilized in compliance with clauses (ii)(*a*) through (*d*) of this subparagraph.

(2) Analytical data is required to demonstrate that the material complies with the requirements of paragraph (1) of this subdivision. The number of samples required to confirm compliance will be approved in the work plan. The department may issue a site-specific exemption for the analytical testing requirements, based upon documentation of the origin and composition of the material.

(3) The department may issue a site-specific exemption for one or more of the requirements set forth in paragraph (1) of this subdivision, based upon site-specific conditions, including but not limited to, the following:

(i) the use and redevelopment of the site;

(ii) the depth of placement of the backfill material;

(iii) the depth of placement of the backfill material relative to groundwater;
(iv) the volume of backfill material;
(v) the potential for odor from the backfill material;
(vi) a department issued beneficial use determination, pursuant to Part 360 of this Title; or
(vii) background levels of contamination in areas surrounding the site.

375-6.8 Soil cleanup objective tables.

Table 375-6.8(a). Unrestricted use soil cleanup objectives

Table 375-6.8(a). Unrestricted use soil cleanup objectives.

Contaminant	CAS Number	Unrestricted Use
Metals		
Arsenic	7440-38-2	13 [c]
Barium	7440-39-3	410 [c]
Beryllium	7440-41-7	4.4
Cadmium	7440-43-9	2.5 [c]
Chromium, hexavalent [e]	18540-29-9	1 [b]
Chromium, trivalent [e]	16065-83-1	30 [c]
Copper	7440-50-8	50
Total Cyanide [e, f]		2.3 [c]
Lead	7439-92-1	63 [c]
Manganese	7439-96-5	1600 [c]
Mercury (Total)		0.18 [c]
Nickel	7440-02-0	30
Selenium	7782-49-2	3.9 [c]
Silver	7440-22-4	2
Zinc	7440-66-6	109 [c]
PCBs/Pesticides		
4,4’-DDE	72-55-9	0.0033 [b]
4,4’-DDT	50-29-3	0.0033 [b]
4,4’-DDD	72-54-8	0.0033 [b]

Table 375-6.8(a). Unrestricted use soil cleanup objectives.

Contaminant	**CAS Number**	**Unrestricted Use**
Aldrin	309-00-2	0.0048 [c]
alpha-BHC	319-84-6	0.02
beta-BHC	319-85-7	0.021
Chlordane (alpha)	5103-71-9	0.014
delta-BHC [g]	319-86-8	0.04
Dieldrin	60-57-1	0.005 [c]
Endosulfan I [d, f]	959-98-8	4.3
Endosulfan II [d, f]	33213-65-9	4.3
Endosulfan sulfate [d, f]	1031-07-8	4.3
Endrin	72-20-8	0.014
Heptachlor	76-44-8	0.013
Lindane	58-89-9	0.025
Polychlorinated biphenyls	1336-36-3	0.1
Semivolatile organic compounds		
1,4 Dioxane	123-91-1	0.1 [b]
Acenaphthene	83-32-9	20
Acenaphthylene [f]	208-96-8	100 [a]
Anthracene [f]	120-12-7	100 [a]
Benz(a)anthracene [f]	56-55-3	1 [c]
Benzo(a)pyrene	50-32-8	1 [c]
Benzo(b)fluoranthene [f]	205-99-2	1 [c]

Table 375-6.8(a). Unrestricted use soil cleanup objectives.

Contaminant	**CAS Number**	**Unrestricted Use**
Benzo(g,h,i)perylene [f]	191-24-2	0.64
Benzo(k)fluoranthene [f]	207-08-9	0.8 [c]
Chrysene [f]	218-01-9	1 [c]
Dibenz(a,h)anthracene [f]	53-70-3	0.33 [b]
Dibenzofuran [f]	132-64-9	2.1
Fluoranthene [f]	206-44-0	85
Fluorene	86-73-7	30
Indeno(1,2,3-cd)pyrene [f]	193-39-5	0.5 [c]
m-Cresol [f]	108-39-4	0.33 [b]
Naphthalene [f]	91-20-3	12
o-Cresol [f]	95-48-7	0.33 [b]
p-Cresol [f]	106-44-5	0.33 [b]
Pentachlorophenol	87-86-5	0.8 [b]
Phenanthrene [f]	85-01-8	1.1 [c]
Phenol	108-95-2	0.33 [b]
Pyrene [f]	129-00-0	64
Volatile organic compounds		
1,1,1-Trichloroethane [f]	71-55-6	0.68
1,1-Dichloroethane [f]	75-34-3	0.27
1,1-Dichloroethene [f]	75-35-4	0.24
1,2-Dichlorobenzene [f]	95-50-1	1.1

Table 375-6.8(a). Unrestricted use soil cleanup objectives.

Contaminant	CAS Number	Unrestricted Use
1,2-Dichloroethane	107-06-2	0.02 [c]
cis -1,2-Dichloroethene [f]	156-59-2	0.19
trans-1,2-Dichloroethene [f]	156-60-5	0.19
1,3-Dichlorobenzene [f]	541-73-1	2.6
1,4-Dichlorobenzene	106-46-7	1.8
Acetone	67-64-1	0.03
Aniline	62-53-3	0.04
Benzene	71-43-2	0.06
n-Butylbenzene [f]	104-51-8	18
Carbon tetrachloride [f]	56-23-5	0.76
Chlorobenzene	108-90-7	4.5
Chloroform	67-66-3	0.37
Ethylbenzene [f]	100-41-4	1
Hexachlorobenzene [f]	118-74-1	0.33 [b]
Methyl ethyl ketone	78-93-3	0.10
Methyl tert-butyl ether [f]	1634-04-4	0.1
Methylene chloride	75-09-2	0.05
Nitrobenzene	98-95-3	0.08[c]
n – Propylbenzene [f]	103-65-1	5
sec-Butylbenzene [f]	135-98-8	25
tert-Butylbenzene [f]	98-06-6	11

Table 375-6.8(a). Unrestricted use soil cleanup objectives.

Contaminant	CAS Number	Unrestricted Use
Tetrachloroethene	127-18-4	1.3
Toluene	108-88-3	0.7
Trichloroethene	79-01-6	0.47
1,2,4-Trimethylbenzene [f]	95-63-6	5.9
1,3,5-Trimethylbenzene [f]	108-67-8	3.1
Vinyl chloride [f]	75-01-4	0.03
Xylene (mixed)	1330-20-7	0.26
All soil cleanup objectives are in parts per million (ppm).		

[a.] The soil cleanup objectives for unrestricted use were capped at a maximum value of 100 ppm. See the New York State Department of Environmental Conservation Technical Support Document (2006), section 9.3.
[b.] For constituents where the calculated soil cleanup objective was lower than the contract required quantitation limit, the contract required quantitation limit is used as the Track 1 soil cleanup objective value.
[c.] For constituents where the calculated soil cleanup objective was lower than the rural soil background concentration, the rural soil background concentration is used as the Track 1 soil cleanup objective value for this use of the site. See the New York State Department of Environmental Conservation Technical Support Document (2006), Section 9 and Appendix D.
[d.] The soil cleanup objective is the sum of endosulfan I, endosulfan II, and endosulfan sulfate.
[e.] The soil cleanup objective for this specific compound (or family of compounds) is met if the analysis for the total species of this contaminant is below the specific soil cleanup objective.
[f.] Protection of ecological resources soil cleanup objectives were not developed for contaminants identified in Table 375-6.8(b) with “NS”. Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the department to calculate a protection of ecological resources soil cleanup objective according to the New York State Department of Environmental Conservation Technical Support Document (2006).
[g] This soil cleanup objective is derived from data on mixed isomers of BHC.

Table 375-6.8(b). Restricted use soil cleanup objectives.

Table 375-6.8(b) Restricted use soil cleanup objectives.

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted Residential	Commercial	Industrial		
Metals							
Arsenic	7440-38-2	16 [f]	16 [f]	16 [f]	16 [f]	13 [f]	16 [f]
Barium	7440-39-3	410	410	410	10,000 [d]	433	820
Beryllium	7440-41-7	8.8	43	670	750	10	47
Cadmium	7440-43-9	2.5 [f]	2.5 [f]	3.7	4.4	4	7.5
Chromium, hexavalent [h]	18540-29-9	1 [e]	1 [e]	11	11	20	19
Chromium, trivalent [h]	16065-83-1	30 [f]	110	1,700	2,000	160	NS
Copper	7440-50-8	280	280	280	10,000 [d]	50	1720
Total Cyanide [h]		2.6	13	28	240	NS	40
Lead	7439-92-1	400	400	1,000	3,900	63 [f]	450
Manganese	7439-96-5	2,000 [f]	2,000 [f]	10,000 [d]	10,000 [d]	1600 [f]	2,000 [f]
Mercury (Total)		0.30 [j]	0.30 [j]	1.1 [j]	1.1 [j]	0.18 [f]	0.73
Nickel	7440-02-0	87	320	320	5,900	30	130
Selenium	7782-49-2	22	110	1,700	2,000	3.9 [f]	4 [f]
Silver	7440-22-4	22	110	1,700	2,000	2	8.3
Zinc	7440-66-6	1,300	6,600	10,000 [d]	10,000 [d]	109 [f]	2,480
PCBs/Pesticides							
4,4’-DDE	72-55-9	0.78	3.4	22	22	0.0033 [e]	9.3

Table 375-6.8(b) Restricted use soil cleanup objectives.

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted Residential	Commercial	Industrial		
4,4'-DDT	50-29-3	0.78	3.8	27	27	0.0033 [e]	135
4,4'- DDD	72-54-8	1.2	5	33	33	0.0033 [e]	14
Aldrin	309-00-2	0.0088	0.044	0.33	0.33	0.14	0.19
alpha-BHC	319-84-6	0.042	0.18	1.2	1.2	0.04 [g]	0.02
beta-BHC	319-85-7	0.042	0.18	1.8	2.9	0.6	0.09
Chlordane (alpha)	5103-71-9	0.14	0.65	8.2	11	1.3	4.5
delta-BHC	319-86-8	100	100 [a]	500 [b]	1,000 [c]	0.04 [g]	0.1
Dieldrin	60-57-1	0.017	0.075	0.48	0.48	0.006	0.1
Endosulfan I	959-98-8	8.4 [i]	35 [i]	360 [i]	580 [i]	NS	65
Endosulfan II	33213-65-9	8.4 [i]	35 [i]	360 [i]	580 [i]	NS	44
Endosulfan sulfate	1031-07-8	8.4 [i]	35 [i]	360 [i]	580 [i]	NS	47 [c]
Endrin	72-20-8	1.2	5.3	55	87	0.014	0.06
Heptachlor	76-44-8	0.12	0.53	5.1	5.1	0.14	0.38
Lindane	58-89-9	0.05	0.21	0.21	3.4	6	0.05
Polychlorinated biphenyls	1336-36-3	1	1	1	25	1	3.2
Semivolatiles							
1,4-Dioxane	123-91-1	1.4	5.7	36	36	0.1 [e]	0.1 [e]
Acenaphthene	83-32-9	100 [a]	100 [a]	500 [b]	1,000 [c]	20	98

Table 375-6.8(b) Restricted use soil cleanup objectives.

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted Residential	Commercial	Industrial		
Acenaphthylene	208-96-8	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	365
Anthracene	120-12-7	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	1,000 [c]
Benz(a)anthracene	56-55-3	1 [f]	1.4	37	37	NS	1 [f]
Benzo(a)pyrene	50-32-8	1 [f]	1 [f]	3.7	3.7	2.6	22
Benzo(b)fluoranthene	205-99-2	1 [f]	1.4	37	37	NS	2.1
Benzo(g,h,i)perylene	191-24-2	1.2	4.9	47	78	NS	1,000 [c]
Benzo(k)fluoranthene	207-08-9	1.2	4.9	47	78	NS	2
Chrysene	218-01-9	1.2	4.9	47	78	NS	1 [f]
Dibenz(a,h) anthracene	53-70-3	0.33 [e]	0.33 [e]	3.7	3.7	NS	1,000 [c]
Dibenzofuran	132-64-9	4.2	18	180	290	NS	110
Fluoranthene	206-44-0	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	1,000 [c]
Fluorene	86-73-7	100 [a]	100 [a]	500 [b]	1,000 [c]	30	386
Indeno(1,2,3-cd) pyrene	193-39-5	0.5 [f]	1.4	37	37	NS	6.6
m-Cresol	108-39-4	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	0.33 [e]
Naphthalene	91-20-3	84 [a]	100 [a]	500 [b]	1,000 [c]	NS	12
o-Cresol	95-48-7	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	0.33 [e]
p-Cresol	106-44-5	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	0.33 [e]
Pentachlorophenol	87-86-5	0.8 [e]	1.3	6.9	7	0.8 [e]	0.8 [e]

Table 375-6.8(b) Restricted use soil cleanup objectives.

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted Residential	Commercial	Industrial		
Phenanthrene	85-01-8	1.2	4.9	47	78	NS	1,000 [c]
Phenol	108-95-2	100 [a]	100 [a]	500 [b]	1,000 [c]	30	0.33 [e]
Pyrene	129-00-0	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	1,000 [c]
Volatiles							
1,1,1-Trichloroethane	71-55-6	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	0.68
1,1-Dichloroethane	75-34-3	19	47	240	240	NS	0.27
1,1-Dichloroethene	75-35-4	0.41	0.98	5.1	5.1	NS	0.33
1,2-Dichlorobenzene	95-50-1	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	1.1
1,2-Dichloroethane	107-06-2	2.4	5.8	30	30	10	0.02
cis-1,2-Dichloroethene	156-59-2	8.7	41	500 [b]	590	NS	0.19
trans-1,2-Dichloroethene	156-60-5	75	100 [a]	500 [b]	1,000 [c]	NS	0.19
1,3-Dichlorobenzene	541-73-1	11	38	280	280	NS	2.6
1,4-Dichlorobenzene	106-46-7	10	24	130	130	20	1.8
Acetone	67-64-1	100 [a]	100 [b]	500 [b]	1,000 [c]	2.2	0.03
Aniline	62-53-3	6.7	8.1	36	36	32	0.04
Benzene	71-43-2	1.2	3.7	20	20	70	0.06
n-Butylbenzene	104-51-8	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	18
Carbon tetrachloride	56-23-5	1.9	7.1	41	41	NS	0.76

Table 375-6.8(b) Restricted use soil cleanup objectives.

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted Residential	Commercial	Industrial		
Chlorobenzene	108-90-7	73	100 [a]	500 [b]	1,000 [c]	40	4.5
Chloroform	67-66-3	4.8	24	180	180	12	0.37
Ethylbenzene	100-41-4	32	76	390	390	NS	1
Hexachlorobenzene	118-74-1	0.33 [e]	0.33 [e]	1.8	2.9	NS	3.2
Methyl ethyl ketone	78-93-3	100 [a]	100 [a]	500 [b]	1,000 [c]	100 [a]	0.10
Methyl tert-butyl ether	1634-04-4	40	100 [a]	500 [b]	890	NS	0.1
Methylene chloride	75-09-2	17	81	500 [b]	1,000 [c]	12	0.05
Nitrobenzene	98-95-3	0.77	1.8	8.9	8.9	2	0.08[f]
n-Propylbenzene	103-65-1	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	5
sec-Butylbenzene	135-98-8	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	25
tert-Butylbenzene	98-06-6	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	11
Tetrachloroethene	127-18-4	15	18	81	81	2	1.3
Toluene	108-88-3	100 [a]	100 [a]	500 [b]	1,000 [c]	36	0.7
Trichloroethene	79-01-6	1.7	6.4	54	54	2	0.47
1,2,4-Trimethylbenzene	95-63-6	41	100 [a]	500 [b]	1,000 [c]	NS	5.9
1,3,5-Trimethylbenzene	108-67-8	41	100 [a]	500 [b]	1,000 [c]	NS	3.1
Vinyl chloride	75-01-4	0.099	0.48	7.1	7.1	NS	0.03
Xylene (mixed)	1330-20-7	100 [a]	100 [a]	500 [b]	1,000 [c]	0.26	1.2

Table 375-6.8(b) Restricted use soil cleanup objectives.

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted Residential	Commercial	Industrial		
All soil cleanup objectives are in parts per million (ppm).							
NS = Not specified. See New York State Department of Environmental Conservation Technical Support Document (2006).							

[a.] The soil cleanup objectives for residential, restricted-residential, and ecological resources use were capped at a maximum value of 100 ppm. See New York State Department of Environmental Conservation Technical Support Document (2006) section 9.3.
[b.] The soil cleanup objectives for commercial use were capped at a maximum value of 500 ppm. See New York State Department of Environmental Conservation Technical Support Document (2006) section 9.3.
[c.] The soil cleanup objectives for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See New York State Department of Environmental Conservation Technical Support Document (2006) section 9.3.
[d.] The soil cleanup objectives for metals were capped at a maximum value of 10,000 ppm. See New York State Department of Environmental Conservation Technical Support Document (2006) section 9.3.
[e.] For constituents where the calculated soil cleanup objective was lower than the contract required quantitation limit, the contract required quantitation limit is used as the soil cleanup objective value.
[f.] For constituents where the calculated soil cleanup objective was lower than the rural soil background concentration, the rural soil background concentration is used as the Track 2 soil cleanup objective value for this use of the site. See the New York State Department of Environmental Conservation Technical Support Document (2006), Section 9 and Appendix D.
[g.] This soil cleanup objective is derived from data on mixed isomers of BHC.
[h.] The soil cleanup objective for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific soil cleanup objective.
[i.] This soil cleanup objective is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.
[j.] Protection of public health soil cleanup objectives for total mercury are based on either the rural soil background concentration for total mercury (0.3 ppm or 0.18 ppm for habitat) or the most toxic mercury form that may be present in soil samples. If total mercury is found in soil

above the published soil cleanup objective, then subsequent analysis of the separate species of mercury can be taken into consideration during the remedy selection process.

375-6.9 Development or modification of soil cleanup objectives.

(a) Applicability. This section identifies when and the procedures under which a contaminant-specific soil cleanup objective may be developed or modified.

(1) Soil cleanup objectives for contaminants not included in Tables 375-6.8(a) and (b) of this Subpart may be developed by the remedial party or required by the department.

(2) Soil cleanup objectives for contaminants included in Tables 375-6.8(a) and (b) of this Subpart, may be modified based on site-specific data if desired by the remedial party; as set forth in:

(i) Subpart 375-3 for Tracks 3 or 4, as set forth in section 375-3.8(e)(3) or (4), respectively of this Part; or

(ii) Subparts 375-2 and 375-4 of this Part, as set forth in sections 375-2.8(b)(1)(iii) and 375-4.8(c)(1)(iii) of this Part.

(3) Protection of ecological resources soil cleanup objectives were not developed for certain contaminants, which are identified in Table 375-6.8(b) of this Subpart as *NS*. Where such contaminants:

(i) appear in Table 375-6.8(a) of this Subpart, the applicant may be required by the department to calculate a protection of ecological resources soil cleanup objective for the contaminant for use in Track 1 and apply such soil cleanup objective where it is lower than the soil cleanup objective set forth in Table 375-6.8(a) of this Subpart; or

(ii) are identified as impacting or threatening an ecological resource for a restricted use remedial program the department may require a protection of ecological resources soil cleanup objective be developed.

(b) New soil cleanup objectives must:

(1) Be developed utilizing the same methodologies that were used by the department to develop the respective soil cleanup objective, as provided in the technical support document.

(2) Apply the following caps, as set forth in section 9.3 of the technical support document, on any soil cleanup objective included in Tables 375-6.8(a) and (b) of this Subpart, with the exception of metals, as set forth in paragraph (3) of this subdivision, developed for:

(i) unrestricted use, residential use, restricted-residential use and the protection of ecological resources, a maximum value of 100 ppm;

(ii) commercial use, a maximum value of 500 ppm; and

(iii) industrial use and the protection of groundwater a maximum value of 1,000 ppm, and

(3) Apply a cap for metals at a maximum value of 10,000 ppm. This cap does not apply to metals which may naturally occur in some areas above that level including aluminum, calcium, iron, magnesium and potassium.

(c) Development of unrestricted use soil cleanup objectives. The unrestricted use soil cleanup objective for a compound will be the lowest of the soil cleanup values, calculated as set forth in appendix E of the technical support document, for the protection of groundwater, protection of ecological resources and protection of public health.

(d) Development of restricted use soil cleanup objectives. The protection of:

(1) Groundwater soil cleanup objective will be the values calculated for the protection of groundwater as set forth in appendix E of the technical support document;

(2) Ecological resources soil cleanup objectives will be the values calculated for the protection of ecological resources as set forth in appendix E of the technical support document; and

(3) Public health cleanup objective will be the values calculated for the protection of public health for the identified use of the site, as set forth in appendix E of the technical support document.

(e) Modification of soil cleanup objectives. The contaminant specific soil cleanup objectives set forth at Tables 375-6.8(a) and (b) of this Subpart may be modified by site-specific data as set forth in this subdivision.

(1) Contaminant specific soil cleanup objectives modified in accordance with this subdivision may be utilized by the remedial party for a site remedial program undertaken pursuant to:

(i) Subpart 375-3 in Tracks 3 or 4, as set forth in section 375-3.8(e)(3) or (4), respectively of this Part; or

(ii) Subparts 375-2 and 375-4 of this Part, as set forth in sections 375-2.8(b)(1)(ii) and 375-4.8(c)(1)(ii) of this Part.

(2) For the calculation of a protection of groundwater or ecological resources contaminant specific soil cleanup objective, the site-specific percentage of total organic carbon in the soil at the site may be substituted in the algorithms provided in appendix E of the technical support document.

(3) For the calculation of a protection of public health contaminant specific soil cleanup objective, site-specific data may be used to modify two of the five exposure pathways, as follows:

(i) for the particulate inhalation pathway six parameters rely on site-specific data; and

(ii) for the volatile inhalation pathway, four parameters rely on site-specific data.

(4) The algorithms to be used for each protection of public health pathway and details on the parameters which can be substituted are included in appendix E of the technical support document.

(f) Use of soil cleanup objectives developed or modified. Once approved by the department, contaminant specific soil cleanup objectives developed or modified as set forth in

this section may be utilized by the department at other sites consistent with paragraphs (1) and (2) of this subdivision.

(1) Contaminant specific soil cleanup objectives developed for contaminants not included in Tables 375-6.8(a) and (b) of this Subpart, as set forth in subdivision 375-6.9(b) of this section, will be used as guidance and shall be considered by the department for inclusion in the Tables in this Subpart during any subsequent reevaluation of the soil cleanup objectives, as set forth by ECL 27-1415.

(2) Contaminant specific soil cleanup objectives modified for site-specific parameters, as set forth in subdivision 375-6.9(e) of this section, may be utilized at sites manifesting similar parameters, if approved by the department.

CP-51 / Soil Cleanup Guidance

New York State Department of Environmental Conservation

DEC Policy

Issuing Authority: Alexander B. Grannis, Commissioner

Date Issued: October 21, 2010	**Latest Date Revised:**

I. Summary

This policy provides the framework and procedures for the selection of soil cleanup levels appropriate for each of the remedial programs in the New York State Department of Environmental Conservation (DEC) Division of Environmental Remediation (DER). This policy applies to the Inactive Hazardous Waste Disposal Site Remedial Program, known as the State Superfund Program (SSF); Brownfield Cleanup Program (BCP); Voluntary Cleanup Program (VCP); Environmental Restoration Program (ERP); Spill Response Program - Navigation Law (NL) section 176 (SRP); and the Resource Conservation and Recovery Act (RCRA) Corrective Action Program. It replaces *Technical and Administrative Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels* (January 24, 1994); the *Petroleum Site Inactivation and Closure Memorandum* (February 23, 1998); and Sections III and IV of *Spill Technology and Remediation Series (STARS) #1* (August 1992).

This document is used in conjunction with the applicable statutes, regulations and guidance. Site-specific soil cleanup levels, determined in accordance with this guidance, are only applied after:

- the site, or area of concern, is fully investigated to determine the nature and extent of contamination;
- all sources of contamination are addressed consistent with the hierarchy provided in 6 NYCRR 375-1.8(c) or consistent with the RCRA Corrective Action Program (as appropriate);
- groundwater, if contaminated, has been evaluated for appropriate remedial actions consistent with 6 NYCRR 375-1.8(d) or consistent with the RCRA Corrective Action Program (as appropriate); and
- impacts on adjacent residential properties, surface water, aquatic ecological resources are evaluated, as well as indoor air, soil vapor, vapor intrusion and other appropriate media.

II. Policy

It is DEC's policy, consistent with applicable statutes and regulations, that all remedies will be protective of public health and the environment. DEC's preference is that remedial programs, including the selection of soil cleanup levels, be designed such that the performance standard results in the implementation of a permanent remedy resulting in no future land use restrictions. However, some of

DEC's remedial programs are predicated on future site use. Further, it is not always feasible to return to a condition where no restrictions are required.

The procedures set forth herein are intended for the use and guidance of both DEC and remedial parties to provide a uniform and consistent process for the determination of soil cleanup levels. This guidance is not intended to create any substantive or procedural rights, enforceable by any party in administrative or judicial litigation with DEC. DEC reserves the right to act at variance with these procedures to address site-specific circumstances and to change the procedures in this guidance at any time.

Please note that this guidance focuses only on soil cleanup levels. All remedies must be fully protective of public health and the environment and must prevent further off-site migration to the extent feasible, with special emphasis on preventing or minimizing migration onto adjacent residential properties. A remedial party is required to evaluate and investigate, if necessary, all environmental media including soil, groundwater, surface water, sediments, soil vapor, ambient air, and biota. [See 6 NYCRR 375-1.8(a)(6) or RCRA Corrective Action Program (as appropriate)]. This investigation will determine if any of the referenced media are, or may be, impacted by site contamination. Applicable guidance should be consulted for media other than soil.

Nothing contained in this guidance, in itself, forms the basis for changes to previously selected remedies. However, a change in the site remedy may be considered consistent with *DER-2: Making Changes to Selected Remedies* (April 1, 2008). [See Section VI, Related References.] To the extent that a change to a selected remedy at a site in one of DER's remedial programs is necessary as provided in DER-2, as applicable, the Soil Cleanup Objectives (SCOs) may be considered in the evaluation of appropriate changes to the selected remedy. For sites in other programs, applicable regulations and guidance must be used.

III. Purpose and Background

DEC has a number of different remedial programs that were developed over time based on separate and distinct authorities. These programs use different procedures to determine the extent of soil cleanup necessary to satisfy the remedial program goals. The purpose of this document is to set forth how soil cleanup levels are selected for the different programs.

Legislation establishing New York State's Brownfield Cleanup Program (Article 27, Title 14 of the Environmental Conservation Law [ECL]) required DEC, in consultation with the New York State Department of Health (NYSDOH), to develop an approach for the remediation of contamination at brownfield sites. The resulting regulation includes seven sets of SCOs. Four sets provide for the protection of public health for different land uses (residential, restricted residential, commercial, and industrial); two sets provide for the protection of other resources (groundwater and ecological resources); and one set includes SCOs for protection of public health and the environment for all uses (unrestricted use).

With the promulgation of the SCOs, it is necessary to discuss how the SCOs, and soil cleanup levels generally, are arrived at for a specific site. Some key definitions in understanding how cleanup levels for soil are arrived at follow.

Feasible, which means suitable to site conditions, capable of being successfully carried out with available technology, implementable and cost effective [see 6 NYCRR 375-1.2(s)].

Presumptive remedy, which means a technology or technique where experience has shown the remedy to be a proven solution for specific types of sites and/or contaminant classes [See *DER-15: Presumptive/Proven Remedial Technologies* February 27, 2007. Refer to Section VI, Related References.]

Soil cleanup level, which means the concentration of a given contaminant for a specific site that must be achieved under a remedial program for soil. Depending on the regulatory program, a soil cleanup level may be based on the regulation [6 NYCRR 375-6.8(a) or (b)], modified from the regulatory value based on site-specific differences, or based on other information, including background levels or feasibility. Soil cleanup levels may include:

- SCOs promulgated at 6 NYCRR 375-6;
- Supplemental Soil Cleanup Objectives (SSCOs);
- a "totals" approach for a family of contaminants known as Polycyclic Aromatic Hydrocarbons (PAHs);
- Presumptive remedy for Polychlorinated Biphenyls (PCBs); and
- Nuisance Condition.

Soil Cleanup Objective (SCO), which means the chemical concentrations for soil cleanup of individual chemicals contained in 6 NYCRR 375-6.8(a) or (b). The SCOs were developed using the process outlined in the Technical Support Document (TSD). The SCOs and the SSCOs defined below are applicable statewide and do not account for many site-specific considerations which could potentially result in higher levels. Soil concentrations that are higher than the SCOs and SSCOs are not necessarily a health or environmental concern. When an SCO (or SSCO) is exceeded, the degree of public health or environmental concern depends on several factors, including the magnitude of the exceedance, the accuracy of the exposure estimates, other sources of exposure to the contaminant, and the strength and quality of the available toxicological information on the contaminant.

Supplemental Soil Cleanup Objective (SSCO), which means a) an existing soil cleanup level for a contaminant which had been included in former TAGM 4046 and was not included in 6 NYCRR 375-6; b) has been developed using the same process used for development of the SCOs; and c) new cleanup levels for soil developed by the remedial party following the approach detailed in Appendix E of the TSD. The TSD provides information relative to the development of cleanup objectives for soil that are not set forth in 6 NYCRR 375-6. Cleanup objectives that have been established at the direction of DEC or the election of remedial parties are included in Table 1.

Technical Support Document (TSD), which refers to the document dated December 2006 detailing the development of the SCOs that were promulgated in 6 NYCRR 375-6. It provides the technical background and provides a detailed discussion of the considerations for development of the SCOs for the different land uses and exposure pathways. The TSD is available on DEC's website [see Section VI, Related References].

The purpose of this guidance is NOT to focus on media other than soil. Accordingly, the remedial program may require remedial activities to address media other than soil (e.g., groundwater, surface

water, sediment, and vapor). Applicable guidance should be consulted for media other than soil. This guidance is to be used in conjunction with the applicable statutes, regulations and guidance. Site-specific soil cleanup levels, determined in accordance with this guidance, are only applied after:

- the site, or area of concern, is fully investigated to determine the nature and extent of contamination;
- all sources of contamination are addressed consistent with the hierarchy provided in 6 NYCRR 375-1.8(c) or consistent with the RCRA Corrective Action Program (as appropriate);
- groundwater, if contaminated, has been evaluated for appropriate remedial actions consistent with 6 NYCRR 375-1.8(d) or consistent with the RCRA Corrective Action Program (as appropriate); and
- an evaluation of impacts on adjacent residential properties, surface water, aquatic ecological resources, as well as indoor air, soil vapor, vapor intrusion and other appropriate media.

IV. Responsibility

The responsibility for maintaining and updating this policy lies with DER. DEC staff are responsible for implementing this policy, with input (as applicable) from NYSDOH.

V. Procedures

A. General Approaches to the Selection of Soil Cleanup Levels

The determination of soil cleanup levels for a site is dependent on:

1. The regulatory program pursuant to which the site is being addressed;
2. Whether the groundwater beneath or down gradient of the site is, or may become contaminated with site-related contaminants;
3. Whether ecological resources constitute an important component of the environment at or adjacent to a site, and which are, or may be, impacted by site-related contaminants; and
4. Other impacted environmental media such as surface water, sediment, and soil vapor.

After fully evaluating the nature and extent of soil contamination associated with a site, the soil cleanup levels will be based on one, or a combination of, the following four approaches.

Approach 1: **Utilize the Unrestricted Use Soil Cleanup Objectives** [see 6 NYCRR Table 375-6.8(a)]. Under this approach, the soil cleanup levels will be established consistent with the SCOs set forth in 6 NYCRR Table 375-6.8(a). For contaminants of concern which are not included in the rule, DEC may direct development of a soil cleanup level which is protective of public health and the environment without restrictions following the procedure outlined in Appendix E of the TSD. Under this approach, the unrestricted SCOs are applied throughout the soil matrix to the top of bedrock (including the saturated zone).

Approach 2: **Utilize the Restricted Use Soil Cleanup Objectives** [see 6 NYCRR Table 375-6.8(b)]. Under this approach, soil cleanup levels will be established consistent with the SCOs set forth in 6 NYCRR Table 375-6.8(b) selecting the lowest SCO in the categories described in A

through C below. Generally, after source removal, the soil cleanup levels do not need to be achieved to more than 15 feet below ground surface or to the top of bedrock, whichever is shallower.

A. Select the applicable land use category for the protection of public health (residential, restricted residential, commercial or industrial);

B. Determine if the SCOs for the protection of groundwater are applicable (see Section V.D); and

C. Determine if the SCOs for the protection of ecological resources are applicable (see Section V.C).

Approach 3: **Limited Site-Specific Modifications to Soil Cleanup Objectives.** This approach allows for consideration of site-specific information to modify the SCOs promulgated in 6 NYCRR Tables 375-6.8 (a) and (b) following the approach detailed in Appendix E of the TSD. The equations and basic methodology specified for calculating the 6 NYCRR 375-6.8 (a) and (b) values may not be modified under this approach. However, in instances where site-specific parameters were used in the calculation of the SCOs, site data different from the assumptions used to calculate the SCOs may be used to modify the soil cleanup levels for a specific site. These instances are very limited and occur only in certain pathways that are listed below.

- Protection of groundwater pathway
- Particulate inhalation pathway
- Volatile inhalation pathway
- Protection of ecological resources pathway

It should be noted that even if site-specific data modifies these pathways, it may not result in modifying the SCOs because the lowest value from all applicable pathways is used to determine each SCO. The inhalation pathway is very seldom the controlling pathway in the determination of the protection of public health. The specific parameters that can be modified are identified in Appendix E of the TSD (e.g., inhalation dispersion terms, fraction of organic carbon in soil, etc.).

The remedial party should consider the cost of collecting the data necessary to support a request to modify the SCOs with the potential for deriving a higher SCO that provides an appropriate level of protection. The remedial party may be required to submit additional data to support the use of modified SCOs. Once DEC approves one or more modified SCOs, they are applied in the manner described under Approach 2.

Approach 4: **Site-Specific Soil Cleanup Objectives.** Under this approach, the remedial party may propose site-specific cleanup levels or approaches for soil which are protective of public health and the environment based on other information. This approach sets forth a flexible framework to develop soil cleanup levels by allowing the remedial party to conduct a more detailed evaluation of site information in an effort to calculate protective soil cleanup levels or approaches unique to a site. Under this approach, the remedial party may propose a remedy that does not include specific soil cleanup levels (e.g., excavate the top 6 feet in an area extending 75 feet in all directions from boring B12); modify the input parameters used in the SCO calculations; use site data to improve or confirm predictions of exposures to receptors to contaminants of concern; analyze site-specific risks using

risk assessments; use toxicological information available from alternate sources; or consider site background and historic fill. Data supporting these site-specific adjustments or use of alternate methodologies must also be provided to DEC for review and approval to ensure that the resulting soil cleanup levels are protective.

The Approach 4 framework leaves DEC with discretion to determine whether a different approach is appropriate for the site and, if a different approach is to be used, the proper method of implementation. The remedial party should consider the cost of collecting the data necessary to develop site-specific soil cleanup levels (or approaches) with the potential for deriving a soil cleanup level which is higher than a particular SCO and which provides an appropriate level of protection. The remedial party may also be required to submit additional data to support the use of methodologies in the calculation of site-specific soil cleanup levels or to support the proposed approach.

B. Application of Soil Cleanup Levels for the Specific Remedial Programs: Soil cleanup levels are determined on a site-specific basis depending on the program under which the site is being remediated. In some cases (e.g., BCP Track 1 or Track 2), the soil cleanup levels are the SCOs taken directly from 6 NYCRR 375-6. In other cases, soil cleanup levels may be derived from the Part 375 SCOs but modified based on other information. In yet other cases, the soil cleanup levels may have no relationship or connection to the SCOs, but rather be developed in accordance with DEC-approved methodologies or approaches.

1. <u>Inactive Hazardous Waste Disposal Site Remedial Program (State Superfund Program)</u>: The goal of the remedial program for a specific site is to restore that site to pre-disposal conditions, to the extent feasible. The unrestricted use SCOs are considered to be representative of pre-disposal conditions unless an impact to ecological resources has been identified (see 6 NYCRR 375-2.8(b)(2)). However, it must be recognized that achievement of this goal may not be feasible in every case. At a minimum, all remedies must be protective of public health and the environment. The following procedure is used to determine the most feasible remedy.

(a) The remedial party shall evaluate, and if feasible, implement a cleanup utilizing Approach 1 (application of unrestricted SCOs).

(b) Where DEC determines that achieving unrestricted SCOs is not feasible as documented in a feasibility study, the remedial party may evaluate alternatives to remediate the site to the greatest extent feasible (see *DER-10: Technical Guidance for Site Investigation and Remediation*, Chapter 4.3). [See Section VI, Related References.] In this event, the remedial party may propose soil cleanup levels in accordance with any of the general approaches. However, when considering restricted use soil cleanup levels, the remedial party should apply the least restrictive use category feasible. For purposes of this discussion, residential use is the least restrictive use and industrial use is the most restrictive category. This process starts with consideration of residential use, followed by restricted residential use, commercial use, and then industrial use. The evaluation proceeds through the different land uses until a feasible remedy is found. This evaluation is not bound to the SCOs in regulation or SSCOs set forth in this guidance but may result in a site-specific soil cleanup level that is between the SCOs or soil cleanup level for two different land uses (e.g., above the restricted residential SCO and below the commercial SCO).

2. <u>Brownfield Cleanup Program</u> The remedy shall be fully protective of public health and the environment, including, but not limited to, groundwater according to its classification pursuant to ECL 17-0301, drinking water, surface water, air (including indoor air), sensitive populations (including children), and ecological resources (including fish and wildlife). Soil cleanup levels corresponding to the cleanup track under which the site is being remediated are required to be met. The four cleanup tracks are:

<u>Track 1</u>: Cleanups pursuant to this track must achieve unrestricted use of the site. This track requires that the remedial party implement a cleanup utilizing Approach 1. Institutional and engineering controls are allowed only for periods of less than five years (defined as short-term controls) except in the limited instance where a volunteer has conducted remedial activities resulting in a bulk reduction in groundwater contamination to asymptotic levels.

<u>Track 2</u> : Cleanups pursuant to this track may consider the current, intended, or reasonably anticipated future use in determining the appropriate cleanup levels for soil. This track requires that the remedial party implement a cleanup that achieves the SCOs in the tables in 6 NYCRR 375-6.7(b) for the top 15 feet of soil (or bedrock if less than 15 feet). This track follows approach 2. Institutional and engineering controls are allowed for soil (for the top 15 feet of soil or bedrock if less than 15 feet) for less than five years (defined as short-term controls). Institutional and engineering controls which limit site use and the use of onsite groundwater can be used without regard to duration. Track 2 cleanups at restricted residential, commercial or industrial use sites require site management plans to ensure that material removed from the site (post remedial action) is managed appropriately and to ensure that any buffer zone protecting adjacent residential use sites or ecological resources is maintained.

<u>Track 3</u>: Cleanups pursuant to this track may consider the current, intended, or reasonably anticipated use in determining the appropriate cleanup levels for soil. This track requires that the remedial party implement a cleanup utilizing Approach 3 for those SCOs which the remedial party seeks to modify an established SCO. Institutional and engineering controls are allowed for soil (for the top 15 feet of soil or bedrock if less than 15 feet) for less than 5 years (defined as short-term controls). Institutional and engineering controls which limit site use and the use of on-site groundwater can be used without regard to duration. Track 3 cleanups at restricted residential, commercial or industrial use sites require site management plans to ensure that material removed from the site (post remedial action)is managed appropriately and to ensure that any buffer zone protecting adjacent residential use sites or ecological resources is maintained.

<u>Track 4</u>: Cleanups pursuant to this track may consider the current, intended, or reasonably anticipated use in determining the appropriate cleanup levels for soil. This track allows for the development of site-specific soil cleanup levels below the cover system in accordance with Approach 4. Track 4 remedies must address all sources as a component of the remedy. Short- and long-term institutional and engineering controls are allowed to achieve protection of public health and the environment. The remedy under Track 4 must provide a cover system over exposed residual soil contamination. Soils which are not otherwise covered by structures such as buildings, sidewalks or pavement (i.e., exposed surface soils) must be covered with soil that complies with the use-based SCOs in 6 NYCRR Table 375-6.8(b) levels for the top one foot (non-residential uses) or top two feet (restricted residential use).

3. Environmental Restoration Program: The goal of the program for a specific site is to select a remedy that is protective of public health and the environment, including, but not limited to, groundwater according to its classification pursuant to ECL 17-0301, drinking water, surface water and air (including indoor air), sensitive populations (including children) and ecological resources (including fish and wildlife). At a minimum, the remedy selected shall eliminate or mitigate all significant threats to public health and to the environment presented by contaminants disposed at the site through the proper application of scientific and engineering principles. Soil cleanup levels may be developed in accordance with Approaches 1 – 4 without restriction.

4. Voluntary Cleanup Program: The goal of the program for a specific site is to select a remedy that is protective of public health and the environment for the contemplated use. The soil cleanup levels may be developed in accordance with Approaches 1 – 4 without restriction.

5. Petroleum Spill Response Program: The goal of the Petroleum Spill Response Program is to achieve pre-spill conditions [6 NYCRR 611.6(a)(4)]. Remedial activities under this program shall be undertaken relative to the petroleum contamination that was released along with any co-mingled contamination from other sources. The remedial party shall achieve, to the extent feasible, the unrestricted SCOs for petroleum-related contaminants listed in 6 NYCRR Table 375-6.8(a). For petroleum contaminants not included in 6 NYCRR Table 375-6.8(a) (discussed in Section E below), the remedial party shall apply, to the extent feasible, the soil cleanup levels provided in Table 1. For ease of implementation, two lists of petroleum contaminants (Gasoline and Fuel Oil, Tables 2 and 3) are attached. The tables combine the applicable petroleum-related SCOs from 6 NYCRR 375-6.8(a) and the applicable petroleum related SSCOs from Table 1. Where DEC determines that it is not feasible to achieve the soil cleanup levels as set forth in this paragraph, the remedial party may propose soil cleanup levels in accordance with any of the general approaches. However, when considering restricted use soil cleanup levels, the remedial party should apply the least restrictive use category feasible.

For purposes of this discussion, residential use is the least restrictive use, and industrial use is the most restrictive category. This process starts with consideration of residential use, followed by restricted residential use, commercial use, and then industrial use. The evaluation proceeds through the different land uses until a feasible remedy is found. If the protection of groundwater or ecological SCOs apply, the lower of the applicable protection of the public health SCO or the applicable protection of groundwater or ecological SCO should be achieved to the extent feasible. This evaluation is not bound to the SCOs in regulation or the SSCOs set forth in this guidance but may result in a site-specific soil cleanup level that is between the SCOs or soil cleanup level for two different land uses (e.g., above the restricted residential SCO and below the commercial SCO).

6. RCRA Corrective Action Program: The RCRA program was promulgated to regulate facilities that actively manage hazardous waste. DER administers the RCRA Corrective Action Program, with a goal of achieving soil cleanup levels at Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) that eliminate risks to public health and the environment (i.e., clean the site to unrestricted use) or control said risks (i.e., clean the site or unit(s) to the lowest possible soil cleanup objective, regardless of site use), to the extent feasible. This goal takes into account that certain units at the facility may be permitted to manage hazardous waste under New York State's Hazardous Waste Management (HWM) regulations (6 NYCRR Part 373). The requirements of active HWM facilities, as well as the site's history, will be considered when soil cleanup levels are determined. Selected remedies must be protective of public health and the environment. Soil cleanup levels will be selected using the following procedure.

(a) The remedial party shall evaluate, and if feasible, implement a cleanup utilizing Approach 1. Under this approach, the unrestricted SCOs apply to the entire soil matrix to the top of bedrock. For contaminants not listed in 6 NYCRR 375-6, a new or existing SSCO may be used.

(b) If DEC determines that achieving unrestricted SCOs is not feasible, the remedial party may evaluate other alternatives to remediate the site. In this event, the remedial party may propose soil cleanup levels in accordance with any of the general approaches. However, when considering restricted use soil cleanup levels, the remedial party shall apply the use category which is both feasible and least restricted. For purposes of this discussion, residential use is the least restricted category and industrial use is the most restricted category. A soil cleanup level between two different land uses (e.g., residential and restricted residential) may be determined to be feasible, and if selected, must be achieved.

Any soil cleanup levels specified in regulation (i.e., 6 NYCRR 373-2.6(b)-(k) for "regulated units" as defined in 6 NYCRR 373-2.6 (a)(1)(ii)) or in a DEC enforceable document (Part 373 permits, Consent Orders, etc.) shall take precedence over the soil cleanup levels which could be established through use of this document.

C. Determination of Whether Ecological Resources SCOs Apply to a Site: SCOs developed to protect ecological resources (ESCOs) are incorporated in the Unrestricted Use SCO in 6 NYCRR Table 375-6.8(a) and are included as a separate category in 6 NYCRR Table 375-6.8(b). For contaminants of concern which do not have a calculated ESCO in regulation, DEC may direct the remedial party to develop a soil cleanup level which is protective of ecological resources where appropriate, based on the process outlined in Appendix E of the TSD.

The presence of ecological resources and any impact to those resources will be assessed during the remedial investigation. For sites where there is the potential for an ecological resource impact to be present, or where it is likely to be present, an assessment of fish and wildlife resource impacts will be performed. For sites in DER's SSF, BCP, VCP and ERP, the assessment will be performed in accordance with DEC's guidance, *Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites*, October, 1994, as described in DER-10, Section 3.10. For sites in the RCRA Corrective Action Program, the assessment will be performed using the above referenced fish and wildlife impact analysis document as guidance, and by consulting with appropriate personnel in DEC's Division of Fish, Wildlife and Marine Resources.

Soil cleanup levels which are protective of ecological resources must be considered and applied, as appropriate, for the upland soils (not sediment) at sites where DEC determines, based on the foregoing analysis, that:

- ecological resources are present, or will be present, under the reasonably anticipated future use of the site, and such resources constitute an important component of the environment at, or adjacent to, the site;

- an impact or threat of impact to the ecological resource has been identified; and

- contaminant concentrations in soil exceed the ESCOs as set forth in 6 NYCRR 375-6.8(b) or the Protection of Ecological Resources SSCOs contained in this document.

Sites or portions thereof that will be covered by buildings, structures or pavement are not subject to the ESCOs. Further, ecological resources do not include pets, livestock, agricultural or horticultural crops, or landscaping in developed areas. (See 6 NYCRR 375-6.6 for more detail.)

D. Determination of Whether Protection of Groundwater SCOs Apply: SCOs developed to protect groundwater are incorporated in the Unrestricted Use SCOs in 6 NYCRR Table 375-6.8(a) and are included as a separate category in 6 NYCRR Table 375-6.8(b). For contaminants of concern which do not have a protection of groundwater SCO, DEC may direct the remedial party to develop a soil cleanup level which is protective of groundwater using the process in Appendix E of the TSD.

1. Except as provided for in (2) below, the protection of groundwater SCOs will be applicable where:

   (i) contamination has been identified in on-site soil by the remedial investigation; and
   (ii) groundwater standards are, or are threatened to be, contravened by the presence of soil contamination at concentrations above the protection of groundwater SCOs.

2. DEC may provide an exception to the applicability of the protection of groundwater SCOs, as set forth in 6 NYCRR 375-6.5(a)(1), when (i), (ii), and (iii) exist and either (iv) or (v) also apply, as described below.

   (i) The groundwater standard contravention is the result of an on-site source which is addressed by the remedial program.
   (ii) An environmental easement or other institutional control will be put in place which provides for a groundwater use restriction.
   (iii) DEC determines that contaminated groundwater at the site:
      (a) is not migrating, nor is likely to migrate, off-site; or
      (b) is migrating, or is likely to migrate, off-site; however, the remedy includes active groundwater management to address off-site migration.
   (iv) DEC determines the groundwater quality will improve over time.
   (v) The groundwater contamination migrating from the site is the result of an off-site source of contamination, and site contaminants are not contributing consequential amounts to the groundwater contamination.

3. In determining whether to provide the exemption set forth in subparagraph 2 above, DEC will consider:

   (i) all of the remedy selection criteria at 6 NYCRR 375-1.8(h) or in the RCRA Corrective Action program;
   (ii) the amount of time that the groundwater will need to be actively managed for the protection of public health and the environment; and
   (iii) the potential impact that groundwater contamination may have on media not specifically addressed by the SCOs (e.g., vapor intrusion, protection of surface water, and protection of aquatic ecological resources).

E. Supplemental Soil Cleanup Objectives: SSCOs are either existing cleanup levels in Table 1 or are new soil cleanup levels developed by the remedial party as part of its remedial program. These SSCOs are in addition to the SCOs that are included in Part 375.

Existing SSCOs: The Table 1 list of SSCOs includes contaminants from former TAGM 4046 that were not included in 6 NYCRR 375-6.8 and soil cleanup levels developed using the process detailed in Appendix E of the TSD but not promulgated. For those contaminants which were part of the former TAGM 4046, soil cleanup levels exist for the protection of public health (based on ingestion) and for the protection of groundwater. In some cases, to be determined on a site-by-site basis, evaluation of other factors is likely needed for the protection of public health, especially when the use of a site includes residential use.

These other factors include other exposure pathways (e.g., homegrown vegetable ingestion, inhalation and dermal contact), potential non-site exposures to the contaminant and current toxicological data on the contaminant. In these instances, DEC (in consultation with NYSDOH) will determine if the additional factors have been adequately addressed. The SSCOs identified in Table 1 (subject to the limitation described above) may be used as if they were included in Part 375. A remedial party is not required to use the SSCOs set forth in Table 1. In lieu of applying an SSCO, the remedial party may elect to develop a soil cleanup level (using the process described in Appendix E of the TSD and discussed below.) Table 1 also includes SSCOs that were developed for some pathways using the same process detailed in the TSD. A remedial party may elect to use those SSCOs directly or confirm that the calculated value for that pathway is correct.

New SSCOs: The remedial party may elect to, or DEC may direct a remedial party to, develop a contaminant-specific SCO for any contaminant not included in 6 NYCRR Tables 375-6.8(a) or (b). Generally, DEC will request that an SCO be developed only where the contaminant is a predominant contaminant of concern (COC) at the site and is not otherwise being addressed to DEC's satisfaction as part of the proposed remedy. This could happen, for example, when a remedial party is seeking a Track 1 cleanup and non-SCO/SSCO contaminants are present and may not be satisfactorily addressed by the remedial activities addressing the SCOs or SSCOs. Guidance on the process for developing new SCOs is provided in Appendix E of the TSD. DEC will include all newly developed soil cleanup levels, developed and approved pursuant to this paragraph in a revised Table 1. The developed SSCO must:

1. be developed utilizing the same methodologies that were used by DEC to develop SCOs that are set forth in Part 375; and

2. apply the maximum acceptable soil concentrations (caps), as set forth in section 9.3 of the TSD.

F. Use of SCOs and SSCOs as a Screening Tool: The SCOs and SSCOs may be used to identify areas of soil contamination and to determine the extent of soil contamination. As noted in Section V.K, consideration of other media is required to determine if remedial action is needed.

1. At sites or areas of concern where contaminant concentrations are equal to or below the unrestricted SCOs in 6 NYCRR Table 375-6.8(a), no action or study is warranted because of soil contamination.

2. The exceedance of one or more applicable SCOs or SSCOs, (which is the lower of protection of public health, protection of groundwater, or protection of ecological resources soil cleanup objectives as described in Section III below), alone does not trigger the need for remedial action, define "unacceptable" levels of contaminants in soil, or indicates that a site qualifies for any DEC remedial program (e.g., BCP, SSF). As noted in the definition of SCO above, SCOs and SSCOs are applicable statewide and do not account for many site-specific considerations which could potentially result in higher levels. Therefore, soil concentrations that are higher than the applicable SCOs or SSCOs are not necessarily health or environmental concerns.

3. When an applicable SCO or SSCO is exceeded, the degree of public health or environmental concern depends on several factors, including:

    - magnitude of the exceedance;
    - accuracy of the exposure estimates;
    - other sources of exposure to the contaminant; and
    - strength and quality of the available toxicological information on the contaminant.

G. Soil Cleanup Levels for Nuisance Conditions: Experience has shown that contaminants in soil that meets the DEC-approved soil cleanup levels can exhibit a distinct odor or other type of nuisance (e.g., staining). This is true even though the contaminants will not leach from the soil (e.g., certain soils with more insoluble substances at higher concentrations). When DEC determines that soil remaining after the remedial action will result in the continuation of a nuisance (e.g., odors, staining, etc), DEC will require that additional remedial measures be evaluated, and may require additional remedial actions be taken to address the nuisance condition.

H. Subsurface Soil Cleanup for Total Polycyclic Aromatic Hydrocarbons: For non-residential use sites (i.e., commercial or industrial use sites) where the ESCOs are not applicable, DEC may approve a remedial program which achieves a soil cleanup level of 500 parts per million (ppm) for total PAHs for all subsurface soil. The 500 ppm soil cleanup level is in lieu of achieving all of the PAH-specific SCOs in 6 NYCRR 375-6. For purposes of this provision, subsurface soil shall mean the soil beneath permanent structures, pavement, or similar cover systems; or at least one foot of soil cover (which must meet the applicable SCOs). Institutional controls (e.g., an environmental easement) along with a site management plan will be required when this soil cleanup level is employed at a site. This cleanup level is determined to be feasible and protective based on DEC's experience in its various remedial programs. This approach has existed in TAGM 4046 since it was first issued in 1992.

I. Soil Cleanup for PCBs: DEC may approve a remedial program which achieves a soil cleanup level for PCBs as set forth herein:

1. **For Non-BCP sites:** An acceptable presumptive remedy for soil where neither the unrestricted SCOs nor the ESCOs are applied in the remedial program may include a soil cleanup level for PCBs of 1 ppm in the surface soils and 10 ppm in subsurface soils.

2. **For BCP sites:** An acceptable presumptive remedy for soil may include a soil cleanup level for PCBs of 1 ppm (the applicable SCO) in the surface soils and 10 ppm in subsurface in limited circumstances as follows:

- cleanup track is Track 4;
- site use will be restricted residential, commercial or industrial; and
- ESCOs do not apply.

3. **At industrial use sites,** a level of 25 ppm for PCBs provided that access is limited and individual occupancy is restricted to less than an average of 6.7 hours per week.

For purposes of this provision, subsurface soil shall mean:

- soil beneath permanent structures, pavement, or similar cover systems;
- soil beneath 1 foot of soil cover for commercial and industrial uses; or
- soil beneath 2 feet of soil cover for residential and restricted residential uses.

Institutional controls (i.e., an environmental easement), along with a site management plan, will be required when this soil cleanup level is employed at a site. As with all presumptive remedies, just because a remedy is presumptive does not mean that it will work at every site. For example, this presumptive remedy for PCBs in soil is not applicable at most landfills. This cleanup level is determined to be feasible and protective based on DEC's experience in its various remedial programs. Further, this approach has existed in TAGM 4046 since it was first issued in 1992.

J. Sampling and Compliance with Soil Cleanup Levels: The number of samples to determine if the SCOs have been achieved should be sufficient to be representative of the area being sampled. See attached Table 4 for suggested sampling frequency and subdivision 5.4(e) of DER-10 for details. This frequency can be used for confirmatory samples or for backfill. It is DEC's goal that all confirmatory samples demonstrate that the remedy has achieved the DEC-approved soil cleanup levels. However, recognizing the heterogeneity of contaminated sites and the uncertainty of sampling and analysis, DEC project manager has limited discretion to determine that remediation is complete where some discrete samples do not meet the soil cleanup levels established for a site. See DER-10 for more information regarding the determination that remediation is complete.

K. Other Considerations: All remedies must be fully protective of public health and the environment and prevent off-site migration to the extent feasible with special emphasis for the prevention or minimization of migration onto adjacent residential properties or into ecological resources. A remedial party is required to investigate all environmental media including soil, groundwater, surface water, sediments, soil vapor, indoor air, and biota. (See 6 NYCRR 375-1.8(a)(6) or RCRA Corrective Action Program). This investigation will determine if any of the referenced media are, or may be, impacted by site contamination. However, the SCOs do not directly address these other media. DEC may require remedial actions to address such media and impacts, including but not limited to the application of lower soil cleanup levels or buffer zones where it determines, based on the investigation, that any of these media are, or may be, impacted by site contamination.

VI. Related References:

- Environmental Conservation Law, Article 27 Titles 3, 5, 9, 13 and 14.

- Article 12 of the Navigation Law, Section 178.

- 6 NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.
- 6 NYCRR Subparts 373-1, 373-2 and 373-3, Requirements for Hazardous Waste Management Facilities. September 6, 2006.
- 6 NYCRR Part 611, Environmental Priorities and Procedures in Petroleum Cleanup and Removal. November 5, 1984 (amended).
- Development of Soil Cleanup Objectives: Technical Support Document. New York State Department of Environmental Conservation. December 14, 2006.
- Supplemental Guidance to RAGS: Calculating the Concentration Term. United States Environmental Protection Agency. Publication 9285.7-081. May 1992.
- New York State Guidelines for Urban Erosion and Sediment Control. 1997.
- Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites. New York State Department of Environmental Conservation. October 1994.
- Program Policy DER-2, *Making Changes to Selected Remedies*. New York State Department of Environmental Conservation. April 1, 2008.
- Program Policy DER-10, *Technical Guidance for Site Investigation and Remediation*. New York State Department of Environmental Conservation. May 3, 2010.
- Program Policy DER-15, *Presumptive/Proven Remedial Technologies*. New York State Department of Environmental Conservation. February 27, 2007.

TABLES

1 - Supplemental Soil Cleanup Objectives
2 - Soil Cleanup Levels for Gasoline Contaminated Soils
3 - Soil Cleanup Levels for Fuel Oil Contaminated Soils
4 - Recommended Number of Soil Samples for Soil Imported to or Exported From a Site

Table 1

Supplemental Soil Cleanup Objectives
(ppm)

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
METALS							
Aluminum	7429-90-5					10,000 [a,b]	
Antimony	7440–36-0					12[c]	
Boron	7440-42-8					0.5	
Calcium	7440-70-2					10,000 [a,b]	
Cobalt	7440-48-4	30				20	
Iron	7439-89-6	2,000					
Lithium	7439-93-2					2	
Molybdenum	7439-98-7					2	
Technetium	7440-26-8					0.2	
Thallium	7440-28-0					5 [c]	
Tin	7440-31-5					50	
Uranium	7440-61-1					5	
Vanadium	7440-62-2	100 [a]				39[b]	
PESTICIDES							
Biphenyl	92-52-4					60	
Chlordecone (Kepone)	143-50-0					0.06	
Dibenzofuran	132-64-9						6.2
2,4-D (2,4-Dichloro-phenoxyacetic acid)	94-75-7	100 [a]					0.5
Furan	110-00-9					600	
Gamma Chlordane	5103-74-2	0.54					14
Heptachlor Epoxide	1024-57-3	0.077					0.02
Methoxychlor	72-43-5	100 [a]				1.2	900

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
Parathion	56-38-2	100 [a]					1.2
2,4,5-T	93-76-5	100 [a]					1.9
2,3,7,8-TCDD	1746-01-6					0.000001	
2,3,7,8-TCDF	51207-31-9					0.000001	
SEMIVOLATILE ORGANIC COMPOUNDS							
Aniline	62-53-3	48	100[a]	500[a]	1000[a]		0.33[b]
Bis(2-ethylhexyl) phthalate	117-81-7	50				239	435
Benzoic Acid	65-85-0	100[a]					2.7
Butylbenzyl-phthalate	85-68-7	100 [a]					122
4-Chloroaniline	106-47-8	100 [a]					0.22
Chloroethane	75-00-3						1.9
2-Chlorophenol	95-57-8	100 [a]				0.8	
3-Chloroaniline	108-42-9					20	
3-Chlorophenol	108-43-0					7	
Di-n-butyl-phthalate	84-74-2	100 [a]				0.014	8.1
2,4-Dichlorophenol	120-83-2	100 [a]				20	0.40
3,4-Dichlorophenol	95-77-2					20	
Diethylphthalate	84-66-2	100 [a]				100	7.1
Di-*n*-hexyl-phthalate	84-75-3					0.91	
2,4-Dinitrophenol	51-28-5	100 [a]				20	0.2
Dimethylphthlate	131-11-3	100 [a]				200	27
Di-n-octylphthlate	117-84-0	100 [a]					120
1,2,3,6,7,8-HCDF	57117-44-9					0.00021	
Hexachloro-benzene	118-74-1	0.41					1.4
2,6-Dinitrotoluene	606-20-2	1.03					1.0
Isophorone	78-59-1	100 [a]					4.4

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
4-methyl-2-pentanone	108-10-1						1.0
2-methyl-naphthalene	91-57-6	0.41					36.4
2-Nitroaniline	88-74-4						0.4
3-Nitroaniline	99-09-2						0.5
Nitrobenzene	98-95-3	3.7	15	69	140	40	0.17[b]
2-Nitrophenol	88-75-5					7	0.3
4-Nitrophenol	100-02-7					7	0.1
Pentachloroaniline	527-20-8					100	
2,3,5,6-Tetrachloroaniline	3481-20-7					20	
2,3,4,5-Tetrachlorophenol	4901-51-3					20	
2,4,5-Trichloroaniline	636-30-6					20	
2,4,5-Trichlorophenol	95-95-4	100 [a]				4	0.1
2,4,6-Trichlorophenol	88-06-2					10	
VOLATILE ORGANIC COMPOUNDS							
2-Butanone	78-93-3	100 [a]					0.3
Carbon Disulfide	75-15-0	100 [a]					2.7
Chloroacetamide	79-07-2					2	
Dibromochloro-methane	124-48-1					10	
2,4-Dichloro aniline	554-00-7					100	
3,4-Dichloroaniline	95-76-1					20	
1,2-Dichloropropane	78-87-5					700	
1,3-Dichloropropane	142-28-9						0.3
2,6-Dinitrotoluene	606-20-2	1.03					0.17[b]
Ethylacetate	141-78-6					48	

Contaminant	CAS Number	Residential	Restricted Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground-water
4-methyl-2-pentanone	108-10-1						1.0
113 Freon (1,1,2- TFE)	76-13-1	100 [a]					6
isopropylbenzene	98-82-8	100 [a]					2.3
p-isopropyltoluene	99-87-6						10
Hexachlorocyclo-pentadiene	77-47-4					10	
Methanol	67-56-1					6.5	
N-nitrosodiphenyl-amine	86-30-6					20	
Pentachloro-benzene	608-93-5					20	
Pentachloronitro-benzene	82-68-8					10	
Styrene	100-42-5					300	
1,2,3,4-Tetrachlorobenzene	634-66-2					10	
1,1,2,2-Tetrachloroethane	79-34-5	35					0.6
1,1,2,2-Tetrachloroethylene	127-18-4					2	
1,2,3-Trichlorobenzene	87-61-6					20	
1,2,4-Trichlorobenzene	120-82-1					20	3.4
1,2,3-Trichloropropane	96-18-4	80					0.34

[a] SCOs for organic contaminants (volatile organic compounds, semivolatile organic compounds, and pesticides) are capped at 100 ppm for residential use, 500 ppm for commercial use, 1000 ppm for industrial use. SCOs for metals are capped at 10,000 ppm.

[b] Based on rural background study

[c] SCO limited by contract required quantitation limit.

Table 2

Soil Cleanup Levels for Gasoline Contaminated Soils

Contaminant	CAS Registry Number	Soil Cleanup Level (ppm)
Benzene	71-43-2	0.06
n-Butylbenzene	104-51-8	12.0
sec-Butylbenzene	135-98-8	11.0
Ethylbenzene	100-41-4	1.0
Isopropylbenzene	98-82-8	2.3
p-Isopropyltoluene	99-87-6	10.0
Methyl-Tert-Butyl-Ether	1634-04-4	0.93
Naphthalene	91-20-3	12.0
n-Propylbenzene	103-65-1	3.9
Tert-Butylbenzene	98-06-6	5.9
Toluene	108-88-3	0.7
1,2,4-Trimethylbenzene	95-63-6	3.6
1,3,5-Trimethylbenzene	108-67-8	8.4
Xylene (Mixed)	1330-20-7	0.26

Table 3

Soil Cleanup Levels for Fuel Oil Contaminated Soil

Contaminant	CAS Registry Number	Soil Cleanup Level (ppm)
Acenaphthene	83-32-9	20
Acenaphthylene	208-96-8	100
Anthracene	120-12-7	100
Benz(a)Anthracene	56-55-3	1.0
Dibenzo(a,h)Anthracene	53-70-3	0.33
Benzene	71-43-2	0.06
n-Butylbenzene	104-51-8	12.0
sec-Butylbenzene	135-98-8	11.0
Tert-Butylbenzene	98-06-6	5.9
Chrysene	218-01-9	1.0
Ethylbenzene	100-41-4	1.0
Fluoranthene	206-44-0	100
Benzo(b)Fluoranthene	205-99-2	1.0
Benzo(k)Fluoranthene	207-08-9	0.8
Fluorene	86-73-7	30
Isopropylbenzene	98-82-8	2.3
p-Isopropyltoluene	99-87-6	10.0
Naphthalene	91-20-3	12.0
n-Propylbenzene	103-65-1	3.9
Benzo(g,h,i)Perylene	191-24-2	100
Phenanthrene	85-01-8	100
Pyrene	129-00-0	100
Benzo(a)Pyrene	50-32-8	1.0
Indeno(1,2,3-cd)Pyrene	193-39-5	0.5
1,2,4-Trimethylbenzene	95-63-6	3.6
1,3,5-Trimethylbenzene	108-67-8	8.4
Toluene	108-88-3	0.7
Xylene (Mixed)	1330-20-7	0.26

Table 4

Recommended Number of Soil Samples for Soil Imported To or Exported From a Site

Contaminant	VOCs[a]	SVOCs, Inorganics & PCBs/Pesticides	
Soil Quantity (cubic yards)	**Discrete Samples**	**Composite**	**Discrete Samples/Composite**
0-50	1	1	Each composite sample for analysis is created from 3-5 discrete samples from representative locations in the fill.
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1000	7	2	
➢ 1000	Add an additional 2 VOC and 1 composite for each additional 1000 Cubic yards or consult with DER.[b]		

[a] VOC samples cannot be composited. Discrete samples must be taken to maximize the representativeness of the results.

[b] For example, a 3,000 cubic yard soil pile to be sampled and analyzed for VOCs would require 11 discrete representative samples. The same pile to be sampled for SVOCs would require 4 composite samples with each composite sample consisting of 3-5 discrete samples.

BELLUCCI ENGINEERING, PLLC

Attachment D: Resumes

Daniel A. Bellucci, P.E.
27 Belcrest Road • West Hartford, CT 06107 • (845) 803-4347 • bellucciengineeringpllc@gmail.com

Education & Certifications

B.S. Environmental Engineering University of New Hampshire 2011
Professional Engineer (Environmental) MA, NY, NH
40 Hour HAZWOPER Training Certification- 29 CFR 1910.120
Understanding the MCP Course – UMass Lowell (Spring 2019)
ASTM E 1527 Phase I Environmental Site Assessment (ESA) Training, 2012
National Groundwater Association - Certified Well Driller (CWD)
Dig Safe Certified Excavator in Safe Digging Practices, 2019-2024

Employment History

President Core Down Drilling LLC, Brewster, NY July 2019 to Present

- Manage all aspects of company operation including proposal preparation, scheduling/ logistics, client management, sub-contractor bid solicitation, permitting/ regulatory compliance, employee management, payroll.

Environmental Engineer, P.E Bellucci Engineering, PLLC 2019 to Present

- Principal Engineer specializing in Brownfield Remediation and mitigation and remediation system designs.

Environmental Engineer, P.E. EBI Consulting, Site Investigation and Remediation (SIR) Group, Burlington, MA (October 2012 to July 2019)

- Project Management including site investigation proposal preparation, management of junior field staff and client correspondence, project invoicing (fixed fee)
- Extensive field experience conducting hundreds of Phase II Subsurface Investigations throughout Eastern US
- Sub-slab depressurization system pilot testing, design, installation, system startup and ongoing operation, maintenance and sampling
- Field and project management experience associated with the following: soil, groundwater, soil vapor, and surface water sampling / monitoring, UST closure, monitoring well elevation surveys, monitoring well installation and abandonments, operation and maintenance of groundwater pump and treat systems; construction site air monitoring, soil management plans, site plan creation using AutoCAD
- Annual US Airforce base stormwater and wastewater sampling
- Broad spectrum of Real Estate Due Diligence projects including Phase I Environmental Site Assessments (ESAs), State File Reviews, Telecommunications ESAs, Environmental Protection Plans, Soil Management Plans, Release Abatement Measure Plans and Spill Prevention Control and Countermeasure Plans

Environmental Engineer HydroEnvironmental Solutions Inc., Somers, NY (November 2011 to October 2012)

- Oversight and project management of remediation projects including petroleum release sites, industrial redevelopment soil characterization and disposal, and construction dewatering discharge permitting
- Detailed field reporting, soil and water sampling and analysis of laboratory data
- Operator: Geoprobe® Direct Push macro core sampling drill rig
- Invoice review, cost estimates, spill closure report compilation, review and output
- O&M of pumps, carbon filtration units, and oil/water separators
- Spill Prevention, Control and Countermeasure Plan compilation and review

Field Technician Tri-State Environmental Services Inc., Hawthorne, NY (September 2011 to November 2011)

- Hazardous materials handling, transportation, and disposal procedures

Related Educational Experience

- Senior Research Presentation on Microbial Degradation of PCB's in the Hudson River
- Advanced Water Treatment Facility Full Scale Team Design
- Membrane filtration design to optimize pathogen removal prior to disinfection, decreasing disinfection byproducts

Engineering & Business Software Experience

AutoCAD, Win Log/ Strata Explorer, Sales Force/ Financial Force, Parcel, Microsoft

References furnished upon request

RICHARD HOOKER, PH.D.

GALLAGHER BASSETT

CURRENT POSITION: MANAGER, ENVIRONMENTAL CONSULTING

PROFESSIONAL SUMMARY

Richard Hooker serves as Manager of Environmental Consulting for investigative and remedial projects including NYSDEC and OER Brownfields sites, Phase II investigations, and environmental management of construction projects. He also prepares and evaluates interdisciplinary, comprehensive environmental impact assessment reviews (NEPA, SEQR and CEQR) and has a particular expertise in noise issues. Mr. Hooker develops investigative and remedial work plans, health and safety plans, performs fieldwork, and prepares technical reports. He works with regulatory authorities and subcontractors including construction personnel, waste repositories and haulage contractors, laboratories and drillers. His responsibilities include: designing noise studies, investigating site histories, and document reviews, cost benefit analysis of remedial alternatives, overseeing excavations and in situ remediation, sampling, sample data evaluation, report preparation, and obtaining regulatory closure. He has extensive experience of sampling and sample collection protocols for soil, vapor, indoor air, sediment, and groundwater and has worked to remediate a wide range of environmental contaminants including petroleum, heavy metals, PCBs, and solvents.

Mr. Hooker holds a Ph.D. from the University of St. Andrews, St. Andrews, Scotland and a BA from Staffordshire University, Stoke-on-Trent, England. Prior to relocating to the Hudson Valley, he served as an Assistant Professor at the University of Glasgow, Scotland.

PROFESSIONAL EXPERIENCE

3475 Third Avenue, Bronx, NY—Investigated and remediated this former manufacturing facility to NYSDEC Brownfields to Track 1 cleanup standards. This site was the first project in the OER Jumpstart program established to assist cleanup on government supported affordable and supportive housing projects in NYC. Under this program OER sponsored enrollment in the NYS Brownfield Cleanup Program. Work on this trailblazing project required liaising with OER and NYSDEC Region 2 to ensure documentation met the requirements of both agencies. Certificate of Completion secured in 2016.

Former A.C. Dutton Lumber Yard, Dutchess County, NY—Documented hazardous concentrations of arsenic and chromium in soils and concrete surfaces at this NYSDEC Brownfields site contaminated by the historical pressure treatment of lumber. Developed a Workplan for site remediation and directed environmental restoration activities, including: characterization, excavation and removal of hazardous soils, scarification concrete warehouse floors, removal aboveground and underground chemical and petroleum storage tanks.

Crannell Square, Dutchess County, NY —oversaw the investigation and remediation of this Track 1 BCP site.

EDUCATION:

- Ph.D., University of St. Andrews, Scotland
- BA, Staffordshire University, England

SCOTT SPITZER

GALLAGHER BASSETT | TECHNICAL SERVICES

CURRENT POSITION: DIRECTOR OF ENVIRONMENTAL INVESTIGATIONS

PROFESSIONAL SUMMARY

Scott Spitzer serves as Director of Environmental Investigations, overseeing the technical elements of Phase I and Phase II technical environmental investigations and remedial projects, including Brownfield sites. Mr. Spitzer supervises all GBTS field staff and reviews all documents prepared by GBTS to ensure consistency and technical accuracy.

His responsibilities associated with the preparation of site assessments include: investigating site histories, conducting facility inspections, reviewing regulatory agency records, documenting facility compliance with relevant State and Federal regulations, and preparing reports. As project manager for complex technical environmental investigations (including sites currently on the NYSDEC Registry of Inactive Hazardous Waste Sites), Mr. Spitzer is involved with: coordinating subcontractors; overseeing fieldwork; designing and implementing material, soil, and water sampling plans, preparing technical reports and interfacing with regulatory agency personnel.

Mr. Spitzer has 15 years' experience in the preparation of Phase I, Phase II and Brownfields investigations and in the management of complex remediation projects. He is knowledgeable in both New York State and Federal environmental regulations and has an understanding of a broad range of remedial technologies. Mr. Spitzer studied environmental science at SUNY Purchase and holds a BS in Biology from SUNY at Stony Brook, Stony Brook, New York.

PROFESSIONAL EXPERIENCE

Former NuHart Plastics Manufacturing Site, Brooklyn, NY: GBTS conducted a complex remedial investigation of a NYSDEC Class 2 Inactive Hazardous Waste Disposal ("Superfund") site, where a plume of liquid phthalates and chlorinated solvents had impacted groundwater. Extensive sampling was conducted of both on- and off-site soil, soil vapor and groundwater, and phthalates were removed from recovery wells as an interim remedial measure. A Remedial Investigation Report was completed, allowing the site owner to move create a Remedial Design Document.

Sakmann Restaurant Corporation Site, Fort Montgomery, NY: Conducted Phase I Environmental Site Assessment and Phase II Subsurface Investigations for former filling station and automotive repair garage contaminated by solvent and waste-oil discharges to an on-site drywell. Designed and implemented a sampling plan for soils impacted by chlorinated hydrocarbons, petroleum, and metals. Created Work Plan (in coordination with the NYSDEC Voluntary Cleanup Program) for remediation of on-site contamination and long-term sampling of on-site groundwater monitoring wells.

EDUCATION:

- BS, Biology, SUNY at Stony Brook, NY

ERICK SALAZAR

GALLAGHER BASSETT

CURRENT POSITION: SENIOR PROJECT MANAGER

PROFESSIONAL SUMMARY

Erick Salazar serves as Senior Project Manager for environmental site assessments and Phase II technical environmental investigations. His responsibilities include: investigating site histories, conducting facility inspections, reviewing regulatory agency records, documenting facility compliance with relevant State and Federal regulations, and preparing reports. He assists with Phase II technical environmental investigations and fieldwork including implementation of community air monitoring plans (CAMP), collecting soil and water samples and tank removal oversight.

Mr. Salazar has experience in the implementation of CAMP monitoring, personal sampling for lead and dust of workers, coordinating pre-demolition C&D waste inventory as part of Sandy relief work on Staten Island, and providing oversight of site remedial activities on rural properties.

PROFESSIONAL EXPERIENCE

Mr. Salazar has experience in the implementation of CAMP monitoring, personal sampling for lead and dust of workers, coordinating pre-demolition C&D waste inventory as part of Sandy relief work on Staten Island, and providing oversight of site remedial activities on rural properties.
Mr. Salazar's experience with Health and Safety services include:

- Complete OSHA training and three years' experience of Sites handling regulated materials as well as hazardous and non-hazardous wastes.
- Preparation of Environmental Health & Safety Plan for (EHASP) for debris removal and soil sampling project in Ulster County, New York.
- Assistance in the preparation of EHASPs for NYSDEC sites in Dutchess and Westchester Counties.
- Implementation of CAMP at sites in Dutchess, Ulster, Bronx and Queens Counties, including preparation of status reports, preparation of incident reports, and communication with involved regulatory agencies.
- Collection/analysis of media samples (air, water and soil) per requirements of the EHASP and/or remedial work plans.

EDUCATION:

- BS, Biology, State University at New Paltz, NY

REGISTRATIONS / CERTIFICATIONS:

- OSHA, 40-hr Hazardous Waste Operations & Emergency Response Health & Safety Certification
- OSHA, 10-hr General Construction Industry Training & Certification

BELLUCCI ENGINEERING, PLLC

Attachment E: Laboratory Documents

PFAS Field Sampling Guidelines for Groundwater and Soil

For Waters: 2 x 125 mL Bottles per sample filled to the neck of the bottle

PLEASE READ THESE INSTRUCTIONS PRIOR TO CONDUCTING SAMPLING

Sampling for PFAS for determination using EPA 537m can be challenging due to the prevalence of these compounds in consumer products. The following guidelines reflect current knowledge and are recommended when conducting sampling.

Consider Sampling for PFAS First...

Sample containers for other methods may have PFAS present on their sampling containers which could cross-contaminate your sample(s). We are analyzing down to the low parts-per-trillion (ppt) range so cross-contamination prevention is an important consideration.

SAMPLING

All Sampling done with Nitrile Gloves, provided by YORK

SAMPLE CONTAINERS

All sample containers - PP ONLY (Target list of 21 PFAS) Caps are unlined and made of PP (no Teflon® lined caps) Bottles are Batch Certified to be Target PFAS-free (< Reporting Limit)

FIELD EQUIPMENT

-Must not contain Teflon® (aka PTFE) or LDPE materials

-All sampling materials must be made from stainless steel, HDPE, acetate, silicone, or polypropylene

-No waterproof field notebooks can be used

-No plastic clipboards, binders, or the like

-No adhesives (e.g.Post-It® Notes, Duct tape) can be used

-Sharpies and permanent markers not allowed; regular ball point pens are acceptable

-Aluminum foil must not be used

-Keep PFAS samples in separate cooler, away from sampling containers that may contain PFAS

-Coolers filled with regular ice only - Do not use chemical (blue) ice packs

EQUIPMENT DECON

-"PFAS-free" water (e.g. Poland Spring*)-on-site for decontamination

-Only Alconox and Liquinox can be used for decontamination

* *Poland Spring has been demonstrated to be PFAS -free when freshly opened*

FIELD SAMPLING CLOTHING CONSIDERATIONS

Do not use fabric softener on clothing to be worn in field

Do not used cosmetics, moisturizers, hand cream, or other related products the morning of sampling

Do not use sunscreen or insect repellants

No materials containing Tyvek®

All safety boots made from polyurethane and PVC

No clothing or boots containing Gore-Tex®

Wet weather gear made of polyurethane and PVC only

FOOD CONSIDERATIONS

No food or drink when PFAS Sampling with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area.

SAMPLE CONTAINER HANDLING

-For **AQUEOUS** Samples: Each sample set contains 2 x 125 mL containers. Fill each container to the neck

-For **SOILS**-1 x 250 mL container, FILL HALF WAY ONLY

-No preservative is necessary for this appliction at this time.

-Place closed, labeled Sample bottles into ZipLock bag.

-Dispose of Nitrile gloves in provided waste bag.

-Place in separate cooler from other samples, WET ICE only

-Follow instructions on next page for more detail.

-If you have a Quality Assurance Project Plan follow that guidance

York Analytical Laboratories, Inc. ***Emerging Contaminants Laboratory***
132-02 89th Avenue SUITE 217 Richmond Hill, NY 11418

Rev 2.0 12/20

PFAS -Recommended Field Sampling Guidelines

PLEASE READ INSTRUCTIONS ENTIRELY PRIOR TO SAMPLING EVENT

Sampler should wash hands before wearing nitrile gloves in order to limit contamination during sampling. Each sample set* requires a set of containers to comply with the method as indicated below. **Sample set is composed of samples collected from the same sample site and at the same time.* **A pair of Nitrile gloves is included with each sample Zip-lock bag/bottle set. One Field Blank set per day is provided.**

Note: PP is Polypropylene

Sample Containers	Bottle Type	Preservation
2 Sampling Containers - Empty- per sample-Waters **SOILS- 1 Container-fill only half way**	125 mL PP container-Waters 250 mL PP for Soils	None, Cool <6C
1 PP Bottle with PFAS-free Water for Field Blank	125 mL PP container	None, Cool <6C
1 Field Blank (FRB) - Empty-per sampling day	125 mL PP container	None, Cool <6C
2 - Empty PP bottles for MS/DUP when needed (Soils MS/DUP come from same Bottle)	125 mL PP container	None, Cool <6C

NOTE: Sampling containers for WATERS must be filled to the neck. **SOILS, fill bottle only 1/2 full**

FIELD BLANK and MS/DUP Bottles are labeled with NEON GREEN LABELS

Field blanks are required per sampling event day and the containers have been provided. Follow the instructions below.

Field Blank Instructions:

1. Locate the PFAS Field Blank bottle (empty, labeled) supplied The PFAS Field Blank Water container is pre-filled at YORK with PFAS-free water to transfer to the empty PFAS Field Blank bottle.
2. Locate the empty container labeled "Field Blank" with Neon green labels
3. Open both containers and proceed to transfer contents of the "PFAS FIELD BLANK WATER" container into the "PFAS FIELD BLANK" Bottle
4. Field Blanks to be analyzed must be listed on the Chain-of-Custody.
5. Both the empty Field Blank water container and the filled Field Blank container must be returned to YORK along with the samples taken.

Matrix Spike/ Matrix Dup Instructions: Note: Soil MS/MSD can be from the same container as the sample

1. Locate the PFAS MS and DUP bottles (empty, labeled-NEON GREEN) supplied -normally 1 set per 20 field samples
2. Transfer chosen Field MS /Dup as a normal sample and indicate sample ID on container and on Chain-of-Custody

Sampling Instructions: ALL SAMPLE BOTTLES HAVE NEON YELLOW LABELS

1. Do not overfill or rinse the container. Any sample(s) for Matrix Spike and Matrix Duplicates are treated similarly.
2. Close containers securely. Label legibly and place containers in ZipLoc® bags, and in a separate cooler (no other container types).
3. Ensure Chain-of-Custody and all sample labels contain required information. Place all samples in separate coolers (separate from other samples for different parameters). Place wet ice (bagged) on samples for return to YORK. Samples should be kept at 4°C ±2. Samples must not exceed 10°C during first 48 hours after collection. **Hold time is 14 days.**

York Analytical Laboratories, Inc. ***Emerging Contaminants Laboratory***
132-02 89th Avenue SUITE 217 Richmond Hill, NY 11418

PFAS Target compounds and Reporting Limits

Analytical Method Information

Printed: 05/23/2023 9:34 am

PFAS, EPA 1633 Target List in Soil (EPA 1633 Draft 2)

Preservation: Cool 4°C

Container: 10_250mL Plastic Cool to 4° C **Amount Required:** 250 mL **Hold Time:** 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Perfluorobutanesulfonic acid (PFBS)	0.111	0.177 ug/kg		30	25-150	35	50-150	30
Perfluorohexanoic acid (PFHxA)	0.0530	0.200 ug/kg		30	25-150	35	50-150	30
Perfluoroheptanoic acid (PFHpA)	0.105	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorohexanesulfonic acid (PFHxS)	0.179	0.183 ug/kg		30	25-150	35	50-150	30
Perfluorooctanoic acid (PFOA)	0.172	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorooctanesulfonic acid (PFOS)	0.167	0.186 ug/kg		30	25-150	35	50-150	30
Perfluorononanoic acid (PFNA)	0.189	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorodecanoic acid (PFDA)	0.191	0.200 ug/kg		30	25-150	35	50-150	30
Perfluoroundecanoic acid (PFUnA)	0.198	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorododecanoic acid (PFDoA)	0.163	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorotridecanoic acid (PFTrDA)	0.125	0.200 ug/kg		30	25-150	35	50-150	30
Perfluorotetradecanoic acid (PFTA)	0.103	0.200 ug/kg		30	25-150	35	50-150	30
N-MeFOSAA	0.148	0.200 ug/kg		30	25-150	35	50-150	30
N-EtFOSAA	0.194	0.200 ug/kg		30	25-150	35	50-150	30
Perfluoropentanoic acid (PFPeA)	0.109	0.400 ug/kg		30	25-150	35	50-150	30
Perfluoro-1-octanesulfonamide (FOSA)	0.146	0.200 ug/kg		30	25-150	35	50-150	30
Perfluoro-1-heptanesulfonic acid (PFHpS)	0.155	0.200 ug/kg		30	25-150	35	50-150	30
Perfluoro-1-decanesulfonic acid (PFDS)	0.191	0.193 ug/kg		30	25-150	35	50-150	30
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	0.595	0.760 ug/kg		30	25-150	35	50-150	30
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	0.755	0.768 ug/kg		30	25-150	35	50-150	30
Perfluoro-n-butanoic acid (PFBA)	0.109	0.800 ug/kg		30	25-150	35	50-150	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	0.139	0.356 ug/kg		30	25-150	30	50-150	30
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	0.193	0.400 ug/kg		30	25-150	30	50-150	30
Perfluoro-4-oxapentanoic acid (PFMPA)	0.0620	0.400 ug/kg		30	25-150	30	50-150	30
Perfluoro-5-oxahexanoic acid (PFMBA)	0.0960	0.400 ug/kg		30	25-150	30	50-150	30
Perfluoro-1-pentanesulfonate (PFPeS)	0.157	0.188 ug/kg		30	25-150	30	50-150	30
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	0.595	0.750 ug/kg		30	25-150	30	50-150	30
HFPO-DA (Gen-X)	0.608	0.800 ug/kg		30	25-150	30	50-150	30
11CL-PF3OUdS	0.311	0.756 ug/kg		30	25-150	30	50-150	30
9CL-PF3ONS	0.246	0.748 ug/kg		30	25-150	30	50-150	30
ADONA	0.174	0.756 ug/kg		30	25-150	30	50-150	30
Perfluorododecanesulfonic acid (PFDoS)	0.169	0.194 ug/kg		30	25-150	30	50-150	30
Perfluoro-1-nonanesulfonic acid (PFNS)	0.124	0.192 ug/kg		30	25-150	30	50-150	30
3-Perfluoropropyl propanoic acid (FPrPA)	0.634	1.00 ug/kg		30	25-150	30	50-150	30
3-Perfluoropentyl propanoic acid (FPePA)	2.10	5.00 ug/kg		30	25-150	30	50-150	30
3-Perfluoroheptyl propanoic acid (FHpPA)	1.50	5.00 ug/kg		30	25-150	30	50-150	30
N-MeFOSE	0.611	2.00 ug/kg		30	25-150	30	50-150	30
N-MeFOSA	0.180	0.200 ug/kg		30	25-150	30	50-150	30
N-EtFOSE	0.697	2.00 ug/kg		30	25-150	30	50-150	30
N-EtFOSA	0.198	0.200 ug/kg		30	25-150	30	50-150	30
Surr: M3PFBS			25-150					

Analytical Method Information

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(Continued)

PFAS, EPA 1633 Target List in Soil (EPA 1633 Draft 2) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Surr: M5PFHxA			25-150					
Surr: M4PFHpA			25-150					
Surr: M3PFHxS			25-150					
Surr: Perfluoro-n-[13C8]octanoic acid (M8PFOA)			25-150					
Surr: M6PFDA			25-150					
Surr: M7PFUdA			25-150					
Surr: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)			25-150					
Surr: M2PFTeDA			10-150					
Surr: Perfluoro-n-[13C4]butanoic acid (MPFBA)			25-150					
Surr: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)			25-150					
Surr: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)			25-150					
Surr: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)			10-150					
Surr: d3-N-MeFOSAA			25-150					
Surr: d5-N-EtFOSAA			25-150					
Surr: M2-6:2 FTS			25-200					
Surr: M2-8:2 FTS			25-200					
Surr: M9PFNA			25-150					
Surr: M2-4:2 FTS			25-150					
Surr: d-N-MeFOSA			25-150					
Surr: d-N-EtFOSA			25-150					
Surr: M3HFPO-DA			25-150					
Surr: d9-N-EtFOSE			25-150					
Surr: d7-N-MeFOSE			25-150					
M3PFBA								
MPFDA								
MPFHxA								
MPFHxS								
MPFNA								
MPFOA								
MPFOS								
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)-EIS								
Perfluoro-n-[13C8]octanoic acid (M8PFOA)-EIS								
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)-EIS								
Perfluoro-n-[13C4]butanoic acid (MPFBA)-EIS								
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)-EIS								
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)-EIS								
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)-EIS								
M7PFUdA-EIS								
M6PFDA-EIS								
M5PFHxA-EIS								
M4PFHpA-EIS								
M3PFHxS-EIS								
M3PFBS-EIS								
M3-HFPO-DA-EIS								
M2PFTeDA-EIS								

Analytical Method Information

(Continued)

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PFAS, EPA 1633 Target List in Soil (EPA 1633 Draft 2) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
M2-8-2FTS-EIS								
M2-6-2FTS-EIS								
M2-4-2FTS-EIS								
d9-NEtFOSE-EIS								
d7-NMeFOSE-EIS								
d5-NEtFOSA-EIS								
d5-N-EtFOSAA-EIS								
d3-NMeFOSA-EIS								
d3-N-MeFOSAA-EIS								

Analytical Method Information

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(Continued)

PFAS, EPA 1633 Target List in Water (EPA 1633 Draft 2)

Preservation: Cool 4°C

Container: 10_250mL Plastic Cool to 4° C **Amount Required:** 250 mL **Hold Time:** 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Perfluorobutanesulfonic acid (PFBS)	0.470	1.77 ng/L		30	25-150	35	50-150	30
Perfluorohexanoic acid (PFHxA)	0.350	2.00 ng/L		30	25-150	35	50-150	30
Perfluoroheptanoic acid (PFHpA)	0.710	2.00 ng/L		30	25-150	35	50-150	30
Perfluorohexanesulfonic acid (PFHxS)	0.680	1.83 ng/L		30	25-150	35	50-150	30
Perfluorooctanoic acid (PFOA)	0.420	2.00 ng/L		30	25-150	35	50-150	30
Perfluorooctanesulfonic acid (PFOS)	0.820	1.86 ng/L		30	25-150	35	50-150	30
Perfluorononanoic acid (PFNA)	0.520	2.00 ng/L		30	25-150	35	50-150	30
Perfluorodecanoic acid (PFDA)	0.750	2.00 ng/L		30	25-150	35	50-150	30
Perfluoroundecanoic acid (PFUnA)	1.13	2.00 ng/L		30	25-150	35	50-150	30
Perfluorododecanoic acid (PFDoA)	0.880	2.00 ng/L		30	25-150	35	50-150	30
Perfluorotridecanoic acid (PFTrDA)	0.740	2.00 ng/L		30	25-150	35	50-150	30
Perfluorotetradecanoic acid (PFTA)	0.690	2.00 ng/L		30	25-150	35	50-150	30
N-MeFOSAA	0.790	2.00 ng/L		30	25-150	35	50-150	30
N-EtFOSAA	1.03	2.00 ng/L		30	25-150	35	50-150	30
Perfluoropentanoic acid (PFPeA)	0.230	4.00 ng/L		30	25-150	35	50-150	30
Perfluoro-1-octanesulfonamide (FOSA)	0.880	2.00 ng/L		30	25-150	35	50-150	30
Perfluoro-1-heptanesulfonic acid (PFHpS)	0.910	1.91 ng/L		30	25-150	35	50-150	30
Perfluoro-1-decanesulfonic acid (PFDS)	1.32	1.93 ng/L		30	25-150	35	50-150	30
1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTS)	1.06	7.60 ng/L		30	25-150	35	50-150	30
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	2.05	7.68 ng/L		30	25-150	35	50-150	30
Perfluoro-n-butanoic acid (PFBA)	0.330	8.00 ng/L		30	25-150	35	50-150	30
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	0.500	3.56 ng/L		30	25-150	30	50-150	30
Perfluoro-3,6-dioxaheptanoic acid (NFDHA)	2.14	4.00 ng/L		30	25-150	30	50-150	30
Perfluoro-4-oxapentanoic acid (PFMPA)	0.250	4.00 ng/L		30	25-150	30	50-150	30
Perfluoro-5-oxahexanoic acid (PFMBA)	0.370	4.00 ng/L		30	25-150	30	50-150	30
Perfluoro-1-pentanesulfonate (PFPeS)	0.760	1.88 ng/L		30	25-150	30	50-150	30
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	1.79	7.50 ng/L		30	25-150	30	50-150	30
HFPO-DA (Gen-X)	3.23	8.00 ng/L		30	25-150	30	50-150	30
11CL-PF3OUdS	1.38	7.56 ng/L		30	25-150	30	50-150	30
9CL-PF3ONS	0.700	7.48 ng/L		30	25-150	30	50-150	30
ADONA	0.530	7.56 ng/L		30	25-150	30	50-150	30
Perfluorododecanesulfonic acid (PFDoS)	0.930	1.94 ng/L		30	25-150	30	50-150	30
Perfluoro-1-nonanesulfonic acid (PFNS)	0.860	1.92 ng/L		30	25-150	30	50-150	30
3-Perfluoropropyl propanoic acid (FPrPA)	2.03	5.00 ng/L		30	25-150	30	50-150	30
3-Perfluoropentyl propanoic acid (FPePA)	7.33	25.0 ng/L		30	25-150	30	50-150	30
3-Perfluoroheptyl propanoic acid (FHpPA)	9.47	25.0 ng/L		30	25-150	30	50-150	30
N-MeFOSE	3.99	20.0 ng/L		30	25-150	30	50-150	30
N-MeFOSA	1.58	2.00 ng/L		30	25-150	30	50-150	30
N-EtFOSE	3.99	20.0 ng/L		30	25-150	30	50-150	30
N-EtFOSA	1.80	2.00 ng/L		30	25-150	30	50-150	30
Surr: M3PFBS			25-150					

Analytical Method Information

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(Continued)

PFAS, EPA 1633 Target List in Water (EPA 1633 Draft 2) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	----Matrix Spike---- RPD	--Blank Spike / LCS-- %Rec	--Blank Spike / LCS-- RPD
Surr: M5PFHxA			25-150					
Surr: M4PFHpA			25-150					
Surr: M3PFHxS			25-150					
Surr: Perfluoro-n-[13C8]octanoic acid (M8PFOA)			25-150					
Surr: M6PFDA			25-150					
Surr: M7PFUdA			25-150					
Surr: Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)			25-150					
Surr: M2PFTeDA			10-150					
Surr: Perfluoro-n-[13C4]butanoic acid (MPFBA)			25-150					
Surr: Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)			25-150					
Surr: Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)			25-150					
Surr: Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)			10-150					
Surr: d3-N-MeFOSAA			25-150					
Surr: d5-N-EtFOSAA			25-150					
Surr: M2-6:2 FTS			25-200					
Surr: M2-8:2 FTS			25-200					
Surr: M9PFNA			25-150					
Surr: M2-4:2 FTS			25-150					
Surr: d-N-MeFOSA			25-150					
Surr: d-N-EtFOSA			25-150					
Surr: M3HFPO-DA			25-150					
Surr: d9-N-EtFOSE			25-150					
Surr: d7-N-MeFOSE			25-150					
M3PFBA								
MPFDA								
MPFHxA								
MPFHxS								
MPFNA								
MPFOA								
MPFOS								
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)-EIS								
Perfluoro-n-[13C8]octanoic acid (M8PFOA)-EIS								
Perfluoro-n-[13C54]pentanoic acid (M5PFPeA)-EIS								
Perfluoro-n-[13C4]butanoic acid (MPFBA)-EIS								
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)-EIS								
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)-EIS								
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)-EIS								
M7PFUdA-EIS								
M6PFDA-EIS								
M5PFHxA-EIS								
M4PFHpA-EIS								
M3PFHxS-EIS								
M3PFBS-EIS								
M3-HFPO-DA-EIS								
M2PFTeDA-EIS								

Analytical Method Information

(Continued)

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PFAS, EPA 1633 Target List in Water (EPA 1633 Draft 2) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
M2-8-2FTS-EIS								
M2-6-2FTS-EIS								
M2-4-2FTS-EIS								
d9-NEtFOSE-EIS								
d7-NMeFOSE-EIS								
d5-NEtFOSA-EIS								
d5-N-EtFOSAA-EIS								
d3-NMeFOSA-EIS								
d3-N-MeFOSAA-EIS								

Laboratory Standard Operating Procedure

Determination of PFAS in Aqueous and Solid matrices by

Isotope Dilution Analysis by HPLC/MS-MS (EPA 1633 Draft 2)

Standard Operating Procedure

Determination of Target Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous and Solid matrices by Isotope Dilution Analysis by HPLC/MS-MS According to EPA Method 1633 Draft 2

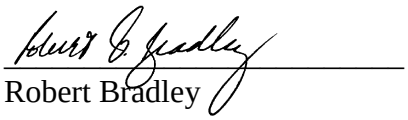
Approvals

Laboratory Director/QA Officer



Krys Trafalski

Vice President/Chief Scientific Officer



Robert Bradley

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1. SCOPE AND APPLICATION

This method is used to identify and quantitate specific PFAS compounds in extracts of non-potable water and solid (soil/sediment) samples using HPLC/MS-MS (high pressure liquid chromatography/tandem mass spectrometry. Currently the compounds (40) that are measured by this methodology are listed in the Table 1.0 below.

Table 1.0-Target PFAS

Perfluoroalkyl carboxylic acids		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
Perfluoroalkyl sulfonic acids Acid Form		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentansulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5
Fluorotelomer sulfonic acids		
1*H*,1*H*, 2*H*, 2*H*-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1*H*,1*H*, 2*H*, 2*H*-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1*H*,1*H*, 2*H*, 2*H*-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
Perfluorooctane sulfonamides		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamidoacetic acids		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
Per- and Polyfluoroether carboxylic acids		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3*H*-perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6
Ether sulfonic acids		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
Fluorotelomer carboxylic acids		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2*H*,2*H*,3*H*,3*H*-Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

The estimated reporting limits (MRL) based upon the preparation/analysis parameters herein at the time of this revision are approximately 2.0-20.0 ng/L (ppt) for aqueous samples and 0.5-5.0 ug/kG for solids . The linear range for these PFAS can be extended by dilution. These MRLs are based upon a volume of 0.250L-0.500L extracted for aqueous samples and 2-5 g. for solids.

This method is "performance-based," which means that modifications may be made without additional EPA review to improve performance (e.g., overcome interferences, or improve the sensitivity, accuracy, or precision of the results) *provided that* all performance criteria in this method are met. Requirements for establishing equivalency are in Section 9.1.2 and include 9.1.2.2c. For CWA uses, additional flexibility is described at 40 CFR 136.6. Changes in performance, sensitivity, selectivity, precision, recovery, etc., that result from modifications within the scope of 40 CFR Part 136.6, and Section 9.0 of this method must be documented, as well as how these modifications compare to the specifications in this method. Changes outside the scope of 40 CFR Part 136.6 and Section 9.0 of this method may require prior review or approval.

2. SUMMARY

Environmental samples are prepared and extracted using method-specific procedures. Sample extracts are subjected to cleanup procedures designed to remove interferences. Analyses of the sample extracts are conducted by LC-MS/MS in the multiple reaction monitoring (MRM) mode. Sample concentrations are determined by isotope dilution or extracted internal standard quantification (see Section 10.3) using isotopically labeled compounds added to the samples before extraction

2.1 Extraction

2.1.1 Aqueous samples are spiked with isotopically labeled standards, extracted using solid-phase extraction (SPE) cartridges and undergo cleanup using carbon before analysis.

2.1.2 Solid samples are spiked with isotopically labeled standards, extracted into basic methanol, and cleaned up by carbon and SPE cartridges before analysis.

2.2 Analysis

2.2.1 Extracts are then analyzed by HPLC-MS/MS in the MRM mode. Extracts contain Non-extracted Internal Standards (NIS) to monitor instrument performance and used for quantitative analysis.

2.2.2 Individual PFAS analytes are identified through peak analysis of the quantification and confirmation ions (Precursor and product ions) where applicable.

2.2.3 The concentration of each analyte is calculated using the isotope dilution technique. This approach corrects the target analytes for surrogate analog recoveries and these surrogates are essentially extracted internal standards (EIS). For QC purposes, the percent recoveries of the isotope dilution analogues are calculated using the integrated peak areas of isotope performance standards, which are added to the final extract and function as traditional internal standards (non-extracted internal standards), exclusively applied to the isotope dilution analogues.

3. DEFINITIONS

3.1 ANALYSIS BATCH – A set of samples that is analyzed on the same instrument during a 24-hour period, including no more than 20 Field Samples, that begins and ends with the analysis of the appropriate Continuing Calibration Check (CCC) standards. Additional CCCs may be required depending on the length of the analysis batch and/or the number of Field Samples.

3.2 CALIBRATION STANDARD (CAL) – A solution of the method analytes, isotope dilution analogues, and isotope performance standards (Internal standards) prepared from the Primary Dilution Standards and stock standards. The calibration standards are used to calibrate the instrument response with respect to analyte concentration.

3.3 CONTINUING CALIBRATION VERIFICATION (CCV) – A calibration standard containing the method analytes, internal standard(s) and surrogate(s). The CCV is analyzed periodically to verify the accuracy of the existing calibration for those analytes.

3.4 EXTRACTION BATCH – A set of up to 20 Field Samples (not including QC Samples) extracted together by the same person(s) during a work day using the same lot of SPE devices, solvents, surrogate, internal standard and fortifying solutions. Required QC samples include Method blank, and Matrix spike/duplicate pair.

3.5 FIELD DUPLICATES – Separate samples collected at the same time and sampling location, shipped and stored under identical conditions. Method precision, including the contribution from sample collection procedures, is estimated from the analysis of Field Duplicates. Field Duplicates are used to prepare matrix spike/matrix spike duplicate QC samples.

3.6 FIELD BLANK (FBLK) – An aliquot of reagent water that is placed in a sample container in the laboratory and treated as a sample in all respects, including shipment to the sampling site, exposure to sampling site conditions, storage, preservation, and all analytical procedures. The purpose of the FBLK is to determine if method analytes or other interferences are introduced into the sample from shipping, storage, and the field environment.

3.7 ISOTOPE DILUTION ANALOGUES - Isotopically labeled analogues of the method analytes that are added to the sample prior to extraction in a known amount. Note: Not all target PFAS currently have an isotopically labeled analogue. In these cases, an alternate isotopically labeled analogue is used as detailed in our SOP and in the reference method.

3.8 ISOTOPE DILUTION TECHNIQUE - An analytical technique for measuring analyte concentration using the ratio of the peak area of the native analyte to that of an isotopically labeled analogue, added to the original sample in a known amount and carried through the entire analytical procedure.

3.9 ISOTOPE PERFORMANCE STANDARDS (Internal Standards) - Quality control compounds that are added to all standard solutions and extracts in a known amount and used to measure the relative response of the isotopically labelled analogues that are components of the same solution. For this method, the isotope performance standards are three isotopically labeled analogues of the method analytes. The isotope performance standards are indicators of instrument performance and are used to calculate the recovery of the isotope dilution analogues through the extraction procedure. In this method, the isotope performance standards are not used in the calculation of the recovery of the native analytes.

3.10 METHOD BLANK – An aliquot of reagent water to which known quantities of the method analytes and isotope dilution analogues are added. The results of the MBLK verify method performance in the absence of sample matrix.

3.11 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) – Aliquots of field samples that have been fortified with a known concentration of target compounds, prior to sample preparation and extraction, and analyzed to measure the effect of matrix interferences. The use of MS/MSD samples is generally not required in isotope dilution methods because the labeled compounds added to every sample provide more performance data than spiking a single sample in each preparation batch.

3.12 LIMIT OF QUANTITATION (LOQ) – The smallest concentration that produces a quantitative result with known and recorded precision and bias. The LOQ shall be set at or above the concentration of the lowest initial calibration standard (the lowest calibration standard must fall within the linear range). Determined by matrix through the entire preparation and analysis process.

3.13 METHOD DETECTION LIMIT (MDL) – The minimum measured concentration of a substance that can be reported with 99% confidence that the measured analyte concentration is distinguishable from method blank results (40 CFR 136, Appendix B).

3.14 MINIMUM LEVEL OF QUANTITATION (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. It may be equivalent to the concentration of

the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed. Alternatively, the ML may be established by multiplying the MDL (pooled or unpooled, as appropriate) by 3.18 and rounding the result to the number nearest to 1, 2, or 5 x 10n, where n is zero or an integer (see 68 FR 11770).

3.15 PRECURSOR ION – For the purpose of this method, the precursor ion is the deprotonated molecule ($[M-H]^-$) of the method analyte (with the exception of HFPO-DA, in which the precursor ion is formed by decarboxylation). In MS/MS, the precursor ion is mass selected and fragmented by collisionally activated dissociation to produce distinctive product ions of smaller *m/z*.

3.16 PRIMARY DILUTION STANDARD (PDS) SOLUTION – A solution containing the analytes prepared in the laboratory from stock standard solutions and diluted as needed to prepare calibration solutions and other needed analyte solutions.

3.17 PRODUCT ION – For the purpose of this method, a product ion is one of the fragment ions produced in MS/MS by collisionally activated dissociation of the precursor ion.

3.18 INITIAL CALIBRATION VERIFICATION (ICV) – A calibration standard prepared independently from the primary calibration solutions. For this method, the ICV is a repeat of the entire dilution scheme starting with the same stock materials (neat compounds or purchased stock solutions) used to prepare the primary calibration solutions. Independent sources and separate lots of the starting materials are not required, provided the laboratory has obtained the purest form of the starting materials commercially available. The purpose of the ICV is to verify the integrity of the primary calibration standards.

3.19 QUANTITATIVE STANDARD - A quantitative standard of assayed concentration and purity traceable to a Certificate of Analysis.

3.20 STOCK STANDARD SOLUTION - A concentrated solution containing one or more method analytes prepared in the laboratory using assayed reference materials or purchased from a reputable commercial source with a Certificate of Analysis.

3.21 TECHNICAL GRADE STANDARD – As defined for this method, a technical-grade standard includes a mixture of the branched and linear isomers of a method analyte. For the purposes of this method, technical-grade standards are used to identify retention times of branched and linear isomers of method analytes.

3.22 ANALYTE – A PFAS compound included in this method. The analytes are listed in Table 1.

3.23 CALIBRATION STANDARD (CS) – A solution prepared from a secondary standard and/or stock solutions and used to calibrate the response of the LC-MS/MS instrument.

3.24 CONTINUING CALIBRATION VERIFICATION (CCV) STANDARD – The mid-point calibration standard that is used to verify calibration.

3.25 CFR – Code of Federal Regulations

3.26 EXTRACTED INTERNAL STANDARD (EIS) QUANTIFICATION – The response of the target compound is compared to the response of the labeled analog of another compound in the same LOC.

3.27 INSTRUMENT SENSITIVITY CHECK – solution used to check the sensitivity of the instrument. The solution contains the native compounds at the concentration of the LOQ.

3.28 IPR – INITIAL PRECISION AND RECOVERY; four aliquots of a reference matrix spiked with the analytes of interest and labeled compounds and analyzed to establish the ability of the laboratory to generate acceptable precision and recovery. An IPR is performed prior to the first time this method is used and any time the method or instrumentation is modified

3.29 OPR - ONGOING PRECISION AND RECOVERY- – Ongoing precision and recovery standard (OPR); a method blank spiked with known quantities of analytes. The OPR is analyzed exactly like a sample. Its purpose is to assure that the results produced by the laboratory remain within the limits specified in this method for precision and recovery. Applies to OPR and LLOPR (low level OPR at **2x** the LOQ level).

3.30 SPE – SOLID PHASE EXTRACTION; a technique in which an analyte is extracted from an aqueous solution or a solid extract by passage over or through a material capable of reversibly adsorbing the analyte. Also termed liquid-solid extraction.

4. INTERFERENCES

LC-MS/MS data from blanks, samples, and spikes must be evaluated for interferences. If any interferences are present, take corrective action if necessary. Do not use aluminum foil because PFAAs can be potentially transferred from the aluminum foil to the glassware. Only aluminum foil rinsed with LC/MS grade methanol can be used where necessary.

4.1 PFAS have been used in a wide variety of manufacturing processes, and laboratory supplies should be considered potentially contaminated until they have been tested and shown to be otherwise. The materials and supplies used during the method validation process have been tested and shown to be clean. These items are listed in the Reagents section.

4.2 Method interferences may be caused by contaminants in solvents, reagents (including DI water), sample bottles and caps, and other sample processing hardware that lead to discrete artifacts and/or elevated baselines in the chromatograms. All items such as these must be routinely demonstrated to be free from interferences (less than 1/2 the Reporting Limit), under the conditions of the analysis by analyzing Method Blanks. Subtracting blank values from sample results is not permitted.

4.3 PTFE products can be a source of PFAS (PFOA) contamination. The use of PTFE in the procedure should be avoided. Polypropylene (PP) or polyethylene (PE, HDPE) products may be used in place of PTFE products to minimize PFOA contamination.

4.3.1 Standards and samples are injected from polypropylene autosampler vials with polypropylene or polyolefin snap caps, once. Multiple injections may be performed on Primers when conditioning the instrument for analysis.

4.3.2 Random evaporation losses have been observed with the polypropylene caps causing high Internal Std. recovery after the vial was punctured and sample re-injected. For this reason, it is best to inject standards and samples once in the analytical sequence, then recap with polyolefin caps for storage.

4.3.2 Teflon-lined screw caps have detected PFAS at low concentrations. Repeated injection from the same teflon-lined screw cap have detected PFNA at increasing concentration as each repeated injection was performed, therefore, it is best to use polypropylene snap caps.

4.3.3 Aqueous samples should not come in contact with any glass containers or pipettes as PFAS analytes can potentially adsorb to glass surfaces. Standards dissolved in organic solvent may be purchased in glass ampoules. These standards in organic solvent are acceptable and subsequent transfers may be performed using glass syringes and pipets. Following extraction, the eluate must be collected in a polypropylene tube prior to concentration to dryness. Concentration to dryness in glass tubes may cause poor recovery.

4.4 LC/MS grade methanol must be used for all steps where methanol is used in this method. HPLC grade methanol has been demonstrated to be acceptable if tested prior to use.

4.5 Matrix interferences may be caused by contaminants that are co-extracted from the sample. The extent of matrix interferences will vary considerably from source to source, depending upon the nature of the sample.

4.5.1 Co-extracted Organic Material - Under normal LC conditions matrix effects due to co-extracted organic material enhanced the ionization of 4:2 FTS appreciably. Total organic carbon (TOC) is a good indicator of humic content of the sample.

4.5.2 Solid phase extraction cartridges may be a source of interferences. The analysis of field and laboratory reagent blanks can provide important information regarding the presence or absence of such interferences. SPE cartridges should be sealed while in storage to prevent ambient contamination of the SPE sorbent.

4.6 Contamination by carryover can occur whenever a high-concentration and low concentration samples are sequentially analyzed. To reduce carryover, the sample syringe in automatically rinsed with solvent between injections. These operations are programmed into the LC multi-sampler system.

4.7 Volumetric glassware and syringes are difficult to clean after being used for solutions containing high levels of PFOA. These items should be labeled for use only with similarly concentrated solutions or verified clean prior to re-use. To the extent possible, disposable labware is used.

4.8 Both branched and linear PFAS isomers can potentially be found in the environment. Linear and branched isomers are known to exist for PFOS, PFOA, PFHxS, and PFBS, based upon the scientific literature. We have also seen branched isomers for PFHpA, NMeFOSAA, NEtFOSAA and PFNA. If multiple isomers are present for one of these PFAS they likely are adjacent peaks that completely resolve or not, but usually with a deflection point resolved during peak integration. The later of these peaks matches the retention time of its labeled linear analog. In general, earlier peaks are the branched isomers and are not the result of peak splitting.

Currently, all these species are available as linear isomers. Some available branched and linear reference standards of the technical mixtures for these specific PFAS are used to ensure that all appropriate peaks are included during peak integration. These species currently include PFOA, PFHxS, NMeFOSAA, and NEtFOSAA. These branched isomers elute before the linear isomer and are integrated and reported as total for those species. Others are also included at this time such as those listed in section 7.3.4.

4.9 In an attempt to reduce PFOS bias, it is required that *m/z* 499>80 transition be used as the quantitation transition.

5. SAMPLE HANDLING

5.1 **Aqueous Samples** - samples are collected by our clients in 250 or 500ml HDPE bottles with unlined HDPE or polypropylene caps and filled to the neck. Each sample submitted should be submitted in triplicate-with one used for determination of Suspended solids and possible pre-screening. Sub-sampling should be avoided whenever possible. When historical data are available indicating high levels of PFAS, sub-sampling may be an advisable option.

5.2 **Soil Samples** – samples are collected in wide mouth 125 or 250 mL HDPE bottles with PP unlined caps.

5.3 SAMPLE SHIPMENT AND STORAGE/HOLDING TIMES – Maintain all aqueous samples protected from light at 0 - 6 ºC from the time of collection until shipped to the laboratory. Samples must be shipped as soon as practical with sufficient ice to maintain the sample temperature below 6 ºC during transport. Sample are to be received by the laboratory within 48 hours of collection. The laboratory must confirm that the sample temperature is 0 - 6 ºC upon receipt. Once received by the laboratory, the samples may be stored at ≤ -20 ºC, or at 0 - 6 ºC, until sample preparation. However, the allowable holding time for samples depends on the storage temperature, as described below:

5.3.1 Aqueous samples may be held in the laboratory for up to 90 days from collection, when stored at ≤ -20 ºC and protected from the light. When stored at 0 - 6 ºC and protected from the light, aqueous samples may be held for up to **28 days**, with the caveat that issues were observed with certain perfluorooctane sulfonamide ethanols and perfluorooctane sulfonamidoacetic acids after **7 days**. These issues are more likely to elevate the observed concentrations of other PFAS compounds via the transformation of these precursors if they are present in the sample.

5.3.2 Solid samples (soils and sediments) may be held for up to 90 days, if stored in the dark at either 0 - 6 ºC or ≤ -20 ºC, with the caveat that samples may need to be extracted as soon as possible if NFDHA is an important analyte.

5.4 **SAMPLE EXTRACT HOLDING TIMES** – Store sample extracts in the dark at less than 0 - 4 ºC until analyzed. If stored in the dark at less than 0 - 4 ºC, sample extracts may be stored for up to 90 days, with the caveat that issues were observed for some ether sulfonates after 28 days. These issues may elevate the observed concentrations of the ether sulfonates in the extract over time. Samples may need to be extracted as soon as possible if NFDHA is an important analyte.

6. APPARATUS AND MATERIALS (as listed or demonstrated equivalents)

6.1 250-500 mL polypropylene bottles with polypropylene caps. VWR Scientific or equivalent: Part no. 414004-125, 12 pk. Alternate: White PP unlined lid L238WH and 16oz. clarified PP single wall jar 70-400 neck, item J066-Containers and Packaging.com or equivalent.

6.2 Transport Tube: Virgin Polypropylene, White, Plastic, 10 mL Capacity, 16 mm OD, 93 mm Overall Lg, Self-Standing, 250 PK， Item 710Z420, Gamut.com (Grainger), with PP cap or equivalent.

6.3 Graduated cylinders, 50, 100, 250, 500 and 1000mL, Polypropylene, VWR Scientific or equivalent

6.4 Analytical Balance, 0.0001g., checked for accuracy each day of use with Class S weights, certified annually by an outside service

6.5 Extract concentrators: Organomation Model N-EVAP 112, 24 position concentrator with water batch control and nitrogen supply controls or equivalent

6.6 3.1 Micron in-line filters, Promochrom only

6.7 1.0-2.0 mL polypropylene snap cap vials, Agilent part no. 5182-0567 or equivalent

6.8 Snap caps, polypropylene or olefin, 11 mm, 11/9k, Agilent Part no. 5182-0542

6.9 Solid Phase Extraction Tubes: for EPA 1633: WAX (weak anion exchange mixed mode polymeric sorbent – Phenomenex No. 8B-S038-HCH 200 mg or Waters Oasis 150 mg Cat. # 186002493. Must have a pKa > 8 to remain positively charged during the extraction. Alternate is Agilent Bond Elute WAX 200 mg-cat. No. 5610-2151

6.10 Syringes, Hamilton or equivalent 5.0 uL, 10 uL 25 uL, 100 uL, 250 uL, 500 uL, teflon free

6.11 Solid Phase Extraction System-automated-Promochrom 8 position autosampler system for 6 mL capacity SPE tubes. System retrofit to remove all PTFE components and replaced with PEEK tubing or PFAS free tubing. Automated bottle rinsing feature required with 3.1 um in line PP filters

6.12 Nitrogen Evaporation System- TurboVap nitrogen evaporation system operated at less than 55C.

6.13 LC/MS-MS system- Agilent 1260 or 1290 HPLC system interfaced to an Agilent 6470A or 6460C Triple Quadrupole system. The instrument control and qualitative/quantitative software is Mass Hunter versions B.8.0 and B.9.0 or later.

6.13.1 HPLC System-Agilent 1260 or 1290 Infinity II

6.13.1.1 The Agilent 1260 or 1290 Infinity II HPLC system is configured with temperature controlled column oven compartment. 4 column configuration, temperature controlled (refrigerated) auto sampler compartments, injection valve, proportioning valves, variable flow controls and variable injection capabilities.

6.13.1.2 The delay column (PFAS and other interference removal) is an Agilent Eclipse Plus C18, 4.6mm x 50 mm, 3.5 um-Part no. 959943-902 or equivalent.

6.13.1.3 The analytical column is a Restek Raptor C18 part no. 9304252 50mm x 2.1 mm ID, 1.8 u particle size or equivalent

6.13.2 Agilent LC/MS-MS- Agilent 6470AAR/6460C

6.14.2.1 Agilent model 6470AAR/6460C triple Quadrupole system with Agilent Jet Stream ESI source. UHP nitrogen is used as cell gas and High purity nitrogen is delivered for the sheath gas from a Peak Scientific nitrogen generator system.

6.14 Vortex Mixer- Benchmark Industries or equivalent

6.15 Variable Speed shaker table, 18” x 12”- Orbital Shaker- Jiangau Tenlin Instr. Co., Ltd., Model no. TLSK-III 20-230 RPM, 0-999 min, or equivalent

6.16 Centrifuge, 50 mL, Premiere Model XC-2450 Series Centrifuge 6 x 50 mL, 3500 RPM max., or equivalent

6.17 Mechanical Pipettors- 10-100 uL; 100-1000 uL; 1000-5000 uL-4 E’S Scientific or equivalent, calibrated quarterly.

6.18 Vortex Mixer- Benchmark Industries or equivalent

6.19 pH paper, short range 6-8 and full range with 0.5 pH readability- VWR Scientific or equivalent

6.20 15 mL PP or HDPE Centrifuge tubes, Corning Part no. 430791

6.21 3 mL Disposable Transfer pipets, PE, VWR part no. 16001-176

6.22 1.0 mL polypropylene snap cap vials, Agilent part no. 5182-0567

6.23 Snap caps, polypropylene, 11 mm, 11/9k, Agilent Part no. 5182-0542

6.24 2mL self standing PP microcentrifuge snap cap tubes, SKS Scientific part no. 0747-17

6.25 Collection tubes, 15 mL graduated PP or HDPE Centrifuge tubes, Corning Part no. 430791
6.26 Disposable 10 mg scoops, PP
6.27 Ultrasonic mixer
6.28 10 mL disposable syringes, PP or HDPE, luer fitting
6.29 13mm or 25 mm 0.2 um Nylon membrane filters, PALL Acrodisc or equivalent

7. REAGENTS AND STANDARDS-as listed or equivalents

7.1 ALL REAGENTS and STANDARDS MUST BE LOGGED INTO THE ELEMENT LIMS SYSTEM. This includes lot numbers, expiration, open and prepared dates, receipt date, Certification/traceability documents from supplier(s) if provided and preparer.

7.2 SOLVENTS and REAGENTS-all as listed or equivalents

7.2.1 Methanol, hypergrade for LC/MS. (Merck) from Sigma Aldrich Part no. 1060354000 or equivalent (HPLC Plus grade is an acceptable alternate)

7.2.2 Water, hypergrade for LC/MS. (Merck) from Sigma Aldrich Part no. 1153334000 or equivalent (HPLC plus grade is an acceptable alternate). Alternatively, York PFAS free water demonstrated ion and PFAS free can be used.

7.2.3 Acetic Acid, glacial. ACS grade or equivalent.

7.2.4 Ammonium Hydroxide, conc. Cert. ACS grade, 28-30% in water, Sigma Aldrich part no.1054231000, or equivalent

7.2.5 Methanolic Potassium Hydroxide (0.05 M) – add 3.3 g of KOH to 1L MeOH

7.2.6 Sodium Hydroxide, pellets, ACS grade- Sigma Aldrich part no. 221465-500G, or equivalent

7.2.7 Potassium Hydroxide, pellets, ACS grade

7.2.8 Ammonium Acetate – ACS grade or better, Ammonium Acetate, HPLC or cert. ACS grade. Sigma Aldrich Part no. 73594-100-G-F or equivalent.

7.2.9 Ammonium Acetate 5 mM for HPLC in aqueous solution: HPLC gradient A-- Weigh 0.3854 g (+ 0.0005) Ammonium Acetate and add to 1 liter hypergrade Water. Mix until dissolved then sonicate for 5 mins. To remove air bubbles. Stability - 2 weeks.

7.2.10 **Methanolic Ammonium Hydroxide 0.3 %** - take 2.5 mL of conc. ammonium hydroxide into 247 mL MeOH (measure the 247 mL in a PP graduated cylinder-they are under QQ1 somewhere). Use a mechanical pipet to add the 2.5 mL (not strictly quantitative FYI)-**Make 4 bottles of this**. *Used for soil extractions*.- 1 month life

7.2.11 **Methanolic Ammonium Hydroxide 1.0 %** - take 8.25 mL of conc. ammonium hydroxide into 242 mL MeOH (measure the 242 mL in a PP graduated cylinder-they are under QQ1 somewhere). Use a mechanical pipet to add the 8.25 mL (not strictly quantitative FYI)- **Make 4 bottles of this** -*used in Promochrom*-1 month life.

7.2.12 **Aqueous Ammonium Hydroxide 3%-** take 24.8 mL of ammonium hydroxide and add to 242 mL PFAS free water. 3 month life- *used for pH adjustment*

7.2.13 **Methanol with 4% water, 1% ammonium hydroxide and 0.625% acetic acid** – add ammonium hydroxide (3.3 mL, 30%), reagent water (1.7 mL) and acetic acid (0.625 mL) to methanol (92 mL), store at room temperature, replace after 1 month. **This solution is used to prepare the instrument blank, calibration stds and is used to dilute the extracts of samples that exceed the calibration range.**

7.2.14 **Formic Acid 0.1M-aqueous** – add 873 uL formic acid into 250 mL PFAS free water- **Make 2 bottles of this-***used to prepare 7 below.* 2 year life

7.2.15 **Formic Acid, 0.3M**-aqueous- add 2.62 mL (2619 uL) into 250 mL PFAS free water- **Make 4 bottles of this** -*used in Promochrom*-2 year life

7.2.16 **Formic Acid methanolic 1:1, 0.1M formic acid**- mix equal volumes of Methanol and 0.1 M formic acid- **Make 4 bottles of this** -*used in Promochrom*-2 year life

7.2.17 **Formic Acid 5% aqueous**- add 12.5 mL Formic acid into 250 mL PFAS free water. *Used for pH adjustment.* 2 year life

7.3 Stock Standards

Stock Standards are purchased in mid to high concentration levels from Wellington Laboratories, Inc. Guelph, ONT, CA. Currently, Wellington is the preferred supplier of these materials. As a second source verification, prepare a mid-level from the stock independently from the preparation used for initial calibration. Document this preparation in Element. See Attachments 1,2, and 3 for detailed information.

7.3.1 Internal Standards (7-Non-Extracted –NIS)) used for the method are MPFOA, MPFOS, M3PFBA, MPFDA, MPFHxA, MPFHxS and MPFNA.

These are purchased at 250 - 1000 ng/mL depending upon the ISTD in a mixture. This mixture is purchased from Wellington Labs in 1.2 mL volumes with the following **part no.: MPFAC-HIF-IS**. Stored at 4C or less unopened this solution has a 5 year life. Once opened, the life is one year from open date.

7.3.2 Isotopic Surrogate Analogs (24 isotopes) are purchased for the method described from Wellington Labs at 250-5000 ng/mL levels, depending upon the isotope. The part no. is **MPFAC-HIF-ES**.

7.3.3 Stock Standard mixtures of both linear and branched isomers of the EPA 1633 - 40 list are purchased from Wellington Labs at varying concentrations in 5 different mixtures under part nos. PFAC-MXJ, PFAS-MXI, PFAC-MXH, PFAC-MXG, PFAC-MXF.

7.3.4 Qualitative branched isomers mix- individual available branched and linear mixes for the following PFAS are used daily to allow for qualitative knowledge of the PFAS branched isomers so they are integrated/included in quantitative analysis: T-PFOA, lp-PFNA, br-FOSA, br-NEtFOSA, br-NMeFOSA, br-NEtFOSE and br-NMeFOSE. These are purchased at 50,000 ng/mL levels from Wellington Labs-the names above are the Catalogue nos. These have a five year life at stock concentrations.

Make a 100 ng/mL Intermediate mix by adding 2.0 uL of the individual stocks up to 1.0 mL with MeOH.

Make a working solution by taking 200 uL of the 100 ng/mL intermediate into 750 uL of cal matrix solution (7.2.13) and add 50 uL of 1:10 EIS mix.

Transfer 300 uL to an autosampler vials, add 3 uL of ISTD working mix, cap, vortex and store until needed. Life is 1 year.

The summary below details the procurement requirements for this method - All from Wellington Laboratories, Inc.:

Description	Part nos.	Comes in
40 Compound Target 1633 list targets	PFAC-MXJ	4 Days – 1.2 mL
	PFAS-MXI	
	PFAC-MXH	
	PFAC-MXG	
	PFAC-MXF	
Isotopic Surrogates-24	MPFAC-HIF-ES	4 Days – 1.2 mL
EPA 1633 - 7 Internal Stds	MPFAC-HIF-IS	4 Days – 1.2 mL

7.4 Preparation of Standards

7.4.1 Preparation of Working Standards and Intermediates from STOCK Materials

All stock standards are prepared by the vendor in methanol containing a bit of sodium hydroxide to prevent losses of target PFAS compounds due to potential esterification in methanolic solution. The stocks come prepared with 4 molar equivalents (a 3x excess) of sodium hydroxide for stocks at the 50 ug/mL levels. This insures their stability with respect to potential loss due to esterification. The basic solution insures that any acidic sites on the glass ampules or acidic impurities in the methanol are neutralized to prevent ester formation and forms the sodium salt of the PFAS to stabilize it.

When preparing any intermediate level standards, the dilution must be prepared in alkaline methanol to prevent the above from occurring.

In order to do this, prepare a 5.0 mM NaOH in Hypergrade Methanol (or LC/MSMS grade) by dissolving 0.02 g. of sodium hydroxide into 100 mL of MeOH. This has a 2 week life.

For intermediate standards that are made to 10 mL final volume, add 100 uL of 5.0 mM NaOH/MeOH as part of the preparation. This results in a final concentration of NaOH at 0.05 mM.

For intermediate standards prepared to a final volume of 1.0 mL. add 10 uL of the 5.0 mM NaOH/MeOH.

For working calibration standards/CCV/SCV made to 500 uL final volume, using the mixture detailed in section 7.1.13 (MeOH/Water/acetic acid/ammonium hydroxide). This approximates the matrix of the final extracts for analysis.

7.4.2 Storage and Handling of Standards

All working standards should be stored at either room temperature or 4C provided the containers are sealed properly.

Stock Standards may be stored at 4-10 deg. C but before using must sit to allow equilibration to room temperature followed by either vigorous vortex mixing or sonication for 3-5 mins.

7.4.3 Detailed Standards Preparation Procedure-EPA 1633

7.4.4 Internal Standards-*See Attachment 1*

Internal Standards are purchased as a **stock mixture** at 250-1000 ng/mL

These as transferred to a snap cap vial that has been pre-rinsed with 5 mM NaOH/MeOH then allowed to dry.

7.4.4.1 Working level of Non-Extracted Internal Standard (NIS) –make a 1:1 dilution of the stock by taking 500 uL of the Stock and adding 500 uL MeOH.

Use as is by adding 3 uL to 300 uL volumes for QC, samples or calibration.

7.4.5 Isotopic Surrogates (Extracted Internal Standards)- *See Attachment 2*

7.4.5.1 Stock Surrogates are purchased as a mixture at 250-5000 ng/mL. These are transferred to a snap cap vial that has been pre-rinsed with 5 mM NaOH/MeOH then allowed to dry.

Option 1- Use Stock as received and add 25 uL to all samples/QC to be extracted

Option 2- Prepare **2** mL of Working EIS by preparing a 1:2 dilution to yield 125-2500 ng/mL for use as follows:
Take 1000 uL of the Surrogate Stock, plus 25 uL of 5 mM NaOH/MeOH and 975 uL MeOH to give 2.0 mL final volume**. 50 uL are added to ALL preparation blanks, samples and QC**. This is sufficient for approx. 40 x 50 uL additions to all blanks, QC and samples.

This corresponds to adding 5 to 100 ng of EIS compounds to the initial samples and QC. The final volume of extractions will typically be 5.0 ml so this yields 1-20 ng/mL of the isotope EISs in the final extract for analysis.

For calibration, the Stock mix at 250-5000 ng/mL is used by adding 100 uL up to 1.0 mL final volume to yield 25/500 ng/mL in each calibration level as directed in the calibration section 7.4.7.1.

7.4.6 Target Analytes- EPA 1633- *See Attachment 3*

The target analytes for this method are purchased commercially from Wellington Labs under the 5 part nos. described in Section 7.3.3 which contains the method target analytes only at varying concentrations. These mixtures are transferred from their glass ampules to snap cap vials that have been pre-rinsed with 5 mM NaOH/MeOH then allowed to dry. Again these are the nominal concentrations and the actual anion concentrations for those present as salts are listed in the documentation and are reflected in both Mass Hunter and Element.

Preparation of a 1.0 mL volume of a 10 x intermediate of each of the 5 mixes for Calibration. Some of the higher levels on the curve use aliquots of the stock as shown in Figure 2.

Scale the volume accordingly if less is desired. Note that the EPA 1633 mixes come 1.2 mL per vial so this recipe may consume one vial quickly.

7.4.6.1 OPR and LLOPR - these are a mid-level blank spike and low level blank spike (at 2x the LOQ). These are prepared as follows from the EPA 1633 Target mixtures (5 components) by taking 200 uL of each STOCK into a snap cap vial giving 1.0 mL final volume.

1. Element ID Y22B199- PFAC-MXF mix 200 uL
2. Element ID Y22B200- PFAC-MXG mix 200 uL
3. Element ID Y22B201- PFAC-MXH mix 200 uL
4. Element ID Y22B204- PFAC-MXI mix 200 uL
5. Element ID Y22B205- PFAC-MXJ mix 200 uL

For OPR (BS) at mid-level add 100 uL to each matrix for the batch OPR and for the **LLOPR add 20 uL** of the spike mix and process through all steps of the specific matrix preparation.

7.4.7 Calibration

Calibration of the LC-MSMS systems is done by an eight level calibration covering the range 0.2 to 1650 ng/mL, nominal. Various PFAS species are present as salts and at differing concentrations and these are reflected in Mass Hunter and Element as their actual concentrations. Six to eight levels are prepared depending upon the analyte. These levels are prepared as directed below using the internal standards, surrogates and target analytes from above.
This is made to a final volume of 1000 uL in the matrix described in section 7.1.13 (MeOH/Water/acetic acid/ammonium hydroxide)

This preparation excludes the ISTD in the initial preparation. After preparation as directed, withdraw 300 uL of each level into a 500 uL PP vial and add 3 uL of ISTD before analysis, cap and vortex to mix.
These are stored at <10C and are stable for 6 months when prepared as directed.

7.4.7.1 Calibration Curve Preparation - Based upon a final volume of 1.0 mL in CAL Matrix Solution*
See Attachment 4 for details.

EPA 1633 Calibration Standard Preparation
Rev 1.,0 10/03/22

For Final volume of 1.0 mL
Recipe uses both a 1:10 intermediate for some levels AND the Stock for other points as indicated
All standards in Stds refrig. Adjacent to QQQ1 N2 generator in box labeled EPA 1633 standards- all are opened, labeled and good to use.

Level	*Stock: Y22B201* **1633 MXH Targets Intermediate @10x *** uL of MXH 10x Interm.	*Stock: Y22B200* **1633 MXG Targets Intermediate at 10x*** ul of MXG interm.	*Stock: Y22B199* **1633 MXF Targets Intermediate at 10x*** ul of MXF interm.	*Stock: Y22B204* **1633 MXI Targets Intermediate at 10x*** ul of MXI interm.	*Stock: Y22B205* **1633 MXJ Targets Intermediate at 10x*** ul of MXJ interm.	*Stock: Y22B198* **1633 EIS isotope Mix Intermediate at 10x** uL of EIS Interm.
1	2	2	4	2	2.5	50
2	5	5	10	5	6.25	50
3	12.5	12.5	25	12.5	15.6	50
4	25	25	50	25	31.3	50
5	50	50	100	50	62.5	50
6	125	125	250	125	15.6 of Stock	50
7	25 of Stock	25 of Stock	50 of Stock	25 of Stock	31.2 of Stock	50
8	62.5 of STOCK	62.5 of STOCK	125 of STOCK	62.5 of STOCK	78.0 of Stock	50

* 100 uL up to 1 mL in MeOH

*CAL MATRIX: Methanol with 4% water, 1% ammonium hydroxide and 0.625% acetic acid – Prepared by adding ammonium hydroxide (3.3 mL, 30%), reagent water (1.7 mL) and acetic acid (0.625 mL) to methanol (92 mL), store at room temperature, replace after 1 month. This solution is used to prepare the instrument blank and is used to dilute the extracts of samples that exceed the calibration range.

Amount of CAL Matrix to make up to 1.0 mL Final volumes:

CAL LEVEL	uL of CAL Matrix
1	937.5
2	918.8
3	871.9
4 *	793.7
5	637.5
6	309.0
7	843.8
8	609.5

INTERNAL STANDARD MIX (non-extracted IS-NIS). Mix 500 uL of STOCK ISTD at 250-1000 ng/mL with 500 uL of Methanol. This results in 125-500 ng/mL Intermediate ISTD. See 7.4.4.1.

Add 3.0 uL to 300 uL of each level 1-8 in a 500 uL PP autosampler vials and cap with polyolefin cap, vortex to mix and run. Add 3 uL to 300 uL of all sample/QC extracts before analysis.

*Level 4 is also used as the CCV for each analysis sequence run initially, then after every 10 samples and at the end of the sequence. Multiple vials should be prepared for this level.

7.4.8 Checking the Efficacy of the Surrogate/Spike Mixes

On a monthly basis the surrogate (EIS) and spike mixes from the vials used for spiking are assayed to ensure stability. These are prepared for the analysis by taking 3.0 uL of the surrogate (EIS) mix and 3 uL of the Spike mix into 294 uL MeOH/Water/Acetic Acid/Ammonium hydroxide from 7.1.13, then add 3 uL of NIS (ISTD). This yields a 1:100 dilution of the EIS and Spike mixes. Use 100 as the dilution factor in the Mass Hunter worklist.

7.4.9 Second Source - Initial Calibration Verification (ICV)

Currently, the EPA method 1633 does not require a second source ICV. Rather, the initial calibration is verified by preparing a Level 5 -5.0 ng/mL (nominal) calibration standard independently from calibration standard preparation. This serves as the ICV.

8. PROCEDURE

8.1 Preventative and Routine Maintenance

HPLC/MS/MS Preventative Maintenance	
As Needed:	**Daily (When in use)**
Change pump seals. Change in-line filters in autosampler (HPLC). Check/replace in-line frit if excessive pressure or poor performance. Replace column if no change following in-line frit change. Clean needle. Replace or clean Capillary Replace fused silica tube in ESI interface. Clean lenses. Clean skimmer. Ballast rough pump 30 minutes. Check Nozzle flow pattern	Check solvent reservoirs for sufficient level of solvent. Verify that pump is primed, operating pulse free. (ripple < 1%) Check needle wash reservoir for sufficient solvent. Verify capillary heater temperature functioning. Verify vaporizer heater temperature. Verify rough pump oil levels. Verify turbo-pump functioning. Verify nitrogen pressure for auxiliary and sheath gasses. Possible Checktune
Semi-Annually	**Annually**
Replace oil mist and odor elements. Replace activated alumina filter if applicable	Vacuum system components including fans and fan covers. Clean/replace fan filters, if applicable.

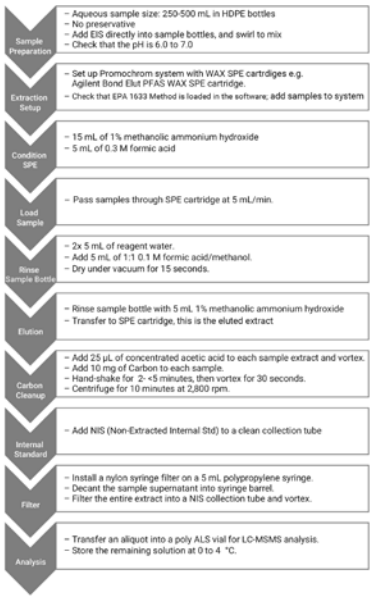
8.2 Sample Preparation (Extraction, Clean-up and Concentration)- Aqueous Matrices

A summary of the steps for the steps related to aqueous samples are shown in Figure 1.0 and in the summary below.

1. Determine % Suspended Solids – 10.0 mLs $\pm$ 0.02 mL through a tared 0.2 um PP filter. Dry filter $\geq$ 12 hours @ 105C, cool in dessicator. Calc % TSS
2. Check pH with short range pH paper to insure pH = 6.5 $\pm$ 0.5. Adjust if necessary with either 5% aqueous formic acid to lower pH or with 3% aqueous ammonium hydroxide to raise pH.
3. Weigh sample bottle as is to $\pm$ 0.1 g.-remove cap first since that will not be weighed later since autosampler caps are used
4. Homogenize sample by inversion 3-4 x-place full volume on Promochrom System using WAX SPE cartridges.

5. Set up MBLK, OPR at 2x LOQ (low LCS) and mid-level OPR (mid-level LCS)-spike with 10 uL of Spike mix for LLOPR and 100 uL of spike mix for mid-OPR.
6. Spike all with 25 uL EIS solution (isotopic surrogates)
7. Follow Promochrom method for EPA 1633
8. Initiate SPE program EPA1633AQ on the Promochrom system
9. Once the program is finished there will be 5 ml in the collection tube. If less, make up to exactly 5.0 mL with MeOH.
10. Remove the sample bottle from the Promochrom system and weigh the empty bottle. That will determine the weight (volume for water) assume 1g. = 1.0 mL. Enter this value into the element bench sheet and the initial volume.
11. Add 25 uL of concentrated acetic acid to each collection tube and vortex to mix.
12. Add 10 mg of activated carbon to all samples and QC. Hand mix and vortex mix for no more than 2 minutes
13. Centrifuge at 2800 rpm for approx. 10 minutes.
14. Filter the final volume through 0.2 um nylon filter using a syringe.
15. If the client provides only 250 mL of sample, in order to meet reporting limits, it may be required to concentrate the unfiltered extract by a factor of at least 2 on a TurboVap at 1.2 Liters/min with nitrogen at <55ºC.. For example if final volume is 5.0 mL, concentrate to 2.0 mL final volume (2.5 x concentration). If 500 ml provided, skip this step.
16. Enter the final volume achieved into the bench sheet in Element.
17. Transfer a portion of the final extract to a 2 mL snap cap, labeled.
18. Take a 300 uL portion of the extract into a 500 uL PP autosampler vial, add 3 uL of NIS (non-extracted internal std.). Cap, vortex, store at <6ºC.
19. Sample is ready for analysis.

Figure 1.0 Aqueous Sample Preparation Steps



8.2.1 To measure sample initial volume for aqueous samples, remove the cap and weight the bottle and record the weight in the sample weight. For MBLK, LLOPR and OPR use 250-500 mL volumes). After SPE processing, be sure the empty bottle is dry and weight to determine the amount of sample in grams (essentially equal to volume in mL). Use that number for the initial volume in Element LIMS.

8.2.2 For every 20 field samples (Field blanks are considered field samples in as they are treated as such), a blank (MBLK), blank spikes, (2 levels-LLOPR and OPR as BS1 and BS2 respectively. A matrix spike is not necessary since isotope dilution is used. If an MS/MSD is required by a specific project, spike 100 uL of the mid-level BS mix (OPR).

8.2.3 All polypropylene equipment including graduated cylinders and sample transfer lines/reservoirs should be washed prior to using with extraction solvent (Methanol).

8.2.4 Add 25 uL of EIS (isotopic surrogates) (250/5000 ng/mL) to each sample and QC sample, recap and invert to mix well.

8.2.5 Add, 5ul (low level spike), 50 uL (mid-level spike)

8.2.6 Using the Promochrom automated system, run a cleaning run. Be sure the reservoirs of LC/MS grade methanol and HPLC plus grade water or equivalent are full. Prime all lines and align all components.

8.2.7. Load in the EPA1633 method and adjust the sample volume to 10 ml more than the highest volume container measured by visual comparison to a calibrated bottle of the same size.

8.2.8 The SPE method solvents for extractions are as follows:

- Solvent 1 = MeOH
- Solvent 2 = H_2O
- Solvent 3 = 0.3 M Formic acid,
- Solvent 4 = 1:1 0.1M Formic Acid/MeOH,
- Solvent 5 = MeOH with 1% ammonium hydroxide ("Basic MeOH")
  W1 = Aqueous waste, W2 = Organic waste

8.2.9 Place labeled 15 mL graduated collection vessels in the sample collection tray and use Element labels to identify the vials at this point. Print 2 sets of labels for each since they will be used after the concentration step as well. These are graduated.

8.2.10 Connect the bottles to the automated system.

8.2.12 Initiate the EPA1633Aq SPE Extraction Program. Each run is approximately 1 hour 45 minutes.

8.2.13 **Evaporation Options**-Aqueous Samples

N-EVAP systems

8.2.13.1 The resulting 5 mL extracts are not further concentrated unless Work Plan reporting limits need to be lower than standard RLs. When this is required by the Work Plan, the extracts and QC are transferred to the N-EVAP concentrator systems operated at 50-55 degrees C (never more than 55C) in their original collection vials. The nitrogen flow is initiated at 1.2 ml/min and adjusted on each individual sample to provide a gentle stream causing a slight disturbance at the surface of the methanol extracts.

8.2.13.2 As this evaporation proceeds the walls of each vessel are rinsed with methanol when the volume is approximately 2.5 mls and then again when the volume is reduced to just below 2.0 mL. Then Bring up the final volume to 2.5 mL. This is a 2x concentration when needed.

8.2.14 Swirl final extract, make up to 2.0 mL with methanol. Using a disposable polypropylene pipet, carefully transfer to a 2 mL PP snap cap vial.

8.2.15 Withdraw an aliquot of 300 uL into a 500 uL autosampler vial (PP) and add 3.0 uL of ISTD (NIS) mix. .

8.2.16 Cap with polyolefin flexible caps and vortex to mix.

8.2.17 Store Extracts at <6°C until analysis.

8.3 Sample Preparation (Extraction, Clean-up and Concentration)- Soil Matrices

1. Determine % solids: use 5 grams; dry at 110C $\geq$ 12 hours.
2. Mix sample with a stainless steel spatula to homogenize-exclude Sticks, vegetation, rocks and the like.
3. Remove 5.0 g. from the homogenized sample container. Add to a tared 50 mL centrifuge tube. Determine the weight $\pm$ 0.01 g.
4. Prepare QC using clean matrix (Ottawa Sand) wetted with 1 mL PFAS free water in 50 mL centrifuge tubes
5. For all samples, QC blanks and LCSs (LLOPR and ML OPR) and a 25 uL aliquot of EIS onto the soil. The current Element standard ID is Y22J305. For the OPRs add appropriate amount of spike solution (10 uL for LLOPR and 100 uL for OPR. The current Element Std ID is Y22J304.
6. Swirl the samples to mix then let sit for 30 minutes.
7. Add 10 mL of 0.3% methanolic ammonium hydroxide to each centrifuge tube.
8. Vortex to mix then shake on the shaker table for 30 minutes.
9. Next, centrifuge at 3500 rpm for 5 minutes or 2800 rpm for 10 minutes.
10. Transfer the supernatant liquid to a clean 50 mL centrifuge tube
11. Add 15 mL of 0.3% methanolic ammonium hydroxide to each of the original centrifuge tubes.
12. Vortex to mix then shake on the shaker table for 30 minutes
13. Next, centrifuge at 3500 rpm for 5 minutes or 2800 rpm for 10 minutes.
14. Transfer the supernatant liquid to the centrifuge tubes from 10.0 above
15. Add another 5 mL of 0.3% methanolic ammonium hydroxide to each of the original centrifuge tubes.
16. Vortex to mix then shake on shaker table for 30 minutes
17. Next, centrifuge at 3500 rpm for 5 minutes or 2800 rpm for 10 minutes.
18. Transfer the supernatant liquid to the centrifuge tubes from 10.0 above
19. Add 10 mg of activated carbon to the combined extract using a 10 mg scoop and hand swirl for 2 minutes (never more than 5 minutes of losses of Target PFAS will occur)
20. Centrifuge at 3500 rpm for 5 minutes or 2800 rpm for 10 minutes
21. Immediately Decant into a 50 mL centrifuge tube.
22. Place in Turbovap or on the N-EVAP system and concentrate at 55 deg. C to a final volume of approx..7 mL at a nitrogen flow of 1.2 ml/min.
23. Add 35-40 mL of PFAS free water to the tube and vortex to mix.
24. Check the pH= 6.5 $\pm$ 0.5 if not adjust accordingly using 5% formic acid to lower pH or 3% aqueous ammonium hydroxide to raise pH rto within this range.

25. Set up the soil EPA 1633 method on the Promochrom be sure volume is set to 50 ml for sample size.
26. Place samples and QC centrifuge tubes on the autosampler
27. Once the program is finished, note the final volume and use that in the Element benchsheet as final volume. Should be 5.0 mL. If less make up to 5.0 mL with MeOH.
28. Add 25 uL of concentrated acetic acid to each collection tube and vortex to mix.
29. Add 10 mg of carbon to all samples and QC and mix for 2 minutes (no more than 5 minutes).
30. Immediately centrifuge at 2800 rpm for 10 minutes.
31. Filter the extract through a 0.2 um nylon membrane using a syringe and filter into a 2 mL snap cap vial.
32. When ready for analysis, remove 300 uL of extract and transfer to a 500 uL autosampler vial. Add 3 uL of NIS (internal standard), vortex to mix. Cap with polyolefin flexible caps and vortex to mix.
33. Store Extracts at <6°C until analysis
34. Samples/QC are now ready for analysis.

8.4 Sample Analysis--Running Samples/QC - Acquisition Method

The acquisition method is detailed in Attachment 4 (HPLC) and Attachment 5 (MS/MS) of this SOP. The method is a HPLC with dynamic MRM method with precursor and product ions with specific acquisition parameters to maximize sensitivity and specificity. This list may be modified to add other PFAS target analytes as necessary.

8.3.1 The triple Quadrupole (QQQ) system must be optimized for each target analyte (including surrogates and internal standards) using the Mass Hunter Optimizer program. This program determines the most abundant precursor and product ions for each compound and their abundances. These data are then used to build an MRM (multiple reaction monitor) method for acquisition. This is done initially or after any major maintenance procedures are performed to the triple quadrupole system. A high level standard is used for this in the $[M-H]^-$ mode or M-COOH for HFPO-DA.

8.3.2 The QQQ is checked for tuning on a weekly basis (if necessary) before analysis using the Tune context by selecting the CHECKTUNE radio button. This is done only in negative ion mode since that what we are operating under. If the Checktune fails, run the Autotune program-note: this takes approx. 45 mins. in negative mode. After autotune or any tuning adjustment, a re-calibration of the instrument is required.

8.3.3 Before any QC or samples can be run, the HPLC must be allowed to purge for at least thirty minutes. This purge must be done using the initial mobile phase conditions used in the method must be allowed to run for 15 minutes or until pressure has stabilized (ripple must be < 1%)

8.3.4 An instrument sequence (Worklist) is then made. It should begin with a blank, a primer (5 ng/mL) followed by a blank with ISTD to establish system cleanliness.

8.3.5 After a successful initial calibration has been completed, the analytical sequence for a batch of samples analyzed during the same time period is as follows. Standards and sample extracts must be brought to room temperature and vortexed prior to aliquoting into an instrument vial in order to ensure homogeneity of the extract.

8.3.6 **Analysis Sequence**

1. Instrument Blank *
2. Instrument Sensitivity Check –**LOQ Standard Level (SEQ-CAL 1) S/N > 3:1**
3. Calibration Verification Standard (CCV)
4. Qualitative Identification Standards –Branched PFAS
   PFOA, PFNA, PFOSA, NMeFOSA, NEtFOSA, NEtFOSE, and NMeFOSE.
5. Instrument Blank (SEQ-CCB)*
6. Method Blank (Batchxxxx-BLK1)
7. Low-level OPR (LLOPR) (Batchxxxx-BS1)
8. OPR (Batchxxxx-BS2)
9. Field Samples (10 or fewer)
10. Calibration Verification Standard (SEQ-CCVn)
11. Instrument Blank (SEQ-CCBn)*
12. Field Samples (10 or fewer)
13. Calibration Verification Standard (SEQ-CCVn)
14. Instrument Blank (SEQ-CCBn)*

* Contains solvent system for calibration, NIS and EIS

8.3.7 The run can end with a script to put the instrument into standby mode.

8.4 Daily Sample Preparation/Analysis Sequence

- Prepare extracts for analysis by placing a 300 ul aliquot of sample extract containing 3 uL of internal standards into a PP auto-sampler vial. Apply Polyolefin cap.
- Confirm that the samples loaded on the auto-sampler were entered correctly in the injection log. Make any necessary corrections.
- Run instrument CCV checks at the RL (0.25-0.5 ng/mL), then at a mid level and high level rotating every ten samples (5, 25 ng/mL) and ending with a mid level CCV.
- Enter the Worklist (injection sequence) into the instrument software and load samples onto the auto-sampler in the order shown above in Section 8.3.6

8.5 Data Review

The Agilent Mass Hunter Quantitation program is used to review all data. All identifications are based upon acceptable ion ratios for the abundance of both precursor and product ions along with retention time information. All positive detections of target PFAS must be less that the high point conc. of the Cal. Curve.

8.5.1 Since certain PFAS species are manufactured by different processes the presence of branched as well as linear isomers may be found. In order to properly quantitate these species, the analyst must sum the related branched and linear isomers. This affects the following species: PFOS, PFHxS, PFOA, PFNA, PFOSA, NMeFOSA, NEtFOSA, NEtFOSE, and NMeFOSE.

8.5.2 Any detection greater than the upper limit of the calibration curve requires dilution into the upper half of the curve, where possible.

9. CALIBRATION

9.1 Initial Calibration

The initial calibration covers the range 0.20 ng/mL to 1560 ng/mL nominal conc. or higher depending upon the linearity of the PFAS species. After acquisition, the data are quantitated in Mass Hunter and the default calibration model for target compounds is generated using Quadratic regression, FORCED through the origin where applicable. All same level species (EIS) used average response factor model. Depending upon the response and accuracy at each level as shown in the Mass Hunter program, use Linear, Forced, weighted (1/x) or quadratic, Forced, with or without weighting to achieve the best fit which is based upon the best accuracy on a compound by compound basis. In any case, the correlation coefficient must be greater than 0.990. Average response factor RSD should be $\leq$ 20% where used.

9.1.1 The calibration levels as shown in Section 7.6.3 use 8 levels. All points are included in the calibration with exception of some species that saturate at levels 7 and 8.

9.2 ICV/SCV

An independently prepared Initial Calibration Verification must be run immediately following initial calibration. The concentration of this standard should be in the middle of the calibration range (e.g. 5.0 ng/mL) and prepared from a separate preparation as that of the calibration. Unless project-specific data quality objectives are required, the values from the second-source check should be $\pm$ 30% of the expected concentration.

Corrective Action: Quantitative sample analyses should not proceed for a failing ICV. Recalibrate and re-run the ICV if necessary.

9.3 Continuing Calibration Verification

The first CCV is at a mid-level and run every 10 client samples including a closing CCV.

The mid-Level CCV must be ± 30% of the true value.

Corrective Action: If any of the required calibration check criteria fail, the system must be evaluated and any appropriate instrument repair or maintenance must be performed. Sample data are unacceptable and must be rerun. Reinjection the standard may be done. If the calibration check standard still fails, the system must be recalibrated.

10. Quality Control

10.1 Initial Demonstration of Capability (IDOC)

10.1.1 The initial demonstration requirement of EPA 1633 must be acceptable before analysis of samples may begin. To establish the ability to generate acceptable precision and recovery, the laboratory must perform the following operations for each sample matrix type to which the method will be applied by that laboratory.

The IDOC includes the following key elements:

- Initial Demonstration of Precision and Recovery (IPR)
- MDL determination

10.1.2 Initial Demonstration of Precision and Recovery-IPR

- Extract, concentrate, and analyze four aliquots of aqueous and soil matrices spiked with 100 uL of the native spike solution OPR Mix Y22J304, 50 µL of the EIS solution no. Y22J305. At least one method blank, matching the matrix being analyzed, must be prepared with the IPR batches by matrix. All sample processing steps that are used for processing samples, including preparation and extractions, cleanup and concentration, must be included in this test.

- Using results of the set of four analyses, compute the average percent recovery (R) of the extracts and the relative standard deviation (RSD) of the concentration for each target and EIS compound.
- For each native and isotopically labeled compound, compare RSD and % recovery with the corresponding limits for initial precision and recovery in Table 5. If RSD and R for all compounds meet the acceptance criteria, system performance is acceptable, and analysis of blanks and samples may begin. *Note these acceptance criteria are not finalized and are based upon a single lab validation. Data for this table are derived from the single-laboratory validation study, and are only provided as examples for this draft method. The data will be updated to reflect the inter-laboratory study results in a subsequent revision. Therefore, these criteria will change after inter-laboratory validation. Several sections of this method state that Table 5 criteria are required, this is standard language that will be applicable when the method is finalized.*

10.1.3 MDL Determination

MDL Determination –In order to perform the MDL study, 7 total extractions are performed on 3 different days (Extraction day 1= 3 LRBs and 3 LFBs); Extraction day 2 is 2 of each, and Extraction day 3 is also 2 of each).

The levels extracted represent approx. 3-5 x the expected LOQ.

Once extracted, the analyses are conducted on 3 separate days (we use only QQQ2 for EPA 1633 so all runs are on that system). The MDL is determined according to the EPA MDL protocol defined in Definition and Procedure of the Determination of the Method Detection Limit, Revision 2 Dec. 2016 as detailed below:

Make all computations as specified in the analytical method and express the final results in the method-specified reporting units.

Calculate the sample standard deviation (SD) of the replicate spiked sample measurements and the sample standard deviation of the replicate method blank measurements from all instruments to which the MDL will be applied.

Compute the MDLs (the MDL based on spiked samples) as follows:

MDL_s = 3.143 x SD (for seven replicates; SD = Standard Deviation)

Compute the MDLb (MDL based on method blanks-LRBs) as follows:

- If none of the blanks give numerical results then the MDLb does not apply
- If only some of the blanks (but not all) give a result, set the MDLb to the highest result found

- If ALL method blanks show a detections then use the following calculation to determine MDLb:

MDLb = Average of Blank Detections + (3.143 x Std. Dev.)

Calculate the final MDL by selecting the greater of MDLs or MDLb.

10.2 On-going QC Requirements

Preparation Batches are defined at the sample preparation step. Batches should be kept together through the whole analytical process as far as possible, but it is not mandatory to analyze prepared extracts on the same instrument or in the same sequence.

The quality control batch is a set of up to 20 samples of the same matrix processed using the same procedure and reagents within the same time period. The quality control batch may contain a matrix spike/matrix spike duplicate (MS/MSD), two laboratory control sample (LCS-LLOPR and OPR) and a method blank. Laboratory generated QC samples (Blank, LLOPR, OPR, MS/MSD) do not count toward the maximum 20 samples in a batch. Field QC samples are included in the batch count. In some cases, at client request, the MS/MSD may be replaced with a matrix spike and sample duplicate.

10.2.1 METHOD BLANK - One method blank must be extracted with every prep batch of similar matrix, not to exceed twenty (20) samples. For aqueous samples the matrix is Lab reagent water. For Soils the method blank matrix is Ottawa sand. Criteria:

- The method blank must not contain any analyte at or above 1/2 the LOQ (Reporting Limit).
- Re-extraction and reanalysis of samples associated with an unacceptable method blank is required when reportable concentrations are determined in the samples.

10.2.2 LABORATORY CONTROL SAMPLES (LCS- also called OPR and LLOPR) must be extracted with every process batch of similar matrix, not to exceed twenty (20) samples. The LCS is an aliquot of laboratory matrix (e.g. water for aqueous spiked with analytes of known identity and concentration and isotopic surrogate analogs. The OPRs must be processed in the same manner and at the same time as the associated samples. Recovery for Aqueous low level OPR target analytes is 40-150% until more data are derived. For all other Aqueous OPR levels recovery targets are 50-150%. These data are based upon EPA 1633 draft ranges that will change and are not used for acceptance/rejection but are reported until such time that fully validated acceptance ranges are provided in the final version of the method.

10.2.3 Matrix spike/Matrix spike duplicate (MS/MSD or MS/MSD). These are not typically required since each sample contains isotopic PFAS analogues that correct for any matrix effects. If the client requests them, then they are processed accordingly but are not a requirement of this method. If done they are by matrix, not to exceed twenty (20) samples. An MS/MSD pair is aliquots of a selected field sample spiked with analytes of known identity and concentration. The MS/MSD pair must be processed in the same manner and at the same time as the associated samples. Spiked analytes with recoveries or precision outside of the Laboratory control limits are flagged accordingly. Until enough statistical data per matrix is available, no criteria are offered. If a specific QA Project Plan has required limits, this is preempted. Any outliers must be qualified accordingly.

10.2.4 Initial calibration verification (ICV) –A second source standard is not required for this method. A second independently prepared mid-level standard is prepared and used for this purpose and analyzed after the ICAL. The concentration should be at the mid range of the curve and must recover within 70-130 % of expected value.

Corrective actions for the ICV include:

- Rerun the ICV
- Remake or acquire a new ICV.
- Evaluate the instrument conditions.
- Evaluate the initial calibration standards.
- Rerun the initial calibration.

10.2.5 Internal Standard- The Non-extracted Internal Standard (NIS) is added to each field and QC sample prior to analysis. The IS response (peak area) must not deviate by more than 50-200% from the mean response (peak area) of the initial calibration. If the areas are low for all the field samples and QC samples in the batch, it suggests a loss of instrument sensitivity, while low areas in only some field or QC samples suggests a possible bad injection.

Corrective action includes:

- Reinject the questionable samples
- Verifying the CCV NIS areas are compliant with the range, if so, this suggests either matrix effects and may require a small dilution to mitigate interference if only some of the NIS compounds are affected
- Qualify affected data

10.3 Initial Demonstration of Capability (IDC)

Initial Demonstration of Capability involves the following processes listed ion Table 1.0 as follows.

Table 1.0 - Initial Demonstration of Capability (IDC)

Requirement	Specification and Frequency	Acceptance Criteria
Initial Demonstration of Precision and Recovery (IPR)	Extract, concentrate, and analyze four aliquots of the matrix (aqueous and soil) spiked with target native standard solution, EIS solution and finally the NIS (ISTD). Extract a method blank of each matrix with each matrix IPR batch. All steps that are used for processing samples, including preparation and extraction must be included.	Using results of the set of four analyses, compute the average percent recovery (R) of the extracts and the relative standard deviation (RSD) of the concentration for each target and EIS compound.
		For each native and isotopically labeled compound, compare RSD and % recovery with the corresponding limits for initial precision and recovery in Table 5. If RSD and R for all compounds meet the acceptance criteria, system performance is acceptable, and analysis of blanks and samples may begin.
Method Detection Limit (MDL)	Method detection limit (MDL) - Each laboratory must also establish MDLs for all the analytes using the MDL procedure at 40 CFR Part 136, Appendix B. An MDL determination must be performed for all target compounds.	The minimum level of quantification (ML) can be calculated by multiplying the MDL by 3.18 and rounding to the nearest integer
Calibration Verification (ICV or SCV) *Section 9.1.5*	Analyze a mid-level ICV, each time a new calibration is performed or at a minimum, quarterly. The ICV must be an independent dilution beginning with the common starting materials used for ICAL. No 2nd source is required due to availability.	Results must be 70-130% of true value.

10.4 QC Requirements

Ongoing QC requirements are detailed in Table 3.0 as follows.

Table 3.0 QC Requirements

Summary of Quality Control		
Method Reference	**Requirement**	**Specification and Frequency**
Section 10.1	Mass Calibration	Annually and on as-needed basis
Section 10.1.7	Mass Calibration Verification	After mass calibration
Section 10.3	Initial Calibration (ICAL)	Minimum 6 calibration standards for linear model and 7 calibration standards for non-linear models.
Sections 10.2.2, 14.4	Retention Time (RT) window	After ICAL and at the beginning of analytical sequence
Sections 7.3.1, 9.4	Extracted Internal Standard (EIS) Analytes	All CAL standards, batch QC and field samples

Sections 7.3.2	Non-extracted Internal Standards (NIS)	All CAL standards, batch QC and field samples
Sections 7.3.4, 10.3.1, 13.3	Instrument Sensitivity Check (ISC)	Daily, prior to analysis
Section 14.2	Calibration Verification (CV) (CCV)	At the beginning and every 10 samples and at the end
Section 14.6	Instrument Blank	Daily prior to analysis and after high standards
Sections 9.1.3, 9.5, 14.7	Method Blank (MB)	One per preparation batch
Section 14.5	Ongoing Precision Recovery (OPR)	One per preparation batch
Section 11.0	Limit of Quantitation Verification (LLOPR)	Prior to analyzing samples
Section 11.0	Matrix Spike (MS/MSD)	One per preparation batch (if required) Normally not needed, since Isotope dilution is employed

11.0 DATA REVIEW, CALCULATIONS AND REPORTING

Samples concentrations are determined using either or linear regression or quadratic regression FORCED through the origin. Weighted ($1/x$ or $1/x^2$) may assist with low level accuracy and is recommended where necessary. All calibration curves have greater than 6 points. Any target analyte exceeding the calibration range will require dilution.

11.1 Data interpretation

All sample data calculations are performed by the Agilent Mass Hunter software in ng/mL and then final data are calculated taking into account final extract volumes and the initial sample volumes extracted which are entered into the Element bench sheet.

11.2 Linear and Branched Isomers are addressed in Section 8.5 and are reported for the noted species as Total which is a sum of the linear and branched isomers for affected species.

11.3 All Data are uploaded into Element LIMS and all final concentration calculations and associated recoveries are detailed. All pdfs of Mass Hunter Quant reports are uploaded to the Element Raw_Data drive for association with ICALs and all batch and analysis sequence runs. Data are set to Analyzed status once uploaded and initially reviewed, then locked.

11.4 The Data are then evaluated using the York Qualinator ^{TM} data review tool which evaluates all data CCVs, QC, ISTDS, Recoveries, etc. and automatically assigns outlier qualifiers for review and acceptance by the reviewer. The accepted data are then uploaded to Element and final reviewed in Laboratory Data Entry/Review module. Once reviewed, the status is set to Reviewed indicating the data are ready to be Reported by the Reporting Group.

12. HEALTH AND SAFETY

12.1 General safety considerations and requirements are detailed in the York Laboratory Safety and Health Standard Operating Procedure No. Safety011600.

Specific safety rules applying to the conduct of this analysis requiring the following:

- When handling standards and samples, latex gloves are required.
- Also, when handling neat materials, a fume hood and safety glasses are required.
- When handling samples, gloves and glasses are required.
- Highly odorous samples must be handled in a fume hood.
- Refer to SDSs for specific safety/health information.

12.2 The analysts must exercise normal care and be supervised and trained to work in an analytical chemistry laboratory. The analysts will be handling fragile glassware, needles, syringes, volatile and flammable chemicals, toxic chemicals and corrosive chemicals.

- No smoking or open flames are allowed.
- No food or food products may be brought into the laboratory.

Solvents should not be left uncovered on the laboratory benches.
All solvent transfers should be done in the hoods.

Hood doors must be kept in the position which yields approx. 100 fpm face velocity.
Solvent evaporation must be done in the hood with exhaust elevated and in the rear.

Waste containers that had solvents must be vented to a hood until all solvents have evaporated.

Safety glasses are provided and must be worn at all times in the laboratory.
Gloves are provided and must be worn when working with chemicals.
Laboratory coats are provided and should be worn to protect the analysts' clothes.
Syringes and needles must be kept in their original cases when not in use.
Care must be exercised in using and handling syringes to avoid injury.
Report any sticking with a needle immediately to your supervisor.

12.3 Specific Safety Concerns

12.3.1 Preliminary toxicity studies indicate that PFAS could have significant toxic effects. In the interest of keeping exposure levels as low as reasonably achievable, PFAS must be handled in the laboratory as hazardous and toxic chemicals.

12.3.2 Exercise caution when using syringes with attached filter

disc assemblies. Application of excessive force has, upon occasion, caused a filter disc to burst during the process.

12.3.3 Laboratory procedures such as repetitive use of pipets, repetitive transferring of extracts and manipulation of filled separatory funnels and other glassware represent a significant potential for repetitive motion or other ergonomic injuries. Laboratory associates performing these procedures are in the best position to realize when they are at risk for these types of injuries.

12.3.4 Eye protection, laboratory coat, and nitrile gloves must be worn while handling samples, standards, solvents, and reagents. Disposable gloves that have been contaminated will be removed and discarded; other gloves will be cleaned immediately.

12.3.5 Perfluorocarboxylic acids are acids and are not compatible with strong bases.

12.3.6 Primary Materials Used- The following is a list of the materials used in this method, which have a serious or significant hazard rating. NOTE: This list does not include all materials used in the method. The table contains a summary of the primary hazards listed in the SDS for each of the materials listed in the table. A complete list of materials used in the method can be found in the reagents and materials section. Employees must review the information in the SDS for each material before using it for the first time or when there are major changes to the SDS.

Methanol	-Flammable Poison -Irritant	200 ppm (TWA)	A slight irritant to the mucous membranes. Toxic effects exerted upon nervous system, particularly the optic nerve. Symptoms of overexposure may include headache, drowsiness and dizziness. Methyl alcohol is a defatting agent and may cause skin to become dry and cracked. Skin absorption can occur; symptoms may parallel inhalation exposure. Irritant to the eyes.

Acetic Acid, Glacial	-Flammable liquid and vapor. -Irritation	10 ppm TWA; 25 mg/m3 TWA	**Eye:** Causes severe eye irritation. Contact with liquid or vapor causes severe burns and possible irreversible eye damage. **Skin:** Causes skin burns. May be harmful if absorbed through the skin. Contact with the skin may cause blackening and hyperkeratosis of the skin of the hands. **Ingestion:** May cause severe and permanent damage to the digestive tract. Causes severe pain, nausea, vomiting, diarrhea, and shock. May cause polyuria, oliguria (excretion of a diminished amount of urine in relation to the fluid intake) and anuria (complete suppression of urination). Rapidly absorbed from the gastrointestinal tract. **Inhalation:** Effects may be delayed. Causes chemical burns to the respiratory tract. Exposure may lead to bronchitis, pharyngitis, and dental erosion. May be absorbed through the lungs. **Chronic:** Chronic exposure to acetic acid may cause erosion of dental enamel, bronchitis, eye irritation, darkening of the skin, and chronic inflammation of the respiratory tract. Acetic acid can cause occupational asthma. One case of a delayed asthmatic response to glacial acetic acid has been reported in a person with bronchial asthma. Skin sensitization to acetic acid is rare, but has occurred.
Ammonium Hydroxide, conc. 28-30%	- Inhalation hazard - Skin Corrosion -Eye Damage and Irritation	OSHA PEL: 35 mg/m3 ; 50 ppm OSHA TWA: 18 mg/m3; 25 ppm	Ammonia is an irritant and corrosive to the skin, eyes, respiratory tract and mucous membranes. May cause severe chemical burns to the eyes, lungs and skin. Skin and respiratory related diseases could be aggravated by exposure. The extent of injury produced by exposure to ammonia depends on the duration of the exposure, the concentration of the liquid or vapor and the depth of inhalation**.** Exposure Routes: Inhalation (vapors), skin and/or eye contact (vapors, liquid), ingestion (liquid).
Formic Acid, conc.	-Flammable liquid and vapor -Harmful if swallowed -Causes severe skin burns and eye damage -Toxic if inhaled -May cause respiratory irritation	OSHA TWA: 5 ppm or 9 mg/m3 OSHA PEL: 10 ppm	Formic acid is an irritant and corrosive to the skin, eyes, respiratory tract and mucous membranes. May cause severe chemical burns to the eyes, lungs and skin. Skin and respiratory related diseases could be aggravated by exposure. The extent of injury produced by exposure to ammonia depends on the duration of the exposure, the concentration of the liquid or vapor and the depth of inhalation**.** Exposure Routes: Inhalation (vapors), skin and/or eye contact (vapors, liquid), ingestion (liquid).

13. WASTE MANAGEMENT/POLLUTION PREVENTION

Neat Materials

Waste management procedures require the prudent use of neat materials. The ordering of neat standards and materials must be done to minimize unused material which would result in storage or handling of excess material. Quantities ordered should be sufficient to provide for necessary standards with consideration to shelf life. When ordering a unique material for a standard, be sure to order the smallest practical quantity.

Solvents

The solvents used at York for this procedure include isopropanol and Methanol. These solvents are used for sample extraction or LC cleanup, all amounts are either consumed during concentration or placed in one liter amber jars in the hood areas for evaporation. Any remaining solvent/water is transferred to a drum designated for solvent waste.

Acids and Bases

The acids and bases used for this procedure include: Acetic Acid and Formic Acid. The bases used are Ammonium hydroxide, sodium hydroxide and potassium hydroxide. Store concentrated base and acids separately whether waste or neat material.

Samples

Unused or remaining water samples are returned to the sample control room for continued storage for proper disposal by the sample control group.

14. REFERENCES

1. EPA METHOD 1633 Draft 2 June, 2022- Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS; EPA 821-D-22-001

15. REVISION HISTORY

Revision 1.0	10/24/2022	First issue.
Revision 1.1	02/10/2023	Modified LLOPR in Section 7.4.6.1 to reflect 2x the MRL

Attachment 1 – Non-Extracted Internal Standards (NIS)

YORK
ANALYTICAL LABORATORIES, INC.

Analytical Standard Record

Standard ID: **Y22B197**

Description:	MPFAC-HIF-IS-EPA 1633 ISTD STOCK	Prepared:	02/16/2022
Standard Type:	Other	Expires:	09/07/2026
Solvent:	Methanol/Water (<1%)	Prepared By:	Robert Q. Bradley
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Lot No.:	MPFACHIFIS0921
Vendor:	Wellington Laboratories		

Comments: Stock ISTD for EPA method 1633

Analyte	CAS Number	Concentration	Units
M3PFBA		1	ug/mL
MPFDA		0.25	ug/mL
MPFHxA		0.5	ug/mL
MPFHxS		0.474	ug/mL
MPFNA		0.25	ug/mL
MPFOA		0.5	ug/mL
MPFOS		0.479	ug/mL

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled Perfluoroalkyl Substance Injection Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-IS
LOT NUMBER:	MPFACHIFIS0921
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	09/07/2021
LAST TESTED: (mm/dd/yyyy)	09/07/2021
EXPIRY DATE: (mm/dd/yyyy)	09/07/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4, C_8, C_9-C_{10}) and two mass-labelled (^{18}O and ^{13}C) perfluoroalkanesulfonates (C_6 and C_8). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and mass-labelled perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of ≥99% per ^{13}C or >94% per ^{18}O.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED AR-1523 ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
Perfluoro-n-(2,3,4-$^{13}C_3$)butanoic acid	M3PFBA	1000		1
Perfluoro-n-(1,2-$^{13}C_2$)hexanoic acid	MPFHxA	500		2
Perfluoro-n-(1,2,3,4-$^{13}C_4$)octanoic acid	MPFOA	500		4
Perfluoro-n-(1,2,3,4,5-$^{13}C_5$)nonanoic acid	MPFNA	250		5
Perfluoro-n-(1,2-$^{13}C_2$)decanoic acid	MPFDA	250		7
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the salt	**as the acid**	
Sodium perfluoro-1-hexane($^{18}O_2$)sulfonate	MPFHxS	500	474	3
Sodium perfluoro-1-(1,2,3,4-$^{13}C_4$)octanesulfonate	MPFOS	500	479	6

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 10/13/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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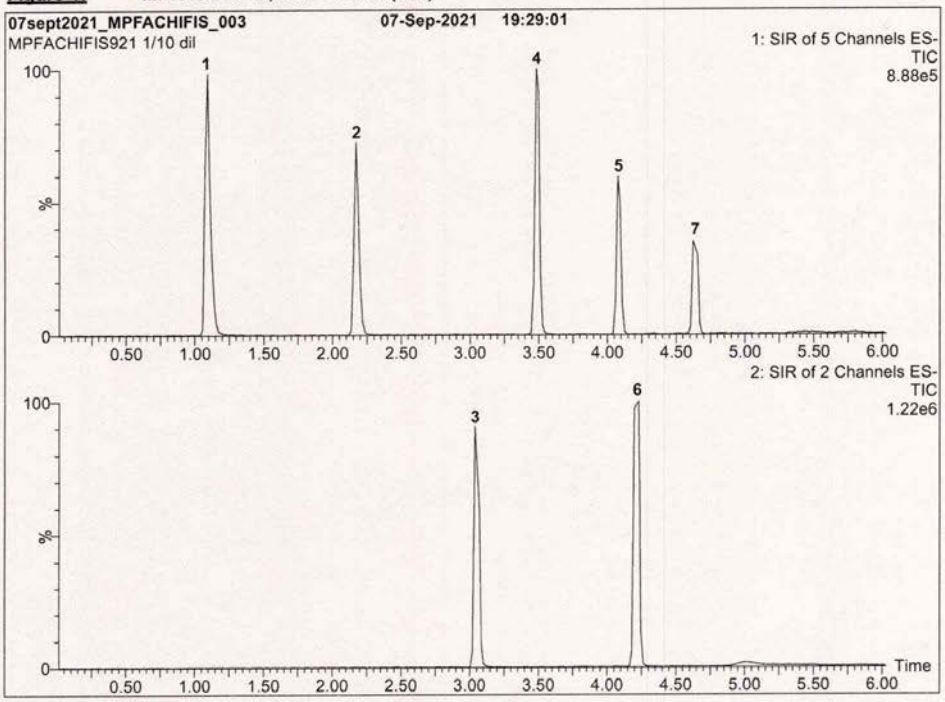
Figure 1: **MPFAC-HIF-IS; LC/MS Data (SIR)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 9 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 15 min

Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2-6)
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

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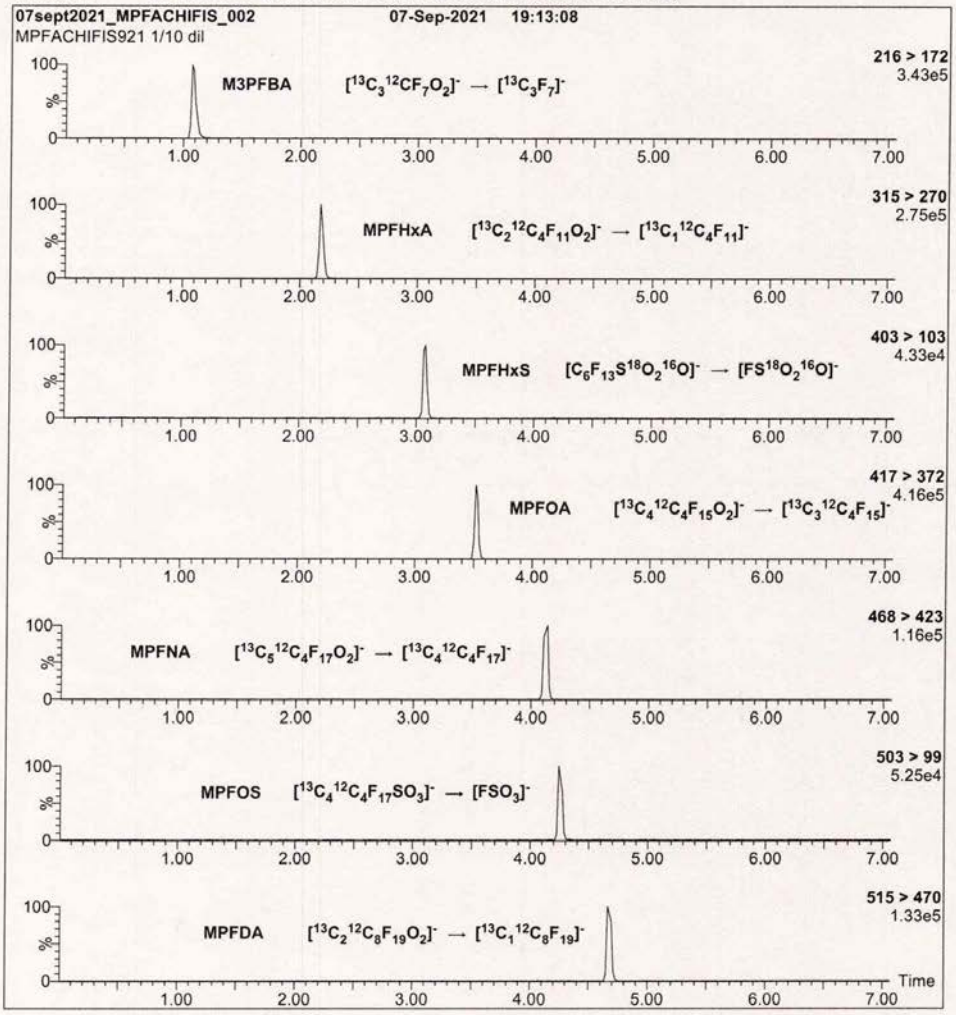
Figure 2: **MPFAC-HIF-IS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFAC-HIF-IS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.18e-3
Collision Energy (eV) = 4-64 (variable)

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Attachment 2 – Extracted Internal Standards (EIS)

YORK
ANALYTICAL LABORATORIES, INC.

Analytical Standard Record

Standard ID: **Y22B198**

Description:	MPFAC-HIF-ES-EPA 1633 STOCK EIS mix	Prepared:	02/17/2022
Standard Type:	Other	Expires:	08/06/2024
Solvent:	MeOH/IPA/1% H2O	Prepared By:	Robert Q. Bradley
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Lot No.:	MPFACHIFES0821
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
d3-N-MeFOSAA		1	ug/mL
d5-N-EtFOSAA		1	ug/mL
d7-N-MeFOSE		5	ug/mL
d9-N-EtFOSE		5	ug/mL
d-N-EtFOSA		0.5	ug/mL
d-N-MeFOSA		0.5	ug/mL
M2-4:2FTS		0.938	ug/mL
M2-6:2FTS		0.951	ug/mL
M2-8:2FTS		0.96	ug/mL
M2PFTeDA		0.25	ug/mL
M3HFPO-DA		2	ug/mL
M3PFBS		0.466	ug/mL
M3PFHxS		0.474	ug/mL
M4PFHpA		0.5	ug/mL
M5PFHxA		0.5	ug/mL
M5PFPeA		1	ug/mL
M6PFDA		0.25	ug/mL
M7PFUdA		0.25	ug/mL
M8FOSA		0.5	ug/mL
M8PFOA		0.5	ug/mL
M8PFOS		0.479	ug/mL
M9PFNA		0.25	ug/mL
MPFBA		2	ug/mL
MPFDoA		0.25	ug/mL

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled Per- and Poly-fluoroalkyl Substance Extraction Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-ES
LOT NUMBER:	MPFACHIFES0821
SOLVENT(S):	Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	08/05/2021
LAST TESTED: (mm/dd/yyyy)	08/16/2021
EXPIRY DATE: (mm/dd/yyyy)	08/16/2024
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4-C_{12}, C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4, C_8, and C_8), three mass-labelled (one ^{13}C and two ^{2}H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^{2}H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^{2}H) perfluorooctanesulfonamidoethanols, and mass-labelled (^{13}C) hexafluoropropylene oxide dimer acid. The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids, mass-labelled perfluoroalkanesulfonates, mass-labelled fluorotelomer sulfonates, perfluoro-1-($^{13}C_8$)octanesulfonamide, and mass-labelled hexafluoropropylene oxide dimer acid all have chemical purities of >98% and isotopic purities of ≥99%. The individual mass-labelled perfluorooctanesulfonamidoacetic acids, mass-labelled perfluorooctanesulfonamidoethanols, and two mass-labelled (^{2}H) perfluoro-1-octanesulfonamides all have chemical purities of >98% and isotopic purities of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Form#:13, Issued 2004-11-10
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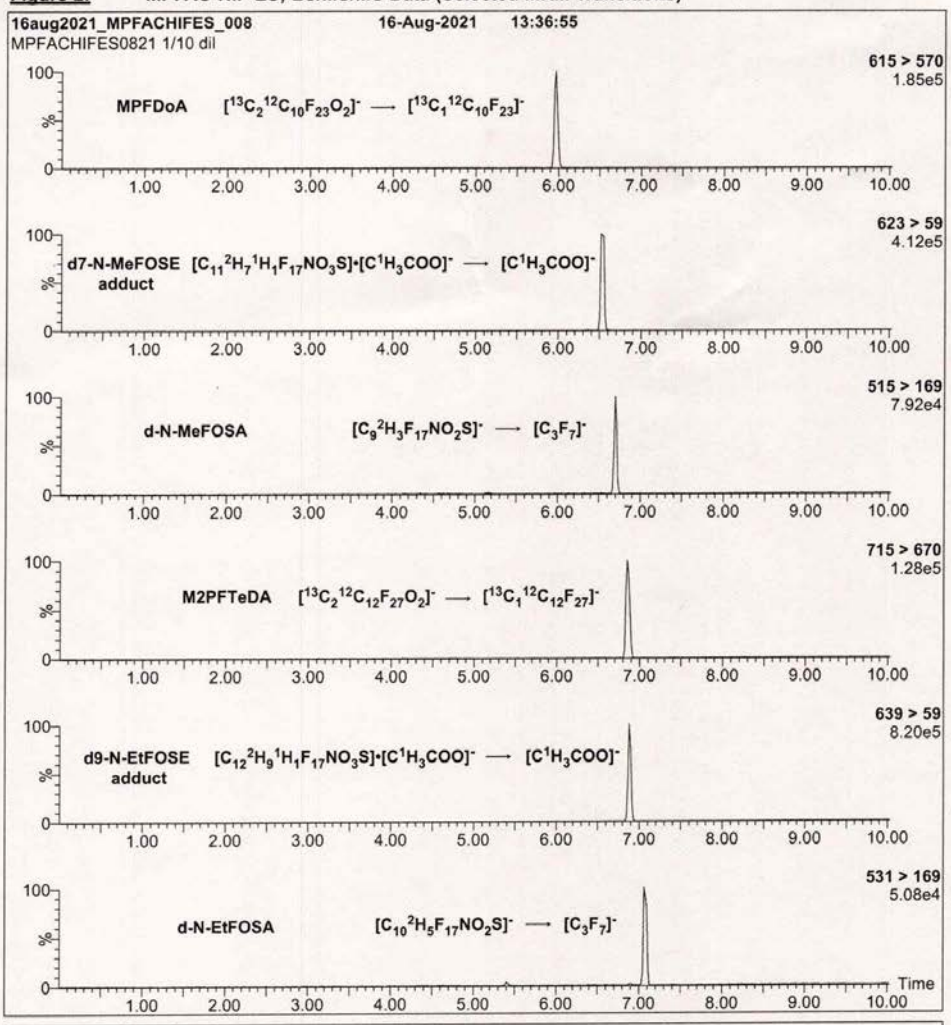
Figure 2: **MPFAC-HIF-ES; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFAC-HIF-ES)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 4-64 (variable)

Form#:13, Issued 2004-11-10
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MPFACHIFES0821 (7 of 7)
rev1

Table A: **MPFAC-HIF-ES; Components and Concentrations (ng/mL, ± 5% in Methanol/Isopropanol (1%)/Water (<1%))**

Compound	Acronym	Concentration (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-($^{13}C_4$)butanoic acid	MPFBA	2000	1
Perfluoro-n-($^{13}C_5$)pentanoic acid	M5PFPeA	1000	2
Perfluoro-n-(1,2,3,4,6-$^{13}C_5$)hexanoic acid	M5PFHxA	500	5
Perfluoro-n-(1,2,3,4-$^{13}C_4$)heptanoic acid	M4PFHpA	500	7
Perfluoro-n-($^{13}C_8$)octanoic acid	M8PFOA	500	10
Perfluoro-n-($^{13}C_9$)nonanoic acid	M9PFNA	250	11
Perfluoro-n-(1,2,3,4,5,6-$^{13}C_6$)decanoic acid	M6PFDA	250	14
Perfluoro-n-(1,2,3,4,5,6,7-$^{13}C_7$)undecanoic acid	M7PFUdA	250	17
Perfluoro-n-(1,2-$^{13}C_2$)dodecanoic acid	MPFDoA	250	19
Perfluoro-n-(1,2-$^{13}C_2$)tetradecanoic acid	M2PFTeDA	250	22
Perfluoro-1-($^{13}C_8$)octanesulfonamide	M8FOSA	500	18
N-methyl-d_3-perfluoro-1-octanesulfonamide	d-N-MeFOSA	500	21
N-ethyl-d_5-perfluoro-1-octanesulfonamide	d-N-EtFOSA	500	24
N-methyl-d_3-perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000	15
N-ethyl-d_5-perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000	16
2-(N-methyl-d_3-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d7-N-MeFOSE	5000	20
2-(N-ethyl-d_5-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d9-N-EtFOSE	5000	23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)($^{13}C_3$)propanoic acid	M3HFPO-DA	2000	6

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4-$^{13}C_3$)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3-$^{13}C_3$)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-($^{13}C_8$)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

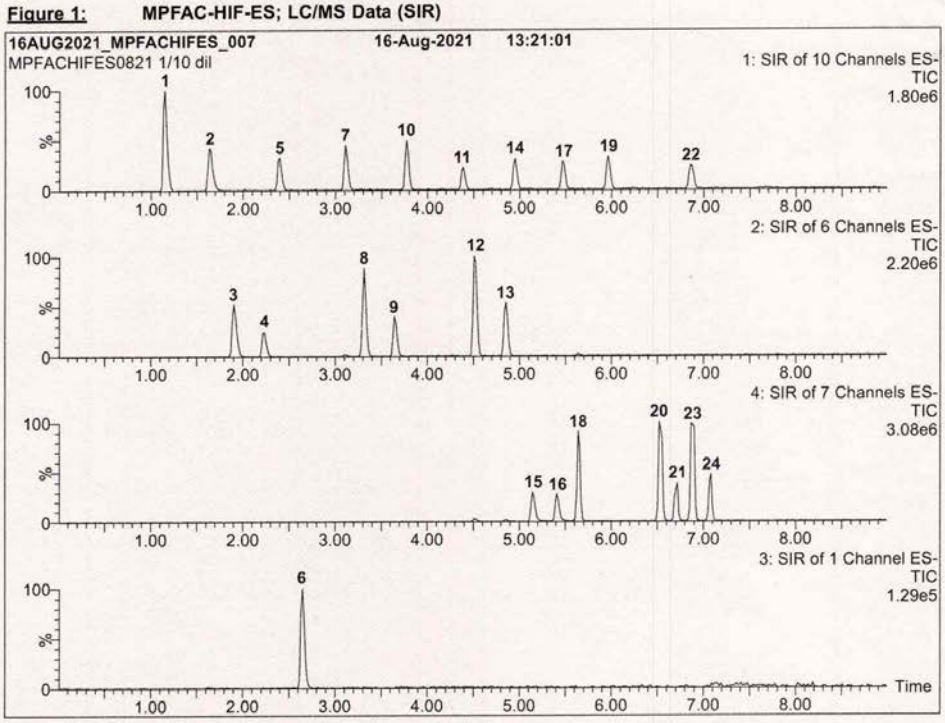
Certified By: _____ **Date:** 10/13/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

MPFACHIFES0821 (3 of 7)
rev1

Figure 1: **MPFAC-HIF-ES; LC/MS Data (SIR)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 9 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 15 min

Flow: 300 µL/min

MS Parameters:

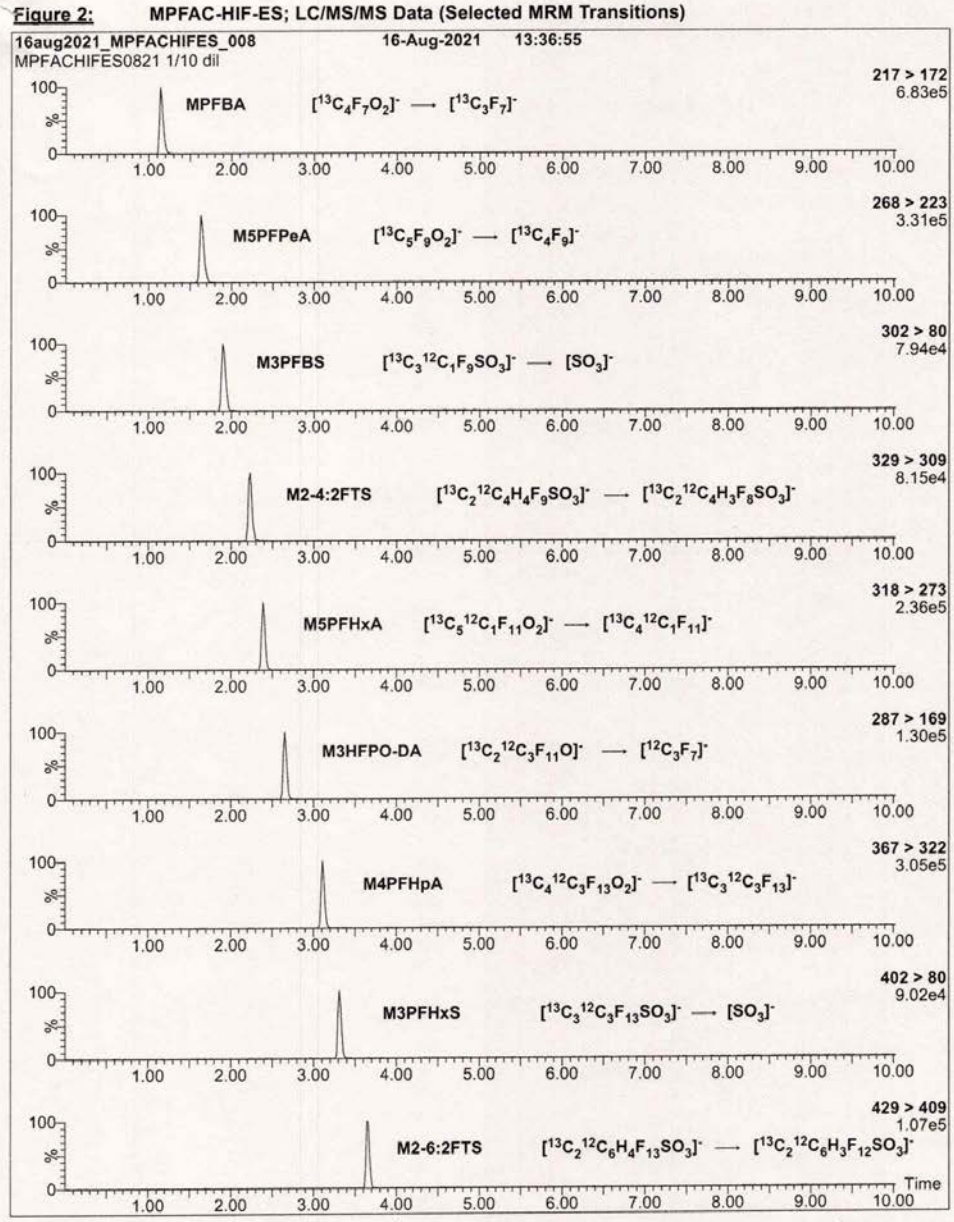
Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2-44)
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

MPFACHIFES0821 (4 of 7)
rev1

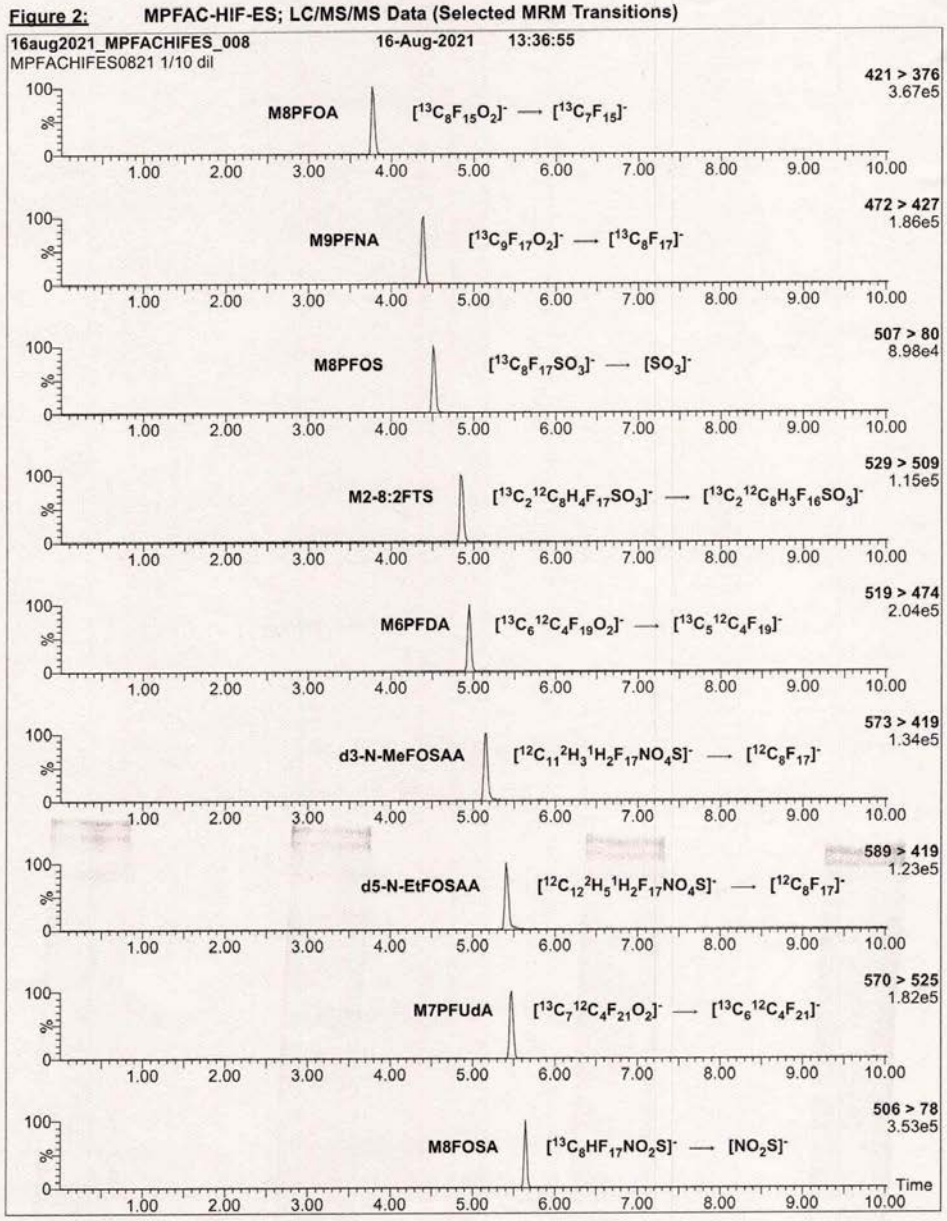
Figure 2: **MPFAC-HIF-ES; LC/MS/MS Data (Selected MRM Transitions)**



Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

MPFACHIFES0821 (5 of 7)
rev1

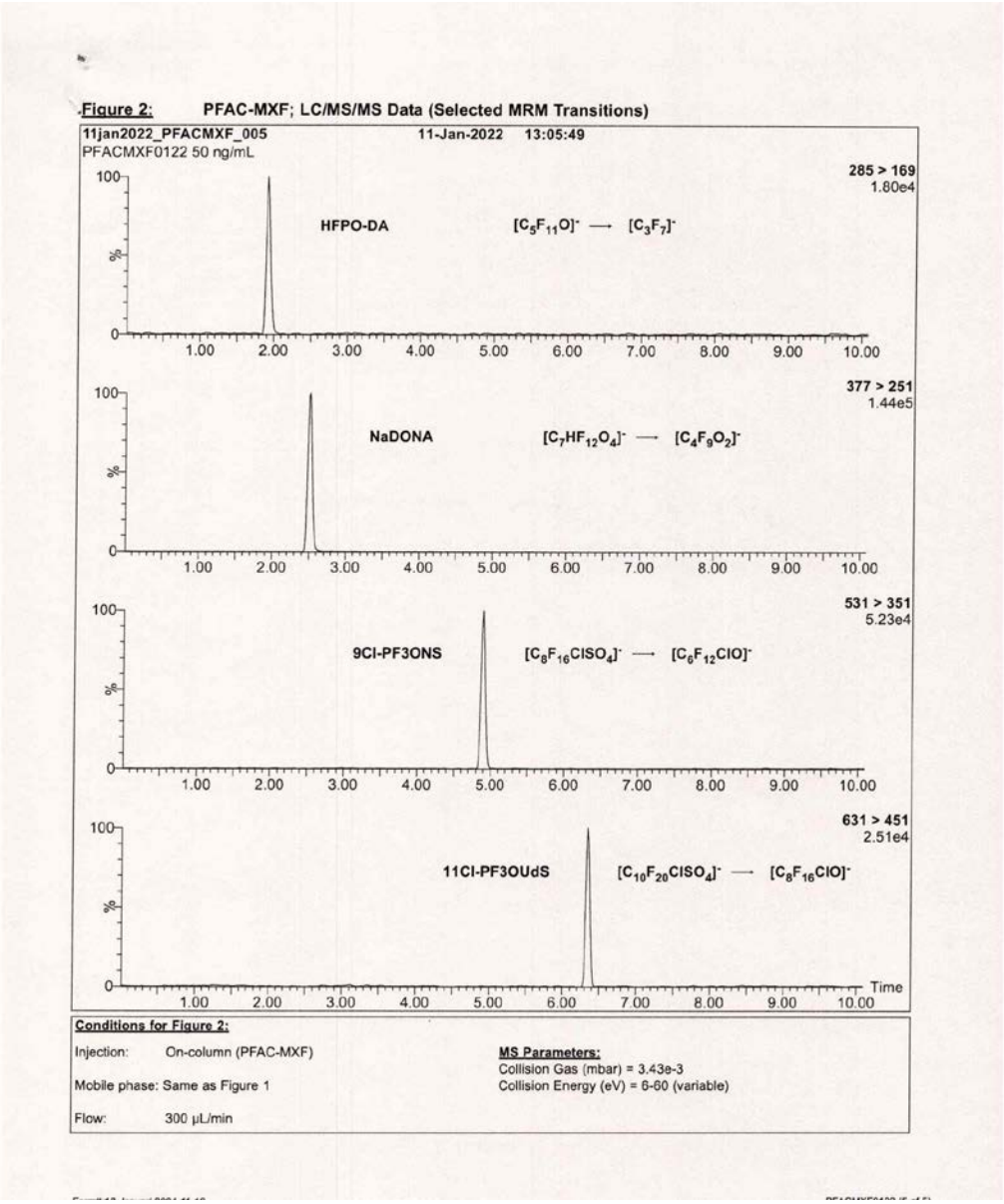
Figure 2: **MPFAC-HIF-ES; LC/MS/MS Data (Selected MRM Transitions)**



Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

MPFACHIFES0821 (6 of 7)
rev1

Attachment 3 – Target Analyte Mixtures



INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXF0122 (2 of 5)
rev0

Table A: **PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))**

Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the salt	**as the acid**	
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

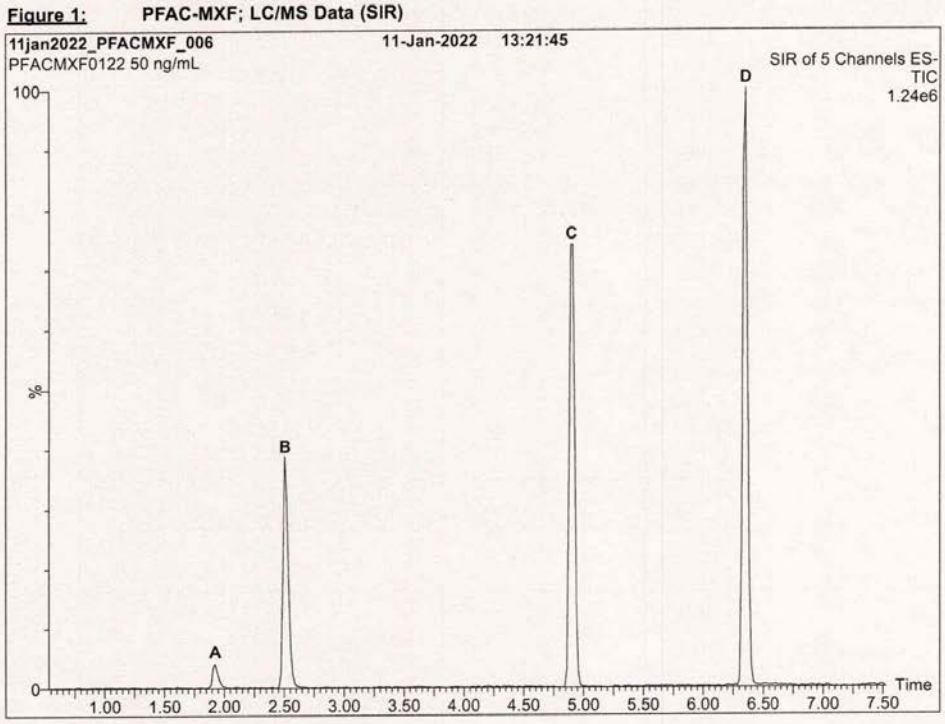
* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 01/12/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXF0122 (3 of 5)
rev0

Figure 1: **PFAC-MXF; LC/MS Data (SIR)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (15-74)
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (L/hr) = 1000

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXF0122 (4 of 5)
rev0

YORK
ANALYTICAL LABORATORIES, INC.

Analytical Standard Record

Standard ID: **Y22B199**

Description:	PFAC-MXF-Native Repl.STOCK EPA 1633 PFAS	Prepared:	02/17/2022
Standard Type:	Other	**Expires:**	**01/11/2025**
Solvent:	MeOH/H20	Prepared By:	Robert Q. Bradley
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Lot No.:	PFACMXF0122
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
11CL-PF3OUdS	763051-92-9	1.89	ug/mL
9CL-PF3ONS	756426-58-1	1.87	ug/mL
ADONA	919005-14-4	1.89	ug/mL
HFPO-DA (Gen-X)	13252-13-6	2	ug/mL

Reviewed By Date

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXF
LOT NUMBER:	PFACMXF0122
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/10/2022
LAST TESTED: (mm/dd/yyyy)	01/11/2022
EXPIRY DATE: (mm/dd/yyyy)	01/11/2025
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

Table A: **PFAC-MXI; Components and Concentrations (µg/mL; ± 5% in methanol)**

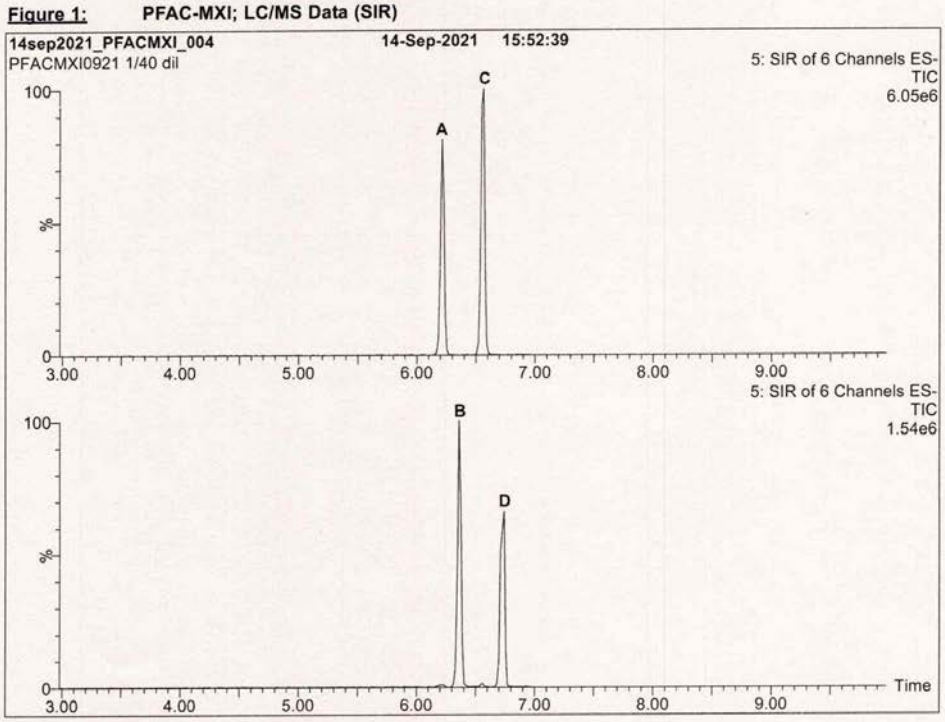
Compound	Acronym	Concentration (µg/mL)	Peak Assignment in Figure 1
N-methylperfluoro-1-octanesulfonamide	N-MeFOSA	1.00	B
N-ethylperfluoro-1-octanesulfonamide	N-EtFOSA	1.00	D
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	N-MeFOSE	10.0	A
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	N-EtFOSE	10.0	C

Certified By: _____ **Date:** 09/23/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXI0921 (3 of 5)
rev0

Figure 1: **PFAC-MXI; LC/MS Data (SIR)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 9 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 15 min

Flow: 300 µL/min

MS Parameters:

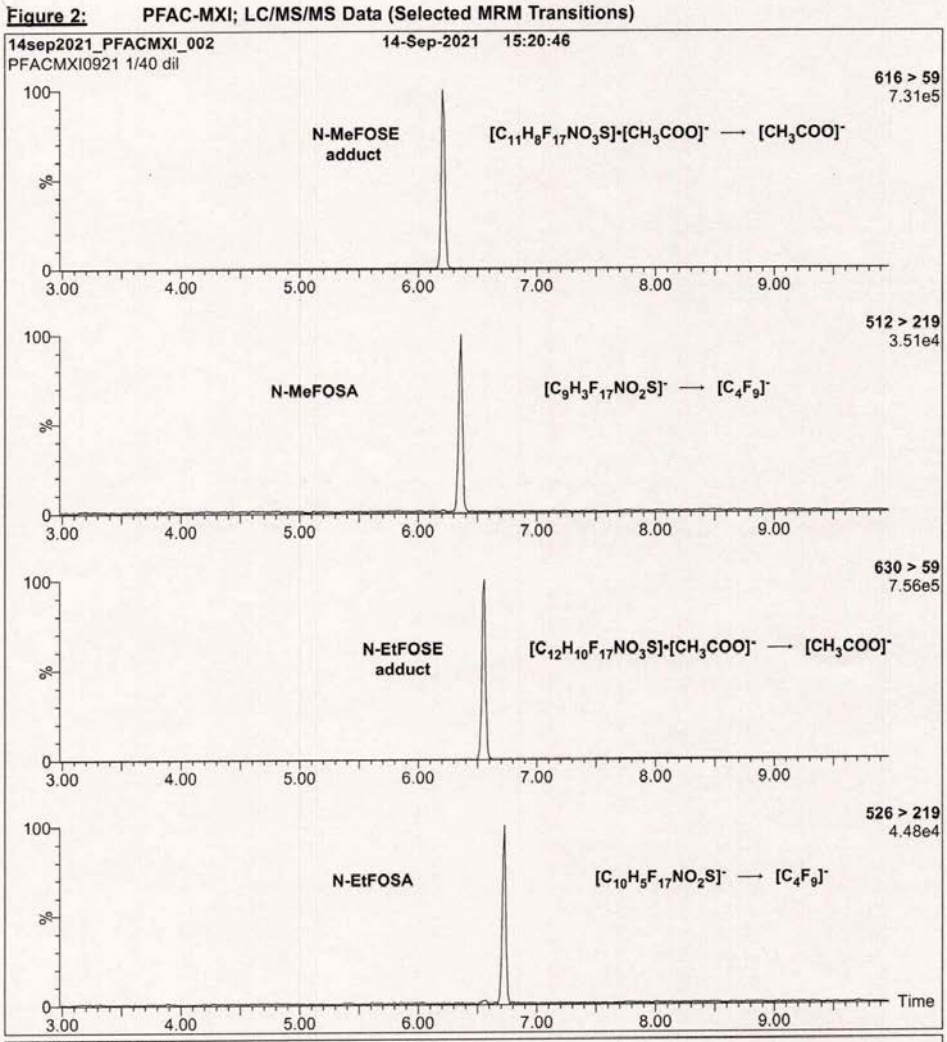
Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = variable (2-74)
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXI0921 (4 of 5)
rev0

Figure 2: **PFAC-MXI; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFAC-MXI)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 6-60 (variable)

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXI0921 (5 of 5)
rev0

YORK
ANALYTICAL LABORATORIES, INC.

Analytical Standard Record

Standard ID: **Y22B204**

Description:	PFAC-MXI-EPA 1633 Stock	Prepared:	02/17/2022
Standard Type:	Other	**Expires:**	**02/17/2023**
Solvent:	Methanol	Prepared By:	Robert Q. Bradley
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Lot No.:	PFACMXI0921
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
N-EtFOSA	4151-50-2	1	ug/mL
N-EtFOSE	1691-99-2	10	ug/mL
N-MeFOSA	31506-32-8	1	ug/mL
N-MeFOSE	24448-09-7	10	ug/mL

Reviewed By Date

Page 1 of 1

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXI

Native Perfluorooctanesulfonamide and Perfluorooctanesulfonamidoethanol Solution/Mixture

PRODUCT CODE:	PFAC-MXI
LOT NUMBER:	PFACMXI0921
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/08/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXI is a solution/mixture of two native perfluorooctanesulfonamides (FOSAs) and two native perfluorooctanesulfonamidoethanols (FOSEs). The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

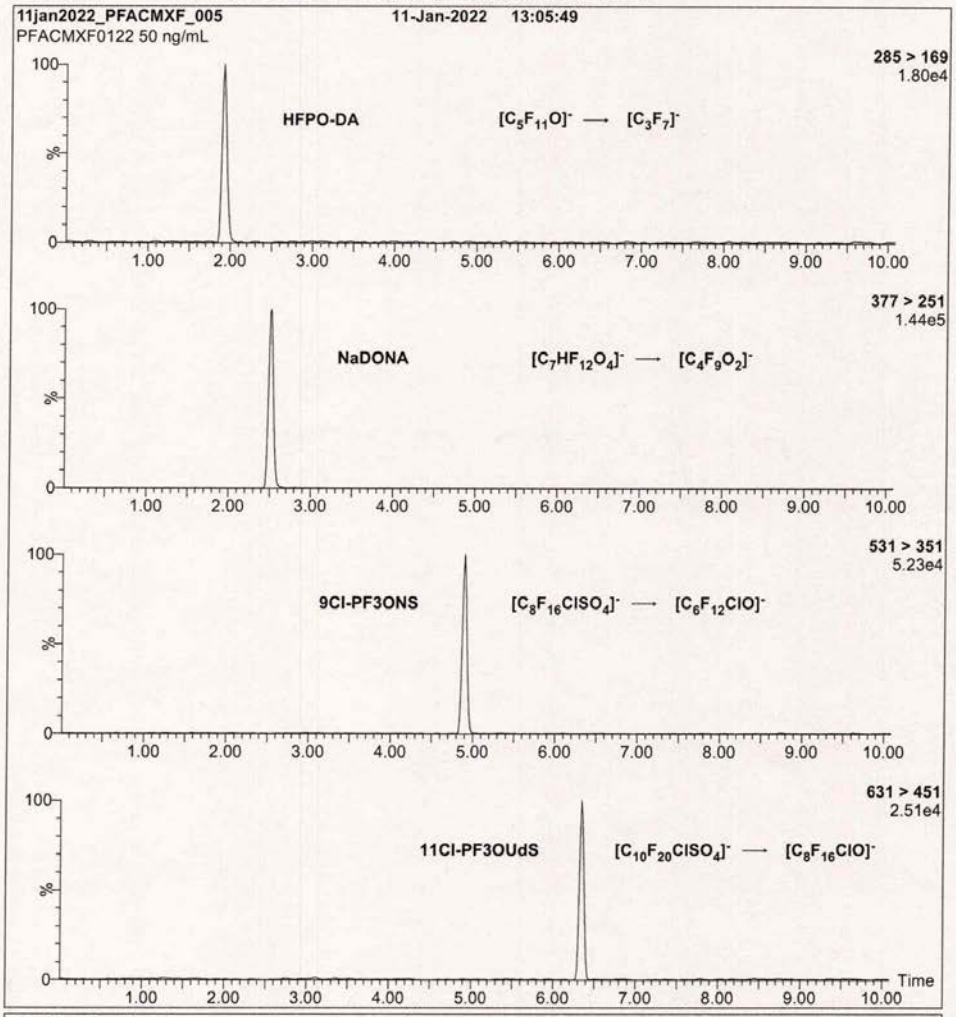
ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXI0921 (2 of 5)
rev0

Figure 2: **PFAC-MXF; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFAC-MXF)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:
Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 6-60 (variable)

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXF0122 (5 of 5)
rev0

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXF0122 (2 of 5)
rev0

Table A: **PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))**

Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the salt	**as the acid**	
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

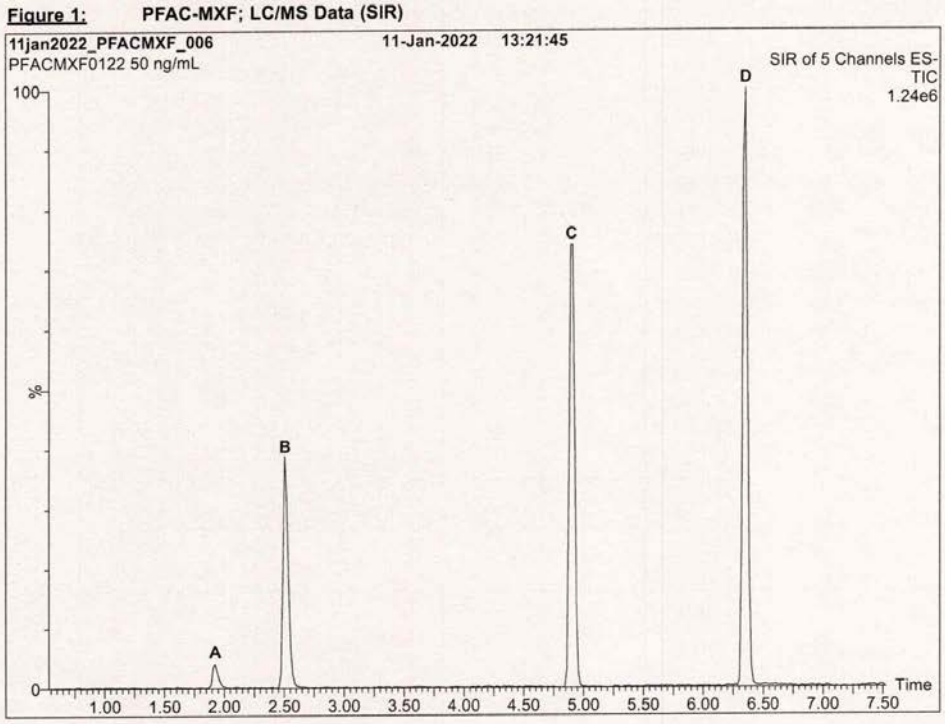
* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 01/12/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXF0122 (3 of 5)
rev0

Figure 1: **PFAC-MXF; LC/MS Data (SIR)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (15-74)
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (L/hr) = 1000

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXF0122 (4 of 5)
rev0

YORK
ANALYTICAL LABORATORIES, INC.

Analytical Standard Record

Standard ID: **Y22B199**

Description:	PFAC-MXF-Native Repl.STOCK EPA 1633 PFAS	Prepared:	02/17/2022
Standard Type:	Other	**Expires:**	**01/11/2025**
Solvent:	MeOH/H20	Prepared By:	Robert Q. Bradley
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Lot No.:	PFACMXF0122
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
11CL-PF3OUdS	763051-92-9	1.89	ug/mL
9CL-PF3ONS	756426-58-1	1.87	ug/mL
ADONA	919005-14-4	1.89	ug/mL
HFPO-DA (Gen-X)	13252-13-6	2	ug/mL

Reviewed By Date

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXF
LOT NUMBER:	PFACMXF0122
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/10/2022
LAST TESTED: (mm/dd/yyyy)	01/11/2022
EXPIRY DATE: (mm/dd/yyyy)	01/11/2025
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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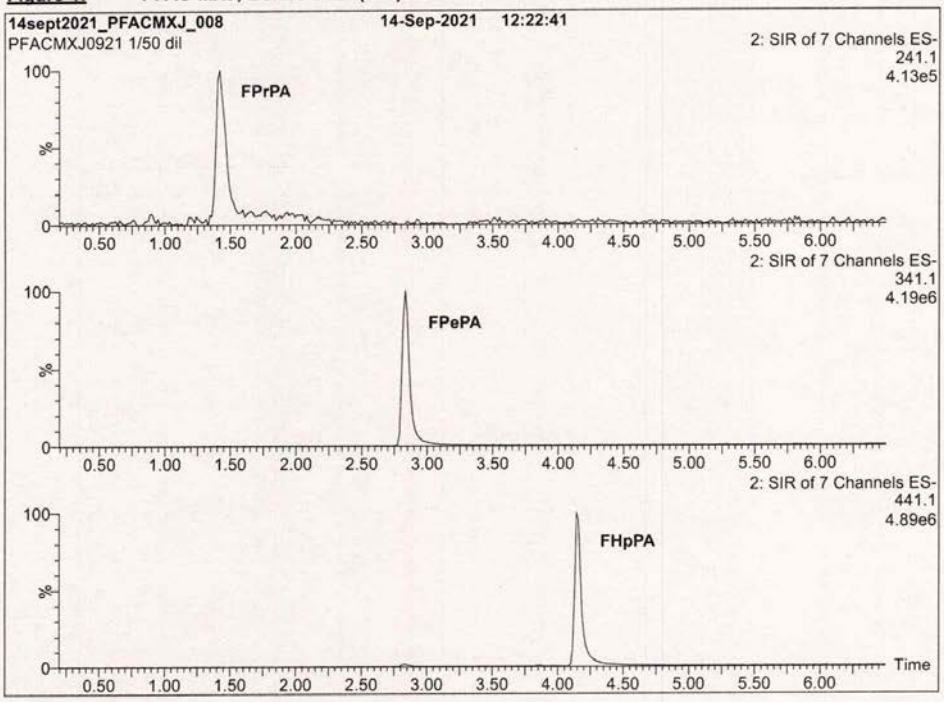
Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

Table A: **PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)**

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: _____ **Date:** 10/02/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Figure 1: **PFAC-MXJ; LC/MS Data (SIR)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 9 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 15 min

Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = variable (2-74)
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

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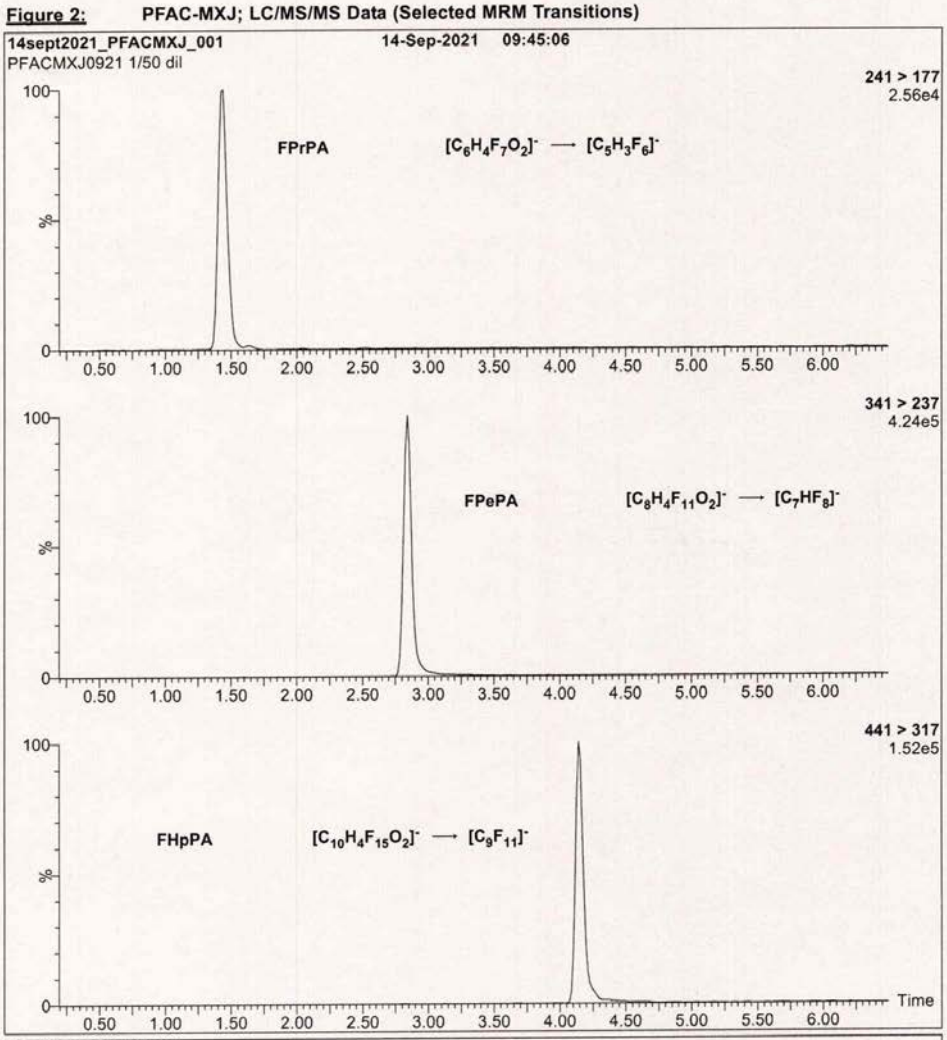
Figure 2: **PFAC-MXJ; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFAC-MXJ)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 6-60 (variable)

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXJ0921 (5 of 5)
rev1

YORK
ANALYTICAL LABORATORIES, INC.

Analytical Standard Record

Standard ID: **Y22B205**

Description:	PFAC-MXJ-EPA 1633 Stock mix	Prepared:	02/17/2022
Standard Type:	Other	Expires:	09/14/2026
Solvent:	Methanol	Prepared By:	Robert Q. Bradley
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Lot No.:	PFACMXJ0921
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
3-Perfluoroheptyl propanoic acid (FHpPA	812-70-4	20	ug/mL
3-Perfluoropentyl propanoic acid (FPePA)	914637-49-3	20	ug/mL
3-Perfluoropropyl propanoic acid (FPrPA)	356-02-2	4	ug/mL

Reviewed By Date

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0921
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/08/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

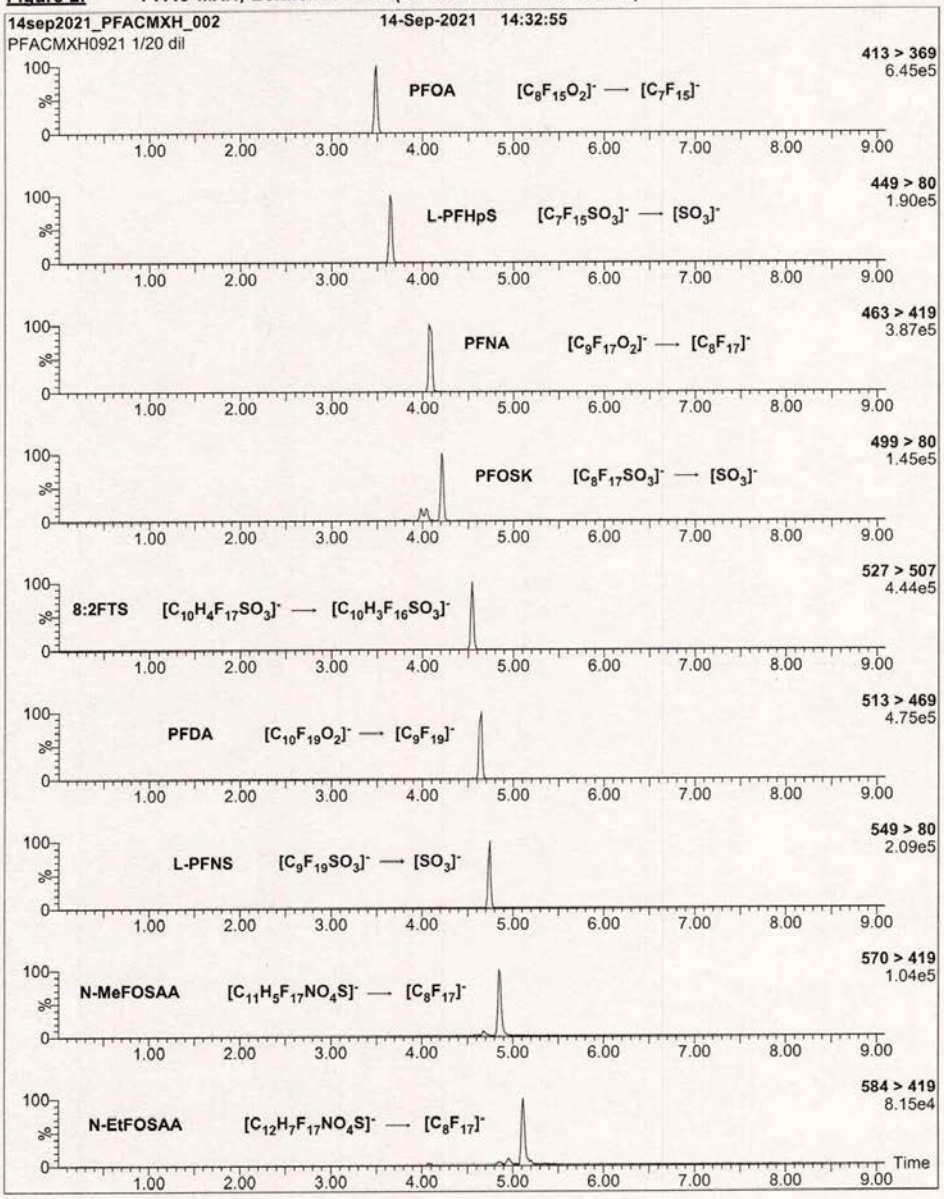
ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXJ0921 (2 of 5)
rev1

Figure 2: **PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**



Form#:13, Issued 2004-11-10
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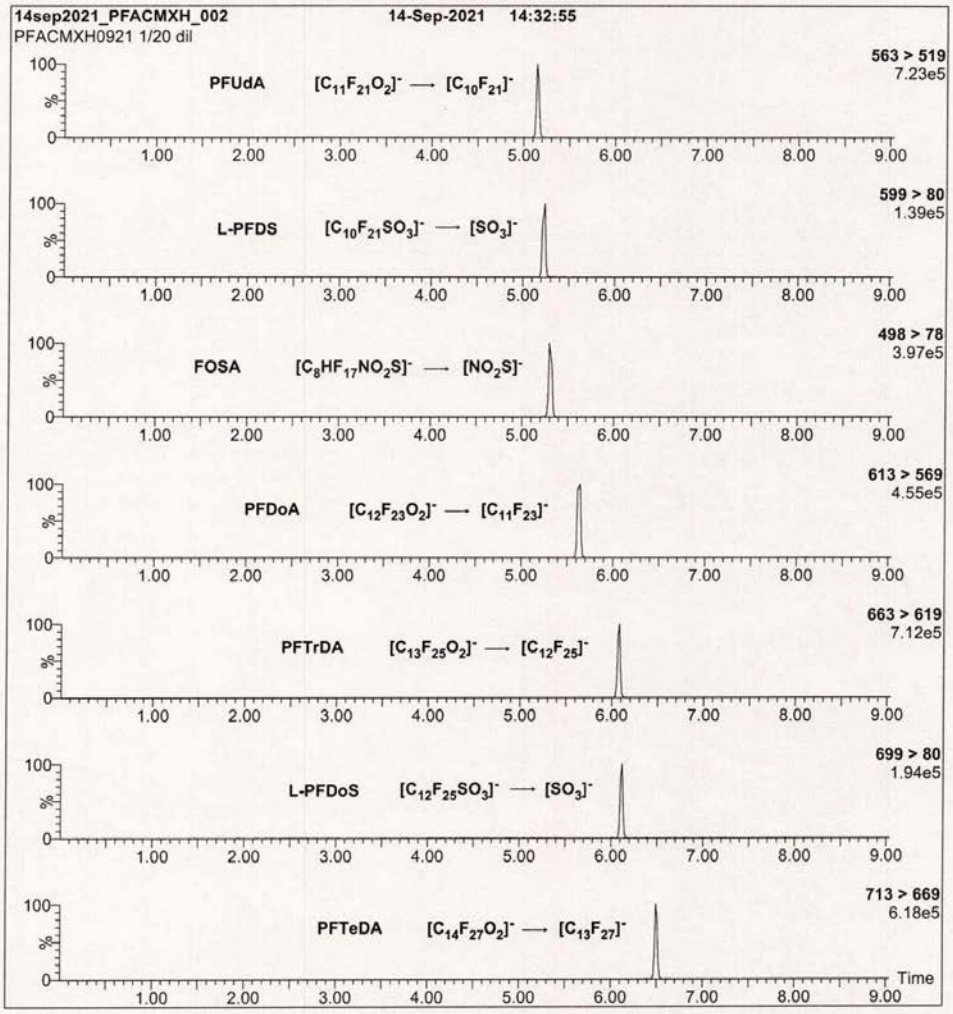
rev0

Figure 2: **PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFAC-MXH)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:
Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 6-60 (variable)

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

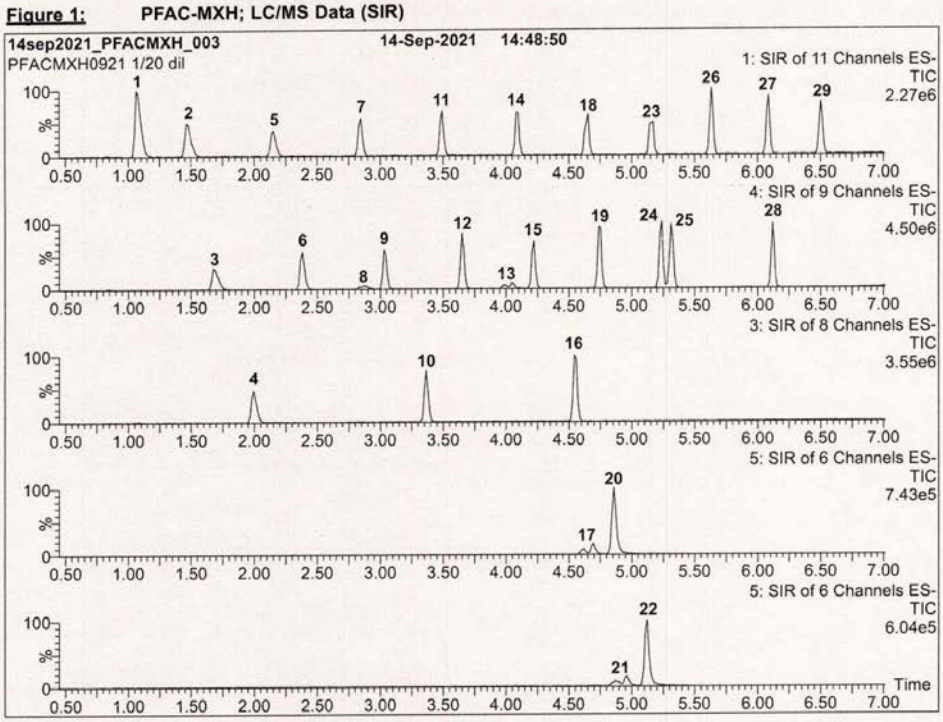
PFACMXH0921 (11 of 11)
rev0

Table E: **PFOSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.07	

* Percent of total perfluorooctanesulfonate isomers only.
** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Figure 1: **PFAC-MXH; LC/MS Data (SIR)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 9 min and hold for 2 min
before returning to initial conditions in 1 min.
Time: 15 min

Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = variable (2-74)
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

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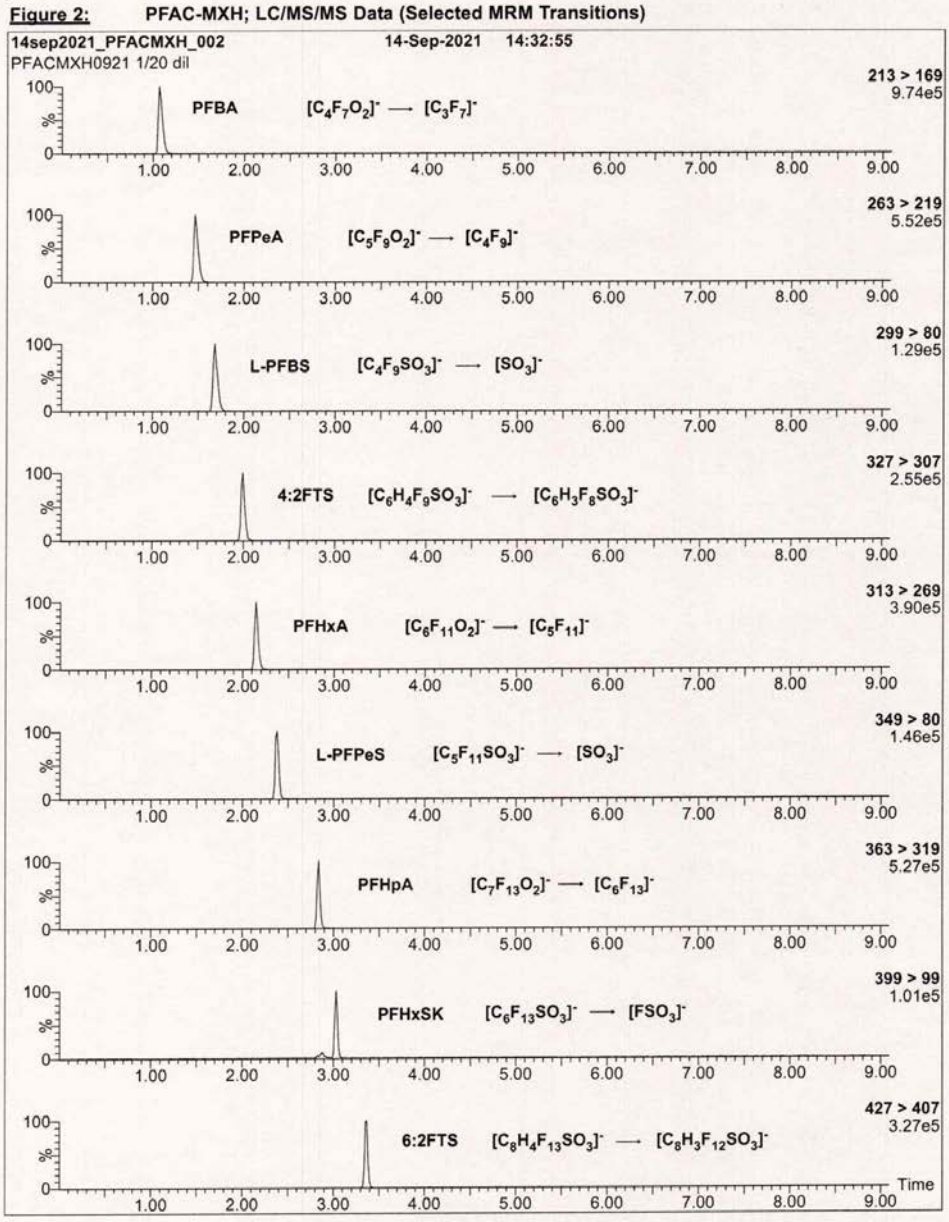
rev0

Figure 2: **PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**



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PFACMXH0921 (9 of 11)
rev0

Table B: **br-NMeFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2H$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(CH_3)CH_2CO_2H$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(CH_3)CH_2CO_2H$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(CH_3)CH_2CO_2H$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	0.2	
7	Other Unidentified Isomers		1.1	

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

Table C: **br-NEtFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2NCH_2CO_2H$ C_2H_5	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_2)_2SO_2NCH_2CO_2H$ CF_3 C_2H_5	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_2)_3SO_2NCH_2CO_2H$ CF_3 C_2H_5	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_2)_4SO_2NCH_2CO_2H$ CF_3 C_2H_5	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_2)_5SO_2NCH_2CO_2H$ CF_3 C_2H_5	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_2)_4SO_2NCH_2CO_2H$ CF_3 C_2H_5	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$CF_3CFCF(CF_2)_3SO_2NCH_2CO_2H$ CF_3 C_2H_5	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$CF_3CFCF_2CF(CF_2)_2SO_2NCH_2CO_2H$ CF_3 C_2H_5	0.3	
9	Other Unidentified Isomers		1.3	

* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXH0921 (5 of 11)
rev0

Table D: **PFHxSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-hexanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3C(CF_3)CF_2CF_2SO_3^-K^+$	0.2	
7	Other Unidentified Isomers		0.5	

* Percent of total perfluorohexanesulfonate isomers only.
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXH

Native Per- and Poly-fluoroalkyl Substance Solution/Mixture

PRODUCT CODE:	PFAC-MXH
LOT NUMBER:	PFACMXH0921
SOLVENT(S):	Methanol / Isopropanol (2%) / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	09/09/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of eleven native linear perfluoroalkylcarboxylic acids (C_4-C_{14}), eight native perfluoroalkanesulfonates (C_4, C_5, C_7, C_8, C_{10} and C_{12} linear; C_6 and C_8 linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide (FOSA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of br-NMeFOSAA
Table C: Isomeric Components and Percent Composition of br-NEtFOSAA
Table D: Isomeric Components and Percent Composition of PFHxSK
Table E: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2,...x_n$ on which it depends is:

$$u_c(y(x_1, x_2,...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXH0921 (2 of 11)
rev0

Table A: **PFAC-MXH; Components and Concentrations (µg/mL, ± 5% in methanol / isopropanol (2%) / water (<1%))**

Compound	Acronym	Concentration* (µg/mL)	Peak Assignment in Figure 1
Perfluoro-n-butanoic acid	PFBA	4.00	1
Perfluoro-n-pentanoic acid	PFPeA	2.00	2
Perfluoro-n-hexanoic acid	PFHxA	1.00	5
Perfluoro-n-heptanoic acid	PFHpA	1.00	7
Perfluoro-n-octanoic acid	PFOA	1.00	11
Perfluoro-n-nonanoic acid	PFNA	1.00	14
Perfluoro-n-decanoic acid	PFDA	1.00	18
Perfluoro-n-undecanoic acid	PFUdA	1.00	23
Perfluoro-n-dodecanoic acid	PFDoA	1.00	26
Perfluoro-n-tridecanoic acid	PFTrDA	1.00	27
Perfluoro-n-tetradecanoic acid	PFTeDA	1.00	29
Perfluoro-1-octanesulfonamide	FOSA	1.00	25
N-methylperfluorooctanesulfonamidoacetic acid [a]	N-MeFOSAA: linear isomer	0.760	20
	N-MeFOSAA: ∑ branched isomers	0.240	17
N-ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	0.775	22
	N-EtFOSAA: ∑ branched isomers	0.225	21

Compound	Acronym	Concentration* (µg/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1.00	0.887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1.00	0.941	6
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	0.811	0.741	9
	PFHxSK: ∑ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1.00	0.953	12
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: ∑ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1.00	0.965	24
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1.00	0.970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4.00	3.75	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4.00	3.80	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4.00	3.84	16

[a] See Table B for percent composition of linear and branched N-MeFOSAA isomers.
[b] See Table C for percent composition of linear and branched N-EtFOSAA isomers.
[c] See Table D for percent composition of linear and branched PFHxSK isomers.
[d] See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 09/23/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXH0921 (3 of 11)
rev0

YORK
ANALYTICAL LABORATORIES, INC.

Analytical Standard Record

Standard ID: **Y22B201**

Description:	PFAC-MXH STOCK PFAS EPA 1633	Prepared:	02/17/2022
Standard Type:	Other	**Expires:**	**09/14/2026**
Solvent:	MeOH/IPA/H2O	Prepared By:	Robert Q. Bradley
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Lot No.:	PFACMXH0921
Vendor:	Wellington Laboratories		

Comments:

Analyte	CAS Number	Concentration	Units
1H,1H,2H,2H-Perfluorodecanesulfonic acid	39108-34-4	3.84	ug/mL
1H,1H,2H,2H-Perfluorohexanesulfonic acid	757124-72-4	3.75	ug/mL
1H,1H,2H,2H-Perfluorooctanesulfonic acid	27619-97-2	3.8	ug/mL
N-EtFOSAA	2991-50-6	1	ug/mL
N-MeFOSAA	2355-31-9	1	ug/mL
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	0.965	ug/mL
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	0.953	ug/mL
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	0.962	ug/mL
Perfluoro-1-octanesulfonamide (FOSA)	754-91-6	1	ug/mL
Perfluoro-1-pentanesulfonate (PFPeS)	2706-91-4	0.941	ug/mL
Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.887	ug/mL
Perfluorodecanesulfonic acid(PFDS)	335-77-3	0.965	ug/mL
Perfluorodecanoic acid (PFDA)	335-76-2	1	ug/mL
Perfluorododecanoic acid (PFDoA)	307-55-1	1	ug/mL
Perfluoroheptanoic acid (PFHpA)	375-85-9	1	ug/mL
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	0.914	ug/mL
Perfluorohexanoic acid (PFHxA)	307-24-4	1	ug/mL
Perfluoro-n-butanoic acid (PFBA)	375-22-4	4	ug/mL
Perfluorononanoic acid (PFNA)	375-95-1	1	ug/mL
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.928	ug/mL
Perfluorooctanoic acid (PFOA)	335-67-1	1	ug/mL
Perfluoropentanoic acid (PFPeA)	2706-90-3	1	ug/mL
Perfluorotetradecanoic acid (PFTA)	376-06-7	1	ug/mL
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	1	ug/mL
Perfluoroundecanoic acid (PFUnA)	2058-94-8	1	ug/mL

Reviewed By Date

Page 1 of 1

Attachment 4 – Calibration Concentrations, nominal

Calibration Solutions (ng/mL) Compound CS1 (LOQ) CS2 Perfluoroalkyl carboxylic acids			CS3	CS4 (CV[1])	CS5	CS6	CS7[2]
acids							
PFBA	0.8	2	5	10	20	50	250
PFPeA	0.4	1	2.5	5	10	25	125
PFHxA	0.2	0.5	1.25	2.5	5	12.5	62.5
PFHpA	0.2	0.5	1.25	2.5	5	12.5	62.5
PFOA	0.2	0.5	1.25	2.5	5	12.5	62.5
PFNA	0.2	0.5	1.25	2.5	5	12.5	62.5
PFDA	0.2	0.5	1.25	2.5	5	12.5	62.5
PFUnA	0.2	0.5	1.25	2.5	5	12.5	62.5
PFDoA	0.2	0.5	1.25	2.5	5	12.5	62.5
PFTrDA	0.2	0.5	1.25	2.5	5	12.5	62.5
PFTeDA	0.2	0.5	1.25	2.5	5	12.5	62.5
Perfluoroalkyl sulfonic acids							
PFBS	0.2	0.5	1.25	2.5	5	12.5	62.5
PFPeS	0.2	0.5	1.25	2.5	5	12.5	62.5
PFHxS	0.2	0.5	1.25	2.5	5	12.5	62.5
PFHpS	0.2	0.5	1.25	2.5	5	12.5	62.5
PFOS	0.2	0.5	1.25	2.5	5	12.5	62.5
PFNS	0.2	0.5	1.25	2.5	5	12.5	62.5
PFDS	0.2	0.5	1.25	2.5	5	12.5	62.5
PFDoS	0.2	0.5	1.25	2.5	5	12.5	62.5
Fluorotelomer sulfonic acids							
4:2FTS	0.8	2	5	10	20	50	NA
6:2FTS	0.8	2	5	10	20	50	NA
8:2FTS	0.8	2	5	10	20	50	NA
Perfluorooctane sulfonamides							
PFOSA	0.2	0.5	1.25	2.5	5	12.5	62.5
NMeFOSA	0.2	0.5	1.25	2.5	5	12.5	62.5
NEtFOSA	0.2	0.5	1.25	2.5	5	12.5	62.5
Perfluorooctane sulfonamidoacetic acids							
NMeFOSAA	0.2	0.5	1.25	2.5	5	12.5	62.5
NEtFOSAA	0.2	0.5	1.25	2.5	5	12.5	62.5
Perfluorooctane sulfonamide ethanols							
NMeFOSE	2	5	12.5	25	50	125	625
NEtFOSE	2	5	12.5	25	50	125	625
Per- and polyfluoroether carboxylic acids							
HFPO-DA	0.8	2	5	10	20	50	250
ADONA	0.8	2	5	10	20	50	250
PFMPA	0.4	1	2.5	5	10	25	125
PFMBA	0.4	1	2.5	5	10	25	125
NFDHA	0.4	1	2.5	5	10	25	125
Ether sulfonic acids							
9Cl-PF3ONS	0.8	2	5	10	20	50	250
11Cl-PF3OUdS	0.8	2	5	10	20	50	250
PFEESA	0.4	1	2.5	5	10	25	125

Calibration Solutions (ng/mL) Compound CS1 (LOQ) CS2 Fluorotelomer carboxylic			CS3	CS4 (CV[1])	CS5	CS6	CS7[2]
acids							
3:3FTCA	1.0	2.5	6.26	12.5	25	62.4	312
5:3FTCA	5.0	12.5	31.3	62.5	125	312	1560
7:3FTCA	5.0	12.5	31.3	62.5	125	312	1560
Extracted Internal Standard (EIS) Analytes							
$^{13}C_4$-PFBA	10	10	10	10	10	10	10
$^{13}C_5$-PFPeA	5	5	5	5	5	5	5
$^{13}C_5$-PFHxA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$^{13}C_4$-PFHpA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$^{13}C_8$-PFOA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$^{13}C_9$-PFNA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
$^{13}C_6$-PFDA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
$^{13}C_7$-PFUnA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
$^{13}C_2$-PFDoA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
$^{13}C_2$-PFTeDA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
$^{13}C_3$-PFBS	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$^{13}C_3$-PFHxS	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$^{13}C_8$-PFOS	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$^{13}C_2$-4:2FTS	5	5	5	5	5	5	5
$^{13}C_2$-6:2FTS	5	5	5	5	5	5	5
$^{13}C_2$-8:2FTS	5	5	5	5	5	5	5
$^{13}C_8$-PFOSA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
D_3-NMeFOSA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
D_5-NEtFOSA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
D_3-NMeFOSAA	5	5	5	5	5	5	5
D_5-NEtFOSAA	5	5	5	5	5	5	5
D_7-NMeFOSE	25	25	25	25	25	25	25
D_9-NEtFOSE	25	25	25	25	25	25	25
$^{13}C_3$-HFPO-DA	10	10	10	10	10	10	10
Non-extracted Internal Standard (NIS) Analytes							
$^{13}C_3$-PFBA	5	5	5	5	5	5	5
$^{13}C_2$-PFHxA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$^{13}C_4$-PFOA	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$^{13}C_5$-PFNA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
$^{13}C_2$-PFDA	1.25	1.25	1.25	1.25	1.25	1.25	1.25
$^{18}O_2$-PFHxS	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$^{13}C_4$-PFOS	2.5	2.5	2.5	2.5	2.5	2.5	2.5

[1] This calibration point is used as the calibration verification (CV)

[2] A minimum of six contiguous calibrations standards are required for linear models and a minimum of seven calibration standards are required for second-order models.

Attachment 5 -HPLC Method Parameters

HPLC Acquisition Method Report

Stroke A
Automatic Stroke Calculation A Yes

Compress A
Compressibility Mode A Compressibility Value Set
Compressibility A 70 10e-6/bar

Compress B
Compressibility Mode B Compressibility Value Set
Compressibility B 90 10e-6/bar

Stop Time
Stoptime Mode Time set
Stoptime 10.00 min

Post Time
Posttime Mode Time set
Posttime 1.50 min

Injection
Injection with needle wash
3.00 µL

Solvent Composition

	Channel	Name 1	Name 2	Selected	Used	Percent
1	A	Water 5mM ammonium acetate		Ch. 1	Yes	90.00 %
2	B	Methanol		Ch. 1	Yes	10.00 %

Timetable

	Time	A	B	Flow
1	3.50 min	50.00 %	50.00 %	0.400 mL/min
2	8.00 min	10.00 %	90.00 %	0.400 mL/min
3	8.50 min	90.00 %	10.00 %	0.400 mL/min

Name: **Column Comp.** Module: **G1316C**

Left Temperature Control
Temperature Control Mode Temperature Set
Temperature 50.0 °C
Enable Analysis Left Temperature
Enable Analysis Left Temperature On Yes
Enable Analysis Left Temperature Value 0.8 °C

Right Temperature Control
Right temperature Control Mode Temperature Set
Right temperature 50.0 °C
Enable Analysis Right Temperature
Enable Analysis Right Temperature On Yes
Enable Analysis Right Temperature Value 0.8 °C

Stop Time
Stoptime Mode As pump/injector

Post Time
Posttime Mode Off

Timetable
Valve Position Position 1 (Port 1 -> 2)
Ready when front door open Yes

Attachment 6 - Triple Quadrupole Acquisition Method

Acquisition Method Report

Agilent Technologies

Acquisition Method Info

Method Name PFAS1633_ACQ_092922.m

Method Path D:\MassHunter\methods\PFAS1633_ACQ_092922.m

Method Description EPA 1633_Target PFAS Isotope Dilution_Acquisition

Device List

HiP Sampler
Binary Pump
Column Comp.
QQQ

MS QQQ Mass Spectrometer

Ion Source	AJS ESI	**Tune File**	D:\MassHunter\Tune\QQQ\G6460C\atunes.TUNE.XML
Stop Mode	No Limit/As Pump	**Stop Time (min)**	1
Time Filter	On	**Time Filter Width (min)**	0.07
LC->Waste Pre Row	N/A	**LC->Waste Post Row**	N/A

Time Segments

Index	Start Time (min)	Scan Type	Ion Mode	Div Valve	Delta EMV	Store	Cycle Time (ms)	Triggered?	MRM Repeats
1	0	DynamicMRM	ESI+Agilent Jet Stream	To MS	350	Yes	550	Yes	3

Time Segment 1

Scan Segments

Cpd Name	ISTD?	Prec Ion	MS1 Res	Prod Ion	MS2 Res	Primary	Trigger	Frag (V)	CE (V)	Cell Acc (V)	Ret Time (min)	Ret Window	Polarity
11-Cl-PF3OUdS	No	631	Unit/Enh (6490)	451	Unit/Enh (6490)	Yes	No	170	33	4	7.62	3	Negative
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	No	527	Unit/Enh (6490)	507	Unit/Enh (6490)	Yes	No	170	28	4	7.14	3	Negative
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8 2FTS)	No	527	Unit/Enh (6490)	80.9	Unit/Enh (6490)	Yes	No	170	40	4	7.14	3	Negative
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	No	327	Unit/Enh (6490)	307	Unit/Enh (6490)	Yes	No	162	20	4	4.788	3	Negative
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4 2FTS)	No	327	Unit/Enh (6490)	80.9	Unit/Enh (6490)	Yes	No	162	36	4	4.788	3	Negative
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	No	427	Unit/Enh (6490)	407	Unit/Enh (6490)	Yes	No	162	24	4	6.168	3	Negative
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6 2FTS)	No	427	Unit/Enh (6490)	79.7	Unit/Enh (6490)	Yes	No	162	48	4	6.168	3	Negative
3:3FTCA	No	241	Unit/Enh (6490)	177	Unit/Enh (6490)	Yes	No	74	4	4	3.4	3	Negative
3-3FTCA	No	241	Unit/Enh (6490)	117	Unit/Enh (6490)	Yes	No	74	44	4	3.4	3	Negative

Report generation date: 18-Oct-2022 09:01:43 AM

Page 1 of 8

Acquisition Method Report

Agilent Technologies

Cpd Name	ISTD?	Prec Ion	MS1 Res	Prod Ion	MS2 Res	Primary	Trigger	Frag (V)	CE (V)	Cell Acc (V)	Ret Time (min)	Ret Window	Polarity
5-3FTCA	No	341	Unit/Enh (6490)	237	Unit/Enh (6490)	Yes	No	84	12	4	5.73	3	Negative
5-3FTCA	No	341	Unit/Enh (6490)	217	Unit/Enh (6490)	Yes	No	84	24	4	5.73	3	Negative
7-3FTCA	No	441	Unit/Enh (6490)	337	Unit/Enh (6490)	Yes	No	76	12	4	6.7	3	Negative
7-3FTCA	No	441	Unit/Enh (6490)	317	Unit/Enh (6490)	Yes	No	76	24	4	6.7	3	Negative
9-Cl-PF3ONS	No	531	Unit/Enh (6490)	351	Unit/Enh (6490)	Yes	No	175	29	4	6.89	3	Negative
ADONA	No	377	Unit/Enh (6490)	251	Unit/Enh (6490)	Yes	No	103	9	4	5.62	3	Negative
ADONA	No	377	Unit/Enh (6490)	85	Unit/Enh (6490)	Yes	No	103	37	4	5.62	3	Negative
d3-NMeFOSA	No	515	Unit/Enh (6490)	219	Unit/Enh (6490)	Yes	No	134	20	4	7.17	3	Negative
d3-N-MeFOSAA	No	572.99	Unit/Enh (6490)	418.8	Unit/Enh (6490)	Yes	No	130	20	4	7.17	3	Negative
d5-NEtFOSA	No	531	Unit/Enh (6490)	219	Unit/Enh (6490)	Yes	No	150	20	4	8.52	3	Negative
d5-NEtFOSA	No	531	Unit/Enh (6490)	169	Unit/Enh (6490)	Yes	No	150	20	4	8.52	3	Negative
d5-N-EtFOSAA	No	589.02	Unit/Enh (6490)	530.9	Unit/Enh (6490)	Yes	No	130	20	4	7.36	3	Negative
d5-N-EtFOSAA	No	589.02	Unit/Enh (6490)	418.8	Unit/Enh (6490)	Yes	No	130	20	4	7.36	3	Negative
d7-NMeFOSE	No	623	Unit/Enh (6490)	310	Unit/Enh (6490)	Yes	No	150	15	4	8.28	3	Negative
d7-NMeFOSE	No	623	Unit/Enh (6490)	59	Unit/Enh (6490)	Yes	No	88	15	4	8.28	3	Negative
d9-NEtFOSE	No	639	Unit/Enh (6490)	59	Unit/Enh (6490)	Yes	No	150	15	4	8.6	3	Negative
HFPO-DA	No	285	Unit/Enh (6490)	169.1	Unit/Enh (6490)	Yes	No	100	20	4	4.95	3	Negative
M2-4-2FTS	No	329	Unit/Enh (6490)	309	Unit/Enh (6490)	Yes	No	156	20	4	4.787	3	Negative
M2-4-2FTS	No	329	Unit/Enh (6490)	81	Unit/Enh (6490)	Yes	No	156	28	4	4.787	3	Negative
M2-6-2FTS	No	429	Unit/Enh (6490)	409	Unit/Enh (6490)	Yes	No	162	24	4	6.01	3	Negative
M2-6-2FTS	No	429	Unit/Enh (6490)	81	Unit/Enh (6490)	Yes	No	162	40	4	6.01	3	Negative
M2-8-2FTS	No	529	Unit/Enh (6490)	509	Unit/Enh (6490)	Yes	No	165	28	4	6.98	3	Negative
M2-8-2FTS	No	529	Unit/Enh (6490)	81	Unit/Enh (6490)	Yes	No	165	40	4	6.98	3	Negative
M2PFTeDA	No	715	Unit/Enh (6490)	670	Unit/Enh (6490)	Yes	No	62	12	4	8.25	3	Negative
M3-HFPO-DA	No	287	Unit/Enh (6490)	169	Unit/Enh (6490)	Yes	No	90	5	4	4.99	3	Negative
M3PFBA	Yes	216	Unit/Enh (6490)	172	Unit/Enh (6490)	Yes	No	90	5	4	1.2	2	Negative
M3PFBS	No	302	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	114	32	4	3.94	3	Negative
M3PFBS	No	302	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	114	40	4	3.94	3	Negative
M3PFHxS	No	402	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	165	40	4	5.55	3	Negative
M3PFHxS	No	402	Unit/Enh (6490)	80	Unit/Enh (6490)	Yes	No	165	48	4	5.55	3	Negative
M4PFHpA	No	367	Unit/Enh (6490)	322	Unit/Enh (6490)	Yes	No	124	8	4	5.601	3	Negative
M5PFHxA	No	318	Unit/Enh (6490)	273	Unit/Enh (6490)	Yes	No	70	4	4	5.47	3	Negative
M5PFHxA	No	318	Unit/Enh (6490)	120	Unit/Enh (6490)	Yes	No	70	4	4	5.47	3	Negative
M6PFDA	No	519	Unit/Enh (6490)	473.9	Unit/Enh (6490)	Yes	No	59	8	4	6.99	3	Negative
M7PFUdA	No	570	Unit/Enh (6490)	525	Unit/Enh (6490)	Yes	No	64	8	4	7.38	3	Negative
MPFDA	Yes	514.98	Unit/Enh (6490)	469.8	Unit/Enh (6490)	Yes	No	94	5	4	6.972	2	Negative
MPFHxA	Yes	314.99	Unit/Enh (6490)	269.8	Unit/Enh (6490)	Yes	No	86	4	4	4.705	2	Negative
MPFHxA	Yes	314.99	Unit/Enh (6490)	120	Unit/Enh (6490)	Yes	No	86	4	4	4.705	2	Negative
MPFHxS	Yes	403	Unit/Enh (6490)	103	Unit/Enh (6490)	Yes	No	110	37	4	5.63	2	Negative
MPFHxS	Yes	403	Unit/Enh (6490)	84	Unit/Enh (6490)	Yes	No	110	40	4	5.63	2	Negative
MPFNA	Yes	468	Unit/Enh (6490)	423	Unit/Enh (6490)	Yes	No	66	4	4	6.541	2	Negative
MPFOA	Yes	417	Unit/Enh (6490)	372	Unit/Enh (6490)	Yes	No	84	4	4	6.03	2	Negative
MPFOS	Yes	502.96	Unit/Enh (6490)	99	Unit/Enh (6490)	Yes	No	148	48	4	6.57	3	Negative

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Acquisition Method Report

Agilent Technologies

Cpd Name	ISTD?	Prec Ion	MS1 Res	Prod Ion	MS2 Res	Primary	Trigger	Frag (V)	CE (V)	Cell Acc (V)	Ret Time (min)	Ret Window	Polarity
MPFOS	Yes	502.96	Unit/Enh (6490)	80	Unit/Enh (6490)	Yes	No	148	54	4	6.57	3	Negative
NEtFOSA	No	526	Unit/Enh (6490)	219	Unit/Enh (6490)	Yes	No	120	20	4	8.528	3	Negative
NEtFOSA	No	526	Unit/Enh (6490)	169	Unit/Enh (6490)	Yes	No	120	20	4	8.528	3	Negative
N-EtFOSAA	No	584	Unit/Enh (6490)	525.9	Unit/Enh (6490)	Yes	No	130	20	4	7.521	3	Negative
N-EtFOSAA	No	584	Unit/Enh (6490)	418.8	Unit/Enh (6490)	Yes	No	130	20	4	7.521	3	Negative
NEtFOSE	No	630	Unit/Enh (6490)	59	Unit/Enh (6490)	Yes	No	120	20	4	8.301	3	Negative
NFDHA	No	295	Unit/Enh (6490)	201.1	Unit/Enh (6490)	Yes	No	92	2	4	4.641	3	Negative
NFDHA	No	295	Unit/Enh (6490)	84.9	Unit/Enh (6490)	Yes	No	92	34	4	4.641	3	Negative
NMeFOSA	No	512	Unit/Enh (6490)	219	Unit/Enh (6490)	Yes	No	120	20	4	8.298	3	Negative
NMeFOSA	No	512	Unit/Enh (6490)	169	Unit/Enh (6490)	Yes	No	120	20	4	8.298	3	Negative
N-MeFOSAA	No	570	Unit/Enh (6490)	511.9	Unit/Enh (6490)	Yes	No	150	20	4	7.335	3	Negative
N-MeFOSAA	No	570	Unit/Enh (6490)	418.9	Unit/Enh (6490)	Yes	No	150	20	4	7.335	3	Negative
NMeFOSE	No	616	Unit/Enh (6490)	59	Unit/Enh (6490)	Yes	No	120	20	4	8.301	3	Negative
Perfluoro-1-[13C8]octanesulfonamide (M8FOSA)	No	506	Unit/Enh (6490)	78	Unit/Enh (6490)	Yes	No	162	48	4	7.59	3	Negative
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	No	507	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	174	48	4	6.59	3	Negative
Perfluoro-1-[13C8]octanesulfonic acid (M8PFOS)	No	507	Unit/Enh (6490)	80	Unit/Enh (6490)	Yes	No	174	54	4	6.59	3	Negative
Perfluoro-1-decanesulfonate (L-PFDS)	No	598.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	156	50	4	7.546	3	Negative
Perfluoro-1-decanesulfonate (L-PFDS)	No	598.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	100	60	4	7.546	3	Negative
Perfluoro-1-heptanesulfonate (L-PFHpS)	No	448.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	162	48	4	6.252	3	Negative
Perfluoro-1-heptanesulfonate (L-PFHpS)	No	448.9	Unit/Enh (6490)	80	Unit/Enh (6490)	Yes	No	162	48	4	6.252	3	Negative
Perfluoro-1-octanesulfonamide (FOSA)	No	497.9	Unit/Enh (6490)	478	Unit/Enh (6490)	Yes	No	156	100	4	7.651	3	Negative
Perfluoro-1-octanesulfonamide (FOSA)	No	497.9	Unit/Enh (6490)	78	Unit/Enh (6490)	Yes	No	156	40	4	7.651	3	Negative
Perfluoro-1-pentanesulfonate (L-PFPeS)	No	348.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	150	36	4	5.042	3	Negative
Perfluoro-1-pentanesulfonate (L-PFPeS)	No	348.9	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	150	40	4	5.042	3	Negative

Acquisition Method Report

Agilent Technologies

Cpd Name	ISTD?	Prec Ion	MS1 Res	Prod Ion	MS2 Res	Primary	Trigger	Frag (V)	CE (V)	Cell Acc (V)	Ret Time (min)	Ret Window	Polarity
Perfluorobutanesulfonic acid (PFBS)	No	298.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	150	32	4	4.042	3	Negative
Perfluorobutanesulfonic acid (PFBS)	No	298.9	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	150	36	4	4.042	3	Negative
Perfluorodecanoic acid (PFDA)	No	513	Unit/Enh (6490)	468.8	Unit/Enh (6490)	Yes	No	90	8	4	7.158	3	Negative
Perfluorodecanoic acid (PFDA)	No	513	Unit/Enh (6490)	268.8	Unit/Enh (6490)	Yes	No	90	16	4	7.158	3	Negative
Perfluorododecanesulfonic acid (PFDoS)	No	699	Unit/Enh (6490)	99	Unit/Enh (6490)	Yes	No	100	60	4	7.984	3	Negative
Perfluorododecanesulfonic acid (PFDoS)	No	699	Unit/Enh (6490)	80	Unit/Enh (6490)	Yes	No	156	50	4	7.984	3	Negative
Perfluorododecanoic acid (PFDoA)	No	613	Unit/Enh (6490)	568.8	Unit/Enh (6490)	Yes	No	90	12	4	7.876	3	Negative
Perfluorododecanoic acid (PFDoA)	No	613	Unit/Enh (6490)	168.7	Unit/Enh (6490)	Yes	No	90	28	4	7.876	3	Negative
Perfluoroheptanoic acid (PFHpA)	No	363	Unit/Enh (6490)	318.8	Unit/Enh (6490)	Yes	No	90	8	4	5.601	3	Negative
Perfluoroheptanoic acid (PFHpA)	No	363	Unit/Enh (6490)	168.9	Unit/Enh (6490)	Yes	No	90	16	4	5.601	3	Negative
Perfluorohexanesulfonic acid (PFHxS)	No	398.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	150	40	4	5.685	3	Negative
Perfluorohexanesulfonic acid (PFHxS)	No	398.9	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	150	44	4	5.685	3	Negative
Perfluorohexanoic acid (PFHxA)	No	313	Unit/Enh (6490)	268.9	Unit/Enh (6490)	Yes	No	70	4	4	4.856	3	Negative
Perfluorohexanoic acid (PFHxA)	No	313	Unit/Enh (6490)	119	Unit/Enh (6490)	Yes	No	70	20	4	4.856	3	Negative
Perfluoro-n-[1,2-13C2]dodecanoic acid (MPFDoA)	No	615	Unit/Enh (6490)	570	Unit/Enh (6490)	Yes	No	53	8	4	7.71	3	Negative
Perfluoro-n-[13C4]butanoic acid (MPFBA)	No	217	Unit/Enh (6490)	172	Unit/Enh (6490)	Yes	No	59	4	4	1.22	3	Negative
Perfluoro-n-[13C5]pentanoic acid (M5PFPeA)	No	268	Unit/Enh (6490)	223	Unit/Enh (6490)	Yes	No	62	4	4	3.44	3	Negative
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	No	421	Unit/Enh (6490)	376	Unit/Enh (6490)	Yes	No	59	4	4	6.05	3	Negative
Perfluoro-n-[13C8]octanoic acid (M8PFOA)	No	421	Unit/Enh (6490)	172	Unit/Enh (6490)	Yes	No	59	16	4	6.05	3	Negative

Acquisition Method Report

Agilent Technologies

Cpd Name	ISTD?	Prec Ion	MS1 Res	Prod Ion	MS2 Res	Primary	Trigger	Frag (V)	CE (V)	Cell Acc (V)	Ret Time (min)	Ret Window	Polarity
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	No	472	Unit/Enh (6490)	427	Unit/Enh (6490)	Yes	No	59	8	4	6.56	3	Negative
Perfluoro-n-[13C9]nonanoic acid (M9PFNA)	No	472	Unit/Enh (6490)	223	Unit/Enh (6490)	Yes	No	59	16	4	6.56	3	Negative
Perfluoro-n-butanoic acid (PFBA)	No	213	Unit/Enh (6490)	169.9	Unit/Enh (6490)	Yes	No	70	4	4	1.246	3	Negative
Perfluorononanesulfonate (L-PFNS)	No	548.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	159	48	4	7.174	3	Negative
Perfluorononanesulfonate (L-PFNS)	No	548.9	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	159	48	4	7.174	3	Negative
Perfluorononanoic acid (PFNA)	No	463	Unit/Enh (6490)	418.8	Unit/Enh (6490)	Yes	No	90	8	4	6.718	3	Negative
Perfluorononanoic acid (PFNA)	No	463	Unit/Enh (6490)	218.8	Unit/Enh (6490)	Yes	No	90	16	4	6.718	3	Negative
Perfluoro-n-pentanoic acid (PFPeA)	No	263	Unit/Enh (6490)	219	Unit/Enh (6490)	Yes	No	62	4	4	3.526	3	Negative
Perfluorooctanesulfonic acid (PFOS)	No	498.9	Unit/Enh (6490)	98.9	Unit/Enh (6490)	Yes	No	150	44	4	6.743	3	Negative
Perfluorooctanesulfonic acid (PFOS)	No	498.9	Unit/Enh (6490)	79.9	Unit/Enh (6490)	Yes	No	150	84	4	6.743	3	Negative
Perfluorooctanoic acid (PFOA)	No	413	Unit/Enh (6490)	368.8	Unit/Enh (6490)	Yes	No	90	8	4	6.202	3	Negative
Perfluorooctanoic acid (PFOA)	No	413	Unit/Enh (6490)	168.9	Unit/Enh (6490)	Yes	No	90	16	4	6.202	3	Negative
Perfluorotetradecanoic acid (PFTA)	No	713	Unit/Enh (6490)	669	Unit/Enh (6490)	Yes	No	110	12	4	8.414	3	Negative
Perfluorotetradecanoic acid (PFTA)	No	713	Unit/Enh (6490)	168.8	Unit/Enh (6490)	Yes	No	110	28	4	8.414	3	Negative
Perfluorotridecanoic acid (PFTrDA)	No	663	Unit/Enh (6490)	618.8	Unit/Enh (6490)	Yes	No	90	12	4	8.164	3	Negative
Perfluoroundecanoic acid (PFUnA)	No	563	Unit/Enh (6490)	519	Unit/Enh (6490)	Yes	No	90	8	4	7.538	3	Negative
Perfluoroundecanoic acid (PFUnA)	No	563	Unit/Enh (6490)	169	Unit/Enh (6490)	Yes	No	90	24	4	7.538	3	Negative
PFEESA	No	315	Unit/Enh (6490)	135	Unit/Enh (6490)	Yes	No	112	26	4	4.464	3	Negative
PFEESA	No	315	Unit/Enh (6490)	83	Unit/Enh (6490)	Yes	No	112	14	4	4.464	3	Negative
PFMBA	No	279	Unit/Enh (6490)	85	Unit/Enh (6490)	Yes	No	75	18	4	4.011	3	Negative
PFMPA	No	229	Unit/Enh (6490)	85	Unit/Enh (6490)	Yes	No	59	6	4	2.15	3	Negative

Scan Parameters

Data Stg	Threshold
Centroid	0

Acquisition Method Report

Agilent Technologies

Source Parameters

Parameter	Value (+)	Value (-)
Gas Temp (°C)	230	230
Gas Flow (l/min)	5	5
Nebulizer (psi)	15	15
SheathGasHeater	350	350
SheathGasFlow	12	12
Capillary (V)	3500	2500
VCharging	500	0

Chromatograms

Chrom Type	Label	Offset	Y-Range
TIC	TIC	0	10000000

Instrument Curves

Actual

Name: HiP Sampler **Module: G4226A**

Auxiliary	
Draw Speed	100.0 µL/min
Eject Speed	400.0 µL/min
Draw Position Offset	1.5 mm
Wait Time After Drawing	1.2 s
Sample Flush Out Factor	5.0
Vial/Well bottom sensing	Yes
Injection	
Injection Mode	Injection with needle wash
Injection Volume	3.00 µL
Needle Wash	
Needle Wash Location	Flush Port
Wash Time	10.0 s
High throughput	
Automatic Delay Volume Reduction	No
Overlapped Injection	
Enable Overlapped Injection	No
Valve Switching	
Valve Movements	0
Valve Switch Time 1	
Switch Time 1 Enabled	No
Valve Switch Time 2	
Switch Time 2 Enabled	No
Valve Switch Time 3	
Switch Time 3 Enabled	No
Valve Switch Time 4	
Switch Time 4 Enabled	No
Stop Time	
Stoptime Mode	As pump/No limit
Post Time	
Posttime Mode	Off

Name: Binary Pump **Module: G4220A**

Flow	0.400 mL/min
Use Solvent Types	No
Stroke Mode	Synchronized
Low Pressure Limit	0.00 bar
High Pressure Limit	600.00 bar
Max. Flow Ramp Up	100.000 mL/min²
Max. Flow Ramp Down	100.000 mL/min²
Expected Mixer	No check

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APPENDIX G – Stormwater Pollution Prevention Plan

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

ORIGINAL JANUARY 13, 2026

187 Clinton Street SWPPP
Binghamton NY, Broome County

Prepared for:
METRO GROUP PROPERTIES, INC.
PO BOX 10
BLUE POINT, NY 11715

Prepared By:

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS

860 Hooper Rd, Endwell, NY 13760



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   k. SWPPP Revision Form
   l. Inspection Checklist
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   p. eNOT Qualified Inspector Certification Final Stabilization
(F) Cultural Resource Information

I. Introduction

A stormwater management assessment has been conducted for the proposed project to protect the waters of the State of New York from the adverse impacts of stormwater runoff. This report presents an analysis of the project in accordance with the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-25-001 and the New York State Stormwater Management Design Manual. As required, the Stormwater Pollution Prevention Plan is designed, where appropriate, to incorporate green infrastructure techniques that preserve natural resources and utilize the existing hydrology of the site, provide runoff reduction practices, water quality treatment practices, apply volume and peak control practices for channel protection, overbank flood control, and extreme flood control as appropriate.

In accordance with Appendix B, Table 2 of the SPDES General Permit for Construction Activity, GP-0-25-001, development and or construction projects that involve a soil disturbance of one or more acres require the preparation of a full SWPPP that includes post-construction stormwater management practices. In total, 6.21± acres of soil disturbance are expected by construction of this project. Therefore, this project requires the development of a full SWPPP, including erosion and sediment controls, green infrastructure site planning techniques, runoff reduction volume practices and post-construction stormwater management practices.

The general contractor and subcontractors performing any activity that involves soil disturbance will be required to comply with the terms and conditions of the SWPPP for the project identified as a condition of authorization to discharge stormwater. The Contractor shall provide signed certifications for itself and all applicable subcontractors before or at the preconstruction meeting. These signed certifications shall be included as part of the SWPPP. The SPDES General Permit and SWPPP must be always kept on file onsite and immediately accessible upon request by a NYSDEC or local municipal representative.

As required by the conditions described in the SPDES general permit, the SWPPP shall be kept current and incorporate any changes made to reflect changes in the design, construction, and operation or in the maintenance of the project.

The complete set of construction drawings and specifications are provided as separate documents; however, they should be considered an integral component of the SWPPP and are referenced throughout this document.

(1) ***Scope of the Project:*** This project is the development of an apartment complex constructed in two phases. Phase one will be a complex of 120 units, and phase 2 will be a complex of 150 units. Phase one of the project will also include a complete parking lot construction for all the tenants of both buildings. The project will also include the addition of new green spaces as well as the preservation of a portion of the current green space. The complex will be zoned as Neighborhood Commercial.

(2) ***Location of Project:*** This project is located on the south side of Clinton Street, Binghamton, in Broome County, on tax map parcels 144.78-1-30, 160.22-1-1, 160.22-1-2, 160.22-1-3, 160.22-1-4, 160.22-1-5, 160.22-1-41, and 160.22-1-46. This development is bounded by Clinton Street on the North, Jarvis Street on the West, Hudson Street on the East, and the N-S Railroad on the South.

This project is not located within a TMDL watershed and does not discharge into a 303(d) listed water.

Table 1 - Location Table

Approximate Coordinate Position @ Center of Project	
Latitude	*42º06'19.1" N*
Longitude	*75º55'41.7" W*

(3) ***Project Type and Size:*** This project is the development of an apartment complex on Clinton Street and is approximately 5.93± Acres. The total project disturbance is 6.21± Acres. 4.89± acres of the site will be impervious and used for the buildings, pedestrian plaza, driveway/fire access, and parking lots. The remaining 1.32± acres of the site will remain pervious, graded, used for landscaping, lawn space, and stormwater treatment areas.

(4) ***Project Description:*** This project is the development of an apartment complex on Clinton Street. When phase 1 is complete there will be a 120-unit apartment complex, along with a 292-car parking lot. This parking lot will supply adequate parking for both phase 1 and phase 2. Phase 1 and the parking lot construction will involve tree plantings and grass areas to break up the impervious. Within the tree planting and grass areas there will be five (5) stormwater treatment tree trenches. When phase 2 is completed there will be an additional 150-unit apartment complex. Both phases include a segment of the complex that will be reserved for commercial.

This redevelopment project will result in the addition of new impervious area amounting to 0.11± acres. Since new impervious areas are to be added to the project the permanent stormwater treatment practices will be designed to treat the equivalent of a minimum of 25% of any existing impervious areas and 100% of the new impervious areas, as well as the RRv. The stormwater generated from the proposed parking lots will simply sheet flow into their respective tree trenches. The tree trenches located on the main lot (northeast, southeast, middle, and south) pipe flow into a central proposed manhole. This manhole will pipe flow into another storm manhole before pipe flowing out to the existing storm manhole in Clinton St. There is a final tree trench located in the eastern parking lot which pipe flows into an existing storm manhole on Slauson St. These tree trenches provide treatment for more than the minimum required total water quality volume (WQv).

All stormwater generated from the eastern proposed rooftop will be conveyed via roof drains. This water will collect into the new stormwater system onsite and travel out to the northern point of study. The second proposed rooftop has been split into two discharge points. The eastern part travels via roof drain into the new stormwater system onsite and follows the other stormwater to the northern part of study. The western portion of the rooftop will be conveyed via roof drains and then piped along the parking lot side of the Phase 2 residential building into the proposed stormwater system. The parking lot on the north side of the western building will just have stormwater sheet flow onto Clinton St. This water will flow into the existing catch basin on Clinton St. and will collect into the northern point of study.

(5) ***Cultural Resources:*** A Cultural Resource Survey (CRS) was submitted, and feedback was received. The New York State Offices of Parks, Recreation, and Historic Preservation (OPRHP) has determined that the no portion of this project, including archeological and/or historical resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted. A copy of the OPRHP correspondence is in Appendix F.

II. Project Maps and Plans

(1) ***Location Map*****:** See Appendix A
(2) ***Soil Maps:*** See Appendix B
(3) ***Erosion and Sediment Control Plans:*** See Appendix C
(4) ***Existing and Proposed Subcatchment Maps:*** See Appendix D

III. Project Soils

(1) ***NRCS Soil Map:*** See Appendix B

(2) ***Soil Types:*** The following soil types and hydrologic groups are present within the project area of disturbance:

Table 2 – Soil Type

Soil Symbol, Name, % Slope Range	Hydrologic Group (HSG)	Texture	Character	Erosion Hazard Potential	% within disturbed area
Cv, Cut and fill lands, gravelly materials 0 to 8 percent slopes.	A	Gravelly materials	Well drained	Moderately High to Very High	100%

(3) ***Discussion of Soil Characteristics and Soil Erosion Hazard Potential:*** There is one soil series and one hydrologic soil groups within the project Area of Disturbance (AOD).

The soil series within the project area is Cv, Cut and fill lands, and is made up of Udorthents materials. It is typically gravelly with a top layer of very gravely silt loam and a bottom layer of very gravelly sandy loam. Per the Soils Report, depth to the water table is estimated to be 36" to 72". Onsite subsurface geotechnical investigations for stormwater purposes are not planned given the shallow nature of the work and use of tree trenches as the stormwater treatment system. However, field permeability tests were performed at three (3) different locations to determine the conductivity of the soil which was found to be 24 in/hr. The test results can be found in Appendix B along with a preliminary soil geotechnical investigation report that was generated for the purpose of the building structure. The final copy of the geotechnical investigation report will be exchanged for the preliminary report once it is received. There were twelve (12) borings, two (2) test pits, and one (1) hand hole locations done onsite. Water was found in three (3) of the locations at a depth of 20 feet to 23 feet deep.

IV. Design Considerations

(1) ***Climate Change Considerations:*** As part of development of this SWPPP, and per GP 0-025-001, the following items have been considered:

i. Increasing temperature – green infrastructure is used wherever feasible, with particular emphasis on the use of tree plantings. This provides additional shade and, in some cases, longer times of concentration.

ii. Increasing precipitation – any grading that is conducted as part of this project flattens slopes where possible to reduce flow velocities and subsequently, erosion and sediment transfer. Conveyance selections also consider the ability to withstand increased flows and where applicable, include different species of grass, additional measures of protection such as erosion control mats or an increase in stone size.

iii. Variability in precipitation and significant rainfall – plant, tree, and other vegetative species selected for inclusion and use on this project have been chosen for their adaptability to drought and or excessive rainfall.

iv. Increasing frequency and severity of flooding – based on FEMA flood maps our project site is located between the 100-year and 500-year flood plains. The lowest part of the site is 2 ft below the building finished floor elevation, along with all pipes are located below ground to protect against flooding.

v. Rising sea level – no impacts anticipated since the project site is located at ~850-860 ft above sea level and ~25 ft above the nearest river.

vi. Increasing storm surge - no impacts anticipated since the project site is located at ~850-860 ft above sea level and ~25 ft above the nearest river.

vii. Shifting ecology – there are a growing number of threatened and endangered species in NY State. When and where applicable, habitat suitable of sustaining all species that reside in the vicinity of the project or could in the future has been considered for inclusion and added to the project if feasible.

(2) ***Other Design Considerations:*** Additionally, the overall site planning also considered items such as stormwater treatment system maintenance, life cycle costs, future accessibility, and catastrophic failures. Systems selected are based on their upfront installation costs, how easily they are for future maintenance, and if specialized equipment is needed for maintenance. Also considered during placement is what happens downstream of the treatment system if a catastrophic failure occurs. For example, placing a treatment system at a similar elevation or below a building rather than upgradient of it would be implemented wherever possible.

V. Construction Phasing

(1) ***Sequence of Construction Activities:*** The Contractor is required to submit for approval, a construction/progress schedule showing the order in which the Contractor proposes to carry on the work, the date on which the work on the project will start, the major items of work (earth work, excavation, mobilization, soil erosion control measures, utility installations, etc.), and the anticipated dates for completing each task.

The Contractor's work schedule and methods shall be consistent with the SWPPP or amended SWPPP. Once approved, the progress schedule shall become a part of the SWPPP. The Contractor shall progress work in a way which minimizes the period any location is in a disturbed state and where possible, does not cause multiple interruptions at different calendar times.

The following list is a suggested sequence of major construction activities for the project to

meet the NYSDEC Phase II erosion control requirements.

1. Schedule a pre-construction meeting with the Owner and the City of Binghamton Representatives.
2. Delineate sources to protect.
3. Establish staging areas and concrete truck washout areas.
4. Install erosion control measures prior to any activities involving ground disturbance. These include but are not limited to silt fence and or sediment filter logs, rock construction entrance/s, and temporary prefabricated inlet protection.
5. Clear and grub as necessary for the installation of perimeter controls.
6. Establish method of spoils disposal (on-site or off).
7. Construct and stabilize perimeter controls.
8. Install initial runoff controls and stabilization.
9. Conduct remaining clearing and grubbing within the perimeter. Remove any existing asphalt, and other impervious surfaces that will not be used for site access.
10. Install underground utilities. Install temporary inlet protection on all new stormwater inlets.
11. Install temporary stormwater treatment at all outfalls leaving the site.
12. Construct buildings, driveways, and other construction.
13. Install permanent stormwater management measures.
14. Conduct soil restoration.
15. Perform final fine grading, landscaping, and stabilization.
16. Remove temporary erosion and sediment controls.
17. Restore and stabilize any disturbed areas remaining upon removal of temporary ESC measures.
18. Some of the steps listed above may need to be repeated based on the contractor's construction phasing and / or as required by direction from the Owner's Representative and / or City of Binghamton Representative.

VI. Erosion and Sediment Control Measures

(1) ***Erosion Control Plan:*** An erosion control plan has been developed in accordance with the "New York Standards and Specifications for Erosion and Sediment Control". The erosion control plan limits the amount of area exposed prior to stabilization, diverts drainage runoff from adjacent areas away from and around the construction site area, and employs various sediment control methods such as silt fence or compost filter socks, vegetation protection barrier, temporary prefabricated inlet protection, check dams, sediment traps, etc. The E&S plan incorporates the appropriate means and methods when needed and where appropriate, as described below.

Construction Entrance: Stabilized construction entrances will be constructed at all site access locations. Construction entrance shall conform to the NYSDOT's Standard Specifications and Standard Sheets.

Construction Ditch: Construction ditches shall be installed at the down gradient edge of the disturbed area. The ditch will intercept sediment laden water and divert it to the sediment basin or sediment trap. They can also be constructed intermittently across disturbed areas to shorten overland flow. Construction ditches shall be constructed using the table below:

Construction Ditches		
	Ditch A	**Ditch B**
Drainage Area	< 5 ac.	5 – 10 ac.
Bottom Width of Flow Channel	4 ft.	6 ft.
Depth of Flow Channel	1 ft.	1 ft.
Side Slopes	2:1 or flatter	2:1 or flatter
Grade	0.5% min./10% max.	0.5% min./10% max.

Stabilization of the ditch shall be completed within 2 days of installation in accordance with the appropriate standard and specifications for vegetative stabilization with mulch as determined by the time (seeding or non-seeding season) of the year. Ditches should not be used until such time they are stabilized. The flow channel shall be stabilized using the following criteria:

Type of Treatment	**Channel Grade**	**Flow Channel**	
		A (< 5 ac.)	B (5 – 10 ac.)
1	0.5 – 3.0%	Seed & straw mulch	Seed & straw mulch
2	3.1 – 5.0%	Seed & straw mulch	Seed & cover with Rolled Erosion Control Product, Sod, or line with plastic or 2 in. stone
3	5.1 – 8.0%	Seed & cover with Rolled Erosion Control Product, Sod, or line with plastic or 2 in. stone	Line with 4 – 8 in. riprap or geotextile

The seeding for vegetative stabilization shall be in accordance with the table below. The seeded area will be mulched with the *NYS Standards and Specifications for Erosion and Sediment Control, Table 4.2*.

Mixtures	**Rater per Acre (lbs.)**	**Rate per 1,000 sq. ft. (lbs.)**
A. White clover or Red clover[1]	8[1]	0.20
Smooth bromegrass[2]	2	0.05
Creeping red fescue	20	0.45
Total	30	0.70

[1] Add inoculate immediately prior to seeding. If using Red Clover mix 4 lbs of Empire and Pardee each OR 4 lbs of Birdsfoot and White Clover each per acre.

[2] Perennial ryegrass may be substituted for the Smooth bromegrass but increase the seeding rate to 5 lbs/acre (0.1 lb/1,000 sq. ft.)

Diversion Ditch: Diversion ditches shall be installed at the up-gradient edge of the disturbed area to intercept and convey clean stormwater away from disturbed areas to stable outlets at non-erosive velocities. Diversion ditches shall not be installed on slopes greater than 15%. Flow spreaders or diffusers should be implemented at the outfalls in areas where concentrated flows do not continue downstream. Diversion ditches shall be constructed using the same criteria as listed for Construction Ditches above.

Earth Dike: An earth dike is a temporary berm or ridge of compacted soil to direct runoff to a sediment trapping device. Design criteria are as shown in the table below.

Stabilization shall be completed within 2 days of installation with the standard and specification for seed and straw mulch or straw mulch only if not in seeding season, as shown in the Construction Table shown above.

Earth Dike		
Criteria	**Dike A**	**Dike B**
Drainage Area	< 5 Ac.	5 – 10 Ac.
Dike Height	18 in.	36 in.
Dike Width	24 in.	36 in.
Flow Width	4 ft.	6 ft.
Flow Depth in Channel	8 in.	15 in.
Side Slopes	2:1 or flatter	2:1 or flatter
Grade	0.5% min. 10% max.	0.5% min. 10% max.

Flow Spreader: Flow spreaders are constructed to disperse concentrated flow uniformly over a hardened weir into a stabilized area as a shallow, low velocity, sheet flow. Flow spreaders cannot be used where the drainage area exceeds 5 acres. Spreader shall be constructed using the design criteria on Page 3.19 of the *NYS Standards and Specifications for Erosion and Sediment Control*.

Flow Diffuser: Flow diffusers are installed to diffuse flow uniformly through a stone matrix onto a stabilized area in the form of shallow, low velocity, sheet flow. This practice can be applied in areas where the ground slope at the outlet of the diffuser is less than 30% and the runoff will not re-concentrate after release. Diffusers shall be designed using the criteria shown on Page 3.16 of the *NYS Standards and Specifications for Erosion and Sediment Control*.

Dust Control: The contractor will be required to minimize dust generation during the construction activities. Provisions such as watering, the use of cover materials, and the application of calcium chloride have proven effective in dust control and can be approved by the Owner's Representative for use in the affected areas.

Silt fence: A temporary barrier of reinforced geotextile fabric shall be installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil by temporarily ponding the sediment laden runoff allowing settling to occur. The maximum period of use is limited by the ultraviolet stability of the fabric (approximately one year). Silt fence shall be replaced when it reaches 75% of its capacity. Silt fence shall be installed in double rows spaced 5' apart, and at least 10' from the toe of any slope steeper than 3H:1V. The silt fence shall be installed based on the table on the following page. If the slope or length exceeds what is shown in the table below, a compost filter sock shall be used instead.

Silt Fence		
Slope	**Steepness**	**Slope Length/Fence Length (ft.)**
< 2%	< 50:1	N/A
2 – 10%	50:1 to 10:1	250 / 2000
10 -20%	10:1 to 5:1	150 / 1000
20 - 33%	5:1 to 3:1	80 / 750
33 – 50%	3:1 to 2:1	70 / 350
>50%	> 2:1	30 / 175

Compost Filter Sock: A temporary control practice composed of a biodegradable mesh tube used to intersect sediment laden runoff from drainage areas of disturbed soil by temporarily ponding the sediment laden runoff, allowing settling to occur. Compost filter socks should be used at the site perimeter as well as within the construction areas. These socks may be filled after placement by blowing compost into the tube pneumatically or filled at a staging location and moved into its designated location.

Compost filter socks will be placed on the contour with both terminal ends of the sock extended 8 feet upslope at a 45-degree angle to prevent bypass flow. The flat dimension of the sock shall be at least 1.5 times the nominal diameter.

The **Maximum Slope Length** (in feet) above any compost filter sock shall not exceed the following limits:

Dia. (in.)	**Slope %**						
	2	**5**	**10**	**20**	**25**	**33**	**50**
8	225*	200	100	50	20	---	---
12	250	225	125	65	50	40	25
18	275	250	150	70	55	45	30
24	350	275	200	130	100	60	35
32	450	325	275	130	120	75	50
* Length in feet							

Temporary Sediment Trap: A sediment trap is usually installed in a drainageway, at a storm drain inlet, or other points of collection from a disturbed area for no more than one construction season. Sediment traps should be used to artificially break up the natural drainage are into smaller sections where a larger sediment basin would be less effective.

If the drainage area exceeds 5 acres or the trap will be in place for more than one construction season, or any of the design criteria discussed herein cannot be met, a full sediment basin must be used.

Design criteria

The maximum drainage area for all sediment traps is 5 acres.

Sediment traps shall be located such they can be installed prior to grading or filling the drainage area they are to protect. Traps cannot be located within 20 feet of the proposed building foundation if it is to be used during construction of the building.

The volume of the sediment trap should be sized at 3,600 cu. ft. per acre of drainage area, with a minimum 2:1 length to width ratio.

Sediment shall be removed, and the trap restored to original dimensions when sediment has accumulated to ½ of the design depths of Traps I and II, and 1/3 the depth for Trap III.

Embankments on sediment traps shall not exceed 5 feet in height as measured at the low point of original ground along the centerline of the embankment. Embankments shall have a four (4) foot wide top and side slopes 2H:1V or flatter.

The elevation of the top of any dike directing any water to any sediment trap will equal or exceed the maximum height of the outlet structure along the entire length of the trap.

Outlets shall be designed, constructed, and maintained in such a manner that sediment does not leave the trap and erosion at or below the outlet does not occur.

Traps must outlet onto stabilized (preferably undisturbed) ground, into a watercourse, stabilized channel, or into a storm drain system. Distance from the inlet to the outlet should be maximized to the longest length practicable.

Types of Sediment Traps

If traps are used on this project, they must be clearly shown on the plans which will be added to this SWPPP by amendment. The following information must be shown:

1. Trap number
2. Type of trap (see below)
3. Drainage area
4. Storage required
5. Storage provided (if applicable)
6. Outlet length or pipe sizes
7. Storage depth below outlet or cleanout elevation
8. Embankment height and elevation (if applicable)

Three types of traps can be used on this project, if appropriate:

I. Pipe Outlet Sediment Trap Type ST-I - formed by embankment or excavation. The trap outlets through a perforated riser pipe, with top of embankment at least 1½ feet above the crest of the riser. Additional design information can be found on Page 5.47 of the *NYS Standards and Specifications for Erosion and Sediment Control*.

II. Stone Outlet Sediment Trap Type ST-II – also formed by an embankment or excavation. Minimum length (in feet) of the outlet shall be equal to four (4) times the drainage area (in acres). Additional design information can be found on Page 5.48 of the *NYS Standards and Specifications for Erosion and Sediment Control*.

III. Compost Filter Sock Sediment Trap Type ST-III – formed by creating an enclosure of geotextile mesh tubes filled with a compost filter media. These are used in locations where there is no opportunity to direct runoff into larger traps or well vegetated areas. While they are listed as an option, use of these on this project will be limited primarily to very short-term use in areas near retaining wall construction. Additional design information can be found on Page 5.48 of the *NYS Standards and Specifications for Erosion and Sediment Control*.

Temporary Surface Stabilization: Areas within the project limits that may be disturbed more than once during the construction activities will be stabilized using temporary seed and mulch item or as directed by the Owner's Representative. Areas remaining inactive for more than five (5) days during construction operations shall be stabilized temporarily. Other areas that might need to be stabilized temporarily will be at the discretion of the Owner's Representative.

Compost can also be used as an alternative to mulching, subject to full compliance with the *NYS Standards and Specifications for Erosion and Sediment Control.* Use is recommended for use on slopes flatter than 2H:1V and should be placed using the following application rates shown in the table below.

Compost Application Rates		
Slope Length (ft)	<3H : 1V Slopes	3H : 1V to 2H : 1V Slopes
20 or less	270 cy/acre (2" layer)	540 cy/acre (4" layer)
20 to 60	405 cy/acre (3" layer)	675 cy/acre (5" layer)
60 to 100	540 cy/acre (4" layer)	810 cy/acre (6" layer)*
*For slopes between 2H : 1V and 1H : 1V use this rate with a max. slope length of 40 ft.		

Hydraulically applied blankets can also be used on areas outside of concentrated flows such as ditches and channels. The Bonded Fiber Matrix (BFM) has an application rate of 3,000 lbs/acre for slopes 3H;1V or flatter. For slopes steeper than 3H:1V, the rate shall be a minimum of 3,000 lbs/acre, and up to 4,000 lbs/acre based on manufacturer recommendations. There is also an installation prohibition from September 30 to April 1. Flexible Growth Medium (FGM) and Polymer Stabilized Fiber Matrix can also be used, with varying application rates and fewer seasonal limitations.

Mulch can also be used for stabilization. If used as part of grass/legume establishment, a combination of straw (cereal grain) mulch applied at 2 ton/acre (90 lbs/1,000 sq. ft.) and anchored with wood fiber mulch (hydromulch) at 500 – 750 lbs/acre (11 – 17 lbs/1,000 sq. ft). the wood fiber must be applied through a hydroseeder immediately after mulching.
Additional information can be found on Pages 4.37 through 4.39 of the *NYS Standards and Specifications for Erosion and Sediment Control*.

Surface Stabilization: Stabilizing of the graded surfaces will be accomplished by using temporary mulch, hydro seeding, etc. during construction. It is expected this effort will be made repeatedly throughout construction as different sections of the parcel become active. Construction progress may require multiple stabilization efforts in the same area. Restabilization shall occur as needed when construction temporarily halts or shifts away from an active area, and / or when directed by the Owner's Representative.

Concrete washout: The contractor shall install concrete washouts prior to beginning any concrete pouring activity. The concrete washout shall be constructed as detailed and cleaned when appropriate as specified in the Erosion and Sediment Control Plans and the *NYS Standards and Specifications for Erosion and Sediment Control*.

Stock Piling: Preserve existing topsoil in place where possible, thereby reducing the need for added topsoil. Conserve by stockpiling topsoil and friable fine textured subsoils that must be stripped from the excavated site and applied after final grading where vegetation will be established. Topsoil stockpiles must be stabilized. Stockpile surfaces can be stabilized by vegetation, geotextile or plastic covers and surrounded by silt fence. This can be aided by orientating the stockpile lengthwise into prevailing winds.

Final Inspection: Prior to the project being finally accepted by the Owner it shall be inspected for any evidence of erosion or slope failure. If any such condition becomes apparent upon final inspection, temporary soil erosion and sediment controls shall be installed immediately as directed by the Engineer. The situation shall be corrected according to a schedule agreed to by the City of Binghamton, the Owner, and the Contractor.

The Erosion Control Plans are included in Appendix C.

(2) ***Additional Stormwater Controls:***

The following are additional BMPs to be implemented at the site to minimize pollutant transport:

Material Transport: Take proper precautions to prevent spilling during transport. Any spilled materials will be swept or removed as soon as practicable so that they do not enter a surface or subsurface drainage system.

Solid Waste Management: Store waste in covered dumpsters or other appropriate containers. Waste is to be disposed of regularly and property in accordance with applicable local, state, and / or federal regulations.

Portable Toilets: Install and clean portable toilets regularly with their contents properly disposed. Locate portable toilets where they will not impact or be impacted by construction activities.

Building Materials: Properly store and contain building materials on-site.

(3) ***Permanent Erosion and Sediment Control Measures:***

Table 2 – List of Permanent Erosion & Sediment Control Measures

Permanent Feature	Converted Temporary Practice?	Receiving Waterbody Protected (where applicable)
Tree trench	No	Susquehanna River via the Chenango River

(4) ***Installation Sequence:*** See the intended sequence of construction activities noted in Section IV.

(5) ***Maintenance Schedule:*** The Contractor is required to inspect and repair all E&SC devices once every seven (7) calendar days and after each rainfall event greater than 0.5". Inspections shall occur twice weekly during the time period whenever the open ground disturbance is greater than Five (5) acres. The City of Binghamton and NYSDEC shall be properly notified in advance when the open disturbance is greater than five (5) acres.

(6) ***SWPPP Implementation Responsibilities:*** Implementation of all E&SC devices will be by the Contractor as indicated in the contract documents.

VII. Existing Watershed Information

(1) ***Table of Receiving Waterbodies:***

Stormwater Structure	*Receiving Waterbody*	*NYSDEC Regulated*
Stormwater collection system	*Susquehanna River via the Chenango River (via MS4)*	*Yes*

(2) ***Existing Watershed Information:*** The project is in the City of Binghamton, approximately 0.7 miles east of Chenango River and 1.15 miles from the Susquehanna River.

The existing watershed bounds the entire project. The proposed watershed is broken down into 10 areas all treated with runoff reduction practices and consist of pervious and impervious areas. A map of the watershed areas is located in Appendix D.

VIII. Green Infrastructure

(1) **Reduction of Impervious Cover:**

Reduction of Impervious Cover	
Practice	**Description**
Roadway Reduction	Reducing the roadway width is not feasible for the project's intended use.
Sidewalk Reduction	Sidewalk widths have been minimized to 5 ft, and quantity of sidewalk has been reduced to the minimum required to ensure safe pedestrian access throughout the site.
Access driveway size	Driveways have already been reduced to meet minimum size allowed by code for an apartment complex.

(2) **Runoff Reduction Techniques:**
The impervious area for this project increased by 0.11± acres. The access drive and fire lane, parking lots, and green spaces will be graded so that the stormwater runoff will sheet flow into the tree trench areas. These practices will achieve more than the required run off reduction. All practices will outlet to the existing MS4. The practice areas are shown on a plan in Appendix D.

IX. Post Construction Stormwater Control Practices

(1) ***Table of Post Construction Practices:*** See Table 2.

Practice	Purpose
Tree Trench	Runoff reduction, Water quality

(2) ***Post Construction Practices Plan:*** See Appendix D for plans with tree trench locations.

(3) ***Hydraulic Analysis of Stormwater Control Practices Including Pre-Development and Post-Development Conditions:***

The table on the following page is a summary of the Watershed Physical Parameters for the proposed Stormwater Control Practices.

Table 4 - Stormwater Management Plan Summary

Storm Event		Pre-Development Runoff (cfs)		Post–Development Runoff (cfs)	
		MS4	Infiltrated	MS4	Infiltrated
North Point of Study	90%	2.36	0.00	1.79	0.23
	1 yr	5.30	0.00	4.00	1.73
	10 yr	10.66	0.00	7.38	2.88
	100 yr	16.90	0.00	13.27	3.11
West Point of Study	90%	1.32	0.00	0.01	0.00
	1 yr	2.67	0.00	0.12	0.00
	10 yr	5.12	0.00	0.39	0.00
	100 yr	8.01	0.00	0.95	0.00
East Point of Study	90%	0.05	0.00	0.02	0.28
	1 yr	0.66	0.00	0.06	0.83
	10 yr	2.58	0.00	0.14	0.83
	100 yr	5.23	0.00	3.52	0.83
Area of disturbance		6.21± ac			
**Water Quality Volume Required		0.120 af / 5227 cf			
**Water Quality Practice Volumes		See Appendix D Tree Trench Worksheets			

**See Appendix D for Water Quality Volume calculation.

(4) ***Maintenance Schedule of Post-construction Stormwater Control Practices:*** All practices that are described in the previous discussions contained herein shall be maintained per industry standards and as further defined by the City of Binghamton.

Table 5 – Maintenance Schedule of Post-Construction Stormwater Management Facilities

Facility to be Maintained	Tree Trench
Description of Maintenance Activity	Assess tree and plant health, determine survival rate, treat damage as necessary, and replace dead trees and plants. Remove weeds annually.
Access and safety issues	City of Binghamton inspectors have access to all drainage facilities on site
Testing and disposal of sediments	Responsibility of Owner

APPENDIX A

Location Map

Google Maps Clinton Street Location Map



Imagery ©2024 Airbus, CNES / Airbus, Maxar Technologies, New York GIS, USDA/FPAC/GEO, Map data ©2024 1000 ft

APPENDIX B

NRCS Soil Map
with Area of Disturbance

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Broome County, New York

187 Clinton St.



February 22, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,910 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Broome County, New York
Survey Area Data: Version 21, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 26, 2020—Nov 10, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cv	Cut and fill lands, gravelly materials	7.7	100.0%
Totals for Area of Interest		**7.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Broome County, New York

Cv—Cut and fill lands, gravelly materials

Map Unit Setting

National map unit symbol: 9pxd
Elevation: 160 to 1,970 feet
Mean annual precipitation: 36 to 45 inches
Mean annual air temperature: 43 to 48 degrees F
Frost-free period: 110 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, gravelly, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Gravelly

Typical profile

H1 - 0 to 4 inches: very gravelly silt loam
H2 - 4 to 70 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (0.20 to 19.98 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Chenango

Percent of map unit: 5 percent
Hydric soil rating: No

Udorthents, loamy

Percent of map unit: 5 percent
Hydric soil rating: No

Howard

Percent of map unit: 5 percent
Hydric soil rating: No

Udifluvents

Percent of map unit: 5 percent

Hydric soil rating: No

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Foundation Design, P.C.

SOIL ● BEDROCK ● GROUNDWATER

June 14, 2024

The Metro Group Properties, Inc.
PO Box 10
Blue Point, New York 11715

Attention: Myles Monaghan

Reference: Clinton Street Housing
Clinton, Jarvis, and Hudson Streets, Binghamton, New York
Preliminary Geotechnical Evaluation, 24.05669

Dear Mr. Monaghan:

This report summarizes our preliminary geotechnical evaluation for proposed development along Clinton Street in Binghamton, New York. We understand the eventual, total build out will consist of four stories of apartments over a first floor podium (five stories total) with a building footprint of 120,000 square feet (Phase I) and 150,000 square feet (Phase II). This is a redevelopment project in the older portion of Binghamton, the site is now vacant but was occupied by a few different manufacturing facilities. Overhead portions of the (former) structures have been removed but the slab(s) and footings remain in place. We intend for this report to be used exclusively for this project. We base this evaluation on our review of U.S.G.S. geologic mapping; new exploration; review of historic Sanborn mapping; laboratory testing; and consultation with the design team. Foundation Design, P.C. was retained to provide the services outlined in our May 5, 2024 Preliminary *Geotechnical Engineering Proposal, P5691.0R.*

The new building will be located at multiple parcels roughly centered around 187 Clinton Street in Binghamton, New York. This parcel lies between Jarvis Street (to the west) and Hudson Street (to the east). Proposed parking lot areas will extend from Jarvis Street through the southern portion of the Clinton Street parcel, and then in the lot east of Hudson Street and south of Slauson Street. Site grades vary by three to four feet, rising towards the south. Attached is a *General Location Plan* on 2023 U.S.G.S. topographic mapping.

We completed an exploration program consisting of twelve borings (B24-1 to B24-12), two test pits (TP24-1 and B24-13), and one hand hole (B24-14). Target Drilling provided a truck mounted CME-75 drill rig with an auto hammer between May 28 and May 30, 2024 to drill the twelve borings. Borings were drilled to depths between

3.0 and 50.0 feet below grade. Our staff logged the soil profiles and collected representative soil samples obtained with the split spoon sampler. Upon completion, the boring holes were backfilled with auger spoils and re-leveled. Pritchard Development Corporation provided a Kubota mini excavator on May 28 and May 30, 2024 to excavate the two test pits. The handhole was completed using hand tooling and excavating to 1.5 feet below grade, noting the soil profile encountered. We laid out the borings using site features and surveyed the holes, referencing elevations depicted on the Delta Engineers *Boundary and Topographic Survey*. An *Exploration Location Plan* and the boring, test pit, and hand hole logs are attached.

Clinton Street

At the corner of Jarvis and Clinton Street (northwest section) is an existing building that will be demolished as part of the redevelopment project. Opposingly, at the corner of Hudson and Clinton Street (northeast section) the Broome County DMV office building has recently been demolished as of 2019. There are existing brick and concrete foundations/retaining walls to the south, east and west. Concrete barriers block off an overgrown asphalt parking area in the northern quadrant. Gravel, topsoil and concrete debris mounds can be seen at the center of the site, encompassing one of the still intact concrete slabs. Sanborn & USGS mapping indicates that many structures had once occupied this space (former Vail-Ballou Press Site) and Charles Street had originally cut through this parcel, becoming decommissioned between 1948-1957. Much of the original building concrete slabs and footings are still intact/in place and cover a substantial amount of the parcel. 'Sinkholes' with concerning void space were noted near B24-8 and B24-12, one of which was a staircase leading into a basement area and the latter being an underground structure with a couple feet of void space.

Slauson Avenue

Hudson street doglegs left from Clinton Street and turns into Slauson Avenue. The parcel is located south of this street. Concrete slabs with low overgrowth are in the north and east of the parcel and concrete retaining walls define the northern and eastern limits. Dense tree coverage is to the south and the property line is defined by a chain link fence. There were environmental concerns involving this parcel that prevented us from performing any exploration at this time.

Hudson Street (East Side)

Hudson Street has an upper paved road section off Clinton Street that transitions to a gravel path, terminating before the railroad tracks. The parcel to the east of Hudson Street (B24-14) consists of dense, hardwoods with some overgrown brush/mounds of concrete debris. A chain link fence defines its northern limit, the railroad shoulder defines its southern, Crandall Street is to the east. Site grades are relatively flat with the exception of some overgrown scattered concrete debris to the south. Sanborn & USGS mapping indicates a structure had once occupied the southern part of the parcel. Due to drill rig/excavator inaccessibility issues onto the parcel, B24-14 was converted to a hand hole.

Hudson Street (West Side)

Hudson Street-West (B24-13) is predominately overgrown brush with moderate to dense tree coverage. Remnants of a past 'dump' site cover a few surfaces. Tree coverage is 'light' in the west and opens up to a low traffic foot path tucked next to the railroad tracks. Site grades increase from north to south by up to three feet. Sanborn mapping indicates a structure had once occupied this parcel and a railroad spur had defined its northern limit. Due to drill rig inaccessibility issues onto the parcel, B24-13 was converted to a test pit.

We selected representative soil samples for laboratory analysis. The testing program consisted of five moisture content tests and five sieve analyses. We discuss the test results below. Our laboratory test report is enclosed.

The following interpretations of the soil, bedrock, and groundwater conditions are based on our recent exploration and our site observations. Variations from the inferred subsurface profile are possible. See the attached logs for soil descriptions at the test locations. Call us to the site if variations are encountered during construction so we can assess the impacts on these recommendations.

A typical soil profile across the site consists of concrete/topsoil/asphalt, fill material, then a glacial outwash deposit. We encountered refusal on concrete about a foot below the concrete slab at B24-12 and about three feet below the ground surface at B24-8. Concrete slab thicknesses were between 1.0 to 8.0 inches, averaging 4.6 inches thick, with some having rebar (B24-9 and B24-12). Topsoil thicknesses ranged from 1.0 to 6.0 inches, averaging 3.6 inches thick. Asphalt thicknesses were seen to range between 2.0 to 5.5 inches, averaging 3.2 inches thick. Fill was encountered at all of the boring/test pit locations (excluding B24-14), with depths of

1.0 to 12.5 feet below grade, averaging at least 4.3 feet thick of known fill material. The fill consists of reworked native sand and gravel with little concrete/brick/asphalt debris. Depths are tabulated in Table No. 1 below.

Table No. 1 – Fill Depths

Location Number	Surface Elevation	Fill Depth (ft)	Native Soil Elevation
B24-1	855.1	1.0	854.1
B24-2	855.4	4.0	851.4
B24-3	854.0	12.5	841.5
B24-4	851.9	2.3 (8.0)	849.6 (843.9)
B24-5	852.9	6.0	846.9
B24-6	854.1	2.0	852.1
B24-7	853.5	2.0	851.5
B24-8	855.3	>3.0	N/A
B24-9	855.7	6.0	849.7
B24-10	854.2	4.0	850.2
B24-11	853.5	2.0	851.5
B24-12	855.5	>1.5	N/A
B24-13	859.5	4.7	854.8
B24-14	860.3	-	-
TP24-1	854.0	3.0	851.0

*(possible fill)

At test pit TP24-1, adjacent to the neighboring garage, we saw that the existing footing bears nominally four feet below grade. This structure did not have a basement.

Beneath the fill soils is a glacial outwash deposit. This outwash consists of either silty gravel with sand, poorly graded sand with silt and gravel or poorly graded gravel with silt and sand. We did note scattered silt and clay seams within this formation. The general outwash soil classifies as GM (silty gravel with sand) in the USCS classification system. The moisture contents of the outwash ranged from 3.6 to 9.3 percent.

Groundwater was encountered at test locations B24-2, B24-3 and B24-5. The water level at these locations was noted to be between 20.0 to 23.0 feet below the ground surface. Expect water levels to fluctuate with seasonal changes in this outwash valley and to be influenced by the nearby Chenango and Susquehanna Rivers.

Bedrock was not encountered in the soil borings. Geologic mapping shows the bedrock as the Sonyea Group. This formation consists of shale and siltstone. Bedrock will not impact the project.

We conclude that the existing fill soil/in-place structures are not acceptable for support of new construction. We recommend a series of test pits and a geophysical study as part of the final exploration to try to better define the fill/in place structures that were encountered on site. After removal and replacement of the fill/in-place structures, the new buildings can be supported on spread footing foundations.

We make the following specific recommendations:

1. Budget to completely remove the in-place structures. This includes the floor slab(s), foundations, and utilities. When final loads/plans are developed this can be re-visited as there is potential that some structures may be able to remain in place. Plan to backfill with structural fill.

2. Budget to remove the surface topsoil, asphalt, and deleterious fill material from the building footprints. Extend the undercuts to at least five feet beyond the edge of the new footings. Expect unsuitable fills to be between 1.0 and 12.5 feet deep within the building footprints.

   Actual removal limits will need to be adjusted during construction to reflect in-place conditions, and include provisions in the contract for these. In general we did not see deep fills along the perimeter of the parcel. Further exploration should be done to confirm this.

3. The fill soils encountered generally consisted of a sand and gravel material with building debris. Some portion of this material may be available for reuse but would require a large presence from the Geotechnical Engineer to determine the reusability/procedures for using this material. The test pits proposed for the final exploration would allow for a more thorough review of this material to give a more definitive determination. The volume of concrete to be removed may make an on-site crushing operation worthwhile.

4. It is our opinion that the new buildings can be supported on spread footings. For conceptual planning, assume foundations bearing on new structural fill or the native soil will support a 3,000 psf bearing pressure, dependent on the design loads. Actual design values will be dependent on structural loads, final grades, etc.

5. The NYS Building Code identifies various seismic design criteria for this project. It is our opinion that the on-site soils will not liquefy during a seismic event. Based on ASCE 7-16 guidelines and a Site Classification of D (Stiff Soil), the parameters are defined below.

Table No. 2 – Seismic Design Parameters 7-16

Spectral Response Acceleration		Soil Factors		Design Spectral Response Acceleration	
S_S	S_1	S_{MS}	S_{M1}	SD_s	SD_1
0.115g	0.045g	0.185g	0.109g	0.123g	0.072g

6. We typically allow for some existing construction fill and foundation to remain in place at depth below pavement. For preliminary planning assume slabs/foundations require removal to two feet below grade and that pavement subbase thickness will be increased to 18 inches.

7. The conclusions and recommendations outlined above are preliminary and only included for conceptual planning. Additional exploration, testing and engineering analysis is required to finalize design recommendations for specific building use and loadings.

Attached to the end of this text is a GBA paper entitled *Important Information about This Geotechnical Engineering Report* that you should read. It describes how we intend this report to be used and discusses risks and risk allocation. We will continue to work cooperatively with you and other interested parties to achieve win/win solutions.

This concludes our preliminary design phase services. We are available to answer questions that you may have about the data or interpretations of the soil, bedrock, and groundwater conditions.

Sincerely,

FOUNDATION DESIGN, P.C.

James M. Baker, P.E.
President
Enc.



Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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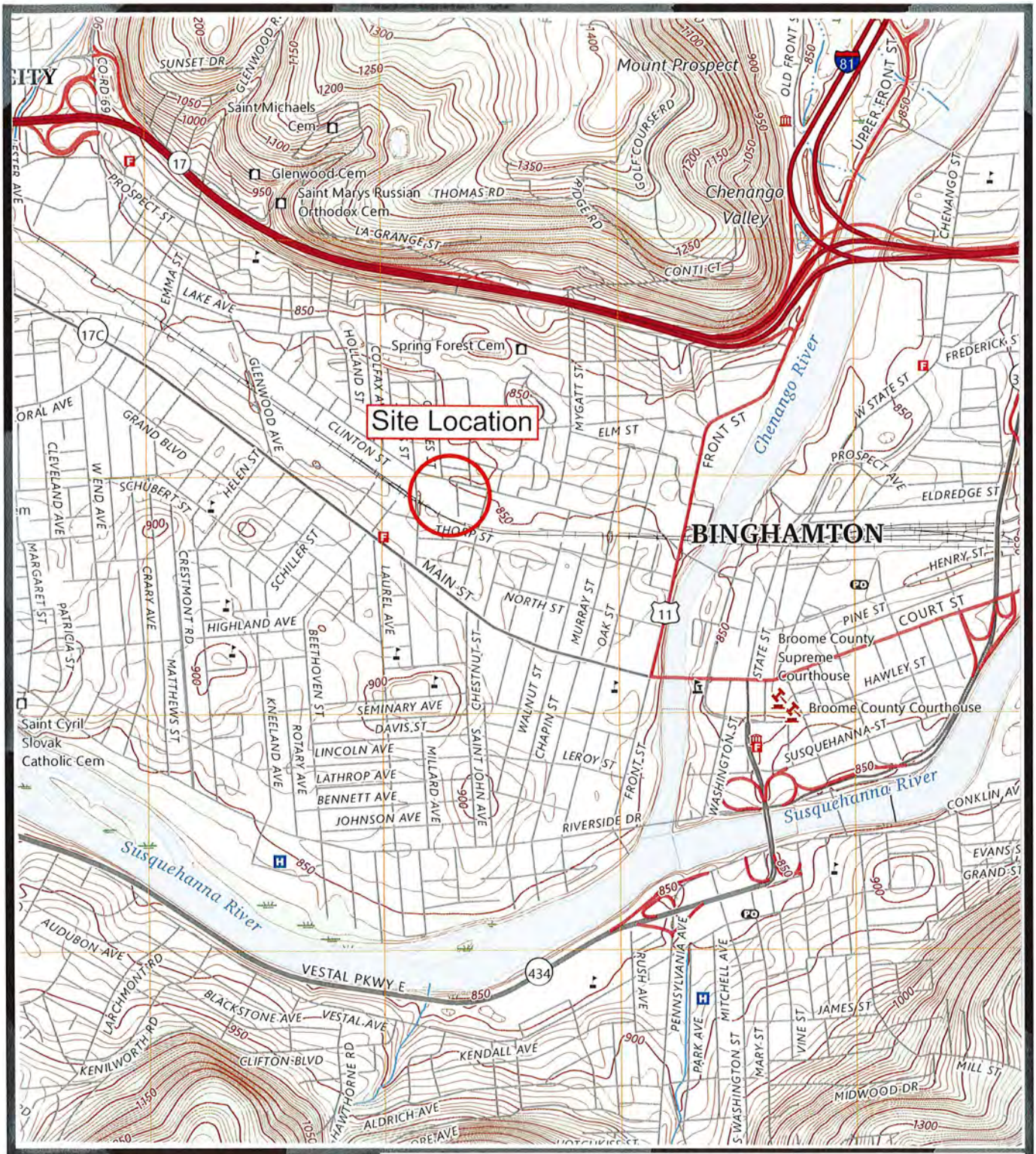

Foundation Design, P.C.

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Rochester, New York 14607
Phone (585) 458-0824
FAX (585) 458-3323

Clinton Street Housing

Clinton, Jarvis, and Hudson Streets, Binghamton, New York

General Location Plan

Adapted from: USGS Topographic Mapping
2023 Binghamton West Quadrangle

CHECKED BY:	**JMB**	Scale 1"= 2000'	**DATE: 6/10/24**
DRAWN BY:	**JLH**		**JOB NO.: 5669.0**



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Clinton Street Housing
Clinton, Jarvis, and Hudson Streets, Binghamton, New York
Exploration Location Plan
Adapted from: Delta Engineers, Architects & Land Surveyors
Boundary and Topographic Survey City of Binghamton

CHECKED BY:	JMB	Scale 1" = 80'	DATE: 6/10/24
DRAWN BY:	JLH		JOB NO.: 5669.0

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SOIL • BEDROCK • GROUNDWATER

SOIL DESCRIPTIONS

COHESIVE SOIL

Very fine grained soils. Plastic soils that can be rolled into a thin thread if moist. Clays and silty clays show cohesion.

DESCRIPTION	SPT –BLOWS/FOOT
Very Soft	0-2
Soft	3-5
Medium	6-15
Stiff	16-25
Hard	26 or more

NON-COHESIVE SOIL

Soils composed of silt, sand and gravel, showing no cohesion or very slight cohesion

DESCRIPTION	SPT –BLOWS/FOOT
Loose	0-10
Firm	11-25
Compact	26-40
Dense	41-50
Very Dense	51 or more

SOIL COMPOSITION	DESCRIPTION	ESTIMATED PERCENTAGE
	and	50
	some	30-49
	little	11-29
	trace	0-10

MOISTURE CONDITIONS Dry, Damp, Moist, Wet, Saturated
Groundwater measured in the boring or test pit may not have reached equilibrium

SOIL STRATA:	TERM	DESCRIPTION
	layer	Soil deposit more than 6" thick
	seam	Soil deposit less than 6" thick
	parting	Soil deposit less than 1/8" thick
	varved	Horizontal uniform layers or seams of soil

GRAIN SIZE

MATERIAL		SIEVE SIZE
Boulder		Larger than 12 inches
Cobble		3 inches to 12 inches
Gravel	- coarse	1 inch to 3 inches
	- medium	3/8 inch to 1 inch
	- fine	No. 4 to 3/8 inch
Sand	- coarse	No. 10 to No. 4
	- medium	No. 40 to No. 10
	- fine	No. 200 to No. 40
Silt and Clay		Less than No. 200

Standard Penetration Test: The number of blows required to drive a split spoon sampler into the soil with a 140 pound hammer dropped 30 inches. The number of blows required for each 6-inches of penetration is recorded. The total number of blows required for the second and third 6-inches of penetration is termed the penetration resistance, or the "N" value.

Split Spoon Sampler: Typically a 2-foot long, 2-inch diameter hollow steel tube that breaks apart or splits in two down the tube length.

Refusal: Depth in the boring where more than 100 blows per 5-inches are needed to advance the sample spoon.

Core Recovery (%): The total length of rock core recovered divided by the total core run.

RQD (%): Rock Quality Designation – the total length of all the pieces of the rock core longer than 4-inches divided by the total length of the rock core run.

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Boring Log

Project No.	24.05669	**Page** 1 **of** 1		**Soil Boring No.**	B24-1
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	855.1	**Weather**	Overcast 60s	**Engineer**	J. Herrera
Date Started	5/29/2024	**Completed**	5/29/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
									CONCRETE 0'1"
									SUBBASE: Firm to compact gray-brown wet GRAVEL, some sand, little cobbles, little silt 1'0"
									Compact brown wet GRAVEL, some sand, little silt
5	47	20							
			19	38	39	S-1	4'-6'	6"	S-1: Compact, moist to wet, poor recovery (Hard augering at 5', numerous cobbles) 6'0"
	26	36							Very dense brown wet SAND and GRAVEL, trace silt
			28	32	64	S-2	6'-8'	14"	
	22	38							
10			25	30	63	S-3	8'-10'	12"	S-3: Some sand
							13'		
	44	33					-		S-4: Moist, little to some sand, little silt
15			31	50/2"	64	S-4	14'8"	12"	
									15'1"
									Boring Terminated at 15'1"
									Auger Refusal on Possible Boulder
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

Foundation Design, P.C.

Boring Log

Project No.	24.05669	**Page** 1 **of** 1		**Soil Boring No.**	B24-2
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	855.4	**Weather**	Overcast 60s	**Engineer**	J. Herrera
Date Started	5/29/2024	**Completed**	5/29/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
									CONCRETE 0'5½"
									SUBBASE: Firm brown wet SAND and GRAVEL 1'0"
									FILL: Firm black moist to wet SAND, some gravel, trace silt, trace millings 4'0"
5	30	10							Firm brown moist to wet GRAVEL, some sand, trace to little silt
			4	6	14	S-1	4'-6'	13"	
	8	14							S-2: Very dense
			50/1"		64/7"	S-2	6'-8'	12"	
	41	21							S-3: Dense
10			21	26	42	S-3	8'-10'	12"	
									S-4: No recovery
	50/2"				50/2"	S-4	13'-13'2"	0	
15									
									S-5: No recovery
	50/1"				50/1"	S-5	18'-18'1"	0	
20									
	31	16							S-6: Compact, saturated
25			21	13	37	S-6	23'-25'	6"	25'0"
									Boring Terminated at 25'0"
									Notes: 1. Water at 23' upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.
30									

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

Foundation Design, P.C.

Boring Log

Project No.	24.05669	**Page** 1 **of** 2		**Soil Boring No.**	B24-3
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	854.0	**Weather**	Sunny 60s	**Engineer**	J. Herrera
Date Started	5/30/2024	**Completed**	5/30/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	5	10							TOPSOIL 0'3"
			15	8	25	S-1	0'-2'	17"	FILL: Firm brown wet GRAVEL, little to some sand, trace silt, trace brick, trace millings
	5	5							
			6	6	11	S-2	2'-4'	7"	S-2: Little concrete, little brick, little slag, little millings, little cinders
5	4	2							S-3: Loose, poor recovery
			1	1	3	S-3	4'-6'	3"	
	1	1							
			WH	1	1	S-4	6'-8'	0	S-4: No recovery
	1	2							
10			5	3	7	S-5	8'-10'	8"	S-5: Loose, little brick, little concrete, little wood, little asphalt
	5	2							S-6: Loose, trace wood
			5	50/3"	7	S-6	10'-11'9"	7"	12'6"
									Compact brown moist to wet GRAVEL, some sand, little silt
	16	20							
15			15	11	35	S-7	13'-15'	12"	
									S-8: Very dense, little sand
	15	25							
20			26	15	51	S-8	18'-20'	8"	
									23'0"
	18	11							Firm brown saturated SAND, little gravel, little silt
25			5	6	16	S-9	23'-25'	12"	
									26'6"
									Compact brown saturated SAND, some gravel, little silt, water noted in spoon
	16	23							
30			16	18	39	S-10	28'-30'	13"	

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

Foundation Design, P.C.

Boring Log

Project No.	24.05669	**Page** 2 **of** 2		**Soil Boring No.**	B24-3
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	854.0	**Weather**	Sunny 60s	**Engineer**	J. Herrera
Date Started	5/30/2024	**Completed**	5/30/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	13	11							
35			10	11	21	S-11	33'-35'	6"	S-11: Firm, saturated, little to some silt, water noted in spoon
									(Sand tends to 'run' at 38')
	6	9							
40			13	8	22	S-12	38'-40'	16"	S-12: Firm, saturated, some silt, little gravel, trace silt seams
									41'6"
									Dense gray-brown wet GRAVEL, some sand, little silt
	13	22							
45			19	22	41	S-13	43'-45'	6"	
	12	17							S-14: Compact, varved
50			12	12	29	S-14	48'-50'	10"	50'0"
									Boring Terminated at 50'0"
55									
60									

Notes:
1. Water at 23' upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

Foundation Design, P.C.

Boring Log

Project No.	24.05669	**Page** 1 **of** 1		**Soil Boring No.**	B24-4
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	851.9	**Weather**	Sunny 60s	**Engineer**	J. Herrera
Date Started	5/30/2024	**Completed**	5/30/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
									ASPHALT 0'2"
									SUBBASE: Firm brown moist to wet GRAVEL, little sand, trace cobbles, trace silt 2'0"
	2	3							ASPHALT MILLINGS 2'3"
			4	11	7	S-1	2'-4'	10"	Loose brown wet GRAVEL, little sand, trace silt (possible fill)
5	6	11							S-2: Compact, little to some clay, few cobbles at 6'
			22	19	33	S-2	4'-6'	13"	
	7	17							S-3: Dense, trace clay
			25	16	42	S-3	6'-8'	14"	8'0"
	9	10							Firm brown wet to saturated SAND, some gravel, little silt
10			9	6	19	S-4	8'-10'	12"	
									(Hard augering to 12', numerous cobbles)
									S-5: Very dense, wet
	50/5"				50/5"	S-5	13'-13'5"	5"	
15									
									16'6"
									Boring Terminated at 16'6" Auger Refusal
20									
25									
30									Notes: 1. Dry upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

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Boring Log

Project No.	24.05669	**Page** 1 **of** 1		**Soil Boring No.**	B24-5
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	852.9	**Weather**	Sunny 60s	**Engineer**	J. Herrera
Date Started	5/30/2024	**Completed**	5/30/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
									ASPHALT 0'2"
									SUBBASE: Loose brown wet GRAVEL, little sand, little silt, trace organic, trace asphalt 3'6"
	1	2							
			1	1	3	S-1	2'-4'	8"	FILL: Loose tan-brown wet SAND 4'0"
5	4	17							FILL: Compact gray damp GRAVEL, little sand, trace silt, trace asphalt 6'0"
			15	16	32	S-2	4'-6'	10"	
	19	27							Very dense brown-gray wet GRAVEL, little to some sand, little silt
			25	35	52	S-3	6'-8'	14"	
	5	15							
10			13	12	28	S-4	8'-10'	15"	S-4: Compact, some sand
	32	50/3"			50/3"	S-5	13'-13'9"	2"	S-5: Very dense, cobble fragments noted in spoon, poor recovery (cobble fragments at 13'6")
15									
	50/4"				50/4"	S-6	18'-18'4"	0	S-6: No recovery
20									
	32	18							
25			16	24	34	S-7	23'-25'	10"	S-7: Compact, little sand, trace silt (Saturated below 23') 25'0"
									Boring Terminated at 25'0"
									Notes: 1. Water at 20' with augers in. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.
30									

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

Foundation Design, P.C.

Boring Log

Project No.	24.05669	**Page** 1 **of** 1		**Soil Boring No.**	B24-6
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	854.1	**Weather**	Overcast 70s	**Engineer**	J. Herrera
Date Started	5/28/2024	**Completed**	5/28/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
									CONCRETE 0'4"
									SUBBASE: Firm gray moist SAND and GRAVEL, some cobbles 1'0"
									FILL: Firm black wet SAND and GRAVEL, trace organics, trace millings 2'0"
5	1	6							Firm brown wet SAND and GRAVEL S-3: Little silt
			7	10	13	S-3	4'-6'	12"	
	10	13							(Hard augering 5'-6', numerous cobbles noted)
			20	25	33	S-4	6'-8'	15"	S-4: Compact, gravel, some sand, little silt
	50/5"					S-5	8'-8'5"	3"	S-5: Very dense, cobble fragments noted in shoe, poor recovery
10									
	49	41							
15			53	52	94	S-6	13'-15'	16"	S-6: Very dense, little to some sand, trace silt, few cobbles
	50/3"				50/3"	S-7	18'-18'3"	2"	S-7: Trace to little silt
20									19'2"
									Boring Terminated at 19'2" Auger Refusal
25									
30									Notes: 1. Dry upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

Foundation Design, P.C.

Boring Log

Project No.	24.05669	**Page** 1 **of** 1		**Soil Boring No.**	B24-7
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	853.5	**Weather**	Sunny 60s	**Engineer**	J. Herrera
Date Started	5/30/2024	**Completed**	5/30/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
									ASPHALT OVERLAY 0'1½"
									ASPHALT TOP 0'3"
	29	53			53	S-1	2'-3'	4"	ASPHALT BINDER 0'5½"
									SUBBASE: Firm brown moist GRAVEL, little to some sand, trace silt, few cobbles 2'0"
5	16	10							Very dense brown moist GRAVEL, little sand, trace silt, trace clay 4'0"
			9	8	19	S-2	4'-6'	6"	Firm brown moist to wet SAND, some gravel, trace to little silt 6'0"
	3	3							Loose tan-brown wet to saturated SAND, some gravel, trace to little silt 8'0"
			2	2	5	S-3	6'-8'	8"	Firm brown wet to saturated GRAVEL, some sand, trace silt, trace clay
	3	2							(Hard augering at 10')
10			12	22	14	S-4	8'-10'	7"	
	50/4"				50/4"	S-5	13'-13'4"	1"	S-5: Very dense, cobble fragments noted in shoe, poor recovery
15									
									16'0"
									Boring Terminated at 16'0"
									Auger Refusal on Possible Boulder
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

Foundation Design, P.C.

Boring Log

Project No.	24.05669	**Page** 1 **of** 1		**Soil Boring No.**	B24-8
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	855.3	**Weather**	Sunny 60s	**Engineer**	J. Herrera
Date Started	5/30/2024	**Completed**	5/30/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	2	5							TOPSOIL 0'3"
			6	7	11	S-1	0'-2'	8"	FILL: Firm brown-black wet SILT, little sand, little gravel, trace brick, trace asphalt 2'0"
	4	50/4"			50/4"	S-2	2'-2'10"	2"	FILL: Very dense brown wet GRAVEL, little sand, trace silt, trace brick, trace concrete
									Concrete at 3', offset 5' NE, concrete at 3'4", offset 3' NW, refusal at 2'6", offset 10' S
5									3'0"
									Boring Terminated at 3'0"
									Auger Refusal
10									
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

Foundation Design, P.C.

Boring Log

Project No.	24.05669	**Page** 1 **of** 1		**Soil Boring No.**	B24-9
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	855.7	**Weather**	Overcast 60s	**Engineer**	J. Herrera
Date Started	5/29/2024	**Completed**	5/29/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
									CONCRETE (rebar at 4") 0'5"
									FILL: Loose black wet SAND, some silt, some gravel
	5	2							S-2: Little asphalt millings
			4	2	6	S-2	2'-4'	15"	4'0"
5	4	5							FILL: Loose tan-brown wet GRAVEL, little to some sand, little silt, trace clay
			4	3	9	S-3	4'-6'	6"	6'0"
	5	6							Firm brown moist to wet GRAVEL, some sand, trace to little silt
			8	11	14	S-4	6'-8'	8"	
	11	32							S-5: Very dense, wet, trace silt
10			28	25	60	S-5	8'-10'	11"	
	50/5"				50/5"	S-6	13'-13'5"	1"	S-6: Very dense, cobble fragments noted in shoe, poor recovery
15									
	23	23							S-7: Dense
20			27	50/3"	50	S-7	18'-19'9"	7"	
									20'6"
									Boring Terminated at 20'6" Auger Refusal
25									
30									Notes: 1. Dry upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

Foundation Design, P.C.

Boring Log

Project No.	24.05669	**Page** 1 **of** 1		**Soil Boring No.**	B24-10
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	854.2	**Weather**	Overcast 70s	**Engineer**	J. Herrera
Date Started	5/28/2024	**Completed**	5/28/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
									CONCRETE 0'4"
									SUBBASE: Compact to dense gray moist GRAVEL, some sand, some cobbles, trace silt
									(Augered to 4') 4'0"
5	25	14							Compact brown moist to wet GRAVEL, little sand, trace to little silt
			14	20	28	S-1	4'-6'	16"	
	20	24							S-2: Very dense, wet, some sand, trace silt
			28	38	52	S-2	6'-8'	18"	
	26	53							S-3: Very dense, moist to wet, little sand, trace to little silt 10'0"
10			37	18	90	S-3	8'-10'	12"	Boring Terminated at 10'0"
15									
20									
25									
30									Notes: 1. Dry upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

Foundation Design, P.C.

Boring Log

Project No.	24.05669	**Page** 1 **of** 1		**Soil Boring No.**	B24-11
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	853.5	**Weather**	Overcast 70s	**Engineer**	J. Herrera
Date Started	5/28/2024	**Completed**	5/28/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	7	14							TOPSOIL 0'6"
			24	3	38	S-1	0'-2'	16"	FILL: Compact black-gray SAND and GRAVEL, little brick, little asphalt millings, trace concrete 2'0"
	35	10							
			11	9	21	S-2	2'-4'	13"	Firm tan-brown wet SAND, some gravel, trace silt 4'0"
5	40	37							
			22	50/3"	59	S-3	4'-5'9"	9"	Very dense GRAVEL some sand, hard augering at 6'
	50/1"				50/1"	S-4	6'-6'1"	0	S-4: No recovery
	50/2"				50/2"	S-5	8'-8'2"	1"	S-5: Very dense, pushing cobbles, cobble fragments noted in shoe 8'2"
10									Boring Terminated at 8'2"
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

Foundation Design, P.C.

Boring Log

Project No.	24.05669	**Page** 1 **of** 1		**Soil Boring No.**	B24-12
Project Name	Clinton Street Housing, Binghamton, NY				
Client	The Metro Group Properties, Inc., PO Box 10, Blue Point, NY				
Elevation	855.5	**Weather**	Sunny 60's	**Engineer**	J. Herrera
Date Started	5/2024	**Completed**	5/2024	**Driller**	J. Loomis
Drilling Company:	Target Drilling			**Drilling Equipment:**	CME 75 Truck Rig

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
									CONCRETE (rebar at 4½") 0'5"
									SUBBASE: Firm brown wet GRAVEL, some sand, little silt, few cobbles 0'8"
									FILL: Compact to dense black-brown GRAVEL, little silt, little sand, trace brick 1'6"
5									Boring Terminated at 1'6"
									Offset 20' NW, auger refusal at 3'
10									
15									
20									
25									
30									Notes: 1. Dry upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2"

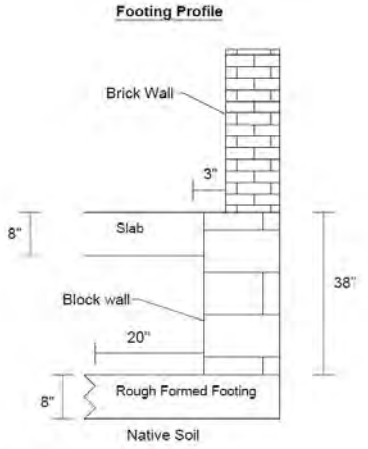
Foundation Design, P.C.

SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No.	24.05669	**Page** 1 **of** 1		**Test Pit No.**	TP24-1
Project Name	Clinton Street Housing, 187 Clinton Street, Binghamton, NY				
Client	The Metro Group Properties, PO Box 10, Blue Point, NY				
Elevation	854.0	**Weather**	Cloudy 60s	**Technician**	J. Baker
Date Started	5/28/2024	**Completed**	5/28/2024	**Operator**	Eric
Backhoe Subcontractor	Pritchard			**Equipment**	Kubota KX040-4

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			SLAB 0'8" BACKFILL: Firm to compact gray moist SAND, some silt with gravel and roots
4	S-1	1'-3'	3'0" Compact brown moist SAND, some silt, little gravel
6	S-2	4'-5'	5'0" Test Pit Terminated at 5'0"
8			
10			
12			



Site Pictures





Notes:
1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Foundation Design, P.C.

Foundation Design, P.C.

SOIL • BEDROCK • GROUNDWATER

Test Pit Log

Project No.	24.05669	**Page** 1 **of** 1		**Test Pit No.**	B24-13
Project Name	Clinton Street Housing, 187 Clinton Street, Binghamton, NY				
Client	The Metro Group Properties, PO Box 10, Blue Point, NY				
Elevation	859.5	**Weather**	Cloudy 70s	**Technician**	J. Herrera
Date Started	5/30/2024	**Completed**	5/30/2024	**Operator**	Eric
Backhoe Subcontractor	Target Drilling			**Equipment**	Kubota KX040-4

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL 0'1" Loose black moist to wet ASPHALT MILLINGS, little to some gravel, little to some sand 0'6" FILL: Compact gray-brown moist to wet GRAVEL, some sand, little silt, little brick, ash layer at bottom 1'6" Buried TOPSOIL 1'10"
4			FILL: Compact brown wet GRAVEL, some silt, little sand, few cobbles (PVC pipe at 2', little rootlets at 3'6") (Steel pipe at 3'9", little sand, trace silt below 4')
6	S-1	4'8"	4'8" Compact to dense gray-brown wet GRAVEL, little sand, trace silt 5'9" Test Pit Terminated at 5'9"
8			
10			
12			

Site Pictures





Notes:
1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Foundation Design, P.C.

Foundation Design, P.C.

SOIL • BEDROCK • GROUNDWATER

Hand Hole Log

Project No.	24.05669	**Page**	1	**of**	1	**Test Pit No.**	B24-14
Project Name	Clinton Street Housing, 187 Clinton Street, Binghamton, NY						
Client	The Metro Group Properties, PO Box 10, Blue Point, NY						
Elevation	860.3	**Weather**	Sunny 60's			**Technician**	J. Herrera
Date Started	5/30/2024	**Completed**	5/30/2024				

Depth Below Surface	Sample Number	Depth of Sample		Soil and Rock Classifications Remarks
2				TOPSOIL 0'5" Firm tan/brown wet GRAVEL, some sand, trace silt, few cobbles 1'6" Hand Hole Terminated at 1'6"
4				
6				
8				
10				
12				

Site Pictures

No photo

Notes:
1. Sides vertical upon completion.
2. Dry on completion.
3. Staked location and elevation provided by Foundation Design, P.C.

Foundation Design, P.C.

SOIL • BEDROCK • GROUNDWATER

June 11, 2024

The Metro Group Properties, Inc.
PO Box 10
Blue Point, New York 11715

Attention: Myles Monaghan

Reference: Clinton Street Housing
Clinton, Jarvis, and Hudson Streets, Binghamton, New York
Laboratory Test Results, 24.05669

Dear Mr. Monaghan:

Foundation Design, P.C. is pleased to present the following results of the laboratory testing performed on the referenced project. The testing was performed in accordance with the following ASTM test methods:

5	Sieve Analysis	ASTM D-1140
5	Moisture Content Test	ASTM D-2216

We appreciate the opportunity to provide these testing services and look forward to hearing from you again in the near future.

Sincerely,

FOUNDATION DESIGN, P.C.

Ryan Radford, P.E.
Vice President

Foundation Design, P.C.

Clinton Street Housing
Clinton, Jarvis and Hudson Street, Binghamton, NY
24.05669

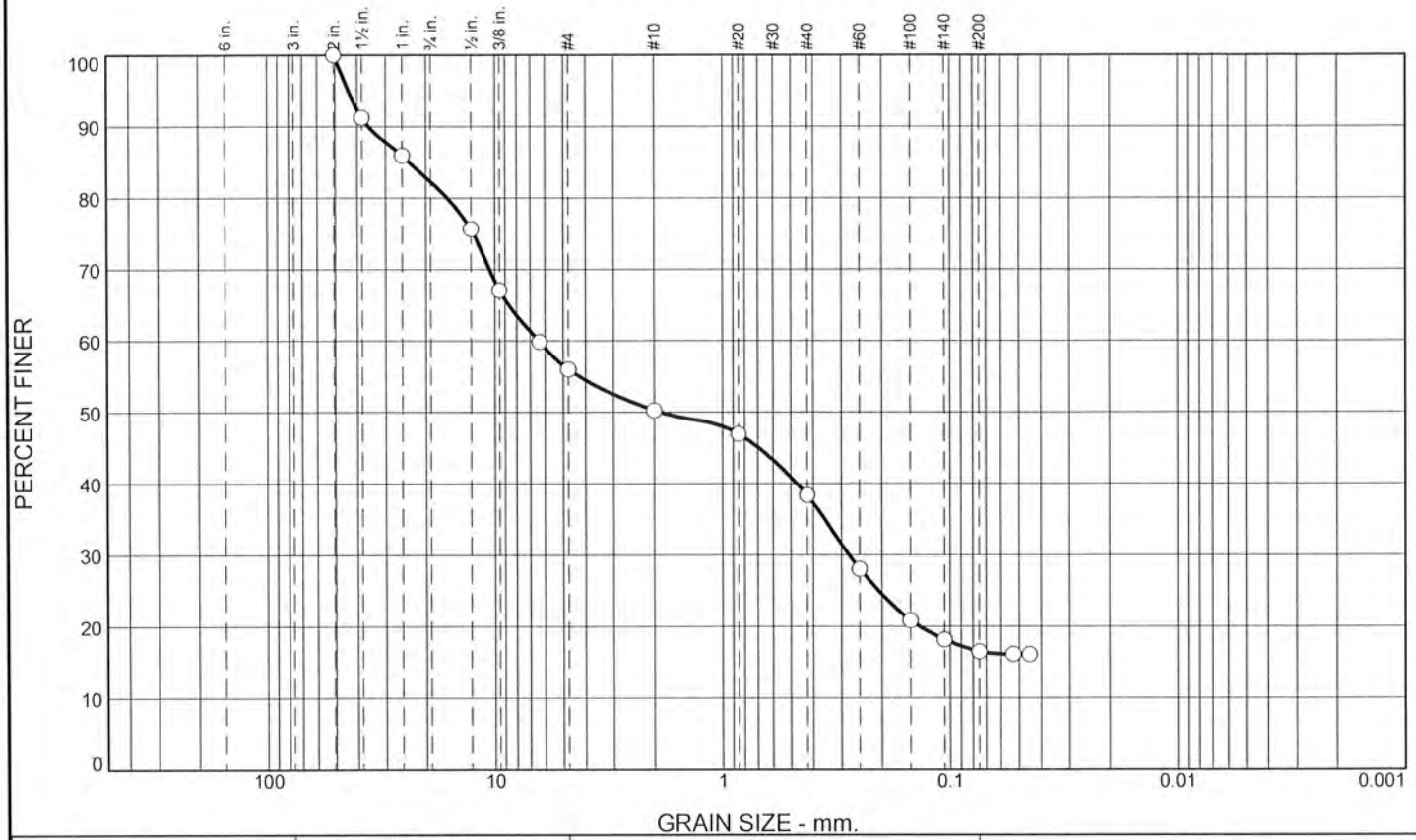
06/11/2024

Moisture Content Test Report
(ASTM D-2216)

Moisture Content Test Results					
Boring/Test Pit Number	TP24-1	B24-2	B24-3	B24-6	B24-11
Sample Number	S-1	S-1	S-7	S-3	S-2
Depth	4′	4′-6′	13′-15′	4′-6′	2′-4′
Moisture Content (%)	**9.3**	**3.7**	**4.0**	**6.6**	**3.6**

Particle Size Distribution Report

ASTM D422 & D1140



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0	18	26	6	12	22	16

Test Results (ASTM D422 & D1140)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
2"	100			
1.5"	91			
1"	86			
1/2"	76			
3/8"	67			
1/4"	60			
#4	56			
#10	50			
#20	47			
#40	38			
#60	28			
#100	21			
#140	18			
#200	16			
#270	16			
#325	16			

* (no specification provided)

Material Description

GM: Tan silty gravel with sand per ASTM D-2488

Atterberg Limits

PL= LL= PI=

Classification

USCS= AASHTO=

Test Remarks

Test performed on 949.44 grams of oven dried sample

Source of Sample: TP24-1 **Depth:** 4'
Sample Number: S-1

Sample Date: 06/11/2024

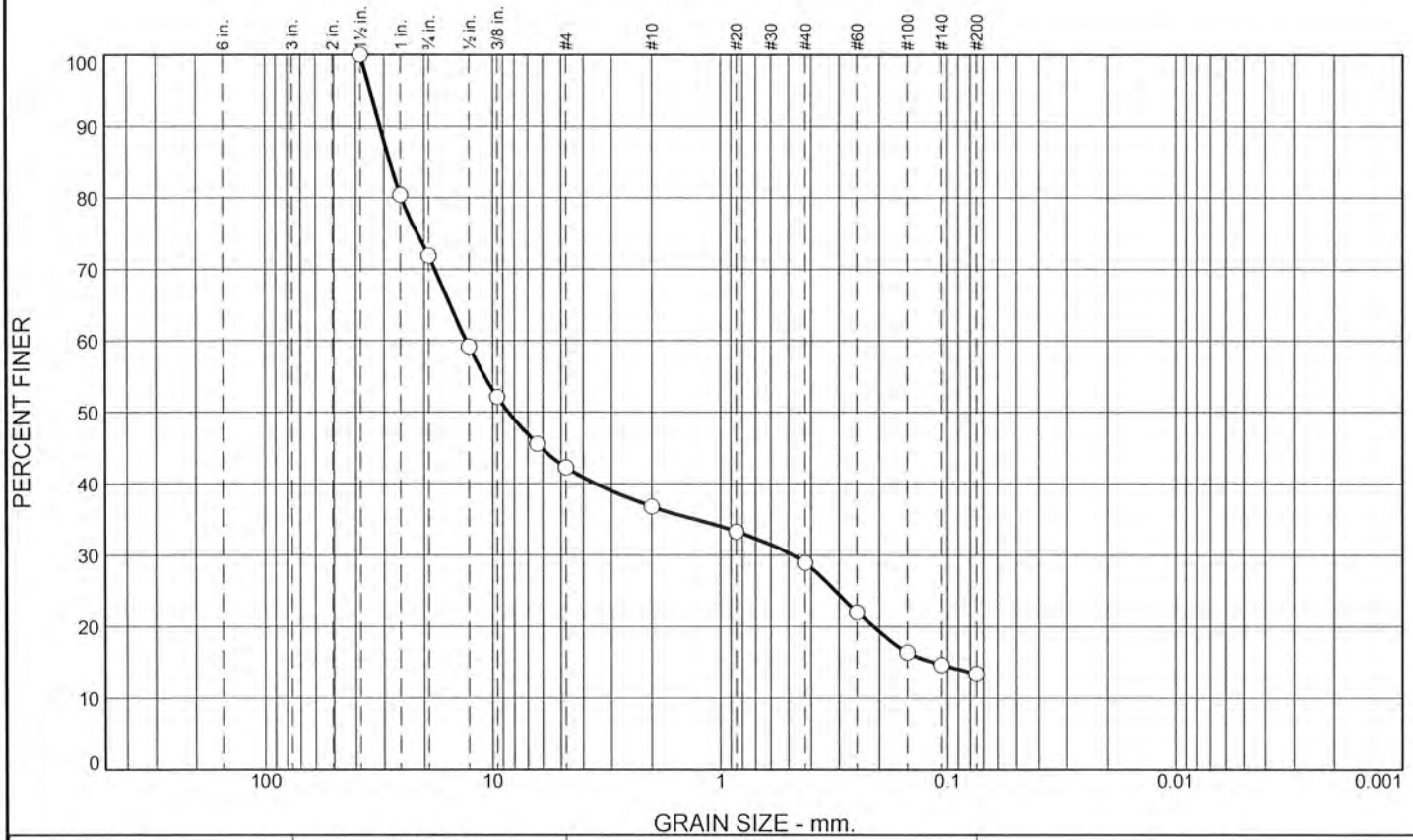
Foundation Design, P.C.

Client: The Metro Group Properties, PO Box 10, Blue Point, NY
Project: Clinton St Housing, Clinton, Jarvis and Hudson Street, Binghamton, NY
Project No: 24.05669 **Figure**

Tested By: RLS **Checked By:** RJR

Particle Size Distribution Report

ASTM D422 & D1140



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0	28	30	5	8	16	13

Test Results (ASTM D422 & D1140)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
1.5"	100			
1"	80			
3/4"	72			
1/2"	59			
3/8"	52			
1/4"	46			
#4	42			
#10	37			
#20	33			
#40	29			
#60	22			
#100	16			
#140	15			
#200	13			

* (no specification provided)

Material Description

GM: Brown-tan silty gravel with sand per ASTM D-2488

Atterberg Limits

PL= LL= PI=

Classification

USCS= AASHTO=

Test Remarks

Test performed on 407.53 grams of oven dried sample

Source of Sample: B24-2 **Depth:** 4'-6'
Sample Number: S-1

Sample Date: 06/11/2024

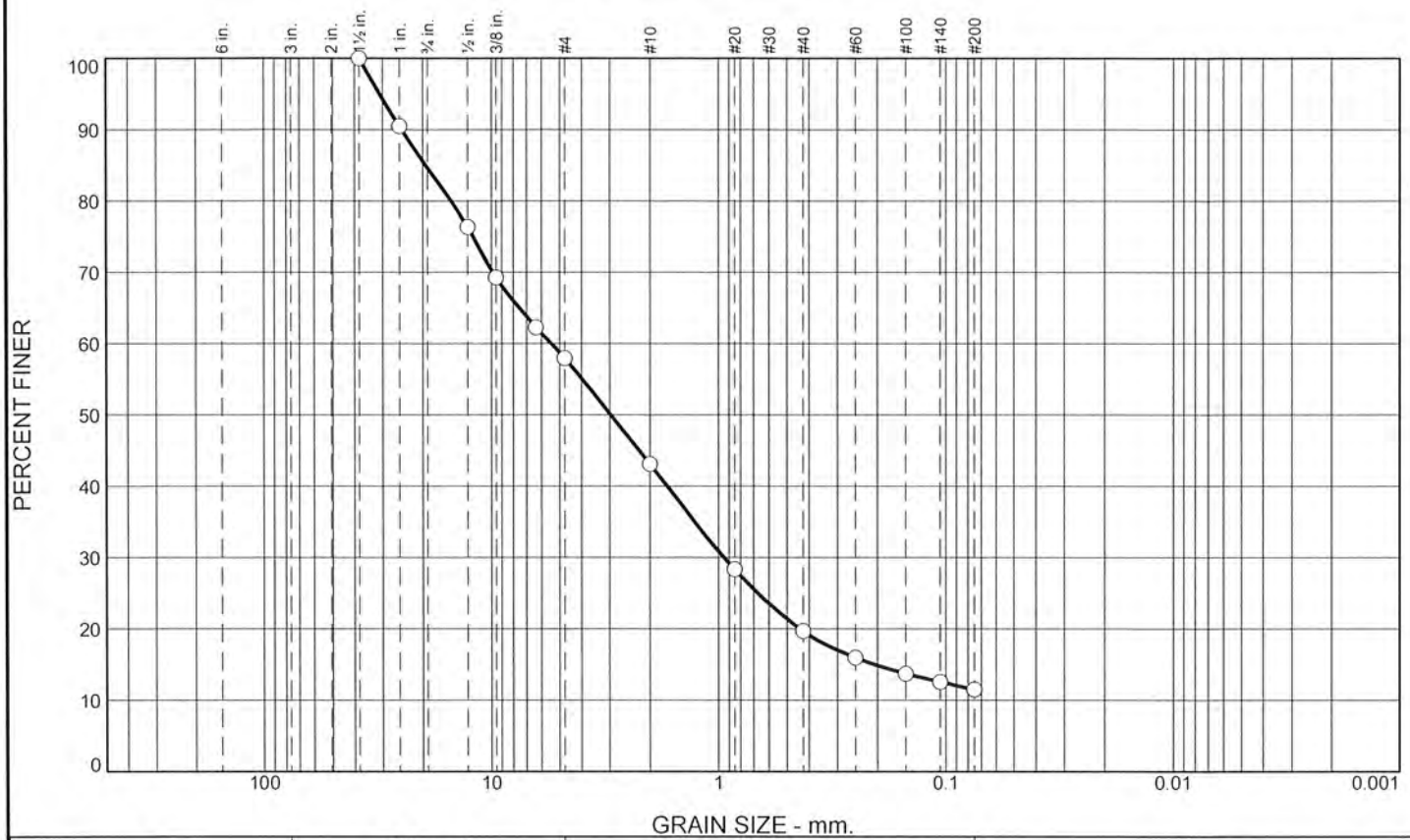
Foundation Design, P.C.

Client: The Metro Group Properties, PO Box 10, Blue Point, NY
Project: Clinton St Housing, Clinton, Jarvis and Hudson Street, Binghamton, NY
Project No: 24.05669 **Figure**

Tested By: RLS **Checked By:** RJR

Particle Size Distribution Report

ASTM D422 & D1140



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0	15	27	15	23	9	11

Test Results (ASTM D422 & D1140)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
1.5"	100			
1"	90			
1/2"	76			
3/8"	69			
1/4"	62			
#4	58			
#10	43			
#20	28			
#40	20			
#60	16			
#100	14			
#140	13			
#200	11			

* (no specification provided)

Material Description

SP-SM: Tan-brown poorly graded sand with silt and gravel per ASTM D-2488

Atterberg Limits

PL= LL= PI=

Classification

USCS= AASHTO=

Test Remarks

Test performed on 458.75 grams of oven dried sample

Source of Sample: B24-3 **Depth:** 13'-15'
Sample Number: S-7 **Sample Date:** 06/11/2024

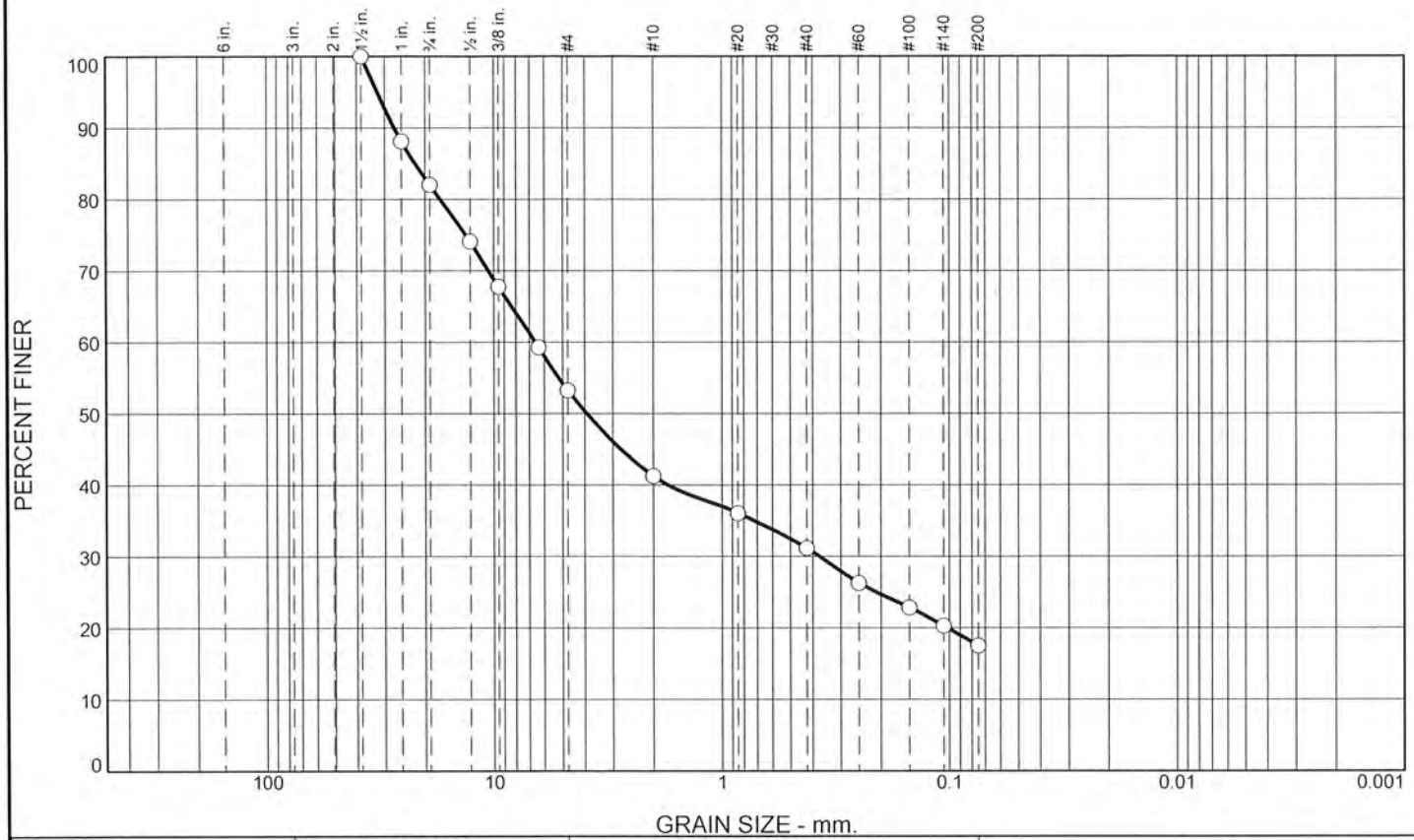
Foundation Design, P.C.

Client: The Metro Group Properties, PO Box 10, Blue Point, NY
Project: Clinton St Housing, Clinton, Jarvis and Hudson Street, Binghamton, NY
Project No: 24.05669 **Figure**

Tested By: RLS **Checked By:** RJR

Particle Size Distribution Report

ASTM D422 & D1140



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0	18	29	12	10	14	17

Test Results (ASTM D422 & D1140)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
1.5"	100			
1"	88			
3/4"	82			
1/2"	74			
3/8"	68			
1/4"	59			
#4	53			
#10	41			
#20	36			
#40	31			
#60	26			
#100	23			
#140	20			
#200	17			

* (no specification provided)

Material Description

GM: Tan-brown silty gravel with sand per ASTM D-2488

Atterberg Limits

PL= LL= PI=

Classification

USCS= AASHTO=

Test Remarks

Test performed on 223.59 grams of oven dried sample

Source of Sample: B24-6 **Depth:** 4'-6'
Sample Number: S-3

Sample Date: 06/11/2024

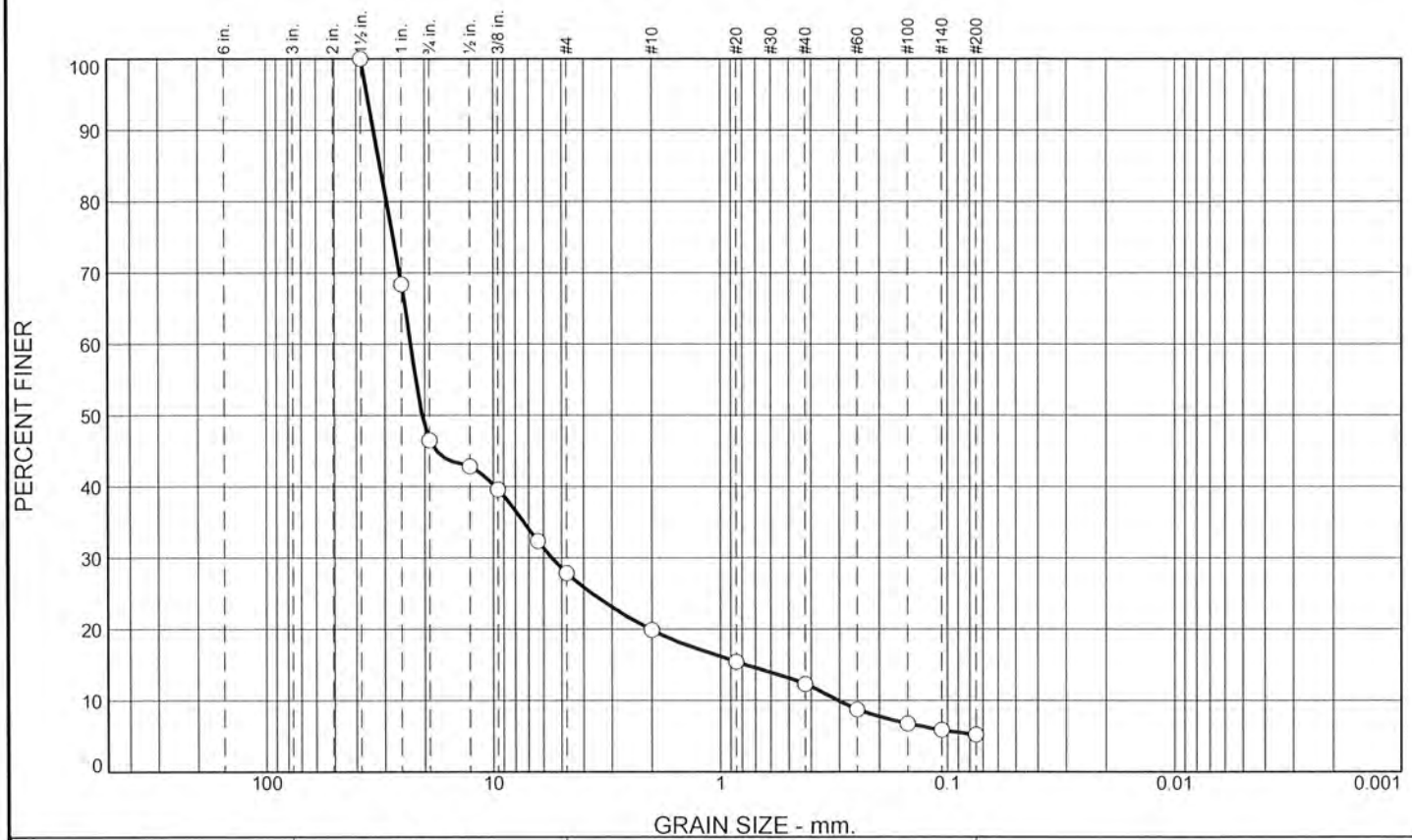
Foundation Design, P.C.

Client: The Metro Group Properties, PO Box 10, Blue Point, NY
Project: Clinton St Housing, Clinton, Jarvis and Hudson Street, Binghamton, NY
Project No: 24.05669 **Figure**

Tested By: RLS **Checked By:** RJR

Particle Size Distribution Report

ASTM D422 & D1140



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0	54	18	8	8	7	5

Test Results (ASTM D422 & D1140)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
1.5"	100			
1"	68			
3/4"	46			
1/2"	43			
3/8"	40			
1/4"	32			
#4	28			
#10	20			
#20	15			
#40	12			
#60	9			
#100	7			
#140	6			
#200	5			

* (no specification provided)

Material Description

GP-GM: Tan-brown poorly graded gravel with silt and sand per ASTM D-2488

Atterberg Limits

PL= LL= PI=

Classification

USCS= AASHTO=

Test Remarks

Test performed on 305.21 grams of oven dried sample

Source of Sample: B24-11 **Depth:** 2'-4'
Sample Number: S-2 **Sample Date:** 06/11/2024

Foundation Design, P.C.

Client: The Metro Group Properties, PO Box 10, Blue Point, NY
Project: Clinton St Housing, Clinton, Jarvis and Hudson Street, Binghamton, NY
Project No: 24.05669 **Figure**

Tested By: RLS **Checked By:** RJR

Infiltration Test results Received by Foundation Design P.C. on October 2, 2025

Infiltration Test Results						
Location	Depth Set (Feet)	Run #1 (Inches)	Run #2 (Inches)	Run #3 (Inches)	Run #4 (Inches)	Average Rate (Inches/Hour)
North	7.5	24	24	24	24	24
Middle	11.5	24	24	24	24	24
East	6.5	24	24	24	24	24

APPENDIX C

Erosion & Sediment Control Plans, Details & Notes



1 C-102 **EROSION AND SEDIMENT CONTROL PLAN**
SCALE: 1" = 50'

NORTH

EROSION AND SEDIMENT CONTROL LEGEND:	
INLET PROTECTION	
STABILIZED CONSTRUCTION ENTRANCE	
SILT FENCE	

#	KEY NOTES
1	PROVIDE SILT FENCE. SEE DETAIL 2/C-304.
2	PROVIDE INLET PROTECTION. SEE DETAIL 3/C-304.
3	PROVIDE CONSTRUCTION ENTRANCE. SEE DETAIL 1/C-304.

EXISTING CONDITIONS LEGEND:	
IRON ROD	⊗
IRON PIPE	⊘
SET IRON ROD	SIR ○
MAG NAIL	MAG △
SET METAL SURVEY MARKER	SSM ⊗
CONCRETE MONUMENT	CMON △
MONITORING WELL	MW
METAL FENCE POST	MFP ○
WOODEN FENCE POST	WFP ○
GAS VALVE	GV ⋈
WATER VALVE	WV ⋈
POWER POLE	○
FIRE HYDRANT	FH ◇
POST INDICATOR VALVE	PIV
MANHOLE	MH ⊗
ELECTRIC MANHOLE	EMH ⊗
TELEPHONE MANHOLE	TMH ⊗
TRAFFIC SIGNAL BOX	TSB ⊠
AIR CONDITIONING UNIT	AC □
ELECTRIC METER	EM ■
GAS METER	GM ■
SQUARE CATCH BASIN	CB □
ROUND CATCH BASIN	CB ○
BOLLARD	•
TRAFFIC SIGN	▲
FINISH FLOOR ELEVATION	FFE
PROPERTY LINE	
FENCE LINE	X
WATER LINE	W
STORM SEWER LINE	ST
SANITARY SEWER LINE	SA
GAS LINE	G
OVERHEAD POWER POLE LINE	OH
GROUND CONTOUR	855
RAILROAD TRACK	
GRAVEL AREA	
CONCRETE AREA	
PAVEMENT AREA	
TREE	

0' 25' 50' 100'
SCALE: 1" = 50'

PERMIT SET

No.	Revision	Date
	PERMIT SET	08/15/25
	HCR SUBMISSION SET	07/18/25
	DESIGN DEVELOPMENT SET	04/18/25

Project Name

VANGUARD VILLAGE

BINGHAMTON, NY 13905

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Email: mail@delta-eas.com
www.delta-eas.com
CERTIFICATE OF AUTHORIZATION#: 019598

Seal

Phase
PERMIT DRAWING SET

Project No.
2023.678.001

UNAUTHORIZED ALTERATION OF THIS DRAWING IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, SECTION 7209, SUBDIVISION 2.

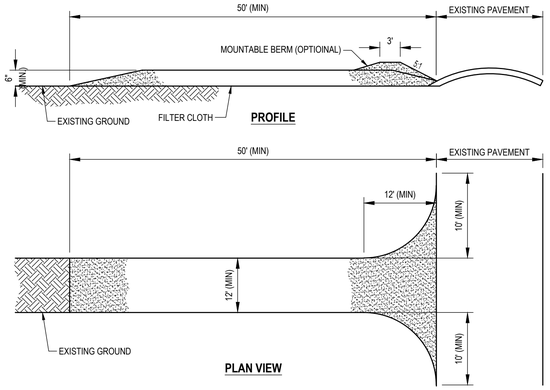
Date
AUGUST 15, 2025

Drawing Title

EROSION AND SEDIMENT CONTROL PLAN

Drawing No.

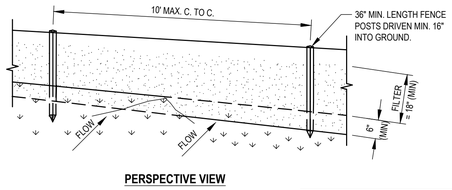
C-102



1 C-304 **STABILIZED CONSTRUCTION ENTRANCE DETAIL**
SCALE: NONE

CONSTRUCTION SPECIFICATIONS:

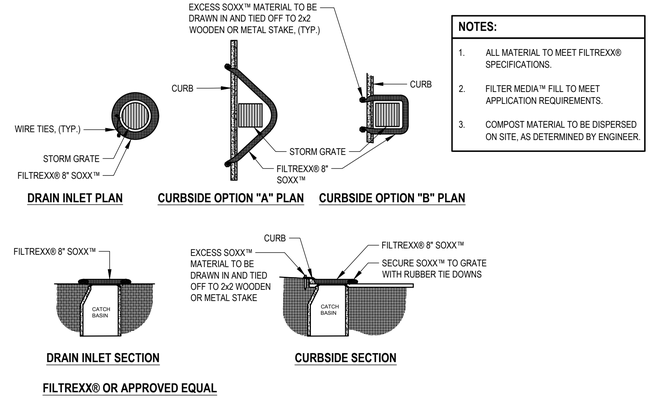
1. STONE SIZE: USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS: NOT LESS THAN SIX (6) INCHES.
4. TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH: WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER: ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.



2 C-304 **SILT FENCE DETAIL**
SCALE: NONE

CONSTRUCTION SPECIFICATIONS:

1. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
3. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.



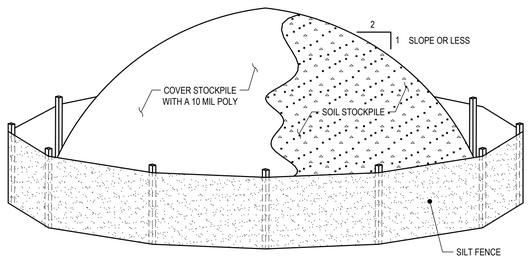
NOTES:

1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

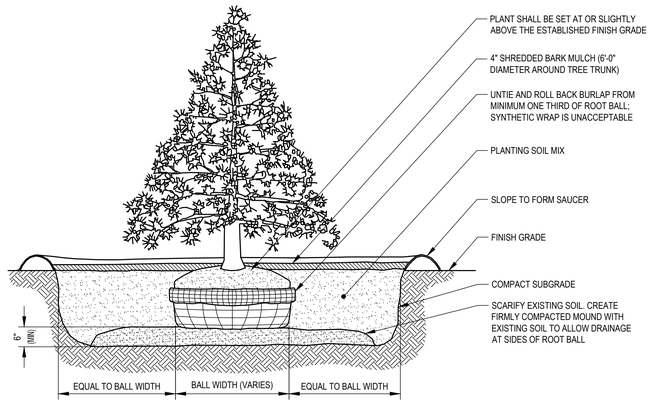
3 C-304 **FILTER SOCK INLET PROTECTION DETAIL**
SCALE: NONE

INSTALLATION NOTES:

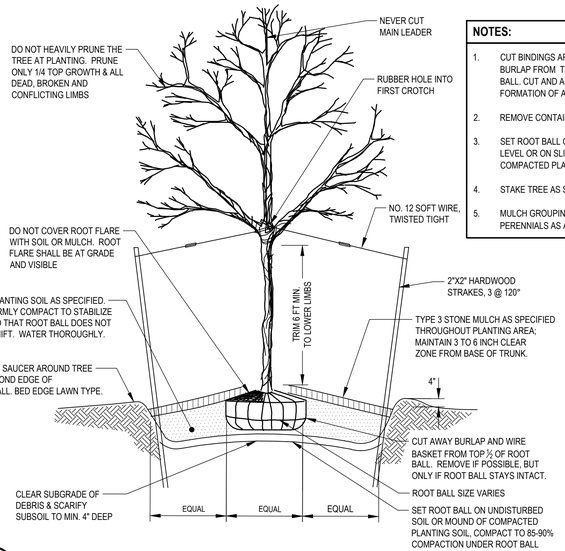
1. SELECT AN AREA THAT IS DRY AND STABLE.
2. COVER AREA WITH 10 MIL POLY AND STOCKPILE ON TOP.
3. COVER STOCKPILE WITH 10 MIL POLY AND SECURE.
4. PROVIDE SILT FENCE AROUND PERIMETER OF STOCKPILE AT THE TOE OF SLOPE.



4 C-304 **SOIL STOCKPILE AREA DETAIL**
SCALE: NONE



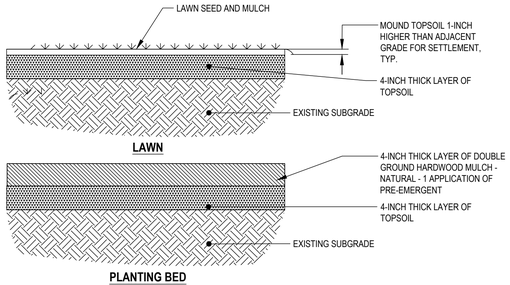
5 C-304 **CONIFEROUS TREE PLANTING DETAIL**
SCALE: NONE



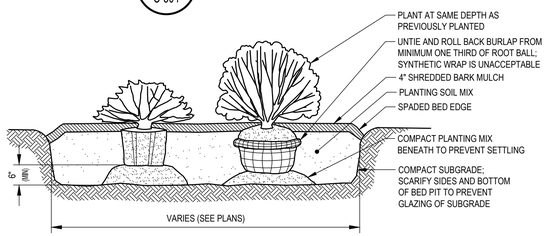
NOTES:

1. CUT BINDINGS AROUND TRUNK AND REMOVE BURLAP FROM TRUNK AND TOP 1/2 OF ROOT BALL. CUT AND ADJUST BURLAP TO PREVENT FORMATION OF AIR POCKETS.
2. REMOVE CONTAINER/WIRE BASKET IF PRESENT.
3. SET ROOT BALL ON UNDISTURBED SUBGRADE LEVEL OR ON SLIGHTLY RAISED MOUND OF COMPACTED PLANTING SOIL.
4. STAKE TREE AS SHOWN.
5. MULCH GROUPINGS OF TREES, SHRUBS AND PERENNIALS AS A CONTINUOUS BED.

7 C-304 **DECIDUOUS TREE PLANTING DETAIL**
SCALE: NONE



6 C-304 **LANDSCAPE DETAIL**
SCALE: NONE



8 C-304 **SHRUB PLANTING DETAIL**
SCALE: NONE

GENERAL NOTES:

1. THE PLANS SHOW SUBSURFACE STRUCTURES, ABOVEGROUND STRUCTURES, AND/OR UTILITIES FROM FIELD LOCATION AND RECORD MAPPING. EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE DIFFERENT FROM THAT SHOWN OR MAY NOT BE SHOWN, AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. THE CONTRACTOR IS TO CALL **UDIG NEW YORK AT 1-800-962-7962.** A MINIMUM OF 72 HOURS BEFORE DIGGING, DRILLING, OR BLASTING.
2. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED WRITTEN APPROVAL OF THE ENGINEER.
3. THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB SITE DURING THE PERFORMANCE OF THIS CONTRACT.
4. THE CONTRACTOR SHALL RESTORE LAWNS, DRIVEWAYS, CULVERTS, SIGNS, AND OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO AT LEAST AS GOOD A CONDITION AS BEFORE BEING DISTURBED AS DETERMINED BY THE ENGINEER. ANY DAMAGED TREES, SHRUBS, AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES, ETC. AND SHALL COMPLY WITH ALL PERMITS.
6. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS.
7. ALL PROPOSED UTILITIES AND APPURTENANCES ARE TO BE CONSTRUCTED IN COMPLIANCE WITH THE LOCAL MUNICIPALITIES' CODES AND REGULATIONS GOVERNING THE INSTALLATION OF SUCH UTILITIES.
8. THE ENGINEER RESERVES THE RIGHT TO EXAMINE ANY WORK DONE ON THIS PROJECT AT ANY TIME TO DETERMINE CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS OF THIS PROJECT AS INTENDED AND INTERPRETED BY THE ENGINEER.
9. MISCELLANEOUS WORK NOT SPECIFICALLY SHOWN ON THE CONTRACT DRAWINGS SUCH AS PATCHING, BLOCKING, TRIMMING, ETC. SHALL BE PERFORMED AS REQUIRED TO MAKE THE WORK COMPLETE, WITH COST INCIDENTAL TO WHAT IS DEPICTED ON THESE PLANS.
10. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE INFORMATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
11. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND COORDINATE WORK WITH ALL OTHER CONTRACTS FOR THE SITE.
12. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
13. EXAMINE THE SITE AND INCLUDE IN HIS/HER WORK THE EFFECT OF ALL EXISTING CONDITIONS ON THE WORK.
14. PROVIDE AND INSTALL ALL MATERIALS AND PERFORM ALL WORK IN ACCORDANCE WITH RECOGNIZED GOOD STANDARD PRACTICE.
15. HOLD THE OWNER HARMLESS AGAINST ANY AND ALL CLAIMS ARISING FROM WORK DONE BY THE CONTRACTOR ON THE SITE..
16. ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH THE LATEST REVISIONS OF NEW YORK STATE INDUSTRIAL CODE RULE 23 AND OSHA REGULATIONS FOR CONSTRUCTION. SHEET PILING SHALL BE DESIGNED AND SEALED BY A NEW YORK STATE PROFESSIONAL ENGINEER.
17. ALL BACKFILL USED IN TRENCHES EXCAVATED IN EXISTING OR PROPOSED ROADWAYS SHALL BE PLACED IN MAXIMUM 6-INCH LIFTS AND COMPACTED BY MEANS OF A MECHANICAL COMPACTOR BETWEEN LIFTS.
18. WHEN BACKFILLING AROUND PROPOSED OR EXISTING STRUCTURES, MATERIAL SHALL BE PLACED IN MAXIMUM 6-INCH LIFTS AND COMPACTED BY MEANS OF A MECHANICAL COMPACTOR BETWEEN LIFTS.
19. ALL UTILITY WORK INVOLVING CONNECTIONS TO EXISTING SYSTEMS SHALL BE COORDINATED WITH THE ENGINEER AND THE UTILITY OWNER. NOTIFY THE ENGINEER AND THE UTILITY OWNER 72 HOURS BEFORE EACH AND EVERY CONNECTION TO EXISTING SYSTEMS IS MADE.
20. CONSTRUCTION OF ALL PROPOSED UTILITIES MUST BEGIN AT ITS POINT OF CONNECTION TO THE EXISTING UTILITY OR AT THE LOWEST POINT IN THE RIMS, GRATES, INVERTS, CLEARANCES, AND LOCATION AT CROSSING MUST BE VERIFIED PRIOR TO THE BEGINNING OF CONSTRUCTION.
21. CONTRACTOR SHALL MAINTAIN FLOW FOR ALL EXISTING UTILITIES.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED-UP AS-BUILT PLANS FOR ALL UTILITIES SHOWING TIES TO CONNECTIONS, BENDS, VALVES, LENGTHS OF LINES, AND INVERTS. THE OWNER AND HIS REPRESENTATIVES SHALL REVIEW AS-BUILT PLANS SHOWING ALL UNDERGROUND UTILITIES INSTALLED OR ENCOUNTERED. THE CONTRACTOR SHALL PROVIDE ANY CORRECTION OR OMISSIONS TO THE SATISFACTION OF THE OWNER AND HIS REPRESENTATIVES BEFORE UTILITIES WILL BE ACCEPTED.
23. ALL ABOVE MENTIONED LAYOUTS, UTILITY CONNECTIONS WILL BE STAKED OUT BY A NYS LICENSED PROFESSIONAL LAND SURVEYOR.
24. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC IN ALL PUBLIC AREAS IN ACCORDANCE WITH THE NYSDOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
25. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL COMMERCIAL, RESIDENTIAL, AND PUBLIC PROPERTIES OR AS DIRECTED BY THE ENGINEER.
26. ALL OPEN EXCAVATIONS SHALL PROTECTED PRIOR TO CONTRACTOR EXITING THE SITE AT THE END OF EACH DAY.
27. CONTRACTOR SHALL TAKE CARE TO PREVENT DAMAGE TO EXISTING UTILITIES. DAMAGED UTILITIES SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
28. PLANS SHOW APPROXIMATE BUILDING DIMENSIONS. THE CONTRACTOR MUST CONSULT THE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS.
29. THE SITE IMPROVEMENTS SHALL BE COMPLETED IN ACCORDANCE WITH ALL FEDERAL, STATE, COUNTY AND LOCAL REGULATIONS. ALL CONSTRUCTION, MATERIALS AND EQUIPMENT SHALL BE IN CONFORMANCE WITH THE CITY OF BINGHAMTON AND THE FOLLOWING CODES/AGENCIES:

a. NEW YORK STATE BUILDING CODES, RULES & REGULATIONS, 9NYCRR, LATEST EDITION.
b. NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.
c. NEW YORK STATE DEPARTMENT OF HEALTH.
d. AMERICAN RAILWAY ENGINEERING MAINTENANCE OF WAY ASSOCIATION SPECIFICATIONS FOR PIPELINES.

PERMIT SET

No.	Revision	Date
	PERMIT SET	08/15/25
	HCR SUBMISSION SET	07/18/25
	DESIGN DEVELOPMENT SET	04/18/25

Project Name

VANGUARD VILLAGE

BINGHAMTON, NY 13905

DELTA
ENGINEERS, ARCHITECTS, & SURVEYORS
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CERTIFICATE OF AUTHORIZATION#: 019598

Seal

Phase: PERMIT DRAWING SET

Project No.: 2023.678.001

UNAUTHORIZED ALTERATION OF THIS DRAWING IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, SECTION 7209, SUBDIVISION 2.

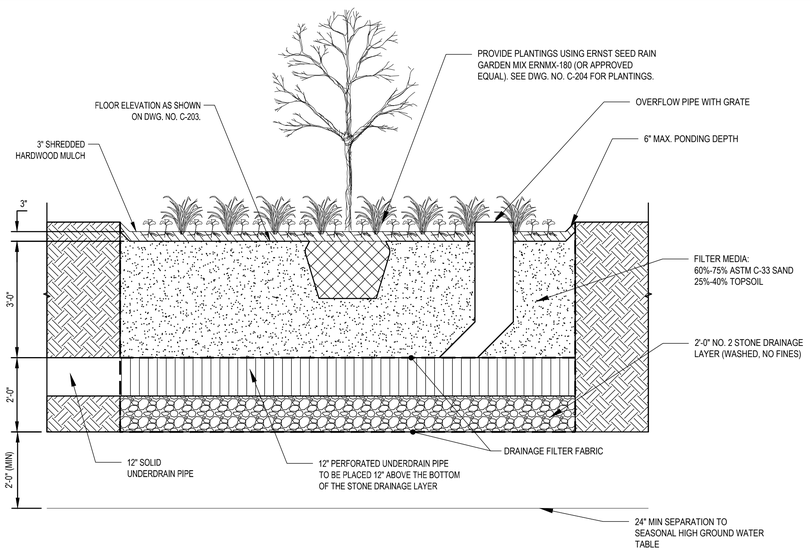
Date: AUGUST 15, 2025

Drawing Title

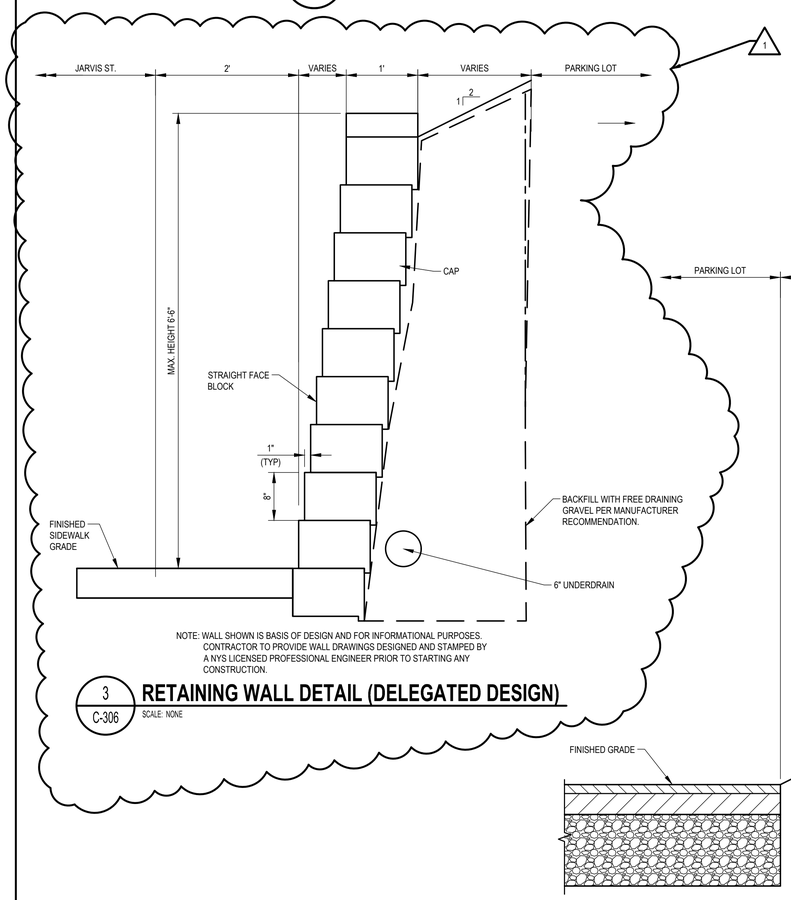
MISCELLANEOUS DETAILS

Drawing No.

C-304



1 C-306 **TREE TRENCH WITH UNDERDRAIN DETAIL**
SCALE: NONE



3 C-306 **RETAINING WALL DETAIL (DELEGATED DESIGN)**
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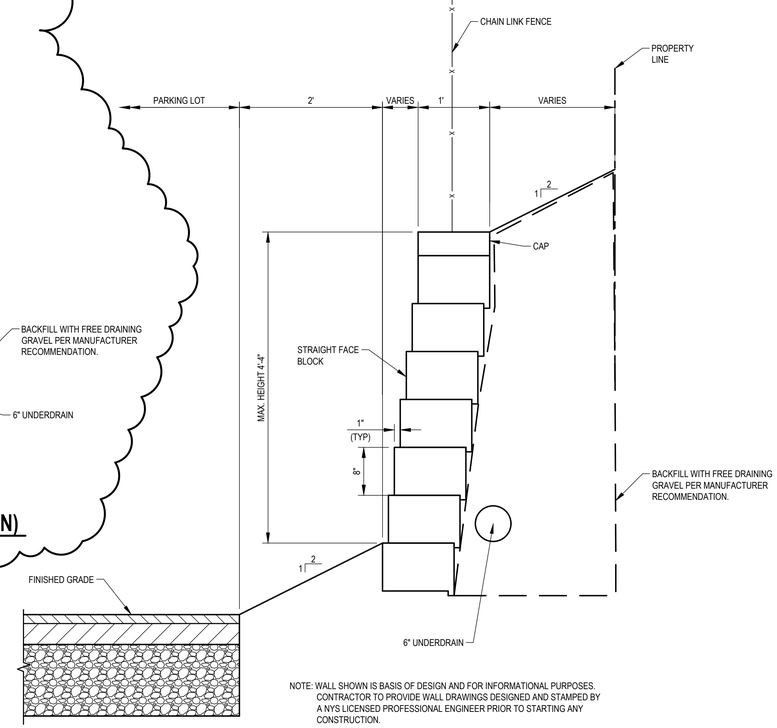
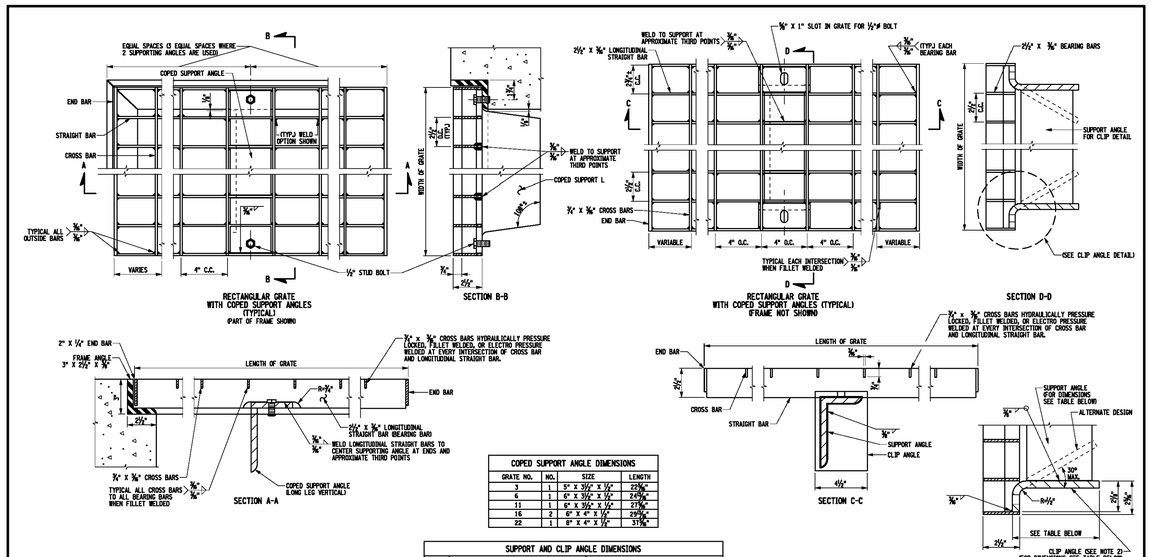


4 C-306 **RETAINING WALL DETAIL (DELEGATED DESIGN)**
SCALE: NONE



COPED SUPPORT ANGLE DIMENSIONS			
GRATE NO.	NO.	SIZE	LENGTH
3	1	5" X 3½" X ½"	22⅝"
6	1	6" X 3½" X ½"	23⅝"
11	1	6" X 3½" X ½"	21⅝"
16	2	6" X 4" X ½"	24⅝"
22	1	8" X 4" X ½"	31⅝"

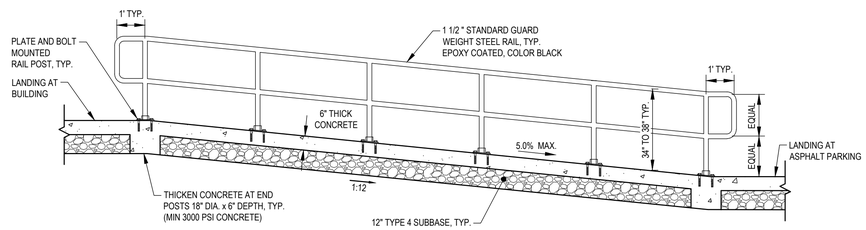
NOTES:
1. GRATES ARE DESIGNED FOR H520, 64, 93 FOR L8F3I.
2. CLIP ANGLES MAY BE CUT FROM STANDARD ASTM A6 ANGLES OR FORMED FROM A 4½" x ½" BAR. THE ALTERNATE CLIP ANGLE SHALL BE FORMED FROM A 4½" x ½" BAR ONLY.
3. GRATE SHALL BE GROUND TO FIT FILLETS IN FRAME ANGLES.
4. WELDS ON OUTSIDE OF GRATE SHALL BE GROUND SMOOTH.
5. WELDS AND AREAS ADJACENT TO WELDS SHALL BE SAND OR SHOT BLASTED BEFORE GALVANIZING IN ORDER TO REMOVE ALL SCALE, RUST, SLAG AND SPLATTER, ETC.
6. GRATES SHALL BE HOT-DIP GALVANIZED AFTER ALL FABRICATION, GRINDING, TAPPING AND CLEANING HAVE BEEN COMPLETED.
7. GRATE SHALL BE BOLTED TO WELDED FRAME WITH TWO BOLTS, ONE ON EACH SIDE. BOLTS SHALL BE CORROSION RESISTANT; MONEL METAL OR TYPE 316 STAINLESS STEEL.
8. MAXIMUM GAP BETWEEN FRAME AND LONG SIDES OF GRATES SHALL NOT EXCEED ⅝".

SUPPORT AND CLIP ANGLE DIMENSIONS						
GRATE NO.	SUPPORT ANGLES			CLIP ANGLES		
	NO.	SIZE	LENGTH	NO.	SIZE	LENGTH
3	1	5" X 3½" X ½"	18"	2	8" X 2½" X ½"	4½"
6	1	6" X 3½" X ½"	20½"	2	7" X 2½" X ½"	4½"
11	1	6" X 3½" X ½"	23"	2	7" X 2½" X ½"	4½"
16	2	6" X 4" X ½"	25½"	4	7" X 2½" X ½"	4½"
22	1	8" X 4" X ½"	33"	2	9" X 2½" X ½"	4½"

GRATE DIMENSIONS AND MASSES							
GRATE NO.	OUTSIDE DIMENSIONS WIDTH X LENGTH	LONGITUDINAL STRAIGHT BARS 2½" X ⅜"		CROSS BARS ¾" X ⅜"		Q1) 2" X ¼"	APPROXIMATE MASS 4.85
		NO.	LENGTH	NO.	LENGTH	LENGTH	
3	22⅝" X 36½"	10	36"	8	22⅝"	22⅛"	86
6	23⅝" X 26½"	11	26"	6	23⅝"	23⅛"	79⅝
11	21⅝" X 36½"	12	36"	8	21⅝"	21⅛"	108
16	30⅝" X 46½"	13	46"	11	30⅝"	30⅛"	176⅝
22	37⅛" X 41½"	16	41"	10	37⅛"	37⅝"	172

ERRATA 1 EFF. 01/01/2019
ISSUED WITH EB 18-036

NEW YORK STATE OF OPPORTUNITY. **Department of Transportation**
U.S. CUSTOMARY STANDARD SHEET
RECTANGULAR GRATES
APPROVED SEPTEMBER 19, 2008
/S/ DANIEL D'ANGELO, P.E.
DEPUTY CHIEF ENGINEER
DESIGN
ISSUED UNDER EB 08-036
655-01



5 C-306 **CONCRETE RAMP WITH HANDRAIL DETAIL**
SCALE: NONE

2 C-306 **DRAINAGE GRATE DETAIL**
SCALE: NONE

PERMIT SET

No.	Revision	Date
1	PERMIT SUBMISSION	08/15/25
	PERMIT SET	08/15/25
	HCR SUBMISSION SET	07/18/25
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Project Name
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BINGHAMTON, NY 13905

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Seal

Phase
PERMIT DRAWING SET

Project No.
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Date
AUGUST 15, 2025

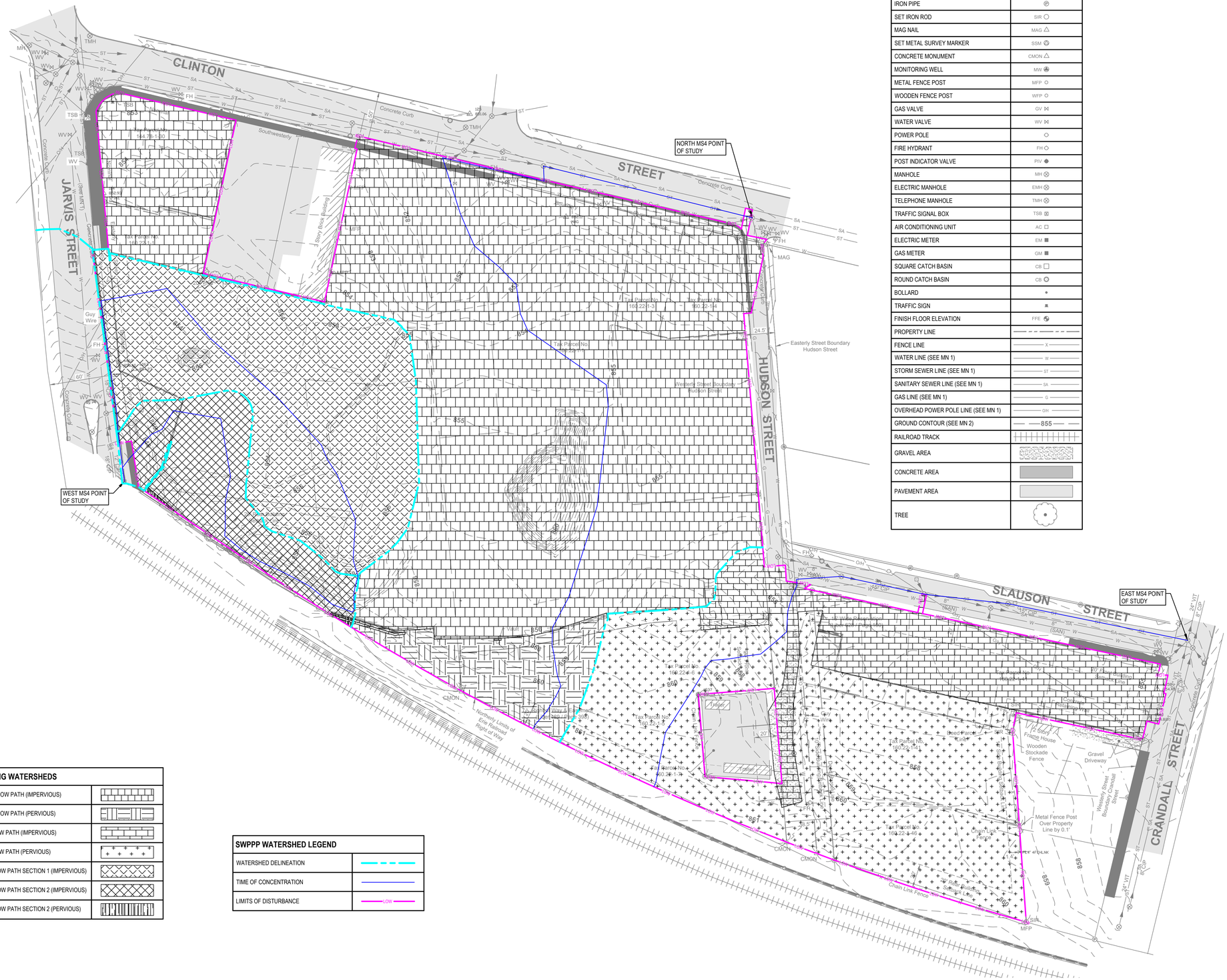
Drawing Title
MISCELLANEOUS DETAILS

Drawing No.
C-306

FILE NAME = P:\DELTA\2023\2023.678.001\CAD\Drawings\C-306.dwg
PLOT DATE = 8/15/2025
USER = rfoote

APPENDIX D

Hydrologic Analysis


CLINTON STREET
JARVIS STREET
HUDSON STREET
SLAUSON STREET
CRANDALL STREET
NORTH MS4 POINT OF STUDY
WEST MS4 POINT OF STUDY
EAST MS4 POINT OF STUDY
Tax Parcel No. 160.22-1-3
Tax Parcel No. 160.22-1-4
Tax Parcel No. 160.22-1-5
Tax Parcel No. 160.22-1-6
Tax Parcel No. 160.22-1-46
Tax Parcel No. 160.22-1-2
Tax Parcel No. 160.22-1-1
Easterly Street Boundary Hudson Street
Western Street Boundary Hudson Street
Western Street Boundary Slauson Street
Northerly Limits of Erie Railroad Right of Way
Southwesterly
Concrete Curb
Gravel Driveway
Metal Fence Post Over Property Line by 0.1'
Wooden Stockade Fence
Chain Link Fence
3 Story Brick Building
2 Story Frame House
Guy Wire
Fire Hydrant No. 144.78-1-10
Fire Hydrant No. 160.22-1-1
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Fire Hydrant No. 160.22-1-46
Fire Hydrant No. 160.22-1-2
Fire Hydrant No. 160.22-1-1
Fire Hydrant No. 160.22-1-3



EXISTING CONDITIONS LEGEND:	
IRON ROD	IR
IRON PIPE	IP
SET IRON ROD	SIR
MAG NAIL	MAG
SET METAL SURVEY MARKER	SSM
CONCRETE MONUMENT	CMON
MONITORING WELL	MW
METAL FENCE POST	MFP
WOODEN FENCE POST	WFP
GAS VALVE	GV
WATER VALVE	WV
POWER POLE	
FIRE HYDRANT	FH
POST INDICATOR VALVE	PIV
MANHOLE	MH
ELECTRIC MANHOLE	EMH
TELEPHONE MANHOLE	TMH
TRAFFIC SIGNAL BOX	TSB
AIR CONDITIONING UNIT	AC
ELECTRIC METER	EM
GAS METER	GM
SQUARE CATCH BASIN	CB
ROUND CATCH BASIN	CB
BOLLARD	
TRAFFIC SIGN	
FINISH FLOOR ELEVATION	FFE
FENCE LINE	X
WATER LINE (SEE MN 1)	W
STORM SEWER LINE (SEE MN 1)	ST
SANITARY SEWER LINE (SEE MN 1)	SA
GAS LINE (SEE MN 1)	G
OVERHEAD POWER POLE LINE (SEE MN 1)	OH
RAILROAD TRACK	

SITE PLAN LEGEND:	
STANDARD DUTY ASPHALT PAVEMENT	
BUILDING	
CONCRETE CURB	
PAVEMENT STRIPING	
CHAIN LINK FENCE	X
GUARDRAIL	

SWPPP WATERSHED LEGEND	
WATERSHED DELINEATION	
TIME OF CONCENTRATION	
LIMITS OF DISTURBANCE	LOW

PROPOSED WATERSHEDS (PHASE 1 IMPERVIOUS)
BUILDING SECTION 1
BUILDING SECTION 2
NORTHERN TREE PIT
NORTHERN UNTREATED SECTION
MIDDLE TREE PIT
SOUTHERN TREE PIT
SOUTH EAST TREE PIT
EAST PARKING LOT TREE PIT
EAST PARKING LOT UNTREATED
WESTERN UNTREATED

PROPOSED WATERSHEDS (PHASE 1 PERVIOUS)
NORTHERN TREE PIT
NORTHERN UNTREATED SECTION
MIDDLE TREE PIT
SOUTHERN TREE PIT
SOUTH EAST TREE PIT
EAST PARKING LOT TREE PIT
EAST PARKING LOT UNTREATED
WESTERN UNTREATED

PROPOSED WATERSHEDS (PHASE 2 IMPERVIOUS)
BUILDING SECTION 1
BUILDING SECTION 2
NORTHERN UNTREATED SECTION
MIDDLE TREE PIT
WESTERN UNTREATED

PROPOSED WATERSHEDS (PHASE 2 PERVIOUS)
NORTHERN UNTREATED SECTION
MIDDLE TREE PIT
WESTERN UNTREATED

PERMIT SET

No.	Revision	Date
	PERMIT SET	08/15/25
	HCR SUBMISSION SET	07/18/25
	DESIGN DEVELOPMENT SET	04/18/25

Project Name

VANGUARD VILLAGE

BINGHAMTON, NY 13905

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Seal

Phase: PERMIT DRAWING SET

Project No.: 2023.678.001

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Date: AUGUST 15, 2025

Drawing Title

PROPOSED WATERSHEDS

Drawing No.

SW-200

Water Quality/Quantity Calculations

For:

187 Clinton St.
Owned by:
Metro Group Properties, Inc.

By:

DELTA
ENGINEERS, ARCHITECTS, & LAND SURVEYORS
860 Hooper Road, Endwell, NY 13760
www.deltaengineers.com
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Fax: (607) 231-6650

Calculations by: Anakin Major
Date: 10/16/2025

Checked by: Izabel Rosalez
Date: 10/22/2025

Calculated By: ASM Date: 10/16/2025
Checked By: IMR Date: 10/22/2025

Data Inputs

Project Location	
City/Town	City of Binghamton
County	Broome
State	NY
Address	187 Clinton St.

Rainfall Distribution Type		
Type	II	Ref: TR-55; Appendix B; Figure B-2

24 Hour Rainfall Data		
Design Storm	Depth (inches)	Reference
90%	1.10	NYSSMDM; Chapter 4; Figure 4.1
1 Year (P_1)	2.10	NYSSMDM; Chapter 4; Figure 4.2
2 Year (P_2)	N/A	TR-55; Appendix B; Figure B-3
10 Year (P_{10})	3.95	NYSSMDM; Chapter 4; Figure 4.3
25 Year (P_{25})	N/A	TR-55; Appendix B; Figure B-6
100 Year (P_{100})	6.14	NYSSMDM; Chapter 4; Figure 4.4

NOTE: LOCAL RAINFALL DATA FROM NOAA's NATIONAL WEATHER SERVICE PRECIPITATION FREQUENCY DATA SERVER (PFDS)

Peak Flows from HydroCAD Model (into muncipal storm sewer sytem)			
Design Storm	Pre-Development (CFS)	Post-Development Uncontrolled (CFS)	Post-Development Controlled (CFS)
1 Year	8.63	N/A	4.18
2 Year	n/a	N/A	n/a
10 Year	18.36	N/A	7.91
25 Year	n/a	N/A	n/a
100 Year	30.14	N/A	17.78

Other Information from HydroCAD Model	
	DISTURBED WATERSHED
Developed Watershed Area (Acres)	6.21
Total Impervious Area (Acres)	4.89
Weighted Curve Number	83
Time of Concentration (Minutes)	6.8
Time of Concentration (Hours)	0.114

Calculated By: ASM Date: 10/16/2025
Checked By: IMR Date: 10/22/2025

Quality Calculations - Redevelopment

Treat 100% of new impervious areas and 25% or 75% of existing impervious areas per:
NYSSMDM; Chapter 9
and
NYSDOT HDM Chapter 8 Appendix B NYSDOT Design Requirements for SPDES General Permit

Disturbed Project Area

Hydrologic Data		
Disturbed Watershed Area (Acres)	A=	6.214
Total Impervious Area (Acres)	A_{TI}=	4.893
New Impervious Area (Acres)	A_{NI}=	0.112
Existing Impervious Area (Acres)	A_{EI}=	4.781
Rainfall (Inches)	P=	1.100
Standard Management Practices Utiilized?	Yes or No	yes
Amount of existing Impervious to be treated		25%

Volume Calculation for WQ_v			
Treat 100% of new impervious area (A_{TI}) =		0.112	
Treat 25% of existing impervious area (AEI*0.25) =		1.195	
Total area to be treated (A_{TI}+(A_{EI}*0.25)) =		1.307	
IC = ((A_{NI} + A_{EI})/A)*100		78.74	
N = A_{NI}/A_{TI}		0.02	
R = A_{EI}/A_{TI}		0.98	
Rv=0.05+0.009(IC)		0.759	
WQv=((N+0.25R)(P)(Rv)(A))/12	WQv=	0.120	Acre-Feet
	WQv=	5227.2	Cubic Feet
RRv Calculation			
Rv = 0.05+0.009(I)	Rv =	0.759	
Percent Impervious	I=	78.74	
Ai = (S)(Aic)	Ai=	1.4679	
Hydrologic Soil Group (HSG)	S=	0.3	
Total area of impervious cover	Aic=	4.893	
RRv = ((P)(Rv*)(Ai))/12	RRv=	0.102	Acre-Feet
		4,447	Cubic Feet

COMPUTE WEIGHTED S BY WEIGHTED AVERAGE			
NEW IMPERVIOUS BY HSG	AREA	S	S*A
HSG A	1.31	0.55	0.719
HSG C		0.3	0
HSG D		0.2	0
TOTAL NEW IMPERVIOUS	1.31	1.05	0.719
WEIGHT AVERAGE "S"		0.55	

Min RRv Calculation			
Rv* = 0.05+0.009(I)	Rv* =	0.950	
Percent Impervious (Use 100)	I=	100%	
Hydrologic Soil Group (HSG)	HSG =	A	
	S=	0.55	
Total area of new impervious cover	Aic=	0.112	
Ai = (S)(Aic)	Ai=	0.0616	
RRv = ((P)(Rv*)(Ai))/12	RRv=	0.005	Acre-Feet
		234	Cubic Feet

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187 CLINTON STREET DEVELOPMENT						
EXISTING WATERSHED AREAS						
Watershed	EXISTING AREA (Ac.)					
			PERVIOUS			
	TOTAL	IMPERVIOUS	HSG A	HSG C	HSG D	TOTAL PERVIOUS
North Flow Path	3.162	2.930	0.232			0.232
East Flow Path	1.768	0.570	1.198			1.198
West Flow Path 1	0.959	0.959	0.000			0.000
West Flow Path 2	0.325	0.322	0.003			0.003
						0.000
						0.000
						0.000
						0.000
						0.000
Total (Ac.) =	6.214	4.781	1.434	0.000	0.000	1.434

187 CLINTON STREET DEVELOPMENT						
PROPOSED WATERSHED AREAS						
Watershed	PROPOSED AREA (Ac.)					
			PERVIOUS			
	TOTAL	IMPERVIOUS	HSG A	HSG C	HSG D	TOTAL PERVIOUS
PHASE 1 BLDG-1	0.342	0.342				0.000
PHASE 1 BLDG-2	0.259	0.259				0.000
NORTHERN TREE PIT	0.090	0.048	0.042			0.042
NORTHERN UNTREATED	0.219	0.165	0.055			0.055
MIDDLE TREE PIT + PHASE 2	1.503	1.068	0.434			0.434
SOUTHERN TREE PIT	0.577	0.481	0.096			0.096
SOUTH EAST TREE PIT	0.519	0.293	0.227			0.227
EAST PARKING LOT TREE PIT	1.238	1.007	0.230			0.230
EAST PARKING LOT UNTREATED	0.041	0.035	0.006			0.006
WESTERN UNTREATED	0.184	0.123	0.061			0.061
PHASE 2 BLDG-1	0.395	0.395				0.000
PHASE 2 BLDG-2	0.413	0.413				0.000
PHASE 2 NORTHERN	0.386	0.261	0.125			0.125
PHASE 2 WESTERN	0.048	0.003	0.045			0.045
	0.000					0.000
	0.000					0.000
	0.000					0.000
	0.000					0.000
Total (Ac.) =	6.214	4.893	1.322	0.000	0.000	1.322
CHANGE	0.000	0.112	-0.112	0.000	0.000	-0.112

187 CLINTON STREET DEVELOPMENT						
EXISTING AND PROPOSED DISTURBED AREAS						
AREA	Existing			Proposed		
	TOTAL	IMPERVIOUS	PERVIOUS	TOTAL	IMPERVIOUS	PERVIOUS
DISTURBED	6.214	4.781	1.434	6.214	4.893	1.322
Total (Ac.) =	6.214	4.781	1.434	6.214	4.893	1.322

NOI QUESTIONS

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	5488	0.126
30	Total RRV Provided	7329	0.168
31	Is RRv Provided ≥WQv Required?	Yes	
32	Minimum RRv	2744	0.063
32a	Is RRv Provided ≥ Minimum RRv Required?	Yes	
33a	Total WQv Treated	0	0.000
34	Sum of Volume Reduced & Treated	7329	0.168
35	Is Sum RRv Provided and WQv Provided ≥WQv Required?	Yes	

Step 1 - Site Planning

	Practice	Description	Applicable	Project Specific Evaluation
Preservation of Natural Features and Conservation Design	**Preservation of Undisturbed Areas**	Delineate and protect undisturbed forests, native vegetated areas, riparian corridors, water bodies, wetlands, and natural terrain.	N/A	
	Preservation of Buffers	Delineate and protect naturally vegetated buffers along perennial streams, rivers, shorelines, and wetlands.	N/A	
	Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	N/A	
	Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	N/A	
	Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	N/A	
	Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices.	N/A	
rvious Cover	**Roadway Reduction**	Minimize roadway widths and lengths, below local requirements, to reduce site impervious area	No	Reducing the roadway width is not feasible for the project's intended use.
	Sidewalk Reduction	Minimize sidewalk lengths and widths, below local requirements, to reduce site impervious area	Yes	Sidewalk widths have been minimized to 5 ft and quantity of sidewalk has been reduced to that required to ensure safe pedestrian access throughout the site.
	Driveway Reduction	Minimize driveway lengths and widths, below local requirements, to reduce site impervious area	No	Driveways have already been reduced to meet the minimum size allowed by code for an apartment complex.
	Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	N/A	

Step 1 - Site Planning

Reduction of Imper	**Building Footprint Reduction**	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	Yes	All new building area has been allocated to efficiently implement the intended use.
	Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, reducing stall dimensions below local requirements, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	No	Reducing the parking stall dimensions or number of stalls is not feasible for the intended use.

Step 2 - Calculate Water Quality Volume

Is this project subject to Section 4.3 of the NYS Design Manual for Enhanced Phosphorus Removal?	No
What is the nature of this construction project?	Redevelopment with increase in impervious area

Design Point:	1		
P=	1.10	inches	*Enter 90% Rainfall Event as P*

Calculate Required WQv

Drainage Area Number	Contributing Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (cf)	SMP Description
1	0.34	0.34	100	0.95	1,298	
2	0.26	0.26	100	0.95	981	
3	0.09	0.05	54	0.53	192	Tree Trench
4	0.22	0.16	75	0.73	635	
5	1.50	1.07	71	0.69	4,139	Tree Trench
6	0.58	0.48	83	0.80	1,843	Tree Trench
7	0.52	0.29	56	0.56	1,155	Tree Trench
8	1.24	1.01	81	0.78	3,867	Tree Trench
9	0.04	0.03	85	0.81	133	
10	0.18	0.12	67	0.65	479	
11	0.39	0.39	100	0.95	1,497	
12	0.41	0.41	100	0.95	1,568	
13	0.39	0.26	68	0.66	1,015	
14	0.05	0.00	6	0.11	21	
15						
16	-2.28	-3.58	157	1.46	-13,335	
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Total	3.93	1.31	33	0.35	**5488**	**Required WQv**

Steps 3 and 5 - Apply RR Techniques and Standard SMPs

Runoff Reduction Volume and Treated Volumes						
	Runoff Reduction Techiques/Standard SMPs		**Total Contributing Area**	**Total Contributing Impervious Area**	**WQv Reduced (RRv)**	**WQv Treated**
			(acres)	**(acres)**	**(cf)**	**(cf)**
RR Techniques	Conservation of Natural Areas	RR-1	0.00		0	
	Sheet Flow to Riparian Buffer/Filter Strip	RR-2	0.00	0.00	0	
	Tree Planting/Tree Pit/Tree Trench	RR-3	3.93	2.90	7,329	
	Disconnection of Rooftop Runoff	RR-4		0.00	0	
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rainwater Harvesting Systems	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Extensive & Intensive)	RR-10	0.00	0.00	0	
	Stream Daylighting	RR-11				
Standard SMPs w/ RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00	0.00	0	0
	Infiltration Bioretention	F-4	0.00	0.00	0	0
	Filtration Bioretention	F-5	0.00	0.00	0	0
	Bioslope	F-6	0.00	0.00	0	0
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention	P-1	0.00	0.00		0
	Wet Pond	P-2	0.00	0.00		0
	Wet Extended Detention	P-3	0.00	0.00		0
	Multiple Pond System	P-4	0.00	0.00		0
	Shallow Wetland	W-1	0.00	0.00		0
	Extended Detention Shallow Wetland	W-2	0.00	0.00		0
	Pond/Wetland System	W-3	0.00	0.00		0
	Pocket Wetland	W-4	0.00	0.00		0
	Gravel Wetland	W-5	0.00	0.00		0
	Surface Sand Filter	F-1	0.00	0.00		0
	Underground Sand Filter	F-2	0.00	0.00		0
	Perimeter Sand Filter	F-3	0.00	0.00		0
	Wet Swale	O-2	0.00	0.00		0
Alt. SMPs	Flow Based Alternative Practice	-	0.00	0.00		0
	Volume Based Alternative Practice	-				
	Totals by RR Technique →		3.93	2.90	7,329	
	Totals by Standard SMP w/RRV →		0.00	0.00	0	0
	Totals by Standard SMP →		0.00	0.00		0
	Totals by Alternative SMP →		0.00	0.00		0
	Totals (RR Techniques + all SMPs) →		3.93	2.90	7,329	0

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

Practice		Description	Applicable	Project Specific Evaluation
RR Techniques	**Conservation of Natural Areas (RR-1)**	Retain the pre-development hydrologic and water quality characteristics of undisturbed natural areas by permanently conserving these areas on a site. Undisturbed natural areas include: forest retention areas; reforestation areas; stream and river corridors; shorelines; wetlands, vernal pools, and associated vegetated buffers; and undisturbed open space.	N/A	
	Sheet Flow to Riparian Buffer/Filter Strip (RR-2)	Undisturbed natural areas such as forested conservation areas and stream buffers or vegetated filter strips and riparian buffers can be used to treat and control stormwater runoff from some areas of a development project.	N/A	
	Tree Planting/Tree Pit/Tree Trench (RR-3)	Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications such as landscaping, stormwater management practice areas, conservation areas and erosion and sediment control.	Yes	The project proposes new tree trenches, adjacent to impervious surfaces, Calculations have been provided in the SWPPP.
	Disconnection of Rooftop Runoff (RR-4)	Direct runoff from rooftop areas and upland overland runoff flow to designated pervious areas to reduce runoff volumes and rates.	N/A	
	Vegetated Swale (RR-5)	The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.	N/A	
	Rain Garden (RR-6)	Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.	N/A	

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

RR Techniques	**Stormwater Planter (RR-7)**	Small landscaped stormwater treatment devices that can be designed as infiltration or filtering practices. Stormwater planters use soil infiltration and biogeochemical processes to decrease stormwater quantity and improve water quality.	N/A	
	Rainwater Harvesting System (RR-8)	Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.	N/A	
	Porous Pavement (RR-9)	Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.	N/A	
	Green Roof (RR-10)	Capture runoff by a layer of vegetation and soil installed on top of a conventional flat or sloped roof. The rooftop vegetation allows evaporation and evapotranspiration processes to reduce volume and discharge rate of runoff entering conveyance system.	N/A	
	Stream Daylighting (RR-11)	Stream Daylight previously-culverted/piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and help reduce pollutant loads.	N/A	
	Infiltration Trench (I-1)	An infiltration practice that stores the water quality volume in the void spaces of a gravel trench before it is infiltrated into the ground.	N/A	
	Infiltration Basin (I-2)	An infiltration practice that stores the water quality volume in a shallow depression, before it is infiltrated it into the ground.	N/A	
	Dry Well (I-3)	An infiltration practice similar in design to the infiltration trench, and best suited for treatment of rooftop runoff.	N/A	

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

Standard SMPs with RRv Capacity	**Underground Infiltration System (I-4)**	An infiltration practice below grade that stores the water quality volume in pre-manufactured pipes, vaults or other modular structures, before it is infiltrated into the ground.	N/A	
	Infiltration Bioretention (F-4)	A shallow depression that treats stormwater as it flows through a soil matrix, before it is infiltrated into the ground.	N/A	
	Filtration Bioretention (F-5)	A shallow depression that treats stormwater as it flows through a soil matrix and is returned to the storm drain system.	N/A	
	Bioslope (F-6)	Permeable engineered soil media that is installed along embankments or other slopes, designed to capture and treat stormwater runoff from adjacent paved areas.	N/A	
	Dry Swale (O-1)	An open drainage channel or depression explicitly designed to detain and promote the filtration of stormwater runoff into the soil media.	N/A	

Step 4 - Calcuate Minimum RRv Required

Enter the Soils Data for the site		
Hydrologic Soil Group	Acres	S
A	1.31	55%
B		40%
C		30%
D		20%
Total Area	1.307	

Calculate the Minimum RRv		
S =	**0.55**	
Impervious =	1.31	*acres*
Precipitation	1.10	*inches*
Rv	0.95	
Minimum RRv	**0.063**	***af***
	2744	cf

Tree Trench (RR-3)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
3	0.09	0.05	54	0.53	192	1.10	Tree Trench

Design Criteria		
Is the contributing area a designated hotspot?	No	
Enter the slope of the contributing area (%)	2.00	
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0.50	
Enter depth to seasonal high water table (ft)	20	
Enter depth to bedrock (ft)	20	
Enter surface layer depth (inches)	3	
Enter filter media width (ft)	35	
Enter drainage layer depth (inches)	24	

Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	192	cf	
Enter Filter Bed Depth	df	3.00	ft	
Permeability Flow Rate	k	1	ft/day	
Enter Average Height of Ponding	hf	0.50	ft	
Enter Filter Time	tf	2	days	
Required Filter Bed Surface Area	Af	82	sf	
Provided Filter Bed Surface Area	Af	705	sf	

Calculate Runoff Reduction		
RRv Provided	**192**	**cf**

Tree Trench (RR-3)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
5	1.50	1.07	71	0.69	4,139	1.10	Tree Trench

Design Criteria		
Is the contributing area a designated hotspot?	No	
Enter the slope of the contributing area (%)	2.00	
Enter underlying soil infiltration rate (based on	0.50	
Enter depth to seasonal high water table (ft)	20	
Enter depth to bedrock (ft)	20	
Enter surface layer depth (inches)	3	
Enter filter media width (ft)	50	
Enter drainage layer depth (inches)	24	

Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	4,139	cf	
Enter Filter Bed Depth	df	3	ft	
Permeability Flow Rate	k	1	ft/day	
Enter Average Height of Ponding	hf	0.5	ft	
Enter Filter Time	tf	2	days	
Required Filter Bed Surface Area	Af	1774	sf	
Provided Filter Bed Surface Area	Af	2488.057	sf	

Calculate Runoff Reduction		
RRv Provided	**4,139**	**cf**

Tree Trench (RR-3)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
6	0.58	0.48	83	0.80	1,843	1.10	Tree Trench

Design Criteria		
Is the contributing area a designated hotspot?	No	
Enter the slope of the contributing area (%)	2	
Enter underlying soil infiltration rate (based on	0.5	
Enter depth to seasonal high water table (ft)	20	
Enter depth to bedrock (ft)	20	
Enter surface layer depth (inches)	3	
Enter filter media width (ft)	10	
Enter drainage layer depth (inches)	24	

Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	1,843	cf	
Enter Filter Bed Depth	df	3	ft	
Permeability Flow Rate	k	1	ft/day	
Enter Average Height of Ponding	hf	0.5	ft	
Enter Filter Time	tf	2	days	
Required Filter Bed Surface Area	Af	790	sf	
Provided Filter Bed Surface Area	Af	1708.2593	sf	

Calculate Runoff Reduction		
RRv Provided	**1,843**	**cf**

Tree Trench (RR-3)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
7	0.52	0.29	56	0.56	1,155	1.10	Tree Trench

Design Criteria		
Is the contributing area a designated hotspot?	No	
Enter the slope of the contributing area (%)	2	
Enter underlying soil infiltration rate (based on	5	
Enter depth to seasonal high water table (ft)	20	
Enter depth to bedrock (ft)	20	
Enter surface layer depth (inches)	3	
Enter filter media width (ft)	10	
Enter drainage layer depth (inches)	24	

Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	1,155	cf	
Enter Filter Bed Depth	df	3	ft	
Permeability Flow Rate	k	1	ft/day	
Enter Average Height of Ponding	hf	0.5	ft	
Enter Filter Time	tf	2	days	
Required Filter Bed Surface Area	Af	495	sf	
Provided Filter Bed Surface Area	Af	771.3298	sf	

Calculate Runoff Reduction		
RRv Provided	**1,155**	**cf**

Tree Trench (RR-3)

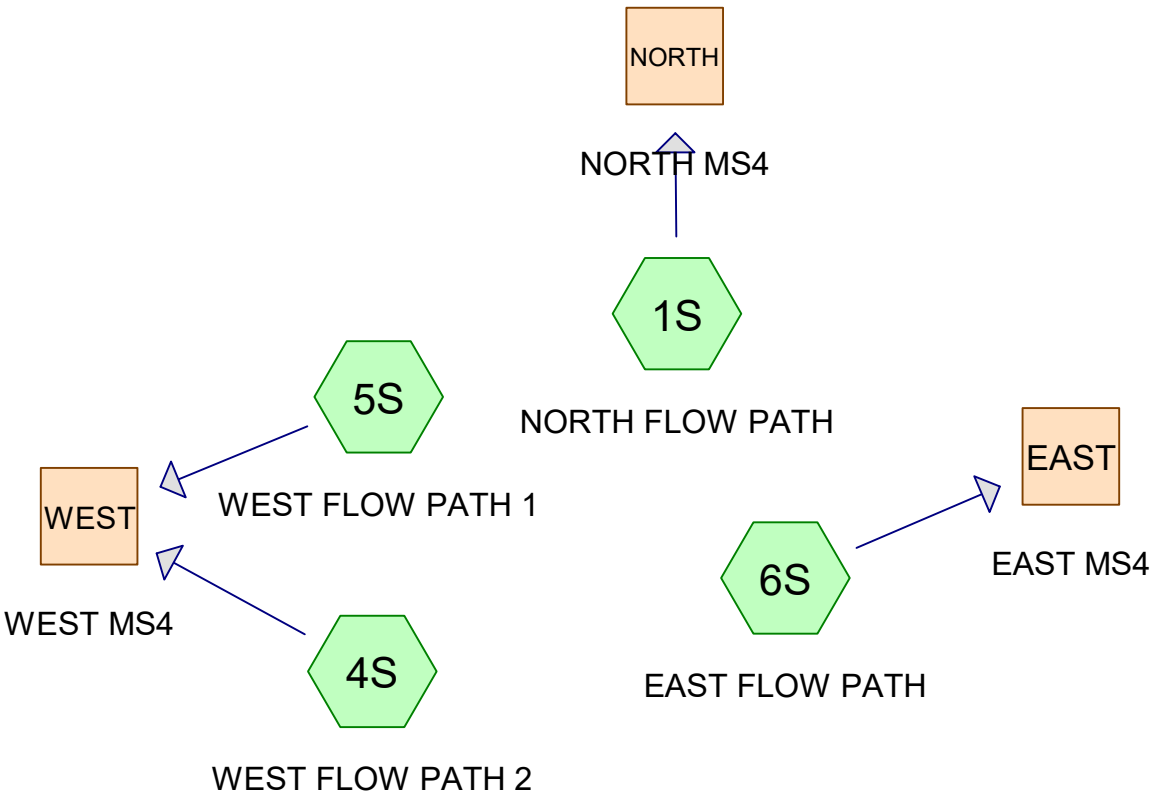
Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
8	1.24	1.01	81	0.78	3,867	1.10	Tree Trench

Design Criteria		
Is the contributing area a designated hotspot?	No	
Enter the slope of the contributing area (%)	2	
Enter underlying soil infiltration rate (based on	0.5	
Enter depth to seasonal high water table (ft)	20	
Enter depth to bedrock (ft)	20	
Enter surface layer depth (inches)	3	
Enter filter media width (ft)	10	
Enter drainage layer depth (inches)	24	

Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	3,867	cf	
Enter Filter Bed Depth	df	3	ft	
Permeability Flow Rate	k	1	ft/day	
Enter Average Height of Ponding	hf	0.5	ft	
Enter Filter Time	tf	2	days	
Required Filter Bed Surface Area	Af	1657	sf	
Provided Filter Bed Surface Area	Af	1496.3238	sf	Does not meet sizing criteria

Calculate Runoff Reduction		
RRv Provided	**0**	**cf**



Subcat Reach Pond Link

Routing Diagram for Pre-Development 2.0
Prepared by Delta Engineers, Printed 9/4/2025
HydroCAD® 10.20-7a s/n 04726 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	90% WQV	Type II 24-hr		Default	24.00	1	1.10	2
2	1-yr	Type II 24-hr		Default	24.00	1	2.10	2
3	10-yr	Type II 24-hr		Default	24.00	1	3.95	2
4	100-yr	Type II 24-hr		Default	24.00	1	6.14	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.433	68	<50% Grass cover, Poor, HSG A (1S, 4S, 6S)
4.781	98	Paved parking, HSG A (1S, 4S, 5S, 6S)
6.214	**91**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
6.214	HSG A	1S, 4S, 5S, 6S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
6.214		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.433	0.000	0.000	0.000	0.000	1.433	<50% Grass cover, Poor	1S, 4S, 6S
4.781	0.000	0.000	0.000	0.000	4.781	Paved parking	1S, 4S, 5S, 6S
6.214	**0.000**	**0.000**	**0.000**	**0.000**	**6.214**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	1S	0.00	0.00	13.0	0.0077	0.012	0.0	10.0	0.0	
2	1S	0.00	0.00	180.0	0.0018	0.012	0.0	36.0	0.0	
3	5S	0.00	0.00	45.0	0.0050	0.012	0.0	12.0	0.0	
4	6S	0.00	0.00	38.0	0.0050	0.013	0.0	12.0	0.0	
5	6S	0.00	0.00	295.0	0.0075	0.013	0.0	15.0	0.0	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: NORTH FLOW PATH Runoff Area=3.162 ac 92.66% Impervious Runoff Depth>0.72"
Flow Length=831' Tc=22.3 min CN=96 Runoff=2.36 cfs 0.189 af

Subcatchment 4S: WEST FLOW PATH 2 Runoff Area=0.325 ac 99.08% Impervious Runoff Depth>0.89"
Flow Length=351' Tc=16.9 min CN=98 Runoff=0.33 cfs 0.024 af

Subcatchment 5S: WEST FLOW PATH 1 Runoff Area=0.959 ac 100.00% Impervious Runoff Depth>0.89"
Flow Length=511' Tc=16.8 min CN=98 Runoff=0.99 cfs 0.071 af

Subcatchment 6S: EAST FLOW PATH Runoff Area=1.768 ac 32.24% Impervious Runoff Depth>0.08"
Flow Length=568' Tc=33.9 min CN=78 Runoff=0.05 cfs 0.012 af

Reach EAST: EAST MS4 Inflow=0.05 cfs 0.012 af
Outflow=0.05 cfs 0.012 af

Reach NORTH: NORTH MS4 Inflow=2.36 cfs 0.189 af
Outflow=2.36 cfs 0.189 af

Reach WEST: WEST MS4 Inflow=1.32 cfs 0.095 af
Outflow=1.32 cfs 0.095 af

Total Runoff Area = 6.214 ac Runoff Volume = 0.296 af Average Runoff Depth = 0.57"
23.06% Pervious = 1.433 ac 76.94% Impervious = 4.781 ac

Summary for Subcatchment 1S: NORTH FLOW PATH

[47] Hint: Peak is 113% of capacity of segment #9

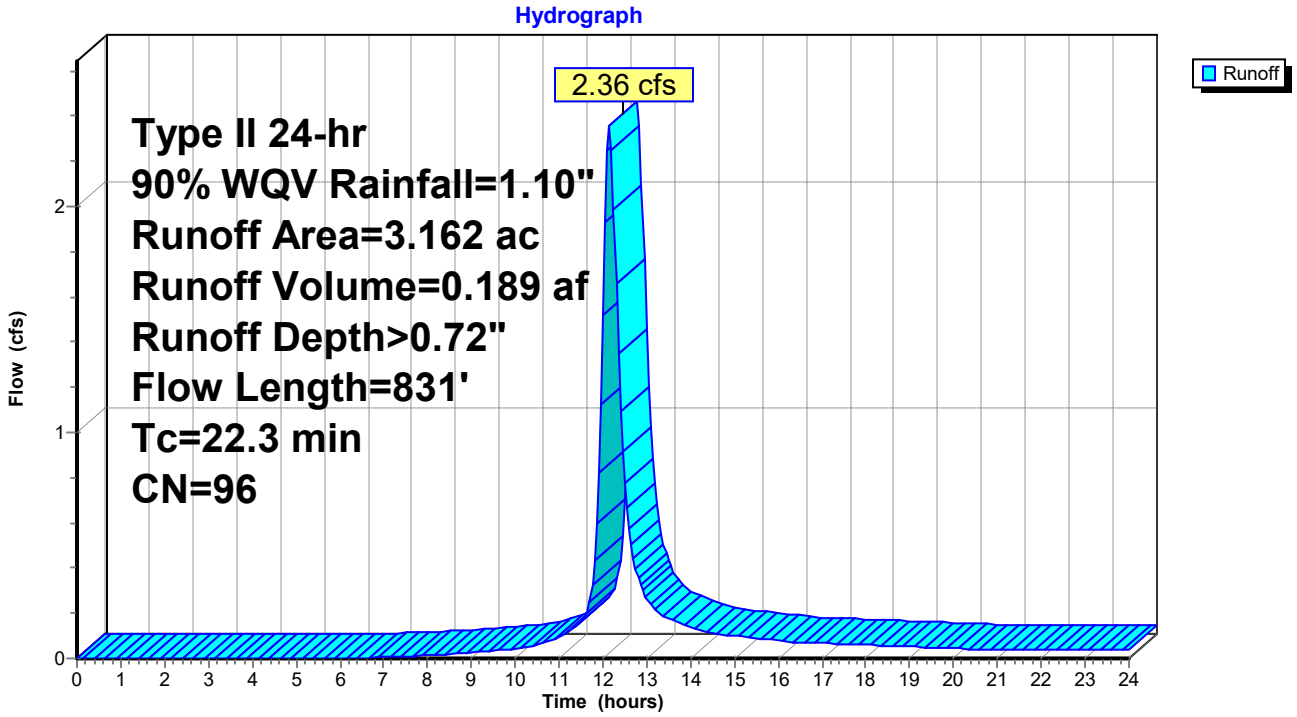
Runoff = 2.36 cfs @ 12.15 hrs, Volume= 0.189 af, Depth> 0.72"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 90% WQV Rainfall=1.10"

Area (ac)	CN	Description
2.930	98	Paved parking, HSG A
0.232	68	<50% Grass cover, Poor, HSG A
3.162	96	Weighted Average
0.232		7.34% Pervious Area
2.930		92.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	93	0.0591	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
0.2	29	0.0172	2.11		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.1	164	0.0030	0.88		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	18	0.0278	2.68		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.0	80	0.0063	1.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.4	88	0.0284	3.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	79	0.0126	2.28		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	87	0.0057	1.53		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	13	0.0077	3.82	2.08	**Pipe Channel,** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.012 Corrugated PP, smooth interior
0.7	180	0.0018	4.34	30.66	**Pipe Channel,** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012 Corrugated PP, smooth interior
22.3	831	Total			

Subcatchment 1S: NORTH FLOW PATH



Summary for Subcatchment 4S: WEST FLOW PATH 2

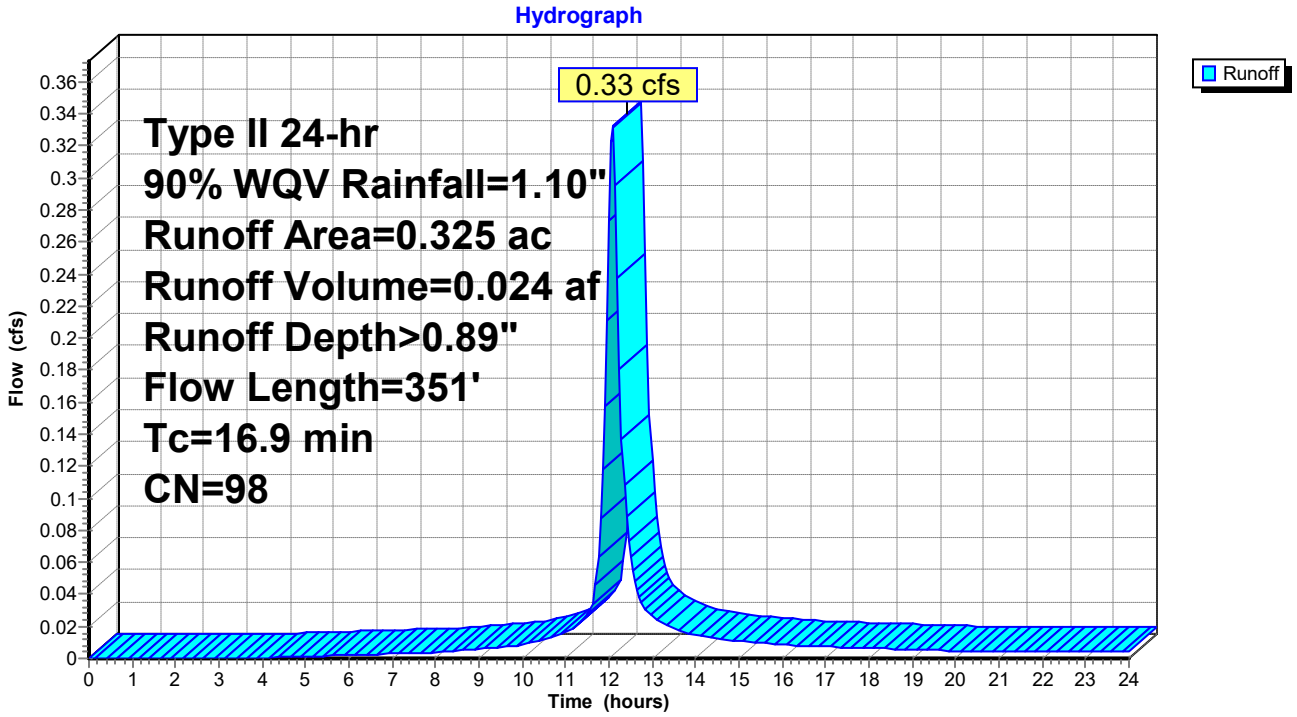
Runoff = 0.33 cfs @ 12.08 hrs, Volume= 0.024 af, Depth> 0.89"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 90% WQV Rainfall=1.10"

Area (ac)	CN	Description
0.322	98	Paved parking, HSG A
0.003	68	<50% Grass cover, Poor, HSG A
0.325	98	Weighted Average
0.003		0.92% Pervious Area
0.322		99.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	31	0.0968	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
12.0	66	0.0076	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.7	43	0.0116	1.08		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
0.7	43	0.0116	1.08		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
0.0	2	0.2500	4.50		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.9	83	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	24	0.0417	4.15		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	10	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	49	0.0816	5.80		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.9	351	Total			

Subcatchment 4S: WEST FLOW PATH 2



Summary for Subcatchment 5S: WEST FLOW PATH 1

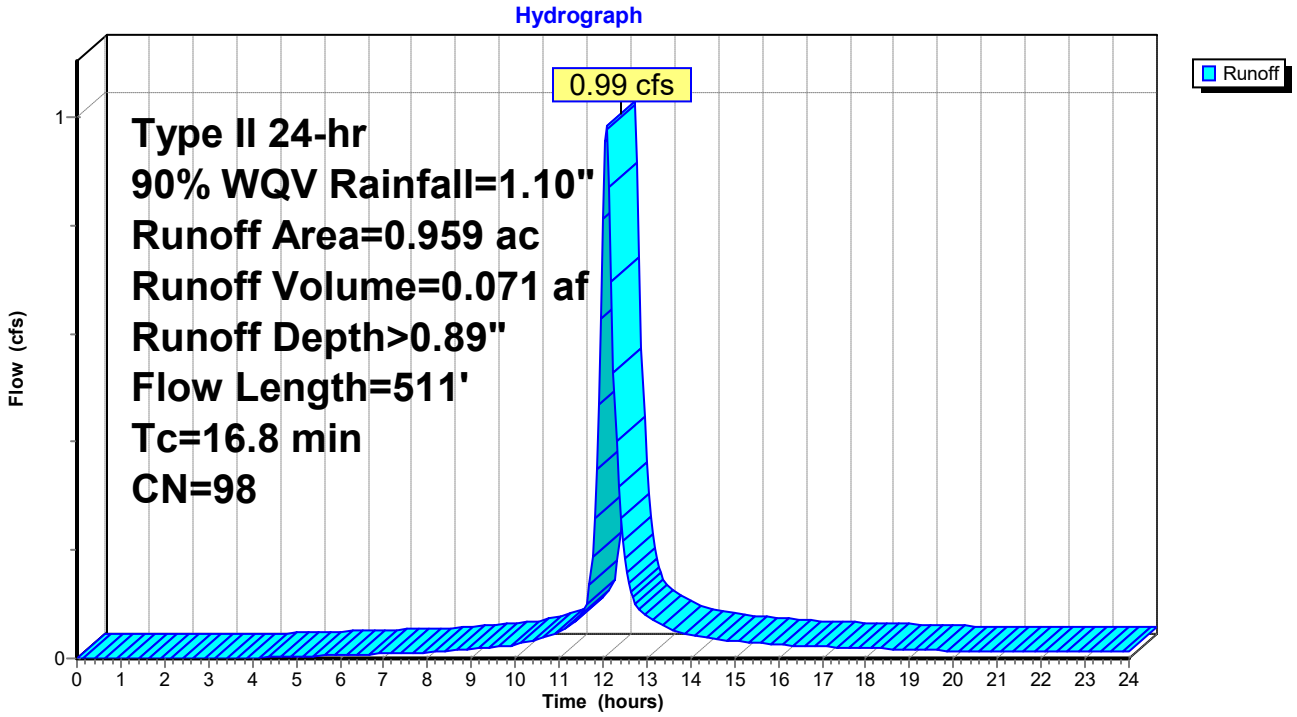
Runoff = 0.99 cfs @ 12.08 hrs, Volume= 0.071 af, Depth> 0.89"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 90% WQV Rainfall=1.10"

Area (ac)	CN	Description
0.959	98	Paved parking, HSG A
0.959		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	15	0.2000	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
10.8	87	0.0172	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.0	2	0.2500	8.05		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	13	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
4.3	241	0.0021	0.93		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	108	0.0417	4.15		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	45	0.0050	3.47	2.73	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Corrugated PP, smooth interior
16.8	511	Total			

Subcatchment 5S: WEST FLOW PATH 1



Summary for Subcatchment 6S: EAST FLOW PATH

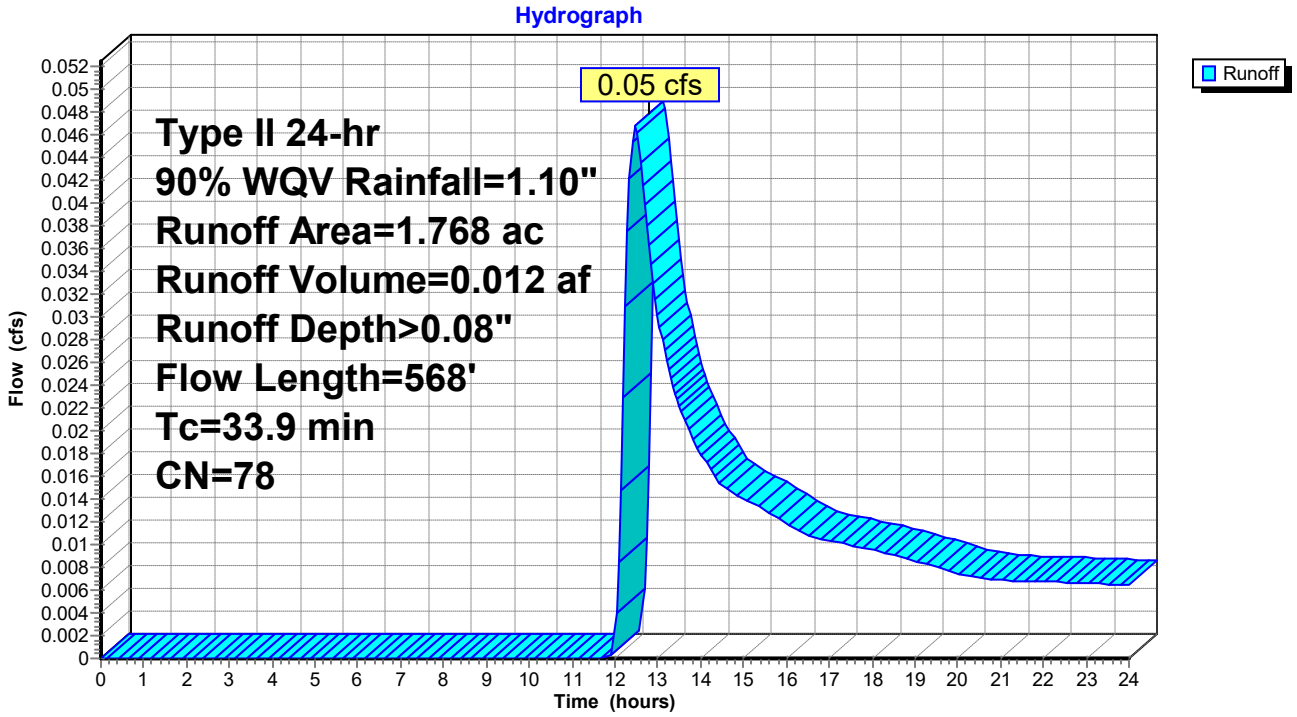
Runoff = 0.05 cfs @ 12.48 hrs, Volume= 0.012 af, Depth> 0.08"
Routed to Reach EAST : EAST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 90% WQV Rainfall=1.10"

Area (ac)	CN	Description
0.570	98	Paved parking, HSG A
1.198	68	<50% Grass cover, Poor, HSG A
1.768	78	Weighted Average
1.198		67.76% Pervious Area
0.570		32.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	4	0.0625	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
11.6	42	0.0238	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
17.9	48	0.0104	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
0.3	24	0.0625	1.25		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	42	0.0357	0.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	29	0.0172	0.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	18	0.0294	2.76		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	23	0.0435	3.36		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	5	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	38	0.0050	3.21	2.52	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Cast iron, coated
1.1	295	0.0075	4.56	5.59	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Cast iron, coated
33.9	568	Total			

Subcatchment 6S: EAST FLOW PATH



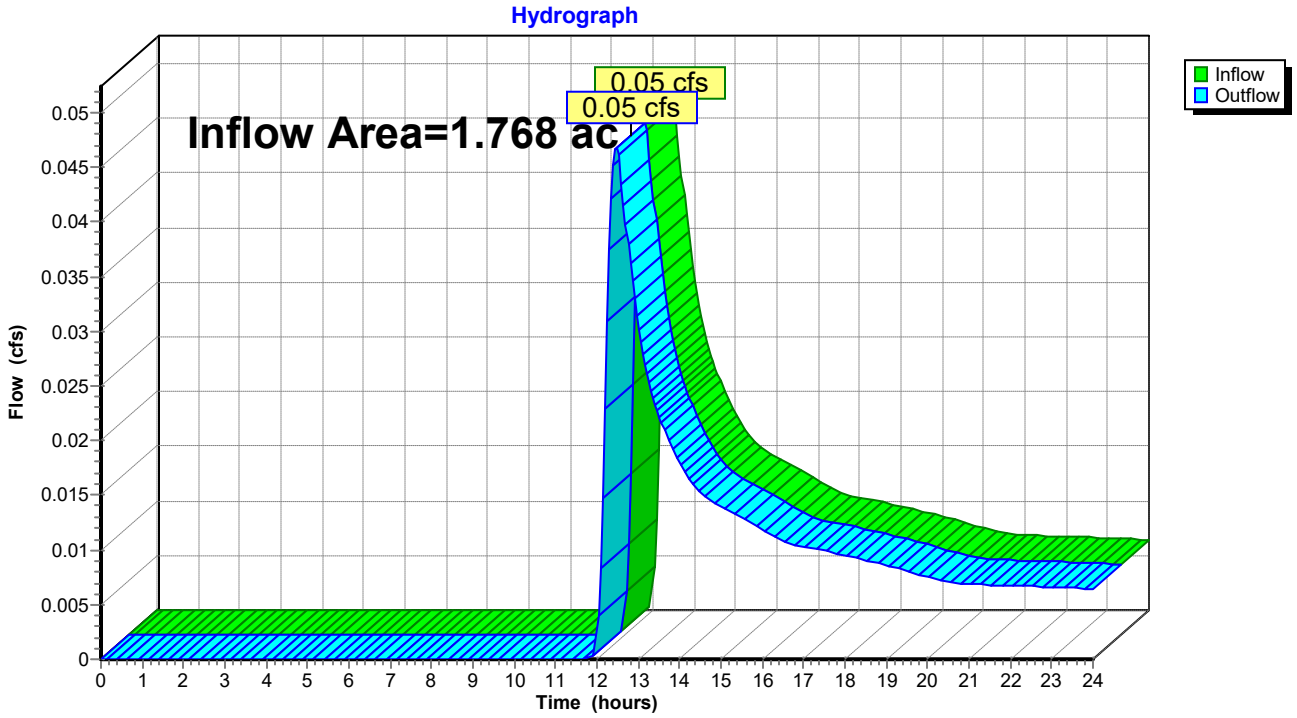
Summary for Reach EAST: EAST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.768 ac, 32.24% Impervious, Inflow Depth > 0.08" for 90% WQV event
Inflow = 0.05 cfs @ 12.48 hrs, Volume= 0.012 af
Outflow = 0.05 cfs @ 12.48 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach EAST: EAST MS4



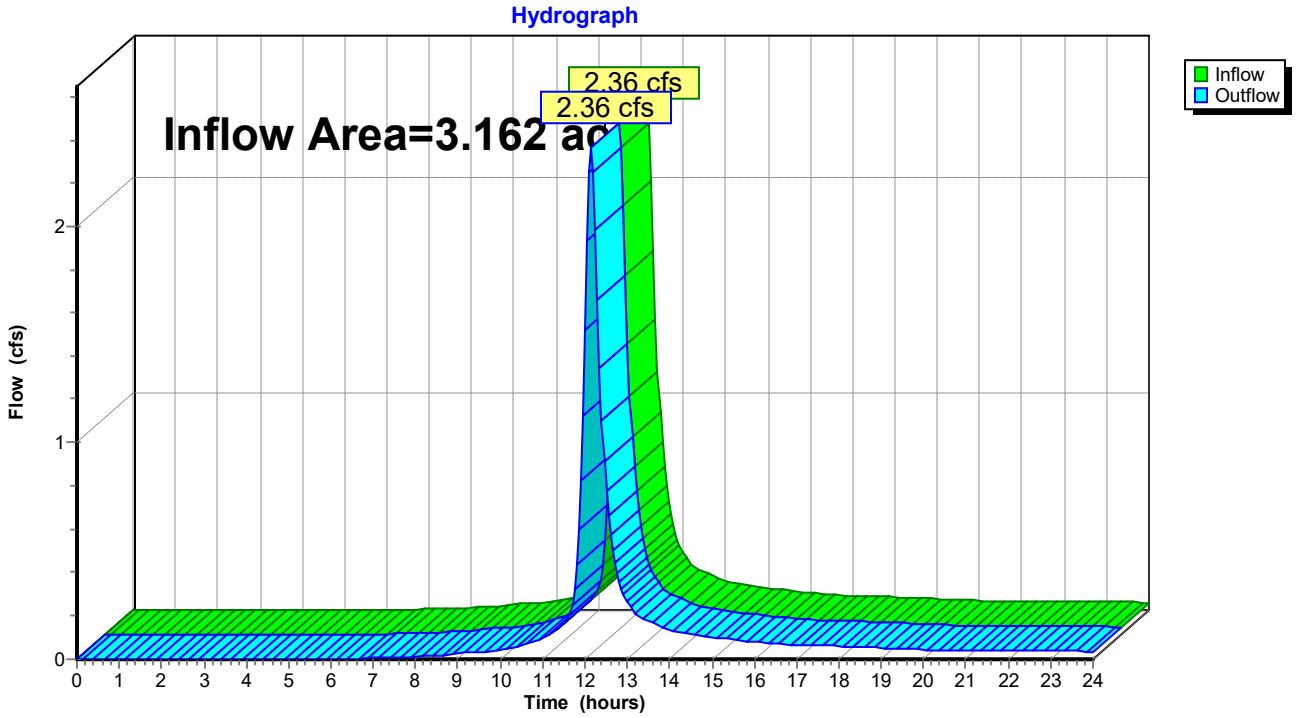
Summary for Reach NORTH: NORTH MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.162 ac, 92.66% Impervious, Inflow Depth > 0.72" for 90% WQV event
Inflow = 2.36 cfs @ 12.15 hrs, Volume= 0.189 af
Outflow = 2.36 cfs @ 12.15 hrs, Volume= 0.189 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach NORTH: NORTH MS4



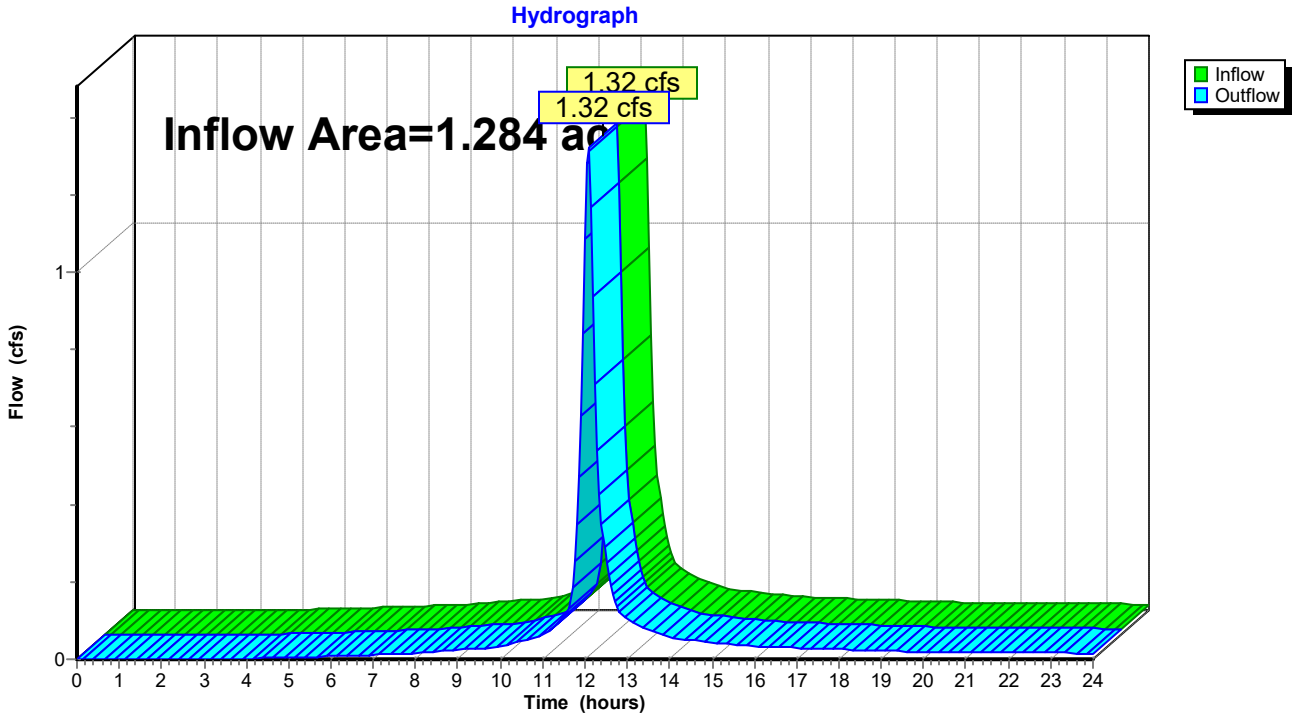
Summary for Reach WEST: WEST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.284 ac, 99.77% Impervious, Inflow Depth > 0.89" for 90% WQV event
Inflow = 1.32 cfs @ 12.08 hrs, Volume= 0.095 af
Outflow = 1.32 cfs @ 12.08 hrs, Volume= 0.095 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach WEST: WEST MS4



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: NORTH FLOW PATH Runoff Area=3.162 ac 92.66% Impervious Runoff Depth>1.66"
Flow Length=831' Tc=22.3 min CN=96 Runoff=5.30 cfs 0.438 af

Subcatchment 4S: WEST FLOW PATH 2 Runoff Area=0.325 ac 99.08% Impervious Runoff Depth>1.87"
Flow Length=351' Tc=16.9 min CN=98 Runoff=0.67 cfs 0.051 af

Subcatchment 5S: WEST FLOW PATH 1 Runoff Area=0.959 ac 100.00% Impervious Runoff Depth>1.87"
Flow Length=511' Tc=16.8 min CN=98 Runoff=2.00 cfs 0.149 af

Subcatchment 6S: EAST FLOW PATH Runoff Area=1.768 ac 32.24% Impervious Runoff Depth>0.53"
Flow Length=568' Tc=33.9 min CN=78 Runoff=0.66 cfs 0.079 af

Reach EAST: EAST MS4 Inflow=0.66 cfs 0.079 af
Outflow=0.66 cfs 0.079 af

Reach NORTH: NORTH MS4 Inflow=5.30 cfs 0.438 af
Outflow=5.30 cfs 0.438 af

Reach WEST: WEST MS4 Inflow=2.67 cfs 0.200 af
Outflow=2.67 cfs 0.200 af

Total Runoff Area = 6.214 ac Runoff Volume = 0.717 af Average Runoff Depth = 1.38"
23.06% Pervious = 1.433 ac 76.94% Impervious = 4.781 ac

Summary for Subcatchment 1S: NORTH FLOW PATH

[47] Hint: Peak is 255% of capacity of segment #9

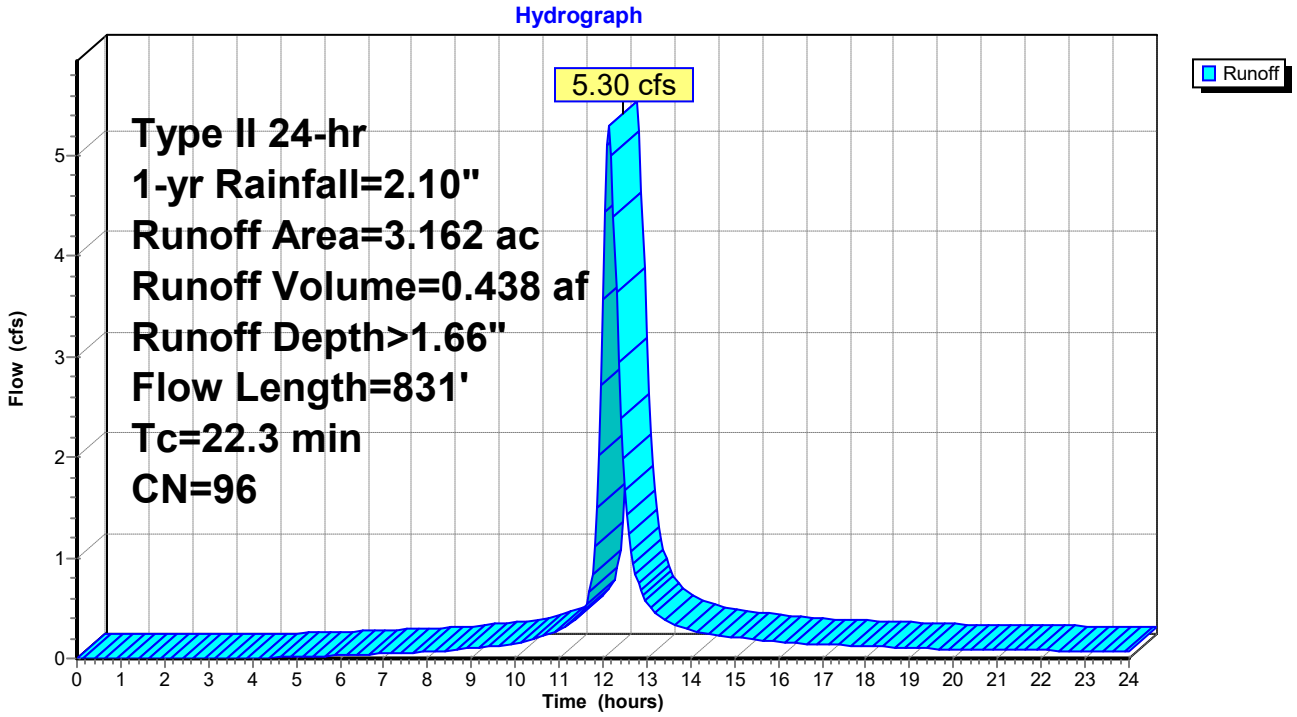
Runoff = 5.30 cfs @ 12.14 hrs, Volume= 0.438 af, Depth> 1.66"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.10"

Area (ac)	CN	Description
2.930	98	Paved parking, HSG A
0.232	68	<50% Grass cover, Poor, HSG A
3.162	96	Weighted Average
0.232		7.34% Pervious Area
2.930		92.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	93	0.0591	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
0.2	29	0.0172	2.11		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.1	164	0.0030	0.88		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	18	0.0278	2.68		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.0	80	0.0063	1.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.4	88	0.0284	3.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	79	0.0126	2.28		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	87	0.0057	1.53		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	13	0.0077	3.82	2.08	**Pipe Channel,** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.012 Corrugated PP, smooth interior
0.7	180	0.0018	4.34	30.66	**Pipe Channel,** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012 Corrugated PP, smooth interior
22.3	831	Total			

Subcatchment 1S: NORTH FLOW PATH



Summary for Subcatchment 4S: WEST FLOW PATH 2

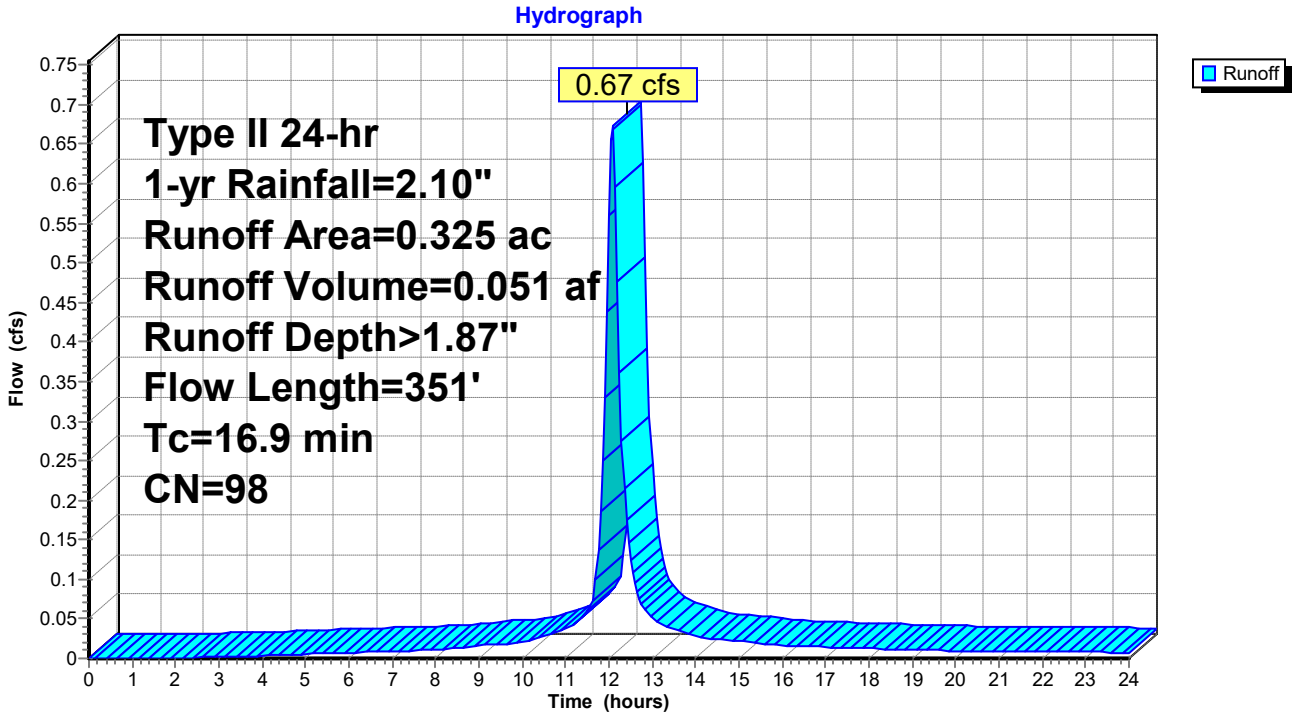
Runoff = 0.67 cfs @ 12.08 hrs, Volume= 0.051 af, Depth> 1.87"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.10"

Area (ac)	CN	Description
0.322	98	Paved parking, HSG A
0.003	68	<50% Grass cover, Poor, HSG A
0.325	98	Weighted Average
0.003		0.92% Pervious Area
0.322		99.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	31	0.0968	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
12.0	66	0.0076	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.7	43	0.0116	1.08		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
0.7	43	0.0116	1.08		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
0.0	2	0.2500	4.50		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.9	83	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	24	0.0417	4.15		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	10	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	49	0.0816	5.80		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.9	351	Total			

Subcatchment 4S: WEST FLOW PATH 2



Summary for Subcatchment 5S: WEST FLOW PATH 1

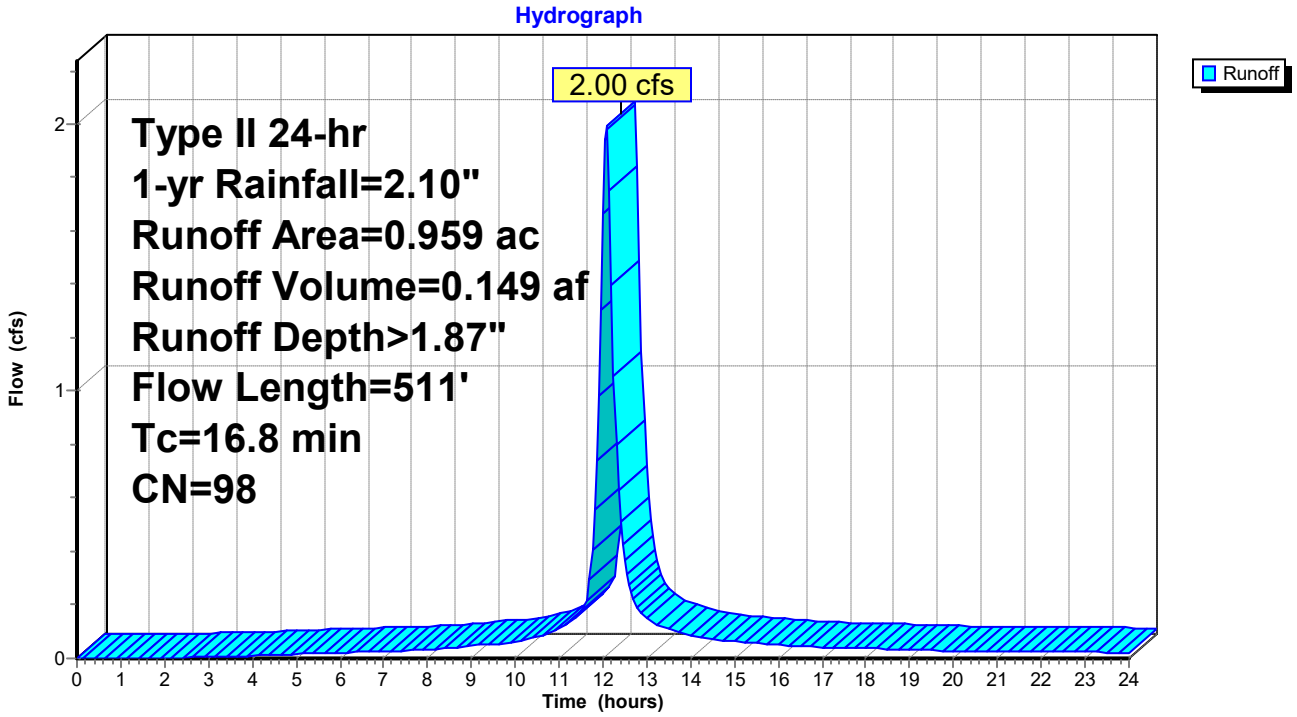
Runoff = 2.00 cfs @ 12.08 hrs, Volume= 0.149 af, Depth> 1.87"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.10"

Area (ac)	CN	Description
0.959	98	Paved parking, HSG A
0.959		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	15	0.2000	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
10.8	87	0.0172	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.0	2	0.2500	8.05		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	13	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
4.3	241	0.0021	0.93		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	108	0.0417	4.15		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	45	0.0050	3.47	2.73	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Corrugated PP, smooth interior
16.8	511	Total			

Subcatchment 5S: WEST FLOW PATH 1



Summary for Subcatchment 6S: EAST FLOW PATH

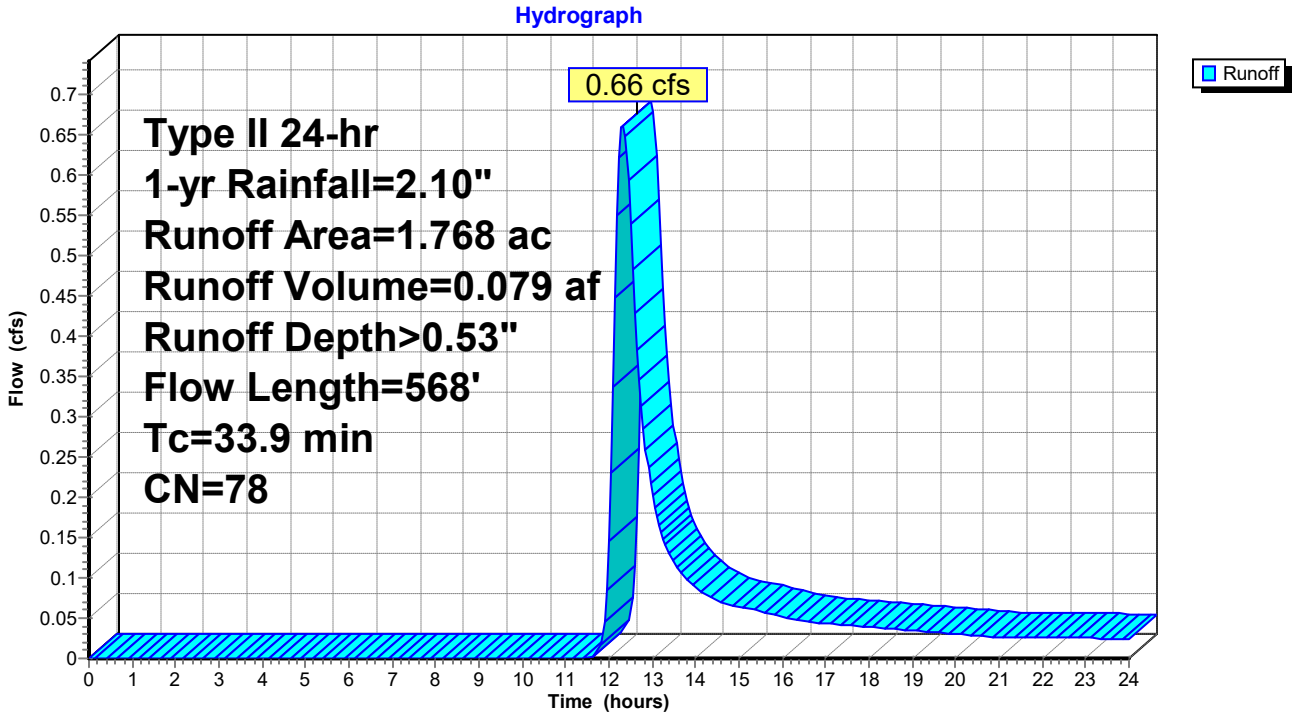
Runoff = 0.66 cfs @ 12.33 hrs, Volume= 0.079 af, Depth> 0.53"
Routed to Reach EAST : EAST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.10"

Area (ac)	CN	Description
0.570	98	Paved parking, HSG A
1.198	68	<50% Grass cover, Poor, HSG A
1.768	78	Weighted Average
1.198		67.76% Pervious Area
0.570		32.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	4	0.0625	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
11.6	42	0.0238	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
17.9	48	0.0104	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
0.3	24	0.0625	1.25		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	42	0.0357	0.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	29	0.0172	0.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	18	0.0294	2.76		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	23	0.0435	3.36		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	5	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	38	0.0050	3.21	2.52	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Cast iron, coated
1.1	295	0.0075	4.56	5.59	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Cast iron, coated
33.9	568	Total			

Subcatchment 6S: EAST FLOW PATH



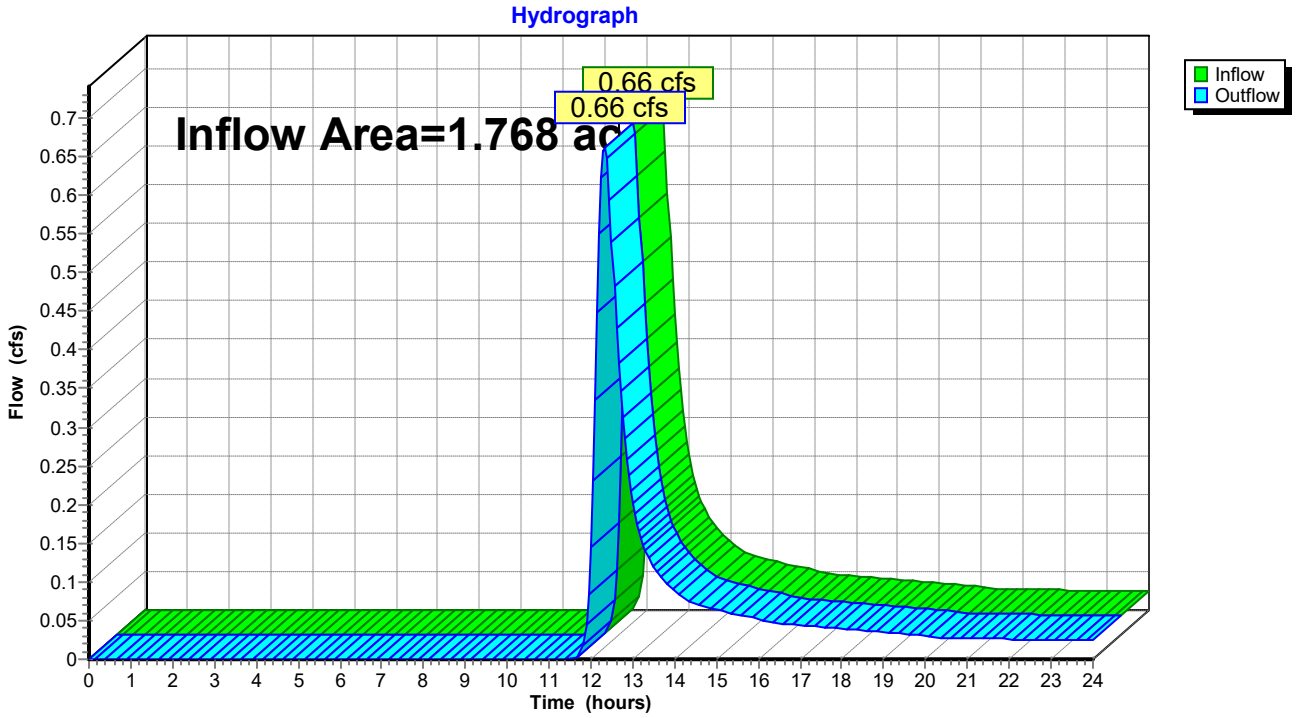
Summary for Reach EAST: EAST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.768 ac, 32.24% Impervious, Inflow Depth > 0.53" for 1-yr event
Inflow = 0.66 cfs @ 12.33 hrs, Volume= 0.079 af
Outflow = 0.66 cfs @ 12.33 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach EAST: EAST MS4



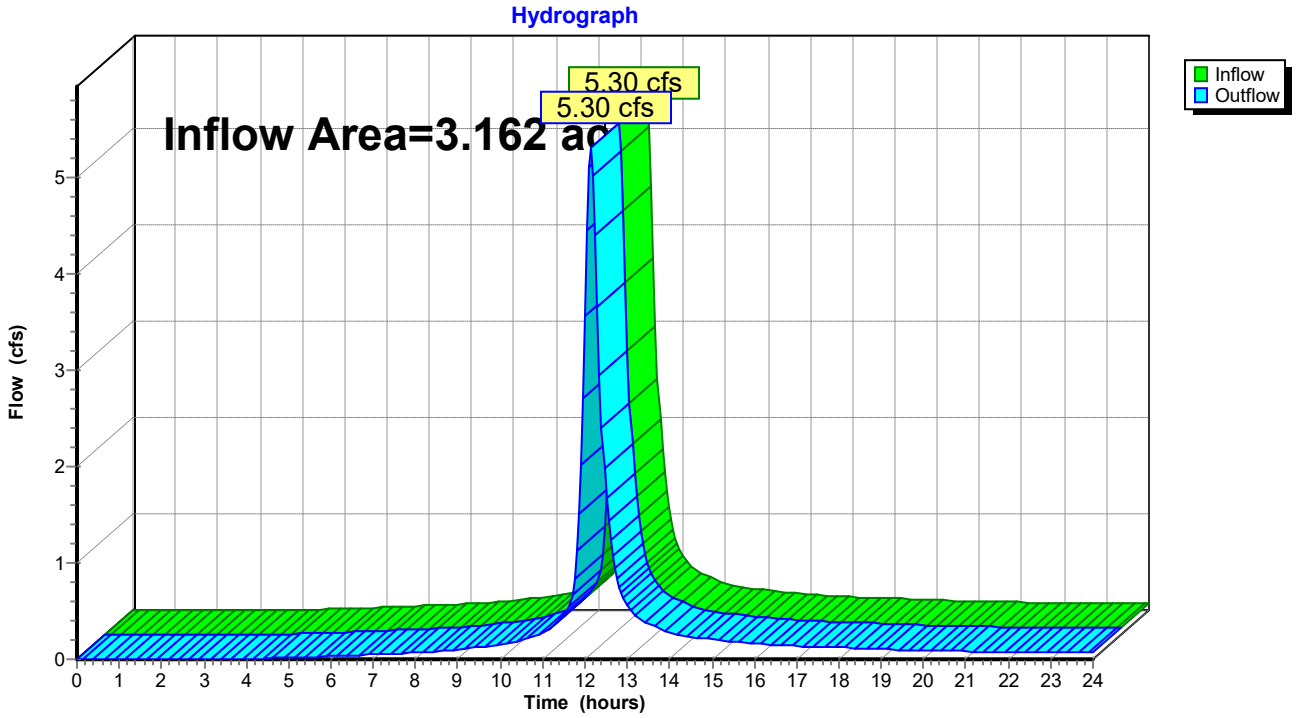
Summary for Reach NORTH: NORTH MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.162 ac, 92.66% Impervious, Inflow Depth > 1.66" for 1-yr event
Inflow = 5.30 cfs @ 12.14 hrs, Volume= 0.438 af
Outflow = 5.30 cfs @ 12.14 hrs, Volume= 0.438 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach NORTH: NORTH MS4



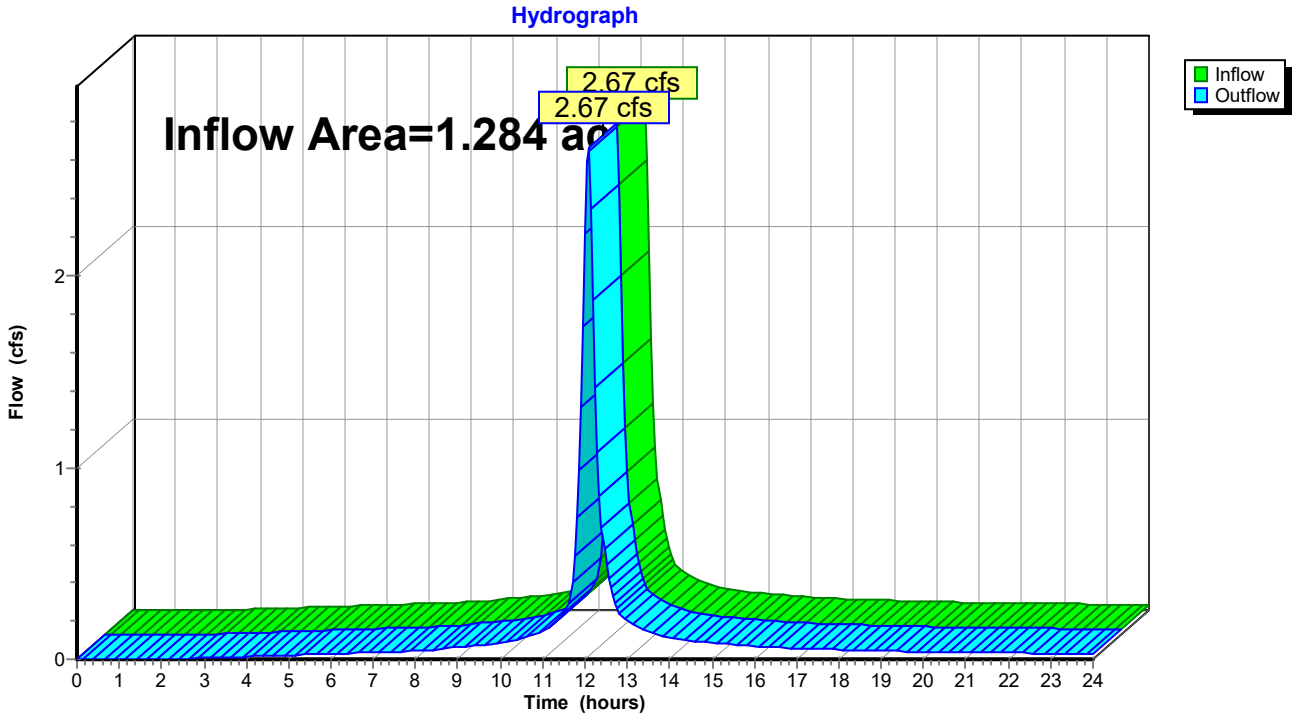
Summary for Reach WEST: WEST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.284 ac, 99.77% Impervious, Inflow Depth > 1.87" for 1-yr event
Inflow = 2.67 cfs @ 12.08 hrs, Volume= 0.200 af
Outflow = 2.67 cfs @ 12.08 hrs, Volume= 0.200 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach WEST: WEST MS4



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: NORTH FLOW PATH Runoff Area=3.162 ac 92.66% Impervious Runoff Depth>3.48"
Flow Length=831' Tc=22.3 min CN=96 Runoff=10.66 cfs 0.916 af

Subcatchment 4S: WEST FLOW PATH 2 Runoff Area=0.325 ac 99.08% Impervious Runoff Depth>3.70"
Flow Length=351' Tc=16.9 min CN=98 Runoff=1.29 cfs 0.100 af

Subcatchment 5S: WEST FLOW PATH 1 Runoff Area=0.959 ac 100.00% Impervious Runoff Depth>3.70"
Flow Length=511' Tc=16.8 min CN=98 Runoff=3.83 cfs 0.296 af

Subcatchment 6S: EAST FLOW PATH Runoff Area=1.768 ac 32.24% Impervious Runoff Depth>1.83"
Flow Length=568' Tc=33.9 min CN=78 Runoff=2.58 cfs 0.270 af

Reach EAST: EAST MS4 Inflow=2.58 cfs 0.270 af
Outflow=2.58 cfs 0.270 af

Reach NORTH: NORTH MS4 Inflow=10.66 cfs 0.916 af
Outflow=10.66 cfs 0.916 af

Reach WEST: WEST MS4 Inflow=5.12 cfs 0.396 af
Outflow=5.12 cfs 0.396 af

Total Runoff Area = 6.214 ac Runoff Volume = 1.582 af Average Runoff Depth = 3.06"
23.06% Pervious = 1.433 ac 76.94% Impervious = 4.781 ac

Summary for Subcatchment 1S: NORTH FLOW PATH

[47] Hint: Peak is 512% of capacity of segment #9

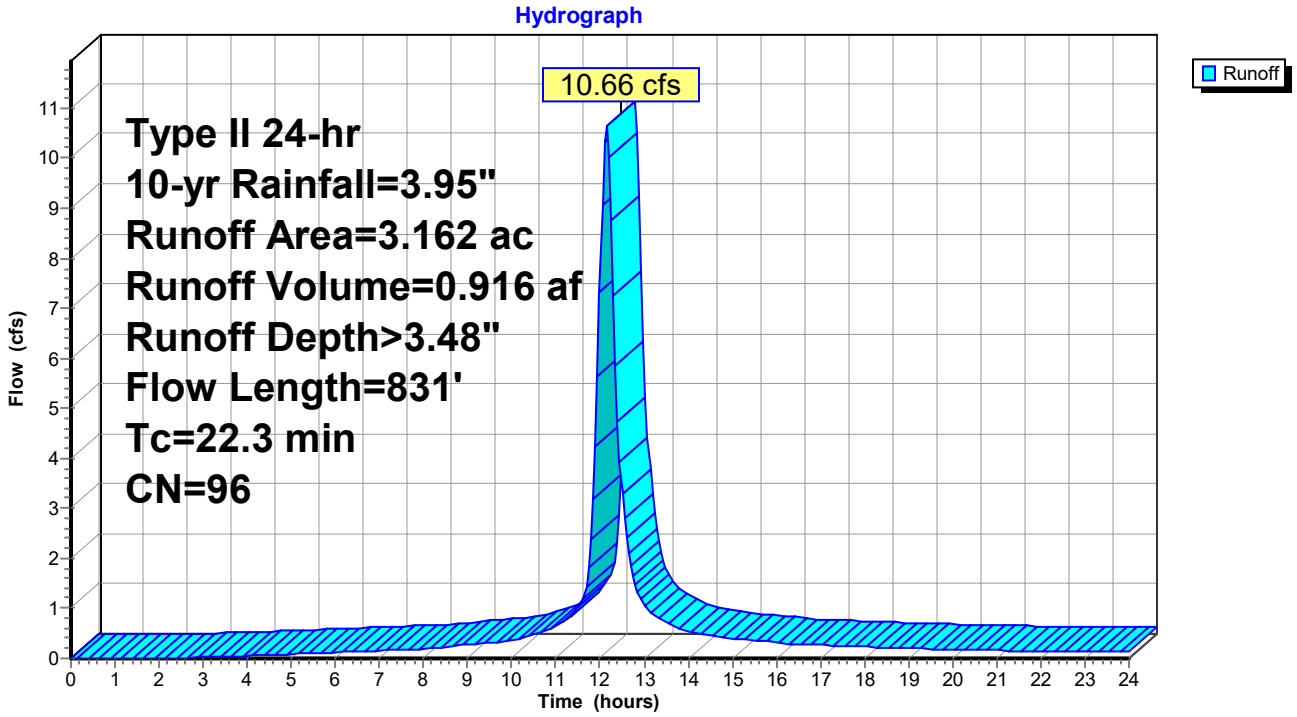
Runoff = 10.66 cfs @ 12.14 hrs, Volume= 0.916 af, Depth> 3.48"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.95"

Area (ac)	CN	Description
2.930	98	Paved parking, HSG A
0.232	68	<50% Grass cover, Poor, HSG A
3.162	96	Weighted Average
0.232		7.34% Pervious Area
2.930		92.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	93	0.0591	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
0.2	29	0.0172	2.11		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.1	164	0.0030	0.88		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	18	0.0278	2.68		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.0	80	0.0063	1.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.4	88	0.0284	3.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	79	0.0126	2.28		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	87	0.0057	1.53		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	13	0.0077	3.82	2.08	**Pipe Channel,** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.012 Corrugated PP, smooth interior
0.7	180	0.0018	4.34	30.66	**Pipe Channel,** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012 Corrugated PP, smooth interior
22.3	831	Total			

Subcatchment 1S: NORTH FLOW PATH



Summary for Subcatchment 4S: WEST FLOW PATH 2

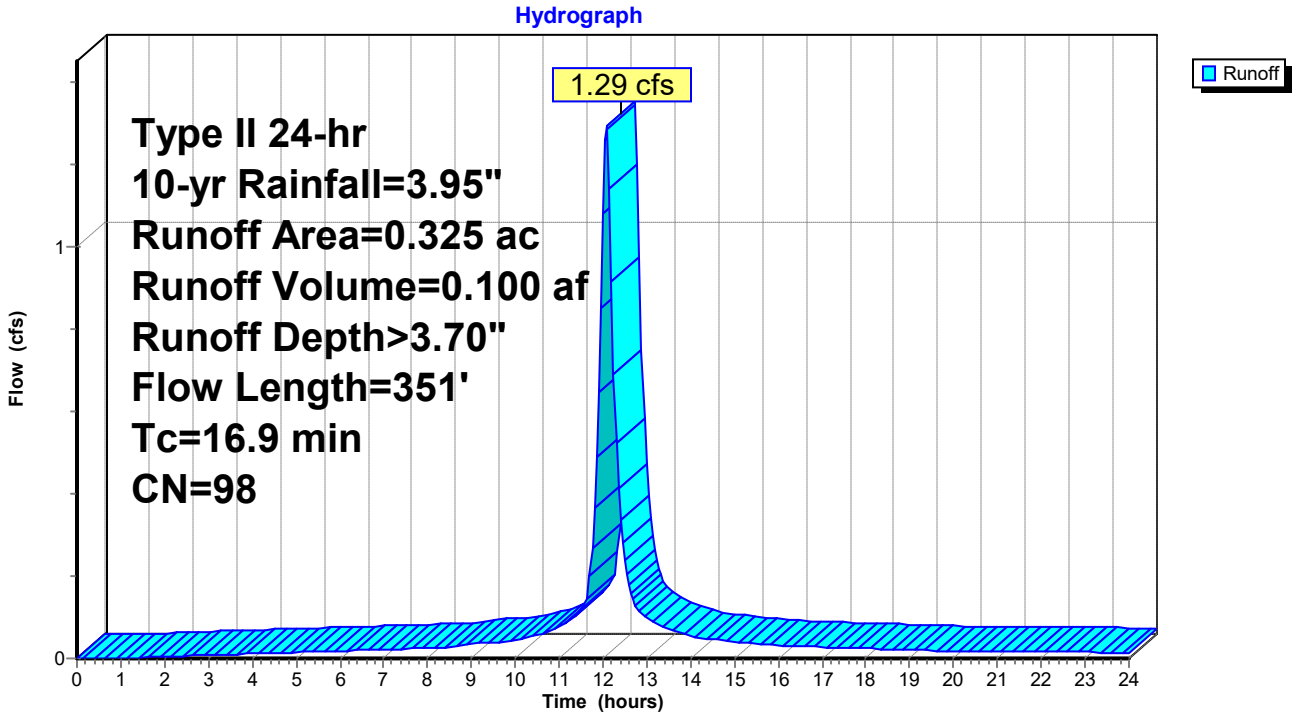
Runoff = 1.29 cfs @ 12.08 hrs, Volume= 0.100 af, Depth> 3.70"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.95"

Area (ac)	CN	Description
0.322	98	Paved parking, HSG A
0.003	68	<50% Grass cover, Poor, HSG A
0.325	98	Weighted Average
0.003		0.92% Pervious Area
0.322		99.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	31	0.0968	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
12.0	66	0.0076	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.7	43	0.0116	1.08		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
0.7	43	0.0116	1.08		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
0.0	2	0.2500	4.50		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.9	83	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	24	0.0417	4.15		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	10	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	49	0.0816	5.80		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.9	351	Total			

Subcatchment 4S: WEST FLOW PATH 2



Summary for Subcatchment 5S: WEST FLOW PATH 1

[47] Hint: Peak is 140% of capacity of segment #7

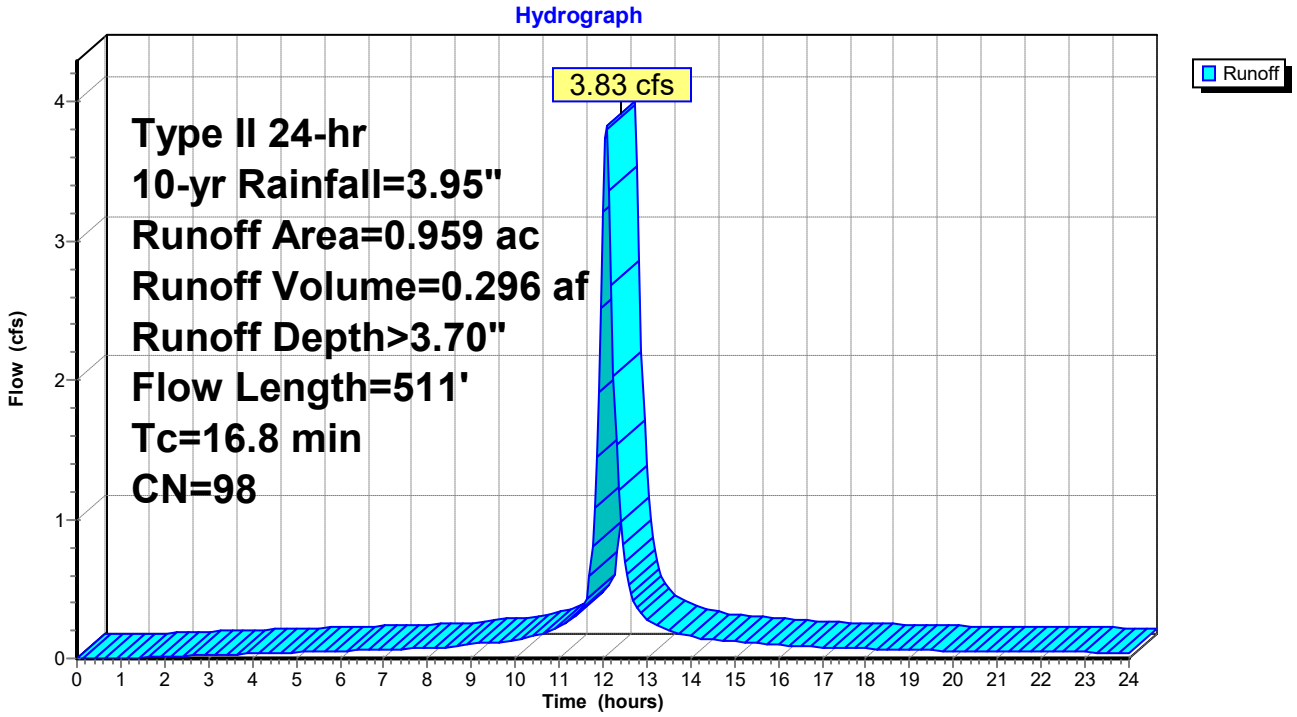
Runoff = 3.83 cfs @ 12.08 hrs, Volume= 0.296 af, Depth> 3.70"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.95"

Area (ac)	CN	Description
0.959	98	Paved parking, HSG A
0.959		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	15	0.2000	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
10.8	87	0.0172	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.0	2	0.2500	8.05		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	13	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
4.3	241	0.0021	0.93		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	108	0.0417	4.15		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	45	0.0050	3.47	2.73	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Corrugated PP, smooth interior
16.8	511	Total			

Subcatchment 5S: WEST FLOW PATH 1



Summary for Subcatchment 6S: EAST FLOW PATH

[47] Hint: Peak is 102% of capacity of segment #10

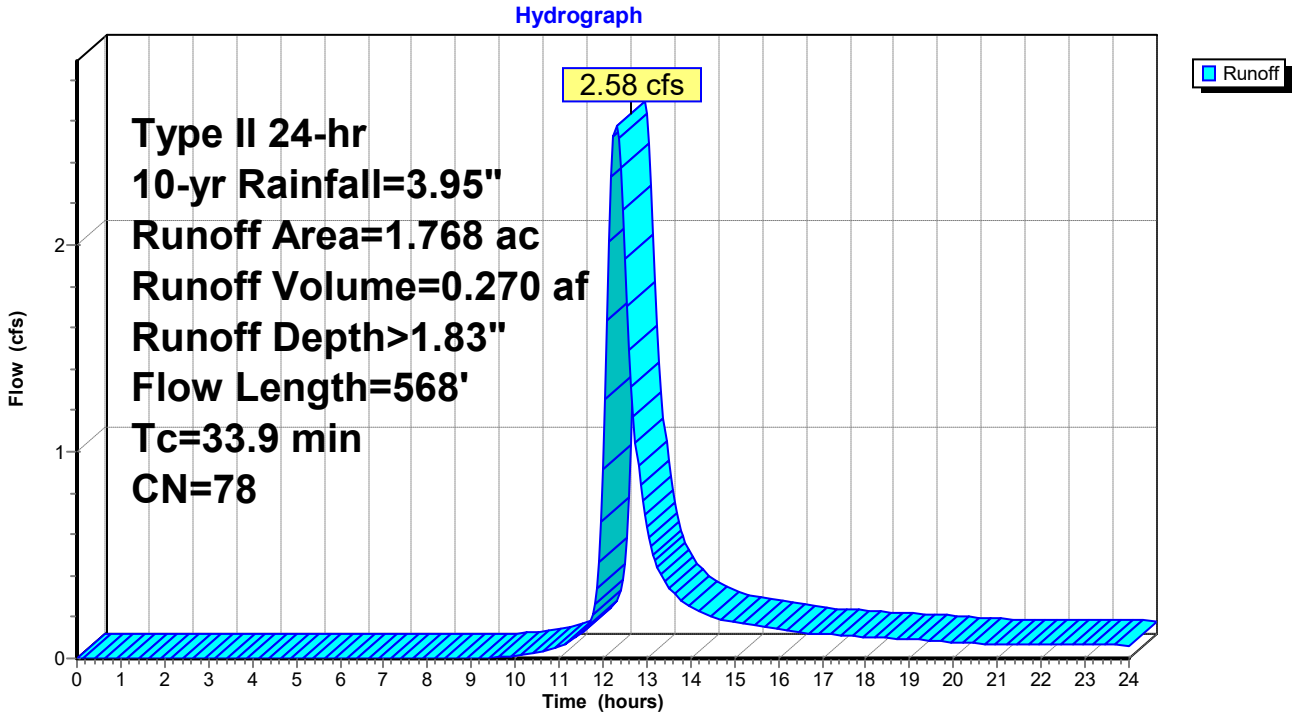
Runoff = 2.58 cfs @ 12.30 hrs, Volume= 0.270 af, Depth> 1.83"
Routed to Reach EAST : EAST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.95"

Area (ac)	CN	Description
0.570	98	Paved parking, HSG A
1.198	68	<50% Grass cover, Poor, HSG A
1.768	78	Weighted Average
1.198		67.76% Pervious Area
0.570		32.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	4	0.0625	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
11.6	42	0.0238	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
17.9	48	0.0104	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
0.3	24	0.0625	1.25		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	42	0.0357	0.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	29	0.0172	0.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	18	0.0294	2.76		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	23	0.0435	3.36		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	5	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	38	0.0050	3.21	2.52	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Cast iron, coated
1.1	295	0.0075	4.56	5.59	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Cast iron, coated
33.9	568	Total			

Subcatchment 6S: EAST FLOW PATH



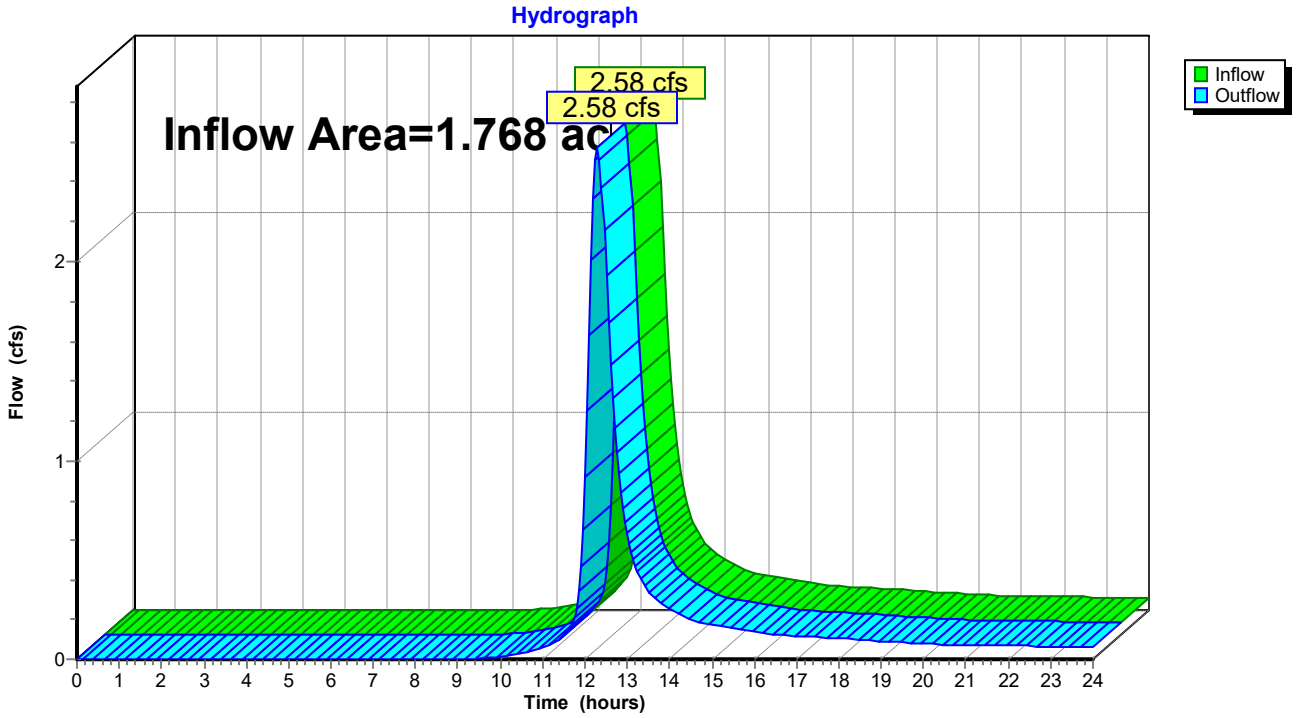
Summary for Reach EAST: EAST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.768 ac, 32.24% Impervious, Inflow Depth > 1.83" for 10-yr event
Inflow = 2.58 cfs @ 12.30 hrs, Volume= 0.270 af
Outflow = 2.58 cfs @ 12.30 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach EAST: EAST MS4



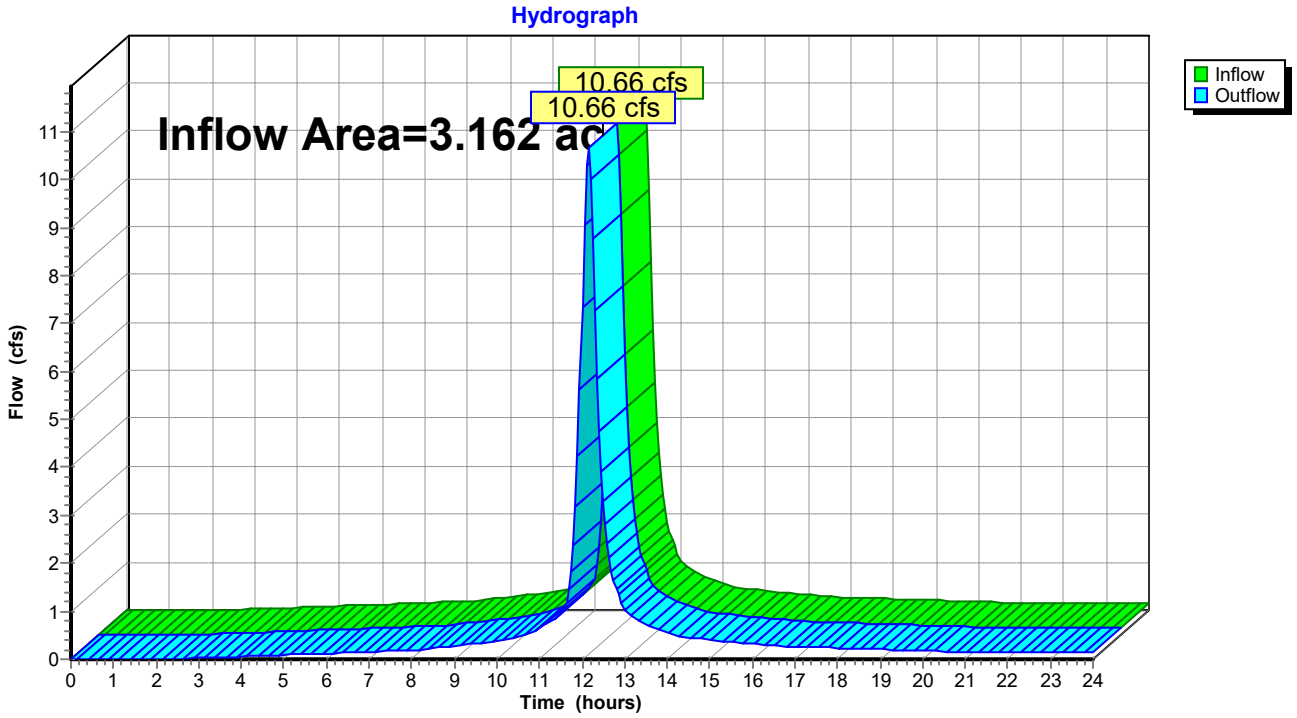
Summary for Reach NORTH: NORTH MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.162 ac, 92.66% Impervious, Inflow Depth > 3.48" for 10-yr event
Inflow = 10.66 cfs @ 12.14 hrs, Volume= 0.916 af
Outflow = 10.66 cfs @ 12.14 hrs, Volume= 0.916 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach NORTH: NORTH MS4



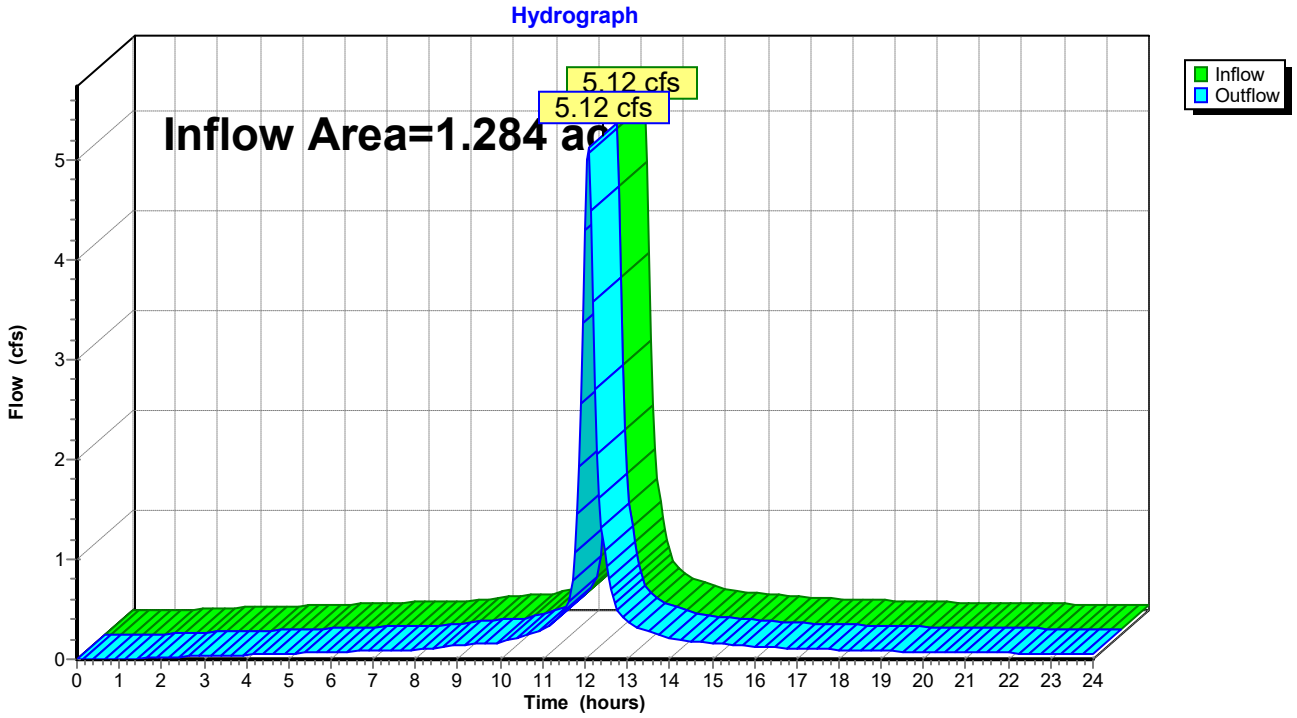
Summary for Reach WEST: WEST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.284 ac, 99.77% Impervious, Inflow Depth > 3.70" for 10-yr event
Inflow = 5.12 cfs @ 12.08 hrs, Volume= 0.396 af
Outflow = 5.12 cfs @ 12.08 hrs, Volume= 0.396 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach WEST: WEST MS4



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: NORTH FLOW PATH Runoff Area=3.162 ac 92.66% Impervious Runoff Depth>5.65"
Flow Length=831' Tc=22.3 min CN=96 Runoff=16.90 cfs 1.487 af

Subcatchment 4S: WEST FLOW PATH 2 Runoff Area=0.325 ac 99.08% Impervious Runoff Depth>5.89"
Flow Length=351' Tc=16.9 min CN=98 Runoff=2.02 cfs 0.159 af

Subcatchment 5S: WEST FLOW PATH 1 Runoff Area=0.959 ac 100.00% Impervious Runoff Depth>5.89"
Flow Length=511' Tc=16.8 min CN=98 Runoff=5.99 cfs 0.470 af

Subcatchment 6S: EAST FLOW PATH Runoff Area=1.768 ac 32.24% Impervious Runoff Depth>3.67"
Flow Length=568' Tc=33.9 min CN=78 Runoff=5.23 cfs 0.541 af

Reach EAST: EAST MS4 Inflow=5.23 cfs 0.541 af
Outflow=5.23 cfs 0.541 af

Reach NORTH: NORTH MS4 Inflow=16.90 cfs 1.487 af
Outflow=16.90 cfs 1.487 af

Reach WEST: WEST MS4 Inflow=8.01 cfs 0.630 af
Outflow=8.01 cfs 0.630 af

Total Runoff Area = 6.214 ac Runoff Volume = 2.658 af Average Runoff Depth = 5.13"
23.06% Pervious = 1.433 ac 76.94% Impervious = 4.781 ac

Summary for Subcatchment 1S: NORTH FLOW PATH

[47] Hint: Peak is 812% of capacity of segment #9

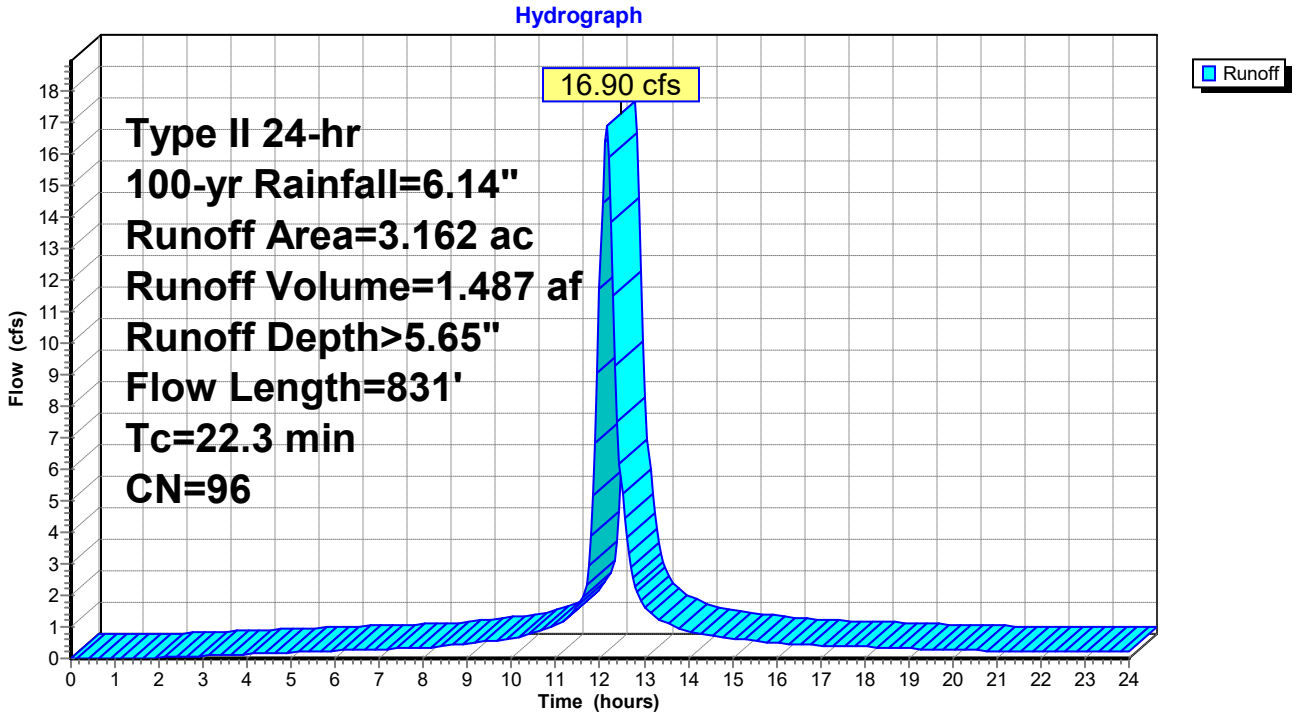
Runoff = 16.90 cfs @ 12.14 hrs, Volume= 1.487 af, Depth> 5.65"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.14"

Area (ac)	CN	Description
2.930	98	Paved parking, HSG A
0.232	68	<50% Grass cover, Poor, HSG A
3.162	96	Weighted Average
0.232		7.34% Pervious Area
2.930		92.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	93	0.0591	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
0.2	29	0.0172	2.11		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.1	164	0.0030	0.88		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	18	0.0278	2.68		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.0	80	0.0063	1.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.4	88	0.0284	3.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	79	0.0126	2.28		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	87	0.0057	1.53		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	13	0.0077	3.82	2.08	**Pipe Channel,** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.012 Corrugated PP, smooth interior
0.7	180	0.0018	4.34	30.66	**Pipe Channel,** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012 Corrugated PP, smooth interior
22.3	831	Total			

Subcatchment 1S: NORTH FLOW PATH



Summary for Subcatchment 4S: WEST FLOW PATH 2

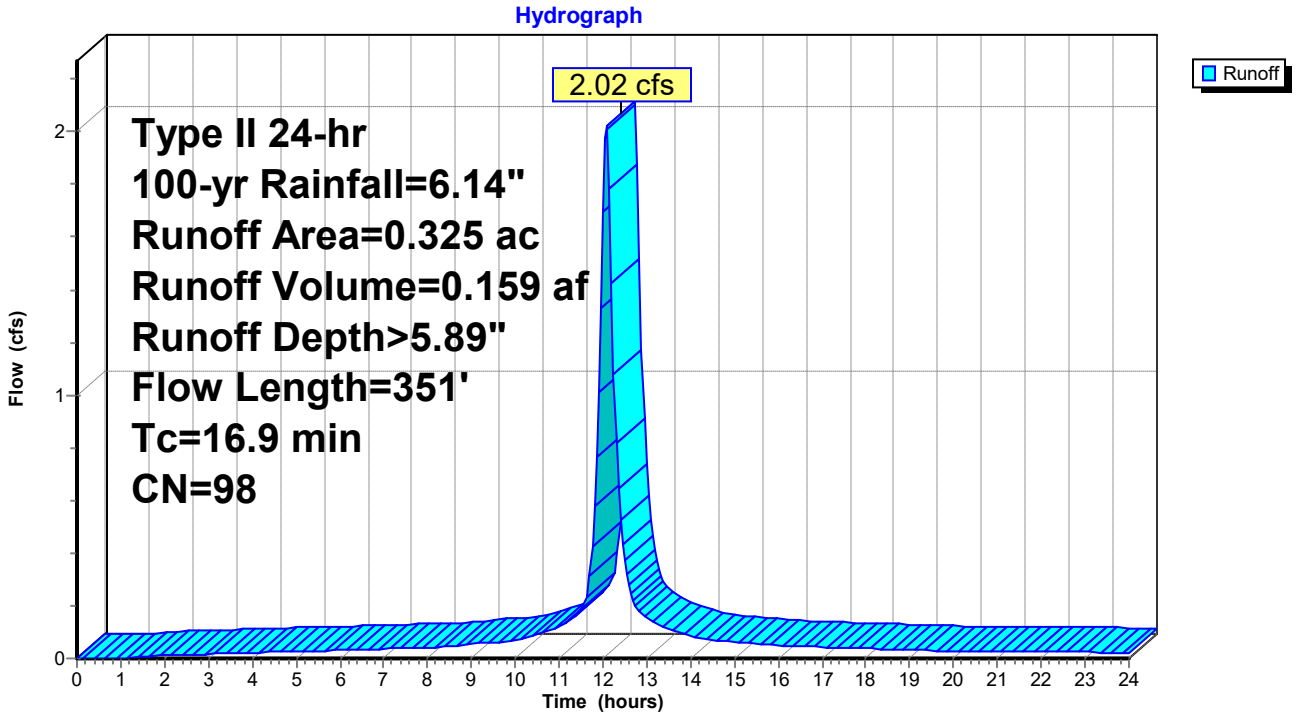
Runoff = 2.02 cfs @ 12.08 hrs, Volume= 0.159 af, Depth> 5.89"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.14"

Area (ac)	CN	Description
0.322	98	Paved parking, HSG A
0.003	68	<50% Grass cover, Poor, HSG A
0.325	98	Weighted Average
0.003		0.92% Pervious Area
0.322		99.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	31	0.0968	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
12.0	66	0.0076	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.7	43	0.0116	1.08		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
0.7	43	0.0116	1.08		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
0.0	2	0.2500	4.50		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.9	83	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	24	0.0417	4.15		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	10	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	49	0.0816	5.80		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.9	351	Total			

Subcatchment 4S: WEST FLOW PATH 2



Summary for Subcatchment 5S: WEST FLOW PATH 1

[47] Hint: Peak is 219% of capacity of segment #7

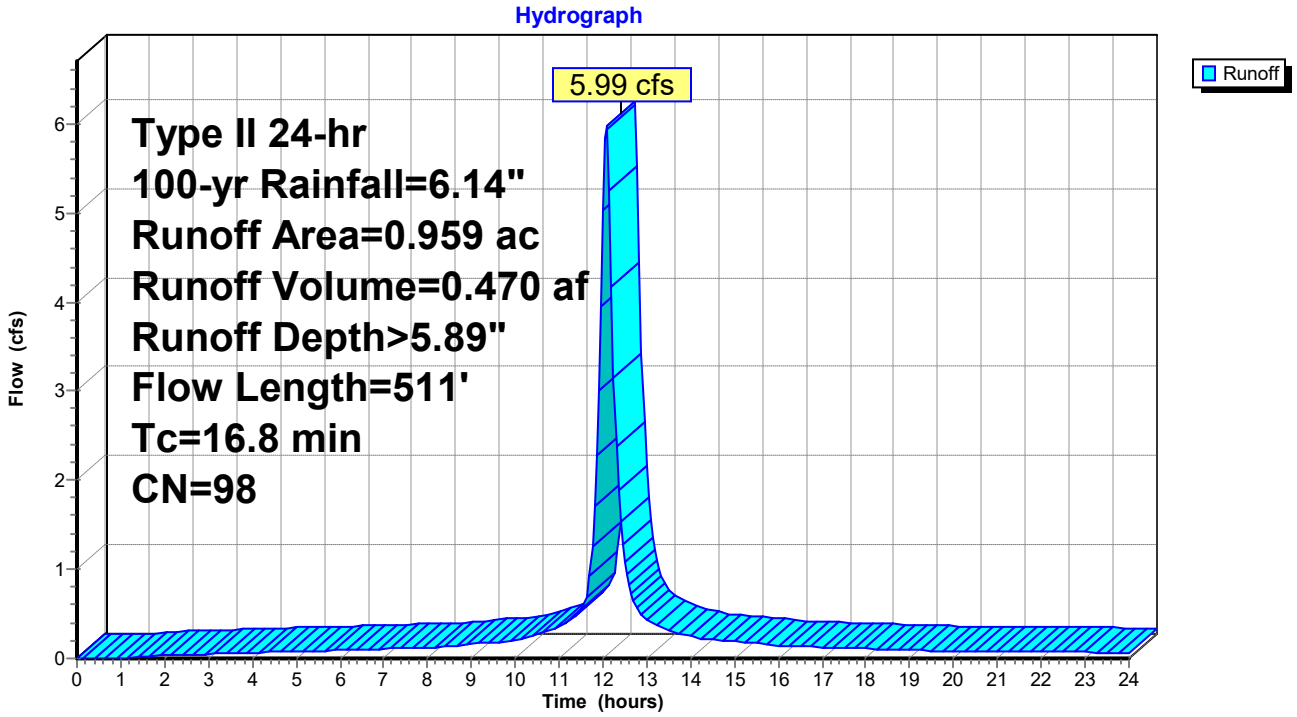
Runoff = 5.99 cfs @ 12.08 hrs, Volume= 0.470 af, Depth> 5.89"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.14"

Area (ac)	CN	Description
0.959	98	Paved parking, HSG A
0.959		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	15	0.2000	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
10.8	87	0.0172	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.0	2	0.2500	8.05		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	13	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
4.3	241	0.0021	0.93		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	108	0.0417	4.15		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	45	0.0050	3.47	2.73	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Corrugated PP, smooth interior
16.8	511	Total			

Subcatchment 5S: WEST FLOW PATH 1



Summary for Subcatchment 6S: EAST FLOW PATH

[47] Hint: Peak is 208% of capacity of segment #10

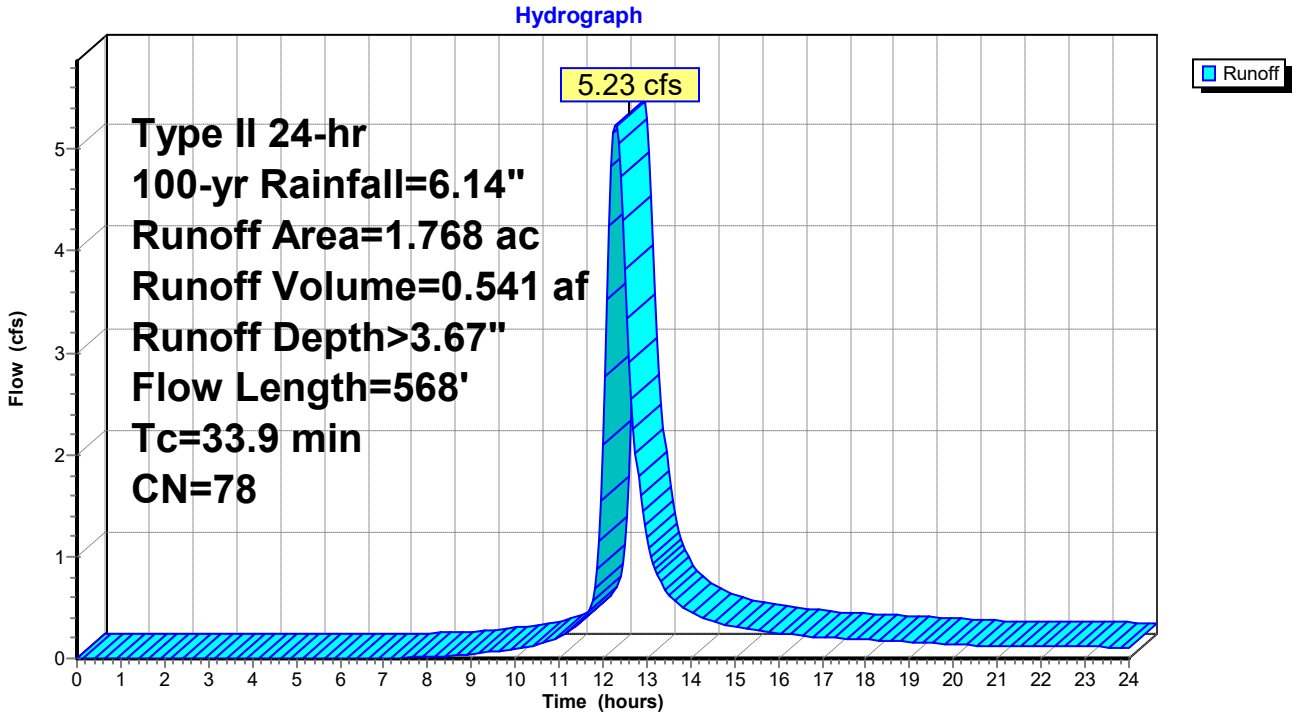
Runoff = 5.23 cfs @ 12.29 hrs, Volume= 0.541 af, Depth> 3.67"
Routed to Reach EAST : EAST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.14"

Area (ac)	CN	Description
0.570	98	Paved parking, HSG A
1.198	68	<50% Grass cover, Poor, HSG A
1.768	78	Weighted Average
1.198		67.76% Pervious Area
0.570		32.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	4	0.0625	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
11.6	42	0.0238	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
17.9	48	0.0104	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.39"
0.3	24	0.0625	1.25		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	42	0.0357	0.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	29	0.0172	0.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	18	0.0294	2.76		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	23	0.0435	3.36		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	5	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	38	0.0050	3.21	2.52	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Cast iron, coated
1.1	295	0.0075	4.56	5.59	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Cast iron, coated
33.9	568	Total			

Subcatchment 6S: EAST FLOW PATH



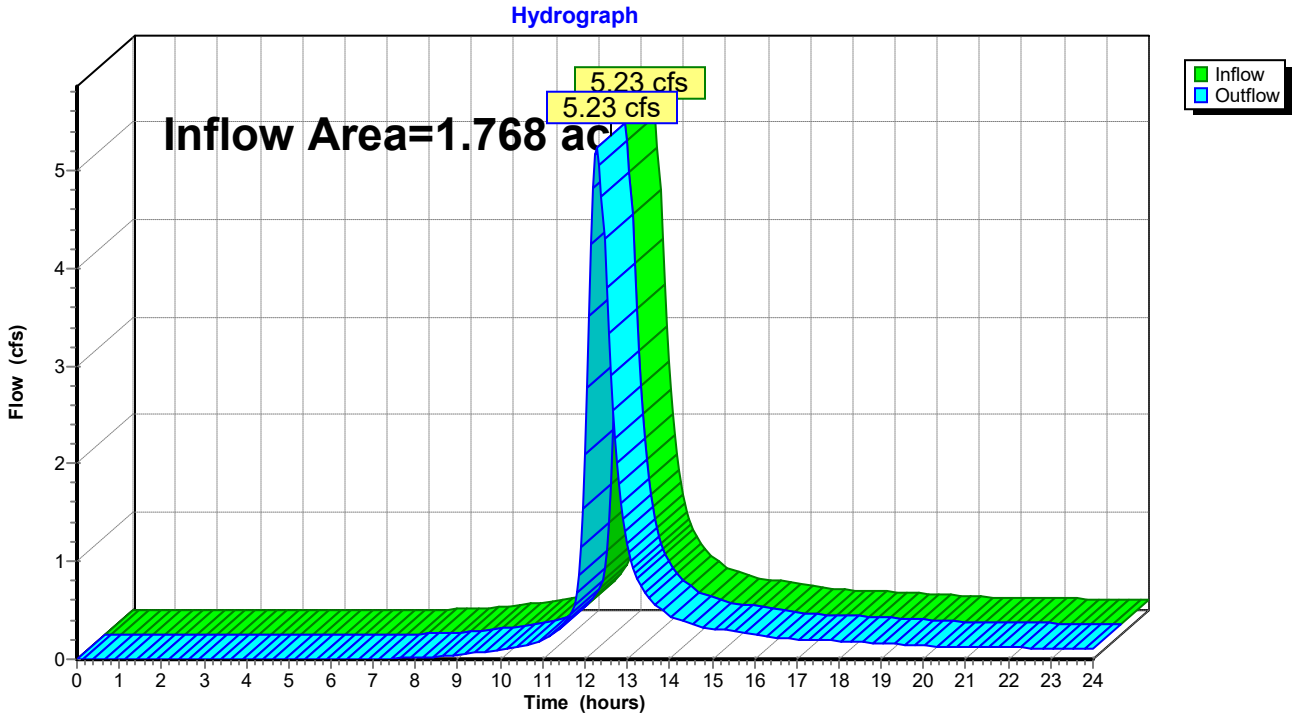
Summary for Reach EAST: EAST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.768 ac, 32.24% Impervious, Inflow Depth > 3.67" for 100-yr event
Inflow = 5.23 cfs @ 12.29 hrs, Volume= 0.541 af
Outflow = 5.23 cfs @ 12.29 hrs, Volume= 0.541 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach EAST: EAST MS4



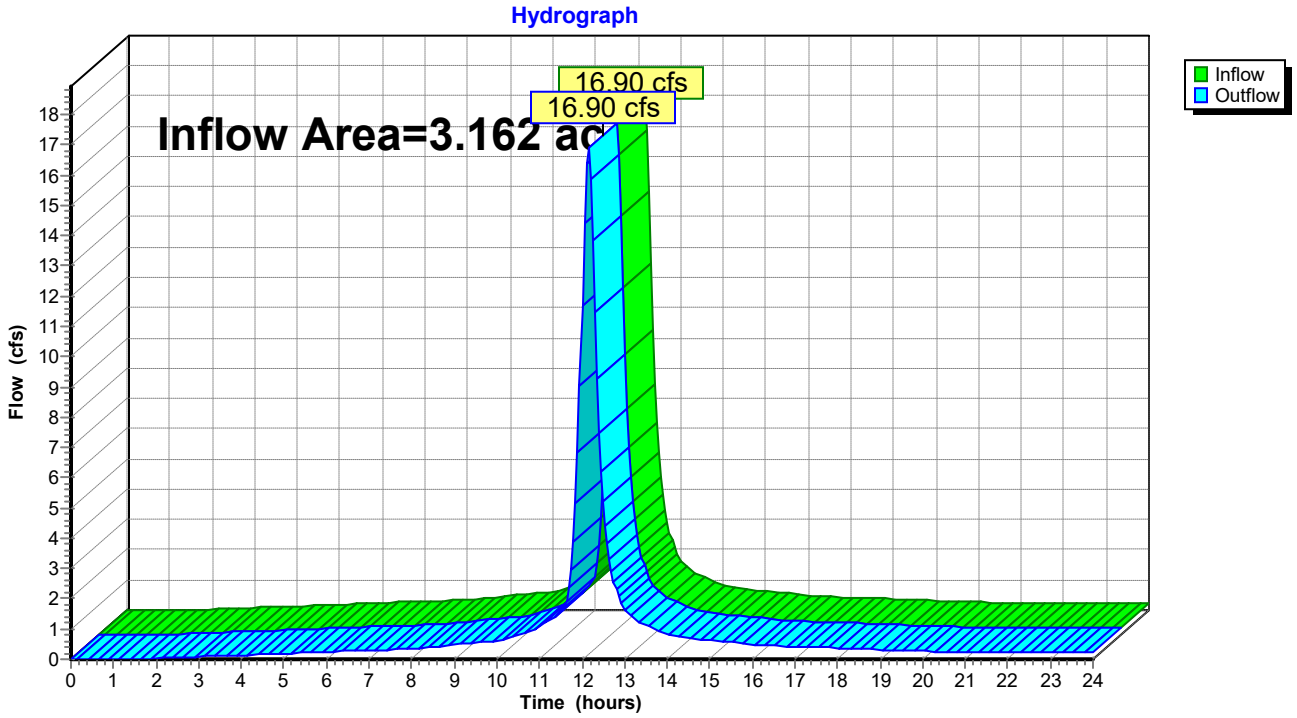
Summary for Reach NORTH: NORTH MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.162 ac, 92.66% Impervious, Inflow Depth > 5.65" for 100-yr event
Inflow = 16.90 cfs @ 12.14 hrs, Volume= 1.487 af
Outflow = 16.90 cfs @ 12.14 hrs, Volume= 1.487 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach NORTH: NORTH MS4



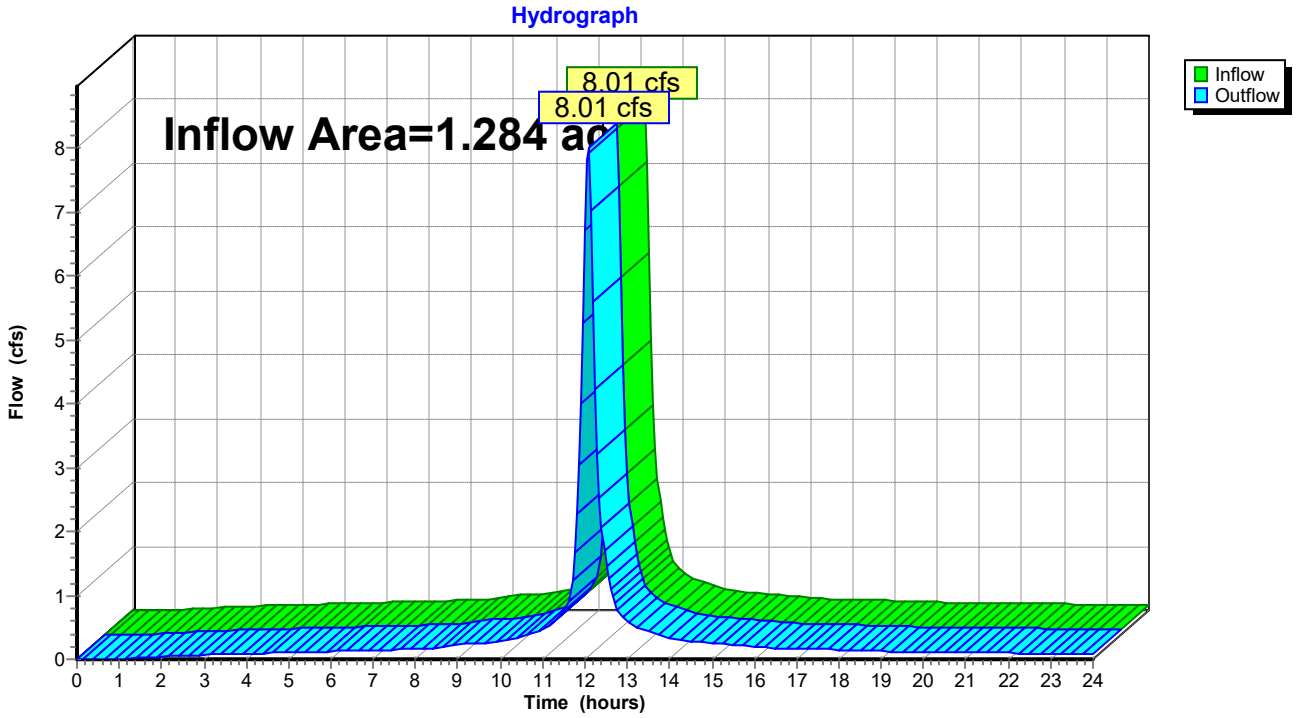
Summary for Reach WEST: WEST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.284 ac, 99.77% Impervious, Inflow Depth > 5.89" for 100-yr event
Inflow = 8.01 cfs @ 12.08 hrs, Volume= 0.630 af
Outflow = 8.01 cfs @ 12.08 hrs, Volume= 0.630 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach WEST: WEST MS4



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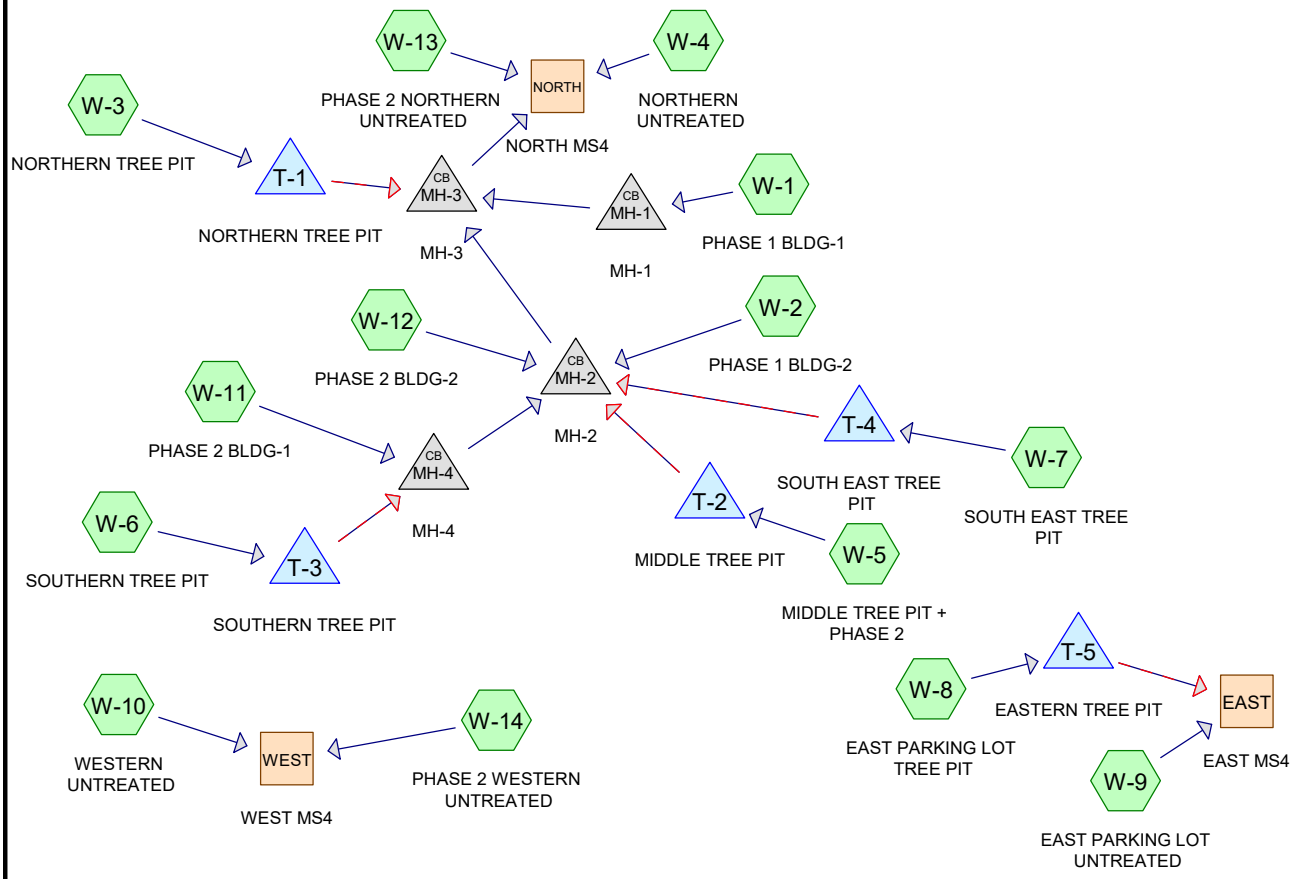


Routing Diagram for Post-Development 4.0
Prepared by Delta Engineers, Printed 12/19/2025
HydroCAD® 10.20-8a s/n 04726 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	90%WQv	Clinton Street Rainfall 24-hr S1	1-yr	Default	24.00	1	1.10	2
2	1-yr	Clinton Street Rainfall 24-hr S1	1-yr	Default	24.00	1	2.07	2
3	10-yr	Clinton Street Rainfall 24-hr S1	10-yr	Default	24.00	1	3.51	2
4	100-yr	Clinton Street Rainfall 24-hr S1	100-yr	Default	24.00	1	6.08	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.321	39	>75% Grass cover, Good, HSG A (W-10, W-13, W-14, W-3, W-4, W-5, W-6, W-7, W-8, W-9)
3.484	98	Paved parking, HSG A (W-10, W-13, W-14, W-3, W-4, W-5, W-6, W-7, W-8, W-9)
1.409	98	Roofs, HSG A (W-1, W-11, W-12, W-2)
6.214	**85**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
6.214	HSG A	W-1, W-10, W-11, W-12, W-13, W-14, W-2, W-3, W-4, W-5, W-6, W-7, W-8, W-9
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
6.214		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.321	0.000	0.000	0.000	0.000	1.321	>75% Grass cover, Good	W-10, W-13, W-14, W-3, W-4, W-5, W-6, W-7, W-8, W-9
3.484	0.000	0.000	0.000	0.000	3.484	Paved parking	W-10, W-13, W-14, W-3, W-4, W-5, W-6, W-7, W-8, W-9
1.409	0.000	0.000	0.000	0.000	1.409	Roofs	W-1, W-11, W-12, W-2
6.214	**0.000**	**0.000**	**0.000**	**0.000**	**6.214**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	W-4	0.00	0.00	33.0	0.0121	0.013	0.0	10.0	0.0	
2	MH-1	844.58	843.67	91.0	0.0100	0.013	0.0	12.0	0.0	
3	MH-2	843.74	842.57	117.2	0.0100	0.013	0.0	18.0	0.0	
4	MH-3	842.07	841.00	107.1	0.0100	0.013	0.0	24.0	0.0	
5	MH-4	846.21	845.44	77.1	0.0100	0.013	0.0	12.0	0.0	
6	T-1	846.43	846.40	3.5	0.0086	0.013	0.0	12.0	0.0	
7	T-2	845.04	844.65	78.2	0.0050	0.013	0.0	12.0	0.0	
8	T-3	848.24	847.21	102.6	0.0100	0.013	0.0	12.0	0.0	
9	T-4	846.75	844.51	223.5	0.0100	0.013	0.0	12.0	0.0	
10	T-5	849.87	849.68	18.8	0.0101	0.013	0.0	12.0	0.0	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment W-1: PHASE 1 BLDG-1 Runoff Area=0.342 ac 100.00% Impervious Runoff Depth>0.89"
Tc=6.0 min CN=98 Runoff=0.43 cfs 0.025 af

Subcatchment W-10: WESTERN Runoff Area=0.184 ac 66.85% Impervious Runoff Depth>0.09"
Tc=6.0 min CN=78 Runoff=0.01 cfs 0.001 af

Subcatchment W-11: PHASE 2 BLDG-1 Runoff Area=0.395 ac 100.00% Impervious Runoff Depth>0.89"
Tc=6.0 min CN=98 Runoff=0.49 cfs 0.029 af

Subcatchment W-12: PHASE 2 BLDG-2 Runoff Area=0.413 ac 100.00% Impervious Runoff Depth>0.89"
Tc=6.0 min CN=98 Runoff=0.51 cfs 0.031 af

Subcatchment W-13: PHASE 2 NORTHERN Runoff Area=0.386 ac 67.62% Impervious Runoff Depth>0.10"
Tc=6.0 min CN=79 Runoff=0.02 cfs 0.003 af

Subcatchment W-14: PHASE 2 WESTERN Runoff Area=0.048 ac 6.25% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=43 Runoff=0.00 cfs 0.000 af

Subcatchment W-2: PHASE 1 BLDG-2 Runoff Area=0.259 ac 100.00% Impervious Runoff Depth>0.89"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.019 af

Subcatchment W-3: NORTHERN TREE PIT Runoff Area=0.090 ac 53.33% Impervious Runoff Depth>0.01"
Tc=6.0 min CN=70 Runoff=0.00 cfs 0.000 af

Subcatchment W-4: NORTHERN Runoff Area=0.220 ac 75.00% Impervious Runoff Depth>0.17"
Flow Length=286' Tc=6.0 min CN=83 Runoff=0.04 cfs 0.003 af

Subcatchment W-5: MIDDLE TREE PIT + Runoff Area=1.502 ac 71.11% Impervious Runoff Depth>0.13"
Flow Length=156' Tc=6.0 min CN=81 Runoff=0.13 cfs 0.017 af

Subcatchment W-6: SOUTHERN TREE PIT Runoff Area=0.577 ac 83.36% Impervious Runoff Depth>0.31"
Flow Length=72' Tc=6.0 min CN=88 Runoff=0.24 cfs 0.015 af

Subcatchment W-7: SOUTH EAST TREE PIT Runoff Area=0.520 ac 56.35% Impervious Runoff Depth>0.02"
Tc=6.0 min CN=72 Runoff=0.00 cfs 0.001 af

Subcatchment W-8: EAST PARKING LOT Runoff Area=1.237 ac 81.41% Impervious Runoff Depth>0.28"
Flow Length=215' Tc=17.7 min CN=87 Runoff=0.28 cfs 0.029 af

Subcatchment W-9: EAST PARKING LOT Runoff Area=0.041 ac 85.37% Impervious Runoff Depth>0.35"
Tc=6.0 min CN=89 Runoff=0.02 cfs 0.001 af

Reach EAST: EAST MS4 Inflow=0.02 cfs 0.001 af
Outflow=0.02 cfs 0.001 af

Reach NORTH: NORTH MS4 Inflow=1.79 cfs 0.111 af
Outflow=1.79 cfs 0.111 af

Reach WEST: WEST MS4 Inflow=0.01 cfs 0.001 af
Outflow=0.01 cfs 0.001 af

Pond MH-1: MH-1 Peak Elev=844.90' Inflow=0.43 cfs 0.025 af
12.0" Round Culvert n=0.013 L=91.0' S=0.0100 '/' Outflow=0.43 cfs 0.025 af

Pond MH-2: MH-2 Peak Elev=844.43' Inflow=1.33 cfs 0.079 af
18.0" Round Culvert n=0.013 L=117.2' S=0.0100 '/' Outflow=1.33 cfs 0.079 af

Pond MH-3: MH-3 Peak Elev=842.62' Inflow=1.75 cfs 0.104 af
24.0" Round Culvert n=0.013 L=107.1' S=0.0100 '/' Outflow=1.75 cfs 0.104 af

Pond MH-4: MH-4 Peak Elev=846.73' Inflow=0.49 cfs 0.029 af
12.0" Round Culvert n=0.013 L=77.1' S=0.0100 '/' Outflow=0.49 cfs 0.029 af

Pond T-1: NORTHERN TREE PIT Peak Elev=845.43' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond T-2: MIDDLE TREE PIT Peak Elev=844.01' Storage=0.001 af Inflow=0.13 cfs 0.017 af
Discarded=0.09 cfs 0.017 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.09 cfs 0.017 af

Pond T-3: SOUTHERN TREE PIT Peak Elev=847.25' Storage=0.000 af Inflow=0.24 cfs 0.015 af
Discarded=0.23 cfs 0.015 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.23 cfs 0.015 af

Pond T-4: SOUTH EAST TREE PIT Peak Elev=845.75' Storage=0.000 af Inflow=0.00 cfs 0.001 af
Discarded=0.00 cfs 0.001 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.001 af

Pond T-5: EASTERN TREE PIT Peak Elev=848.89' Storage=0.000 af Inflow=0.28 cfs 0.029 af
Discarded=0.28 cfs 0.029 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.029 af

Total Runoff Area = 6.214 ac Runoff Volume = 0.175 af Average Runoff Depth = 0.34"
21.26% Pervious = 1.321 ac 78.74% Impervious = 4.893 ac

Summary for Subcatchment W-1: PHASE 1 BLDG-1

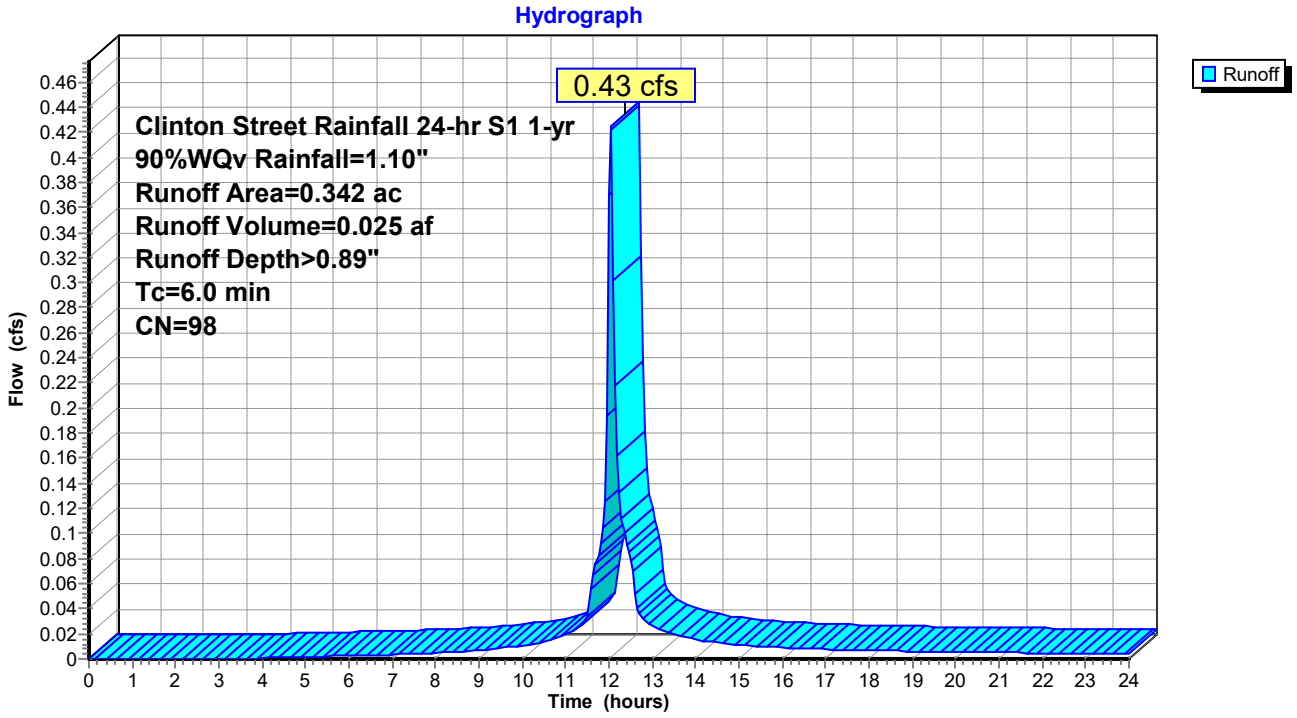
Runoff = 0.43 cfs @ 12.04 hrs, Volume= 0.025 af, Depth> 0.89"
Routed to Pond MH-1 : MH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.342	98	Roofs, HSG A
0.342		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-1: PHASE 1 BLDG-1



Summary for Subcatchment W-10: WESTERN UNTREATED

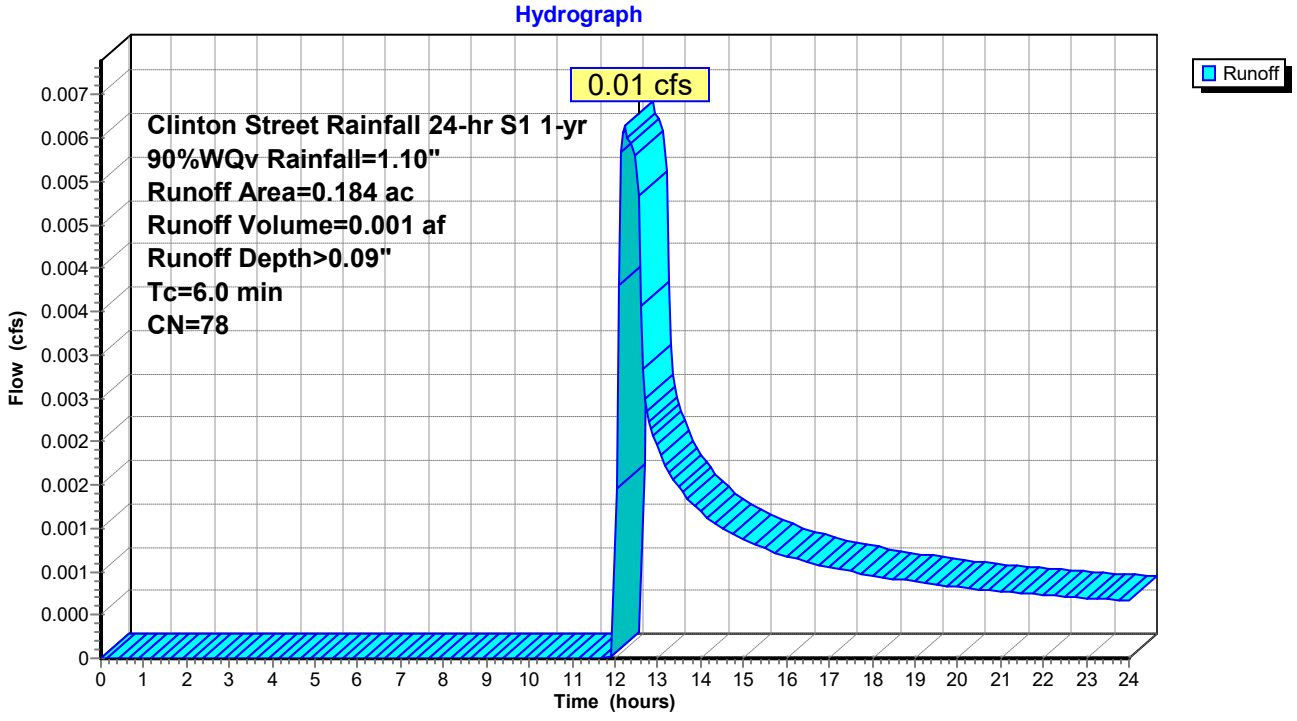
Runoff = 0.01 cfs @ 12.25 hrs, Volume= 0.001 af, Depth> 0.09"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.123	98	Paved parking, HSG A
0.061	39	>75% Grass cover, Good, HSG A
0.184	78	Weighted Average
0.061		33.15% Pervious Area
0.123		66.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-10: WESTERN UNTREATED



Summary for Subcatchment W-11: PHASE 2 BLDG-1

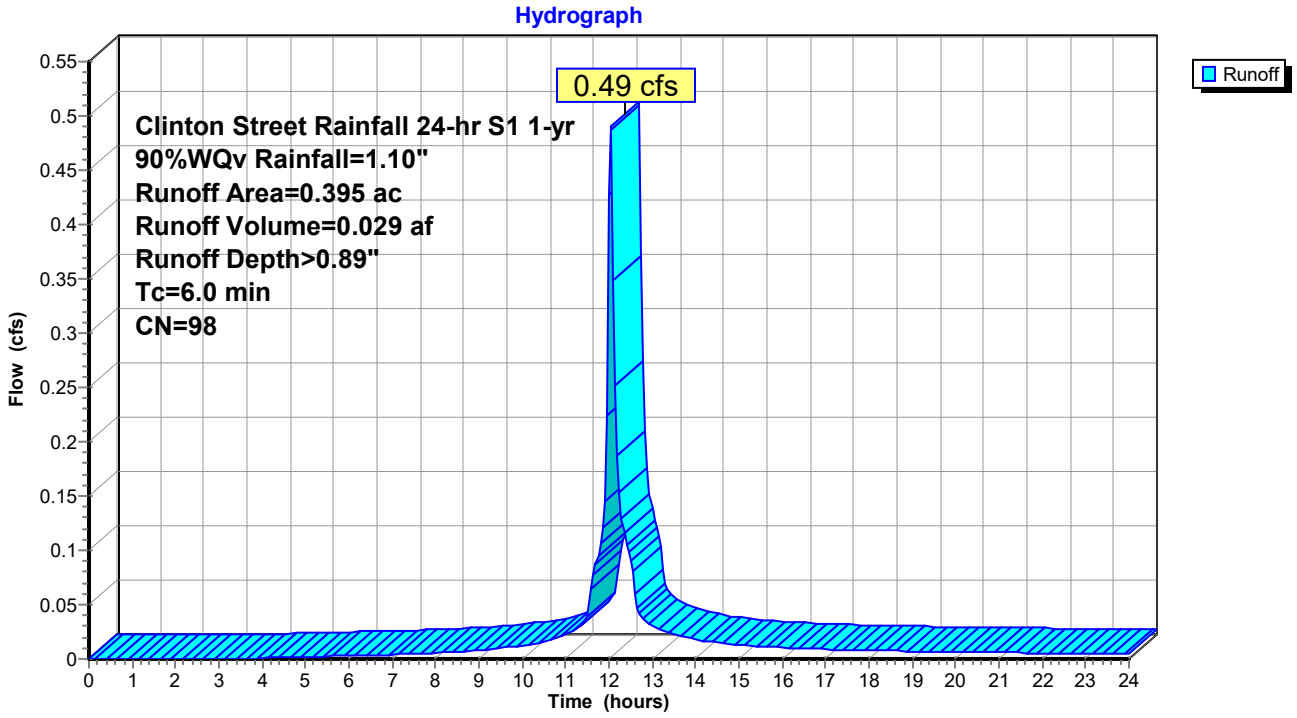
Runoff = 0.49 cfs @ 12.04 hrs, Volume= 0.029 af, Depth> 0.89"
Routed to Pond MH-4 : MH-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.395	98	Roofs, HSG A
0.395		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-11: PHASE 2 BLDG-1



Summary for Subcatchment W-12: PHASE 2 BLDG-2

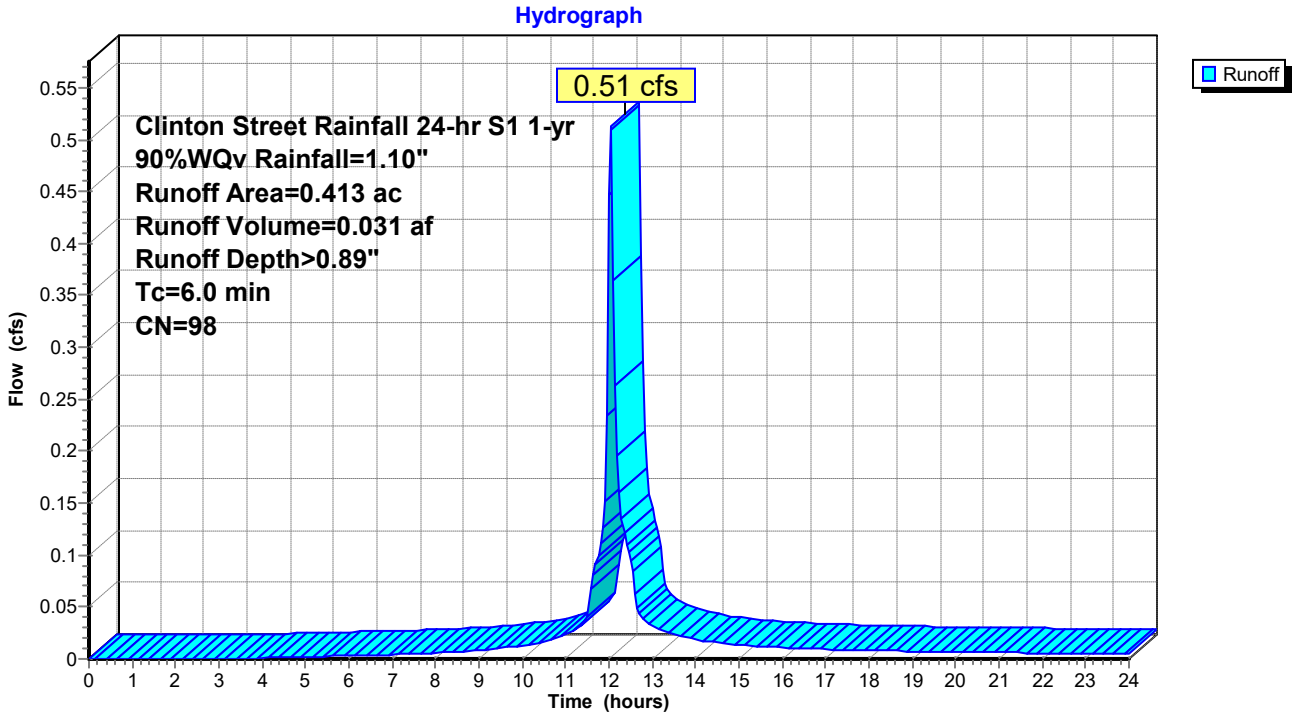
Runoff = 0.51 cfs @ 12.04 hrs, Volume= 0.031 af, Depth> 0.89"
Routed to Pond MH-2 : MH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.413	98	Roofs, HSG A
0.413		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-12: PHASE 2 BLDG-2



Summary for Subcatchment W-13: PHASE 2 NORTHERN UNTREATED

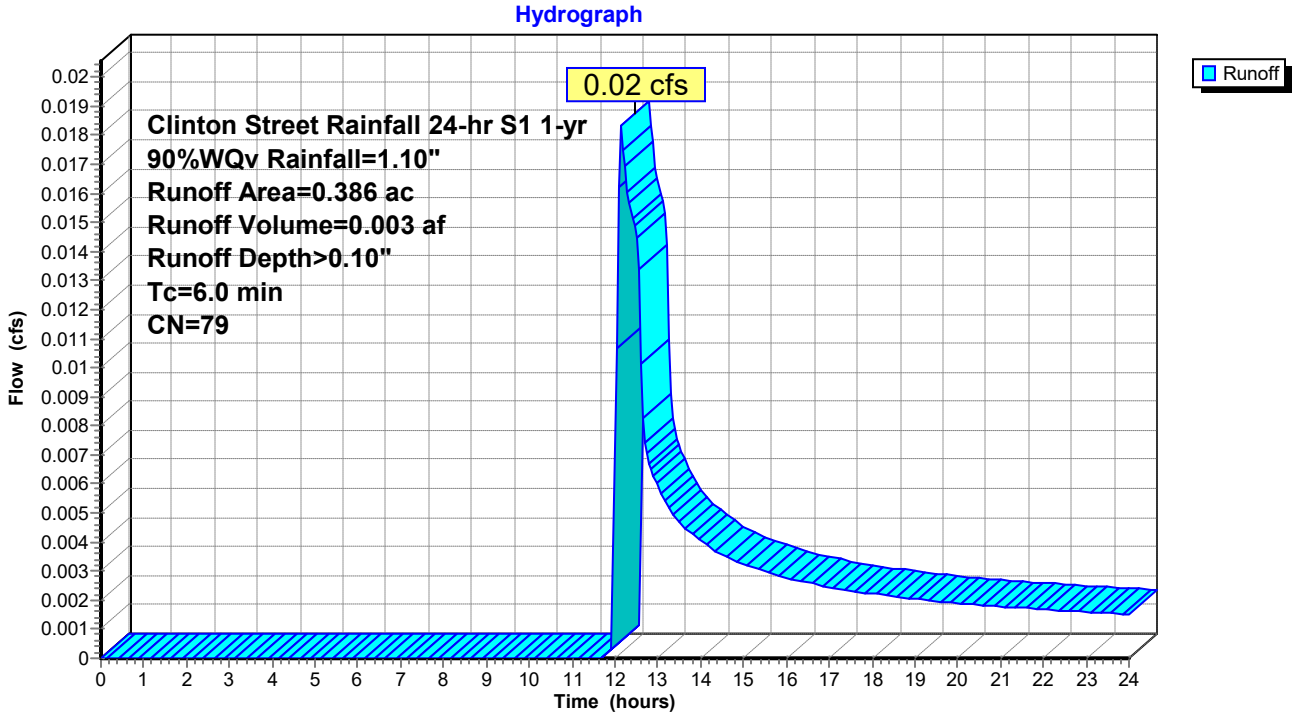
Runoff = 0.02 cfs @ 12.16 hrs, Volume= 0.003 af, Depth> 0.10"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.261	98	Paved parking, HSG A
0.125	39	>75% Grass cover, Good, HSG A
0.386	79	Weighted Average
0.125		32.38% Pervious Area
0.261		67.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-13: PHASE 2 NORTHERN UNTREATED



Summary for Subcatchment W-14: PHASE 2 WESTERN UNTREATED

[45] Hint: Runoff=Zero

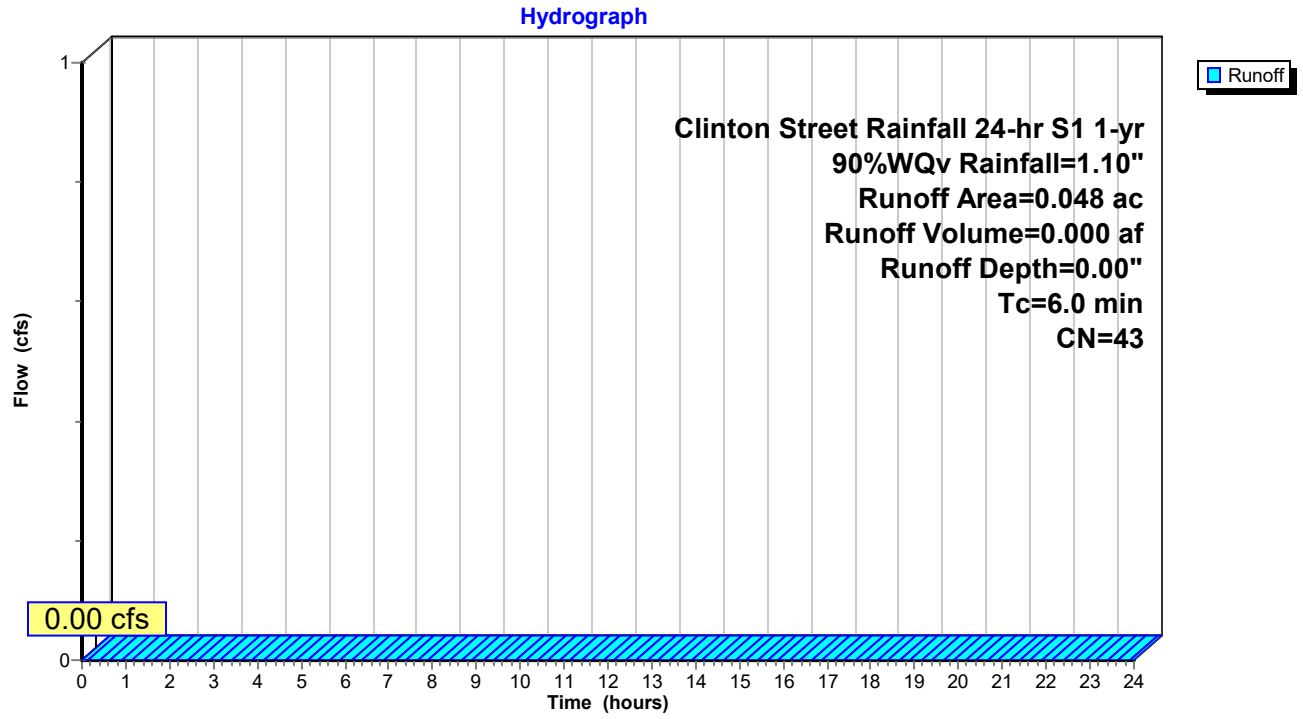
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.003	98	Paved parking, HSG A
0.045	39	>75% Grass cover, Good, HSG A
0.048	43	Weighted Average
0.045		93.75% Pervious Area
0.003		6.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-14: PHASE 2 WESTERN UNTREATED



Summary for Subcatchment W-2: PHASE 1 BLDG-2

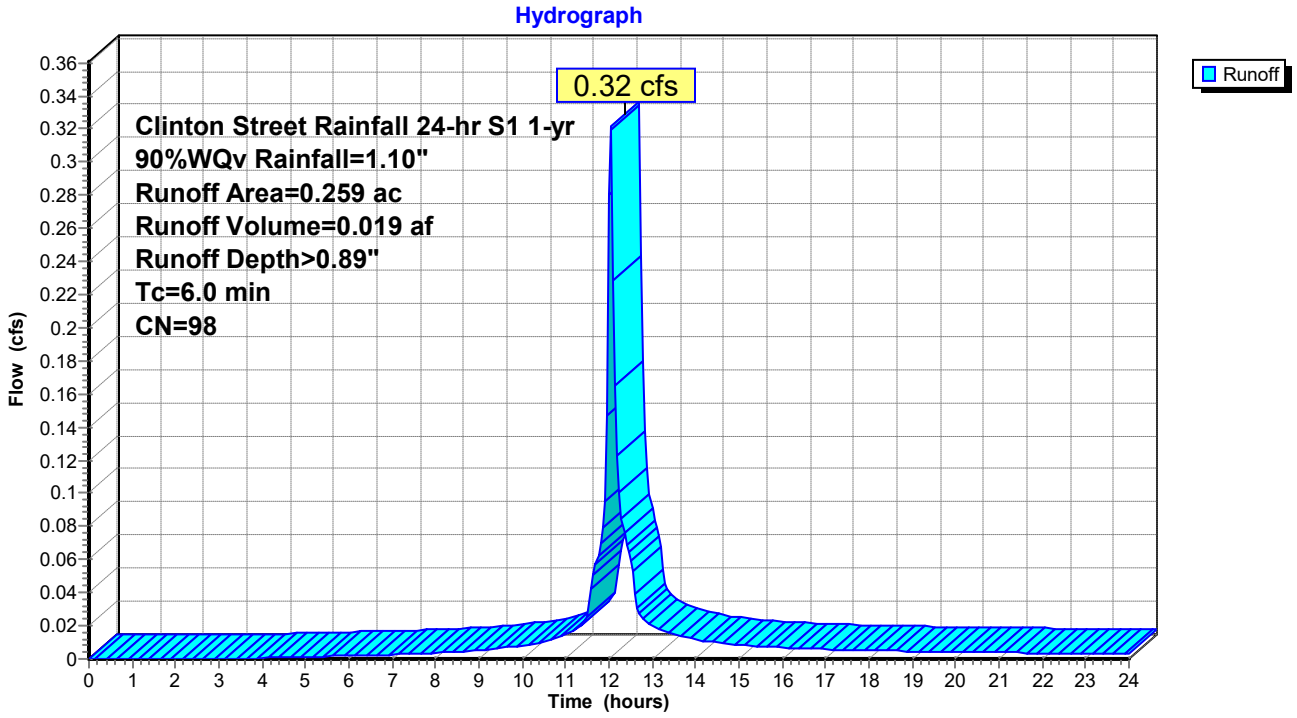
Runoff = 0.32 cfs @ 12.04 hrs, Volume= 0.019 af, Depth> 0.89"
Routed to Pond MH-2 : MH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.259	98	Roofs, HSG A
0.259		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-2: PHASE 1 BLDG-2



Summary for Subcatchment W-3: NORTHERN TREE PIT

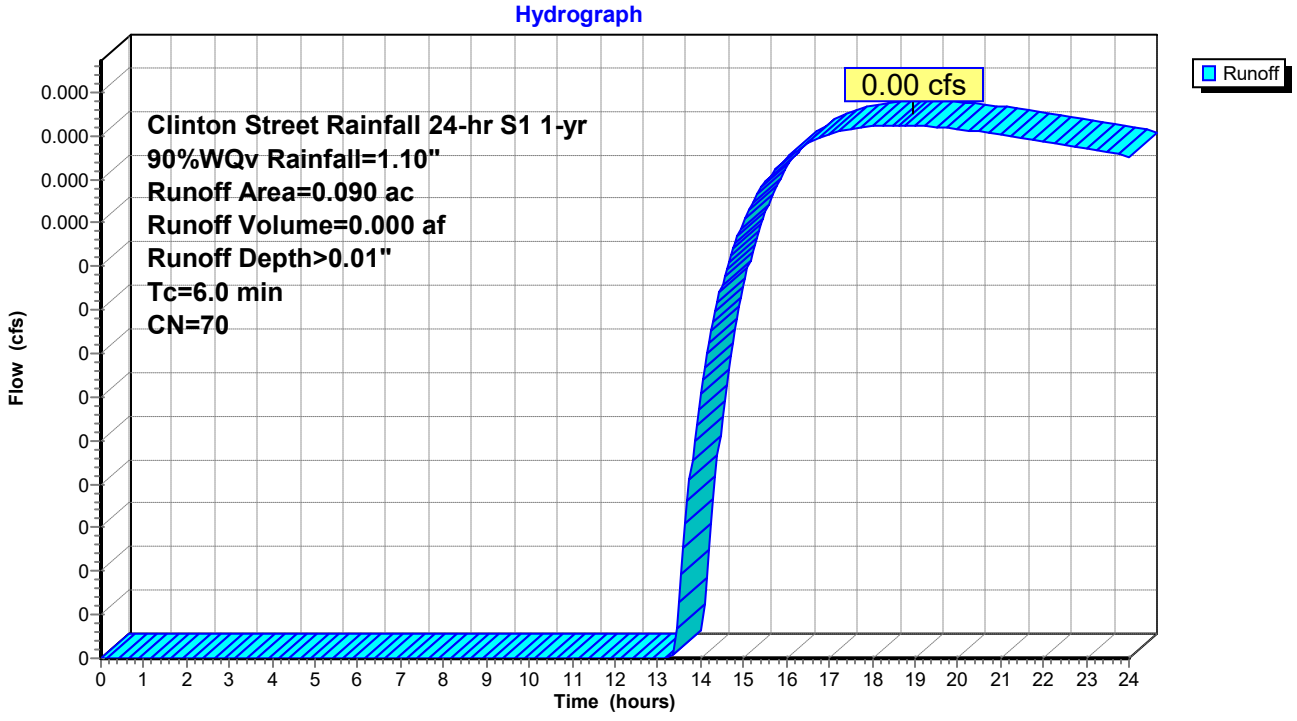
Runoff = 0.00 cfs @ 18.65 hrs, Volume= 0.000 af, Depth> 0.01"
Routed to Pond T-1 : NORTHERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.048	98	Paved parking, HSG A
0.042	39	>75% Grass cover, Good, HSG A
0.090	70	Weighted Average
0.042		46.67% Pervious Area
0.048		53.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-3: NORTHERN TREE PIT



Summary for Subcatchment W-4: NORTHERN UNTREATED

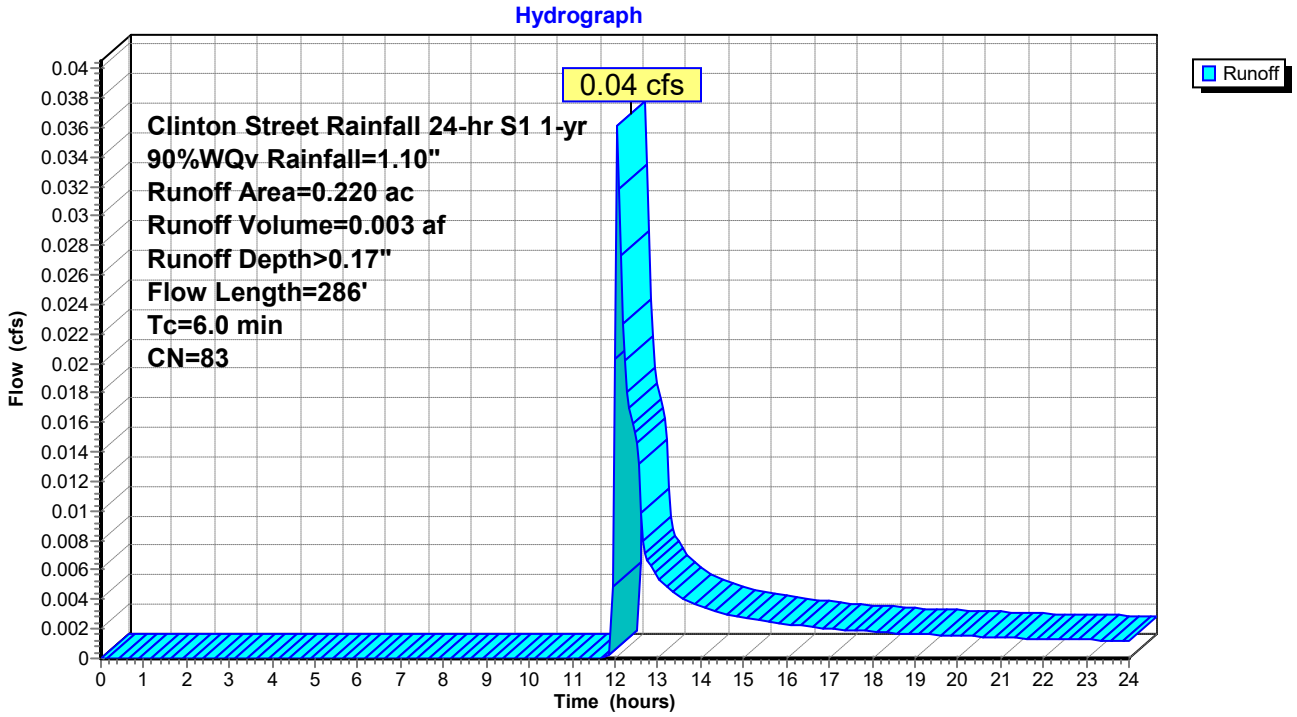
Runoff = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af, Depth> 0.17"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.165	98	Paved parking, HSG A
0.055	39	>75% Grass cover, Good, HSG A
0.220	83	Weighted Average
0.055		25.00% Pervious Area
0.165		75.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	100	0.0050	0.68		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.6	101	0.0198	2.86		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	52	0.0240	3.14		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	33	0.0121	4.42	2.41	**Pipe Channel,** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
2.6					**Direct Entry, MINIMUM**
6.0	286	Total			

Subcatchment W-4: NORTHERN UNTREATED



Summary for Subcatchment W-5: MIDDLE TREE PIT + PHASE 2

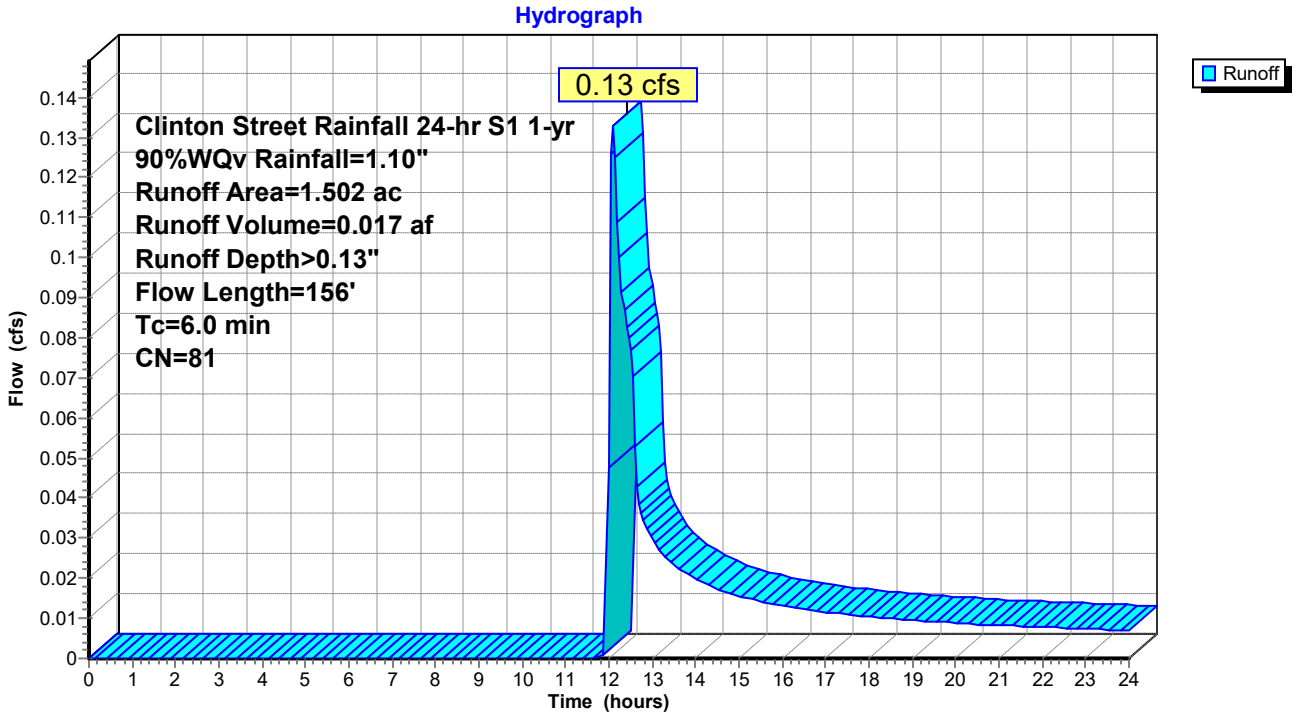
Runoff = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Depth> 0.13"
Routed to Pond T-2 : MIDDLE TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
1.068	98	Paved parking, HSG A
0.434	39	>75% Grass cover, Good, HSG A
1.502	81	Weighted Average
0.434		28.89% Pervious Area
1.068		71.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	7	0.5000	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.8	61	0.0328	1.31		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.2	15	0.1000	1.55		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.4	65	0.0231	3.09		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	8	0.2500	3.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.2					**Direct Entry, MIN Tc**
6.0	156	Total			

Subcatchment W-5: MIDDLE TREE PIT + PHASE 2



Summary for Subcatchment W-6: SOUTHERN TREE PIT

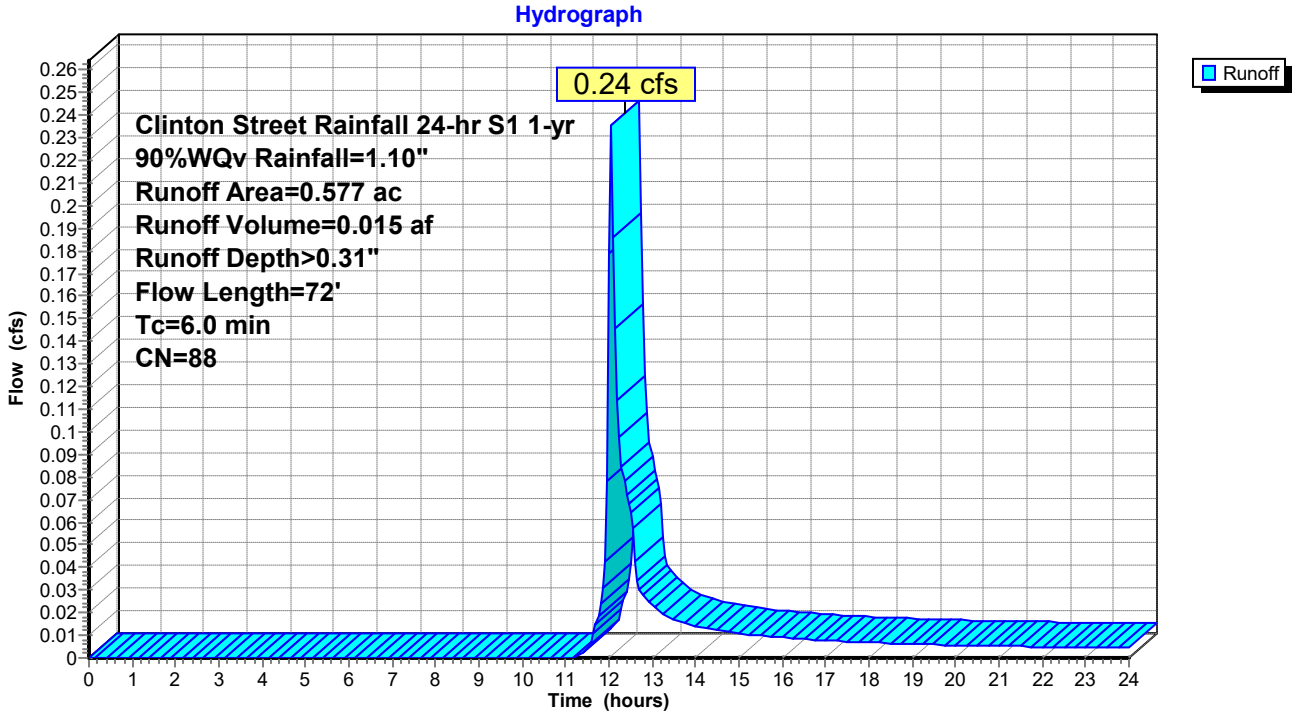
Runoff = 0.24 cfs @ 12.05 hrs, Volume= 0.015 af, Depth> 0.31"
Routed to Pond T-3 : SOUTHERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.481	98	Paved parking, HSG A
0.096	39	>75% Grass cover, Good, HSG A
0.577	88	Weighted Average
0.096		16.64% Pervious Area
0.481		83.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	9	0.3333	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.8	63	0.0317	1.30		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
4.7					**Direct Entry, MINIMUM**
6.0	72	Total			

Subcatchment W-6: SOUTHERN TREE PIT



Summary for Subcatchment W-7: SOUTH EAST TREE PIT

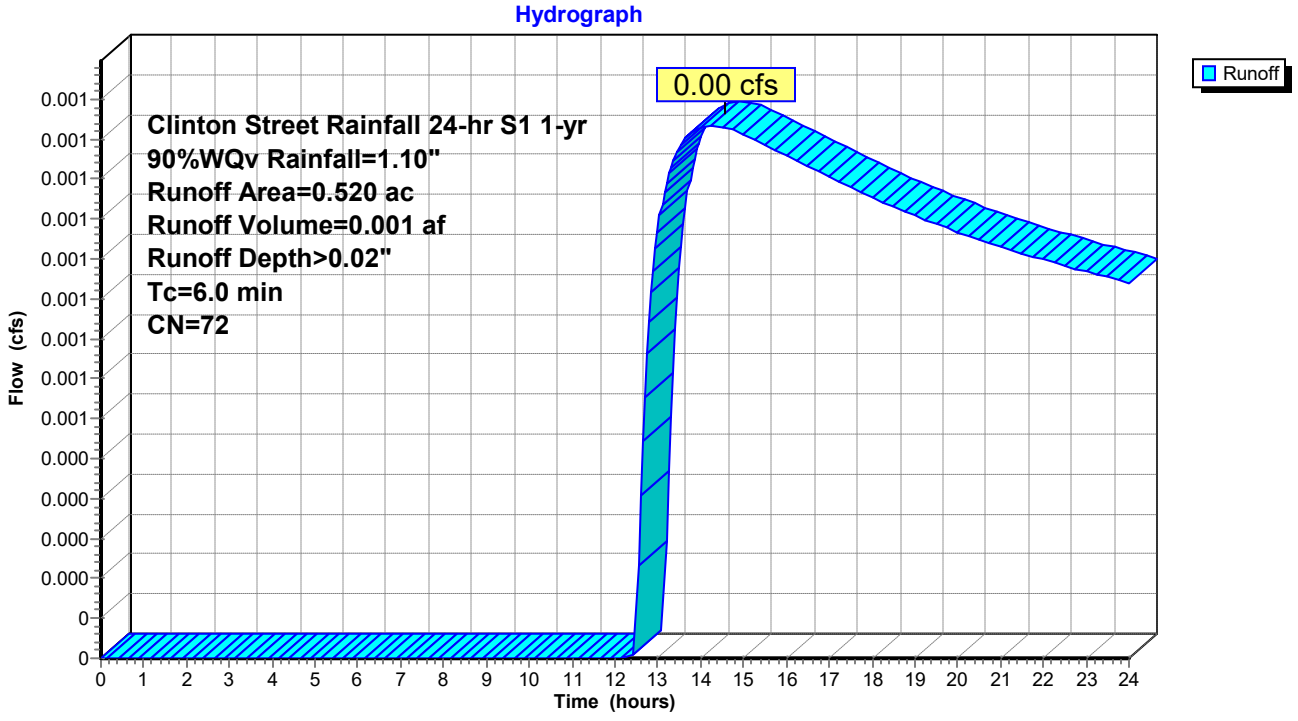
Runoff = 0.00 cfs @ 14.25 hrs, Volume= 0.001 af, Depth> 0.02"
Routed to Pond T-4 : SOUTH EAST TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.293	98	Paved parking, HSG A
0.227	39	>75% Grass cover, Good, HSG A
0.520	72	Weighted Average
0.227		43.65% Pervious Area
0.293		56.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-7: SOUTH EAST TREE PIT



Summary for Subcatchment W-8: EAST PARKING LOT TREE PIT

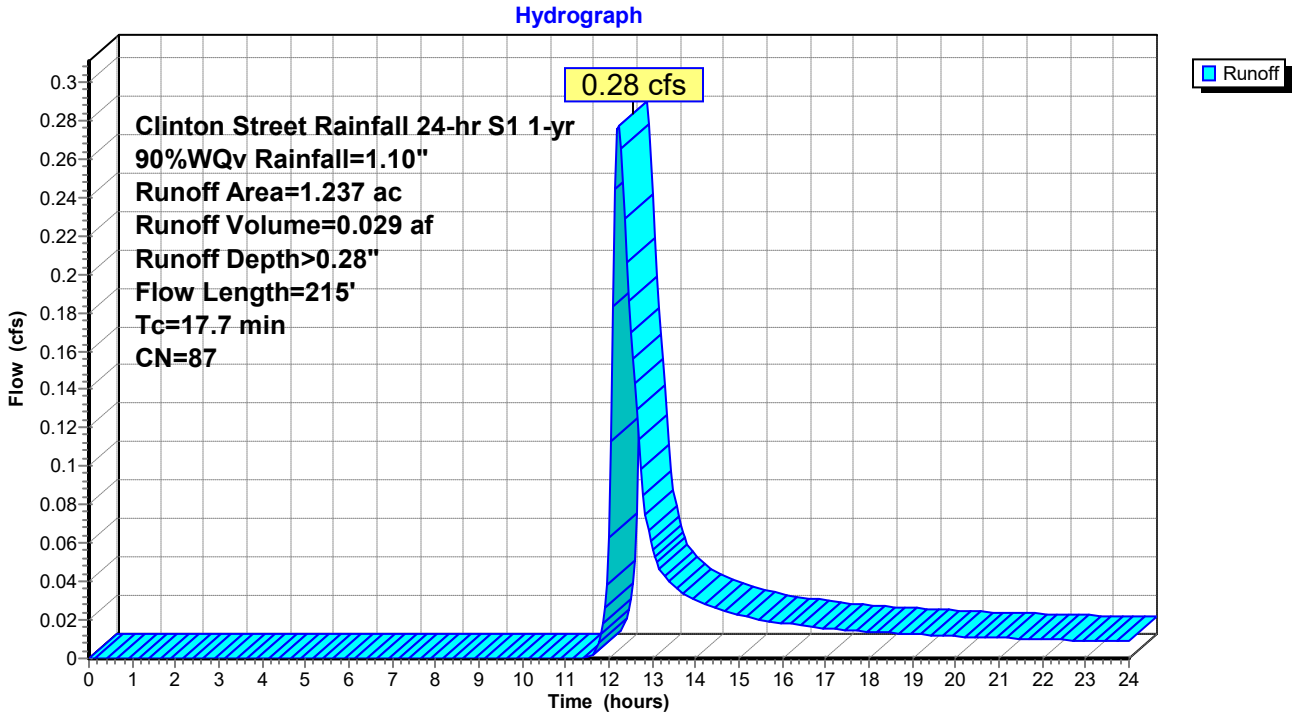
Runoff = 0.28 cfs @ 12.23 hrs, Volume= 0.029 af, Depth> 0.28"
Routed to Pond T-5 : EASTERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
1.007	98	Paved parking, HSG A
0.230	39	>75% Grass cover, Good, HSG A
1.237	87	Weighted Average
0.230		18.59% Pervious Area
1.007		81.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	3	0.1667	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
8.7	53	0.0278	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
4.4	30	0.0500	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
3.5	10	0.0100	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
0.7	119	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.7	215	Total			

Subcatchment W-8: EAST PARKING LOT TREE PIT



Summary for Subcatchment W-9: EAST PARKING LOT UNTREATED

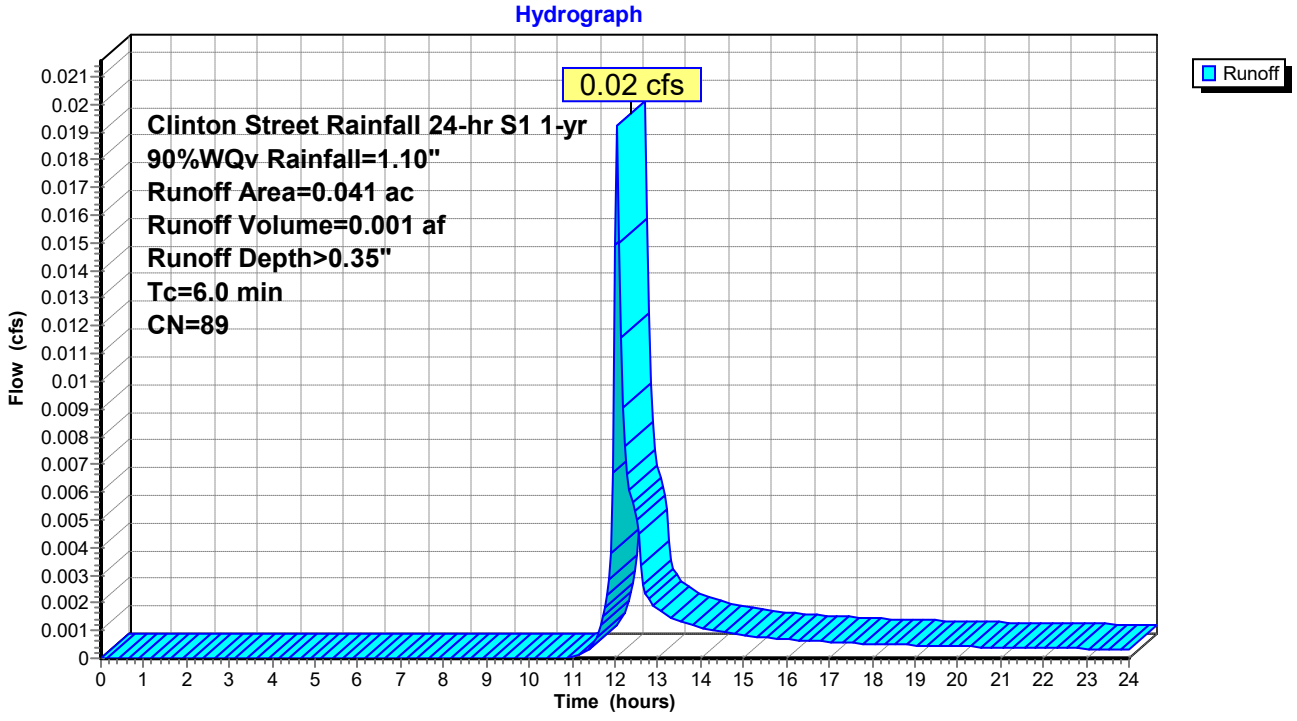
Runoff = 0.02 cfs @ 12.05 hrs, Volume= 0.001 af, Depth> 0.35"
Routed to Reach EAST : EAST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr 90%WQv Rainfall=1.10"

Area (ac)	CN	Description
0.035	98	Paved parking, HSG A
0.006	39	>75% Grass cover, Good, HSG A
0.041	89	Weighted Average
0.006		14.63% Pervious Area
0.035		85.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-9: EAST PARKING LOT UNTREATED



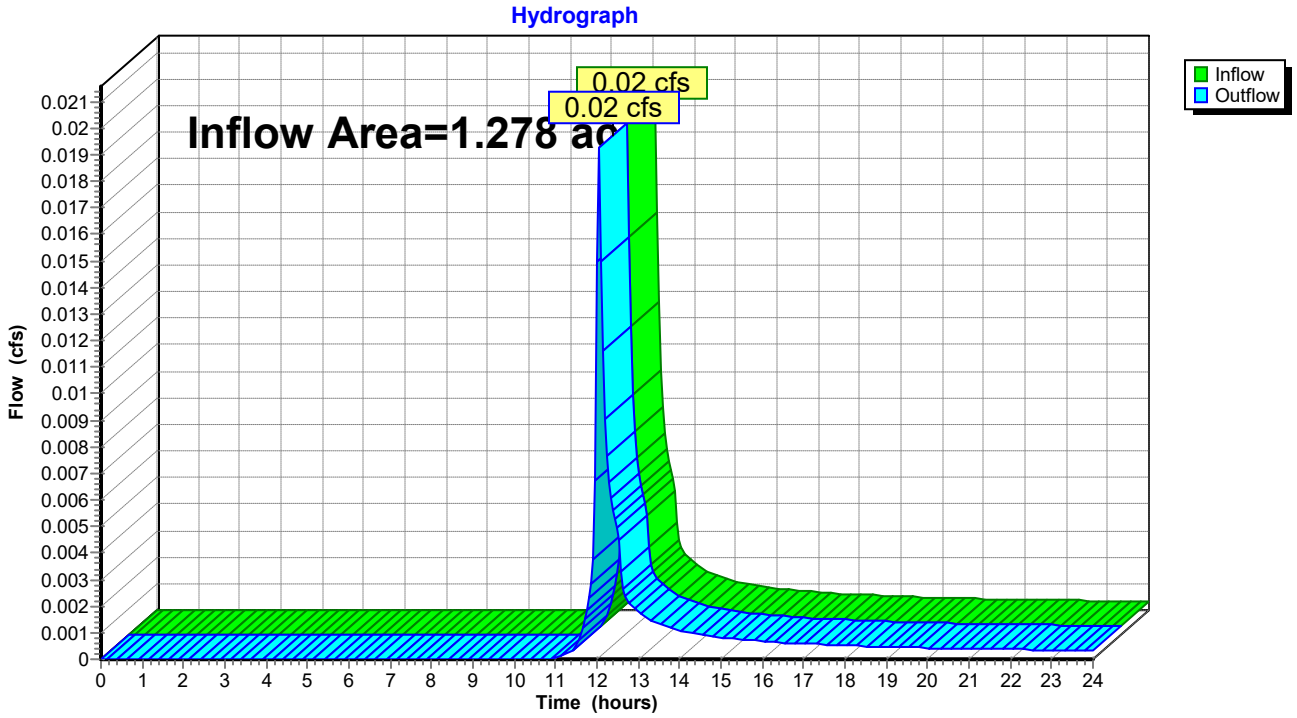
Summary for Reach EAST: EAST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.278 ac, 81.53% Impervious, Inflow Depth > 0.01" for 90%WQv event
Inflow = 0.02 cfs @ 12.05 hrs, Volume= 0.001 af
Outflow = 0.02 cfs @ 12.05 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach EAST: EAST MS4



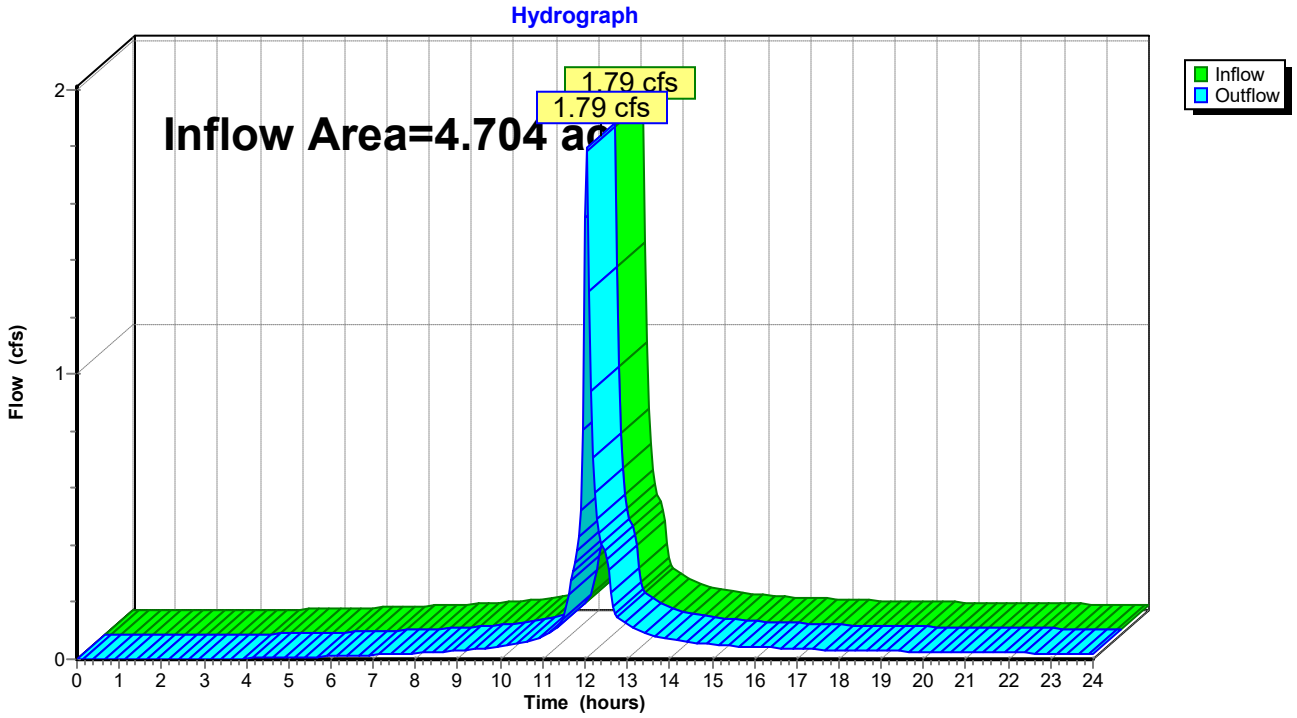
Summary for Reach NORTH: NORTH MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.704 ac, 79.19% Impervious, Inflow Depth > 0.28" for 90%WQv event
Inflow = 1.79 cfs @ 12.04 hrs, Volume= 0.111 af
Outflow = 1.79 cfs @ 12.04 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach NORTH: NORTH MS4



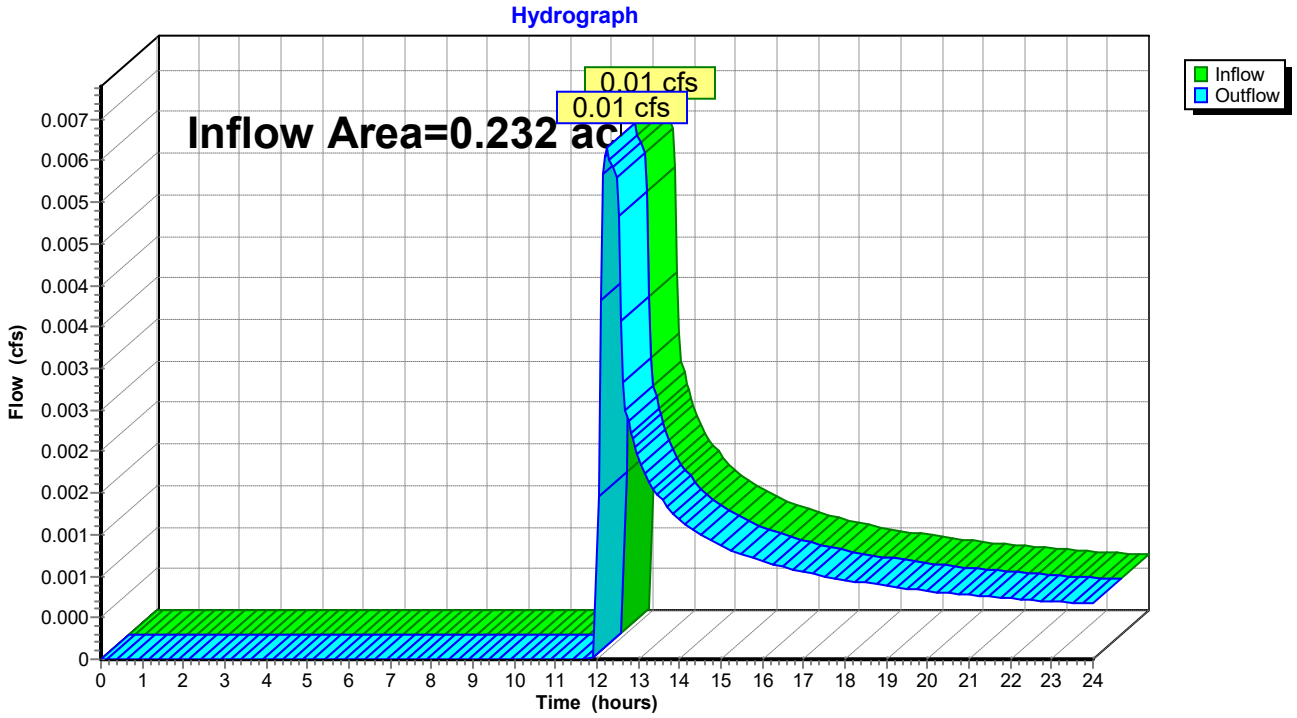
Summary for Reach WEST: WEST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.232 ac, 54.31% Impervious, Inflow Depth > 0.07" for 90%WQv event
Inflow = 0.01 cfs @ 12.25 hrs, Volume= 0.001 af
Outflow = 0.01 cfs @ 12.25 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach WEST: WEST MS4



Summary for Pond MH-1: MH-1

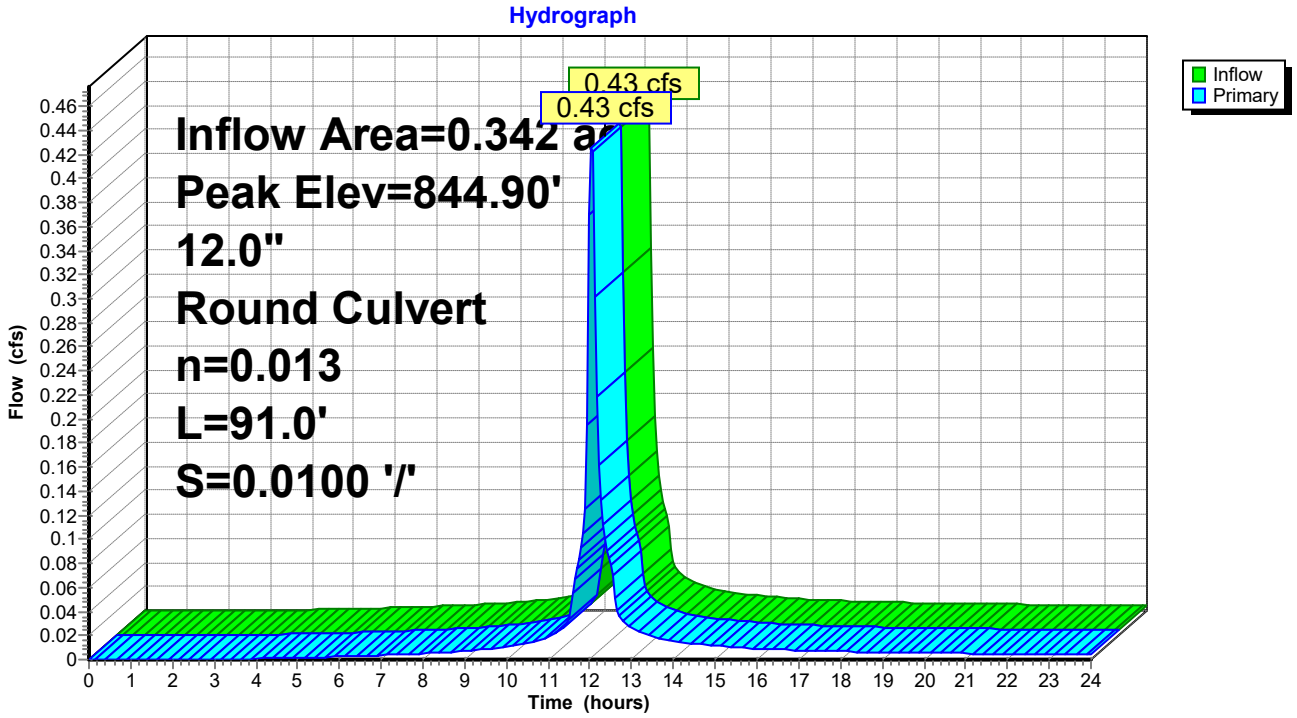
Inflow Area = 0.342 ac,100.00% Impervious, Inflow Depth > 0.89" for 90%WQv event
Inflow = 0.43 cfs @ 12.04 hrs, Volume= 0.025 af
Outflow = 0.43 cfs @ 12.04 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
Primary = 0.43 cfs @ 12.04 hrs, Volume= 0.025 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 844.90' @ 12.04 hrs
Flood Elev= 850.88'

Device	Routing	Invert	Outlet Devices
#1	Primary	844.58'	**12.0" Round OUTLET PIPE** L= 91.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 844.58' / 843.67' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.41 cfs @ 12.04 hrs HW=844.90' (Free Discharge)
1=OUTLET PIPE (Inlet Controls 0.41 cfs @ 1.92 fps)

Pond MH-1: MH-1



Summary for Pond MH-2: MH-2

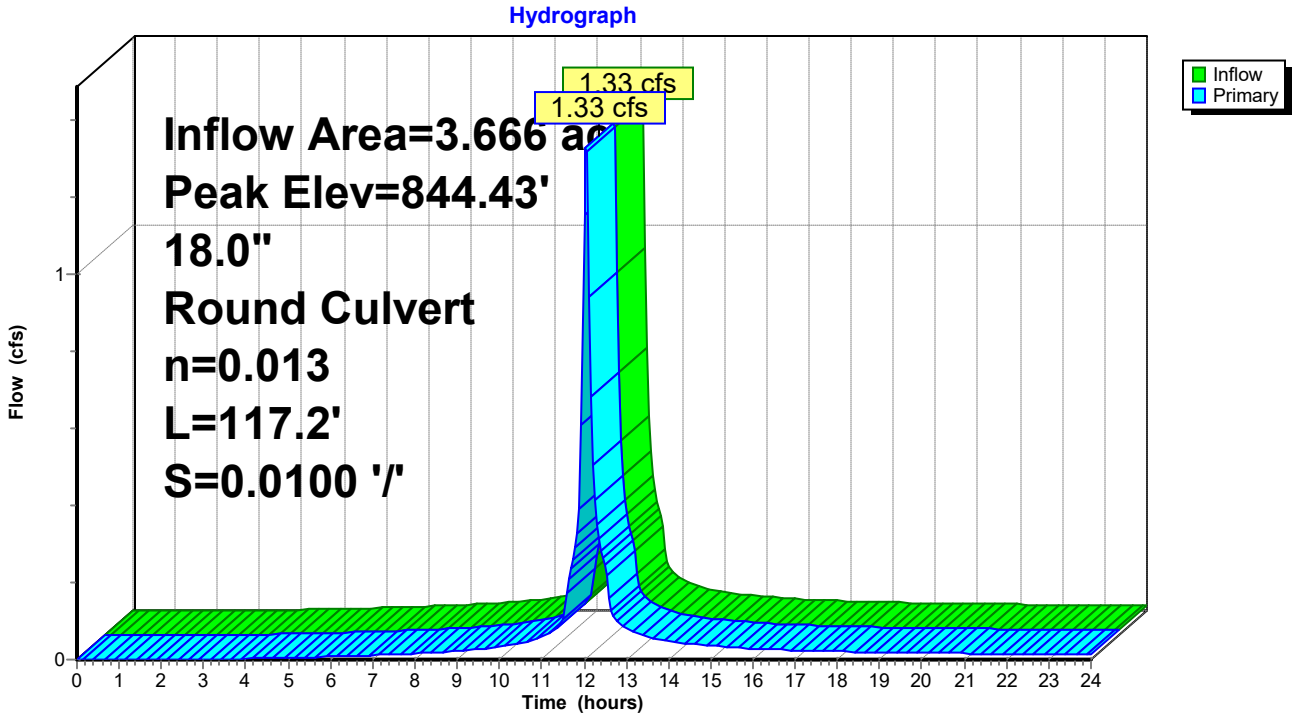
Inflow Area = 3.666 ac, 79.35% Impervious, Inflow Depth > 0.26" for 90%WQv event
Inflow = 1.33 cfs @ 12.04 hrs, Volume= 0.079 af
Outflow = 1.33 cfs @ 12.04 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min
Primary = 1.33 cfs @ 12.04 hrs, Volume= 0.079 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 844.43' @ 12.04 hrs
Flood Elev= 850.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	843.74'	**18.0" Round OUTLET PIPE** L= 117.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 843.74' / 842.57' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.28 cfs @ 12.04 hrs HW=844.42' TW=844.00' (Fixed TW Elev= 844.00')
1=OUTLET PIPE (Outlet Controls 1.28 cfs @ 2.42 fps)

Pond MH-2: MH-2



Summary for Pond MH-3: MH-3

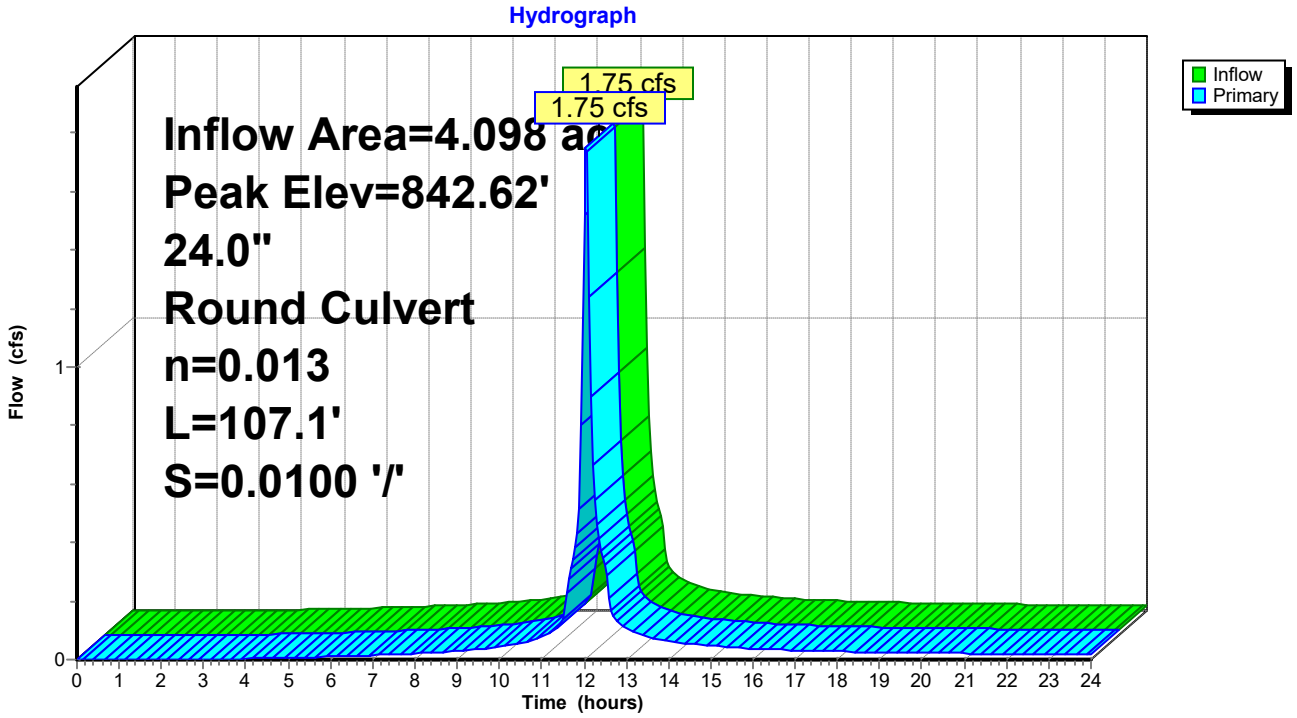
Inflow Area = 4.098 ac, 80.50% Impervious, Inflow Depth > 0.31" for 90%WQv event
Inflow = 1.75 cfs @ 12.04 hrs, Volume= 0.104 af
Outflow = 1.75 cfs @ 12.04 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min
Primary = 1.75 cfs @ 12.04 hrs, Volume= 0.104 af
Routed to Reach NORTH : NORTH MS4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 842.62' @ 12.04 hrs
Flood Elev= 851.51'

Device	Routing	Invert	Outlet Devices
#1	Primary	842.07'	**24.0" Round Culvert** L= 107.1' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 842.07' / 841.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.69 cfs @ 12.04 hrs HW=842.61' (Free Discharge)
1=Culvert (Inlet Controls 1.69 cfs @ 2.49 fps)

Pond MH-3: MH-3



Summary for Pond MH-4: MH-4

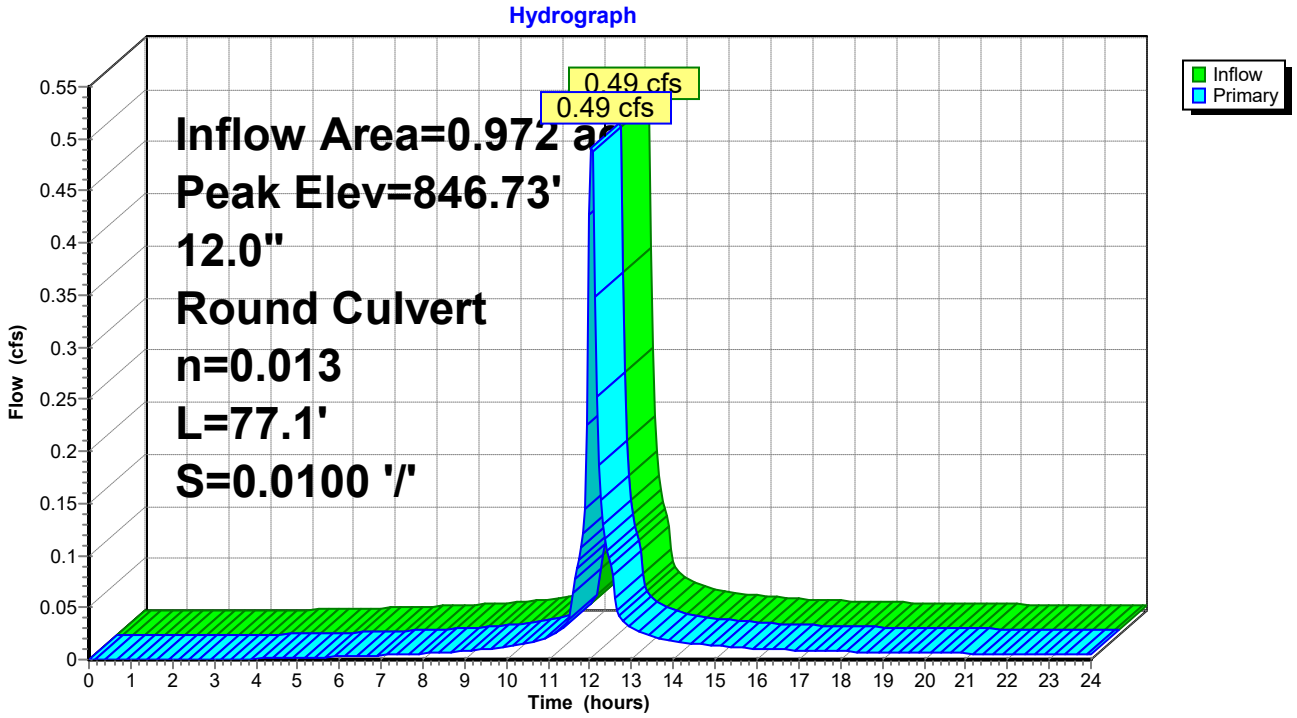
Inflow Area = 0.972 ac, 90.12% Impervious, Inflow Depth > 0.36" for 90%WQv event
Inflow = 0.49 cfs @ 12.04 hrs, Volume= 0.029 af
Outflow = 0.49 cfs @ 12.04 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.49 cfs @ 12.04 hrs, Volume= 0.029 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 846.73' @ 12.04 hrs
Flood Elev= 851.18'

Device	Routing	Invert	Outlet Devices
#1	Primary	846.21'	**12.0" Round OUTLET** L= 77.1' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.21' / 845.44' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.47 cfs @ 12.04 hrs HW=846.73' TW=846.53' (Fixed TW Elev= 846.53')
1=OUTLET (Outlet Controls 0.47 cfs @ 1.68 fps)

Pond MH-4: MH-4



Summary for Pond T-1: NORTHERN TREE PIT

Inflow Area = 0.090 ac, 53.33% Impervious, Inflow Depth > 0.01" for 90%WQv event
Inflow = 0.00 cfs @ 18.65 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 18.62 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 18.62 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-3 : MH-3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 845.43' @ 18.62 hrs Surf.Area= 0.016 ac Storage= 0.000 af
Flood Elev= 851.17' Surf.Area= 0.016 ac Storage= 0.039 af

Plug-Flow detention time= 0.7 min calculated for 0.000 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (1,145.1 - 1,144.7)

Volume	Invert	Avail.Storage	Storage Description
#1	845.43'	0.000 af	**34.49'W x 20.44'L x 5.75'H TREE PIT** 0.093 af Overall - 0.093 af Embedded = 0.000 af
#2	845.43'	0.013 af	**34.49'W x 20.44'L x 2.00'H NO. 2 STONE** Inside #1 0.032 af Overall x 40.0% Voids
#3	847.43'	0.017 af	**34.49'W x 20.44'L x 3.00'H FILTER MEDIA** Inside #1 0.049 af Overall x 35.0% Voids
#4	850.43'	0.001 af	**34.49'W x 20.44'L x 0.25'H MULCH** Inside #1 0.004 af Overall x 30.0% Voids
#5	850.68'	0.008 af	**34.49'W x 20.44'L x 0.50'H PONDING** Inside #1
		0.039 af	Total Available Storage

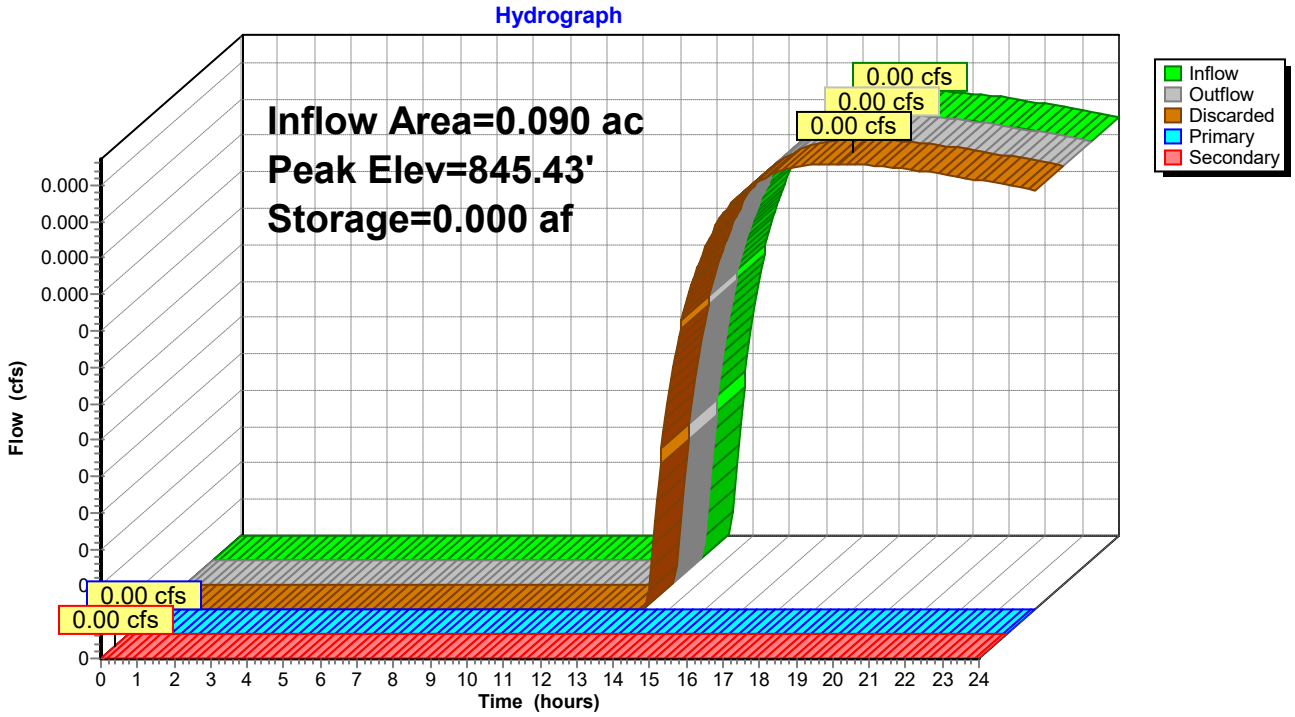
Device	Routing	Invert	Outlet Devices
#1	Primary	846.43'	**12.0" Round OUTLET PIPE** L= 3.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.43' / 846.40' S= 0.0086 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	846.43'	**2.0" Vert. PERF PIPE X 34.48** C= 0.600 Limited to weir flow at low heads
#3	Discarded	845.43'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	851.17'	**12.0" Horiz. SURFACE OVERFLOW** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.39 cfs @ 18.62 hrs HW=845.43' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.39 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.43' (Free Discharge)
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.43' (Free Discharge)
↑└**4=SURFACE OVERFLOW** (Controls 0.00 cfs)

Pond T-1: NORTHERN TREE PIT



Summary for Pond T-2: MIDDLE TREE PIT

Inflow Area = 1.502 ac, 71.11% Impervious, Inflow Depth > 0.13" for 90%WQv event
Inflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Outflow = 0.09 cfs @ 12.36 hrs, Volume= 0.017 af, Atten= 35%, Lag= 15.6 min
Discarded = 0.09 cfs @ 12.36 hrs, Volume= 0.017 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 844.01' @ 12.36 hrs Surf.Area= 0.057 ac Storage= 0.001 af

Plug-Flow detention time= 12.0 min calculated for 0.017 af (99% of inflow)
Center-of-Mass det. time= 8.4 min (941.4 - 933.0)

Volume	Invert	Avail.Storage	Storage Description
#1	843.95'	0.000 af	**49.88'W x 49.88'L x 5.75'H TREE PIT** 0.328 af Overall - 0.328 af Embedded = 0.000 af
#2	843.95'	0.046 af	**49.88'W x 49.88'L x 2.00'H NO. 2 STONE** Inside #1 0.114 af Overall x 40.0% Voids
#3	845.95'	0.060 af	**49.88'W x 49.88'L x 3.00'H FILTER MEDIA** Inside #1 0.171 af Overall x 35.0% Voids
#4	848.95'	0.004 af	**49.88'W x 49.88'L x 0.25'H MULCH** Inside #1 0.014 af Overall x 30.0% Voids
#5	849.20'	0.029 af	**49.88'W x 49.88'L x 0.50'H PONDING DEPTH** Inside #1
		0.139 af	Total Available Storage

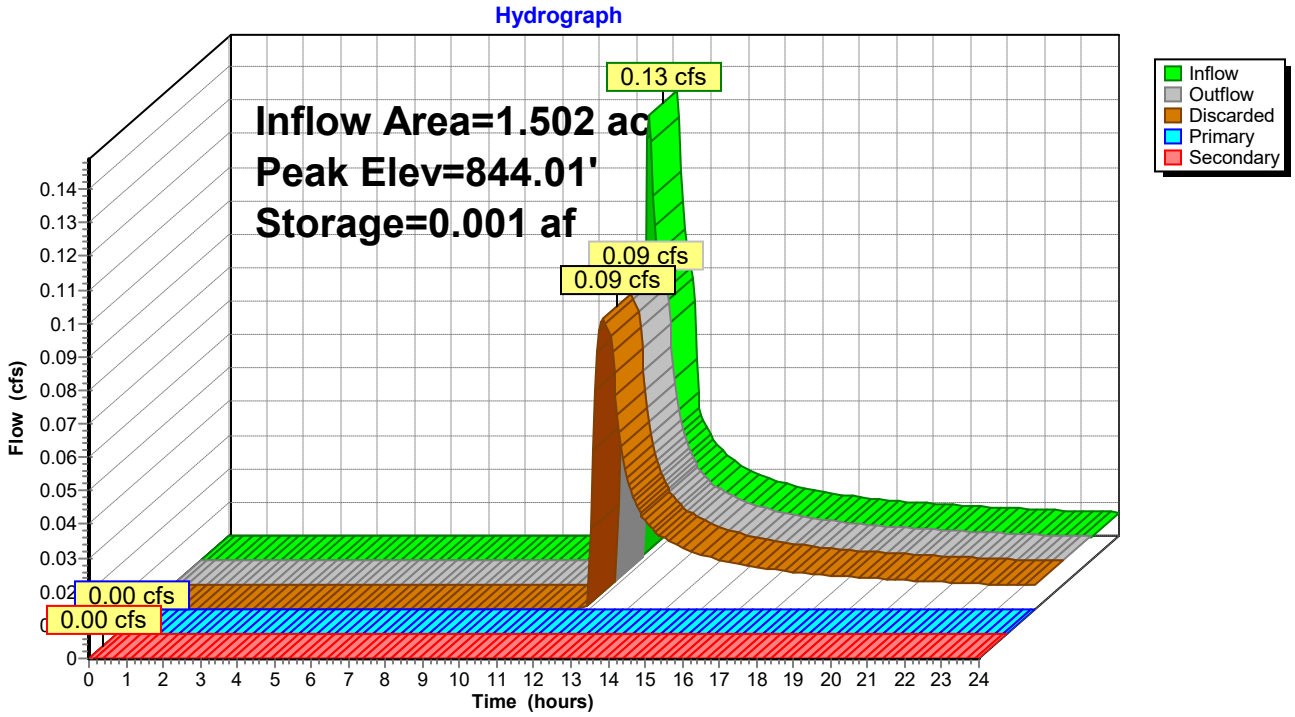
Device	Routing	Invert	Outlet Devices
#0	Secondary	849.70'	**Automatic Storage Overflow** (Discharged without head)
#1	Primary	845.04'	**12.0" Round OUTLET PIPE** L= 78.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 845.04' / 844.65' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	845.04'	**2.0" Vert. PERF PIPE X 123.88** C= 0.600 Limited to weir flow at low heads
#3	Discarded	843.95'	**24.000 in/hr Exfiltration over Surface area** Phase-In= 1.00'
#4	Secondary	849.69'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.09 cfs @ 12.36 hrs HW=844.01' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=843.95' TW=849.00' (Fixed TW Elev= 849.00')
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=843.95' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-2: MIDDLE TREE PIT



Summary for Pond T-3: SOUTHERN TREE PIT

Inflow Area = 0.577 ac, 83.36% Impervious, Inflow Depth > 0.31" for 90%WQv event
Inflow = 0.24 cfs @ 12.05 hrs, Volume= 0.015 af
Outflow = 0.23 cfs @ 12.06 hrs, Volume= 0.015 af, Atten= 2%, Lag= 0.7 min
Discarded = 0.23 cfs @ 12.06 hrs, Volume= 0.015 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-4 : MH-4
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-4 : MH-4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 847.25' @ 12.06 hrs Surf.Area= 0.039 ac Storage= 0.000 af
Flood Elev= 852.99' Surf.Area= 0.039 ac Storage= 0.095 af

Plug-Flow detention time= 0.7 min calculated for 0.015 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (876.9 - 876.4)

Volume	Invert	Avail.Storage	Storage Description
#1	847.24'	0.000 af	**5.00'W x 341.66'L x 5.75'H TREE TRENCH** 0.225 af Overall - 0.225 af Embedded = 0.000 af
#2	847.24'	0.031 af	**5.00'W x 341.66'L x 2.00'H NO. 2 STONE** Inside #1 0.078 af Overall x 40.0% Voids
#3	849.24'	0.041 af	**5.00'W x 341.66'L x 3.00'H FILTER MEDIA** Inside #1 0.118 af Overall x 35.0% Voids
#4	852.24'	0.003 af	**5.00'W x 341.66'L x 0.25'H MULCH** Inside #1 0.010 af Overall x 30.0% Voids
#5	852.49'	0.020 af	**5.00'W x 341.66'L x 0.50'H PONDING** Inside #1
		0.095 af	Total Available Storage

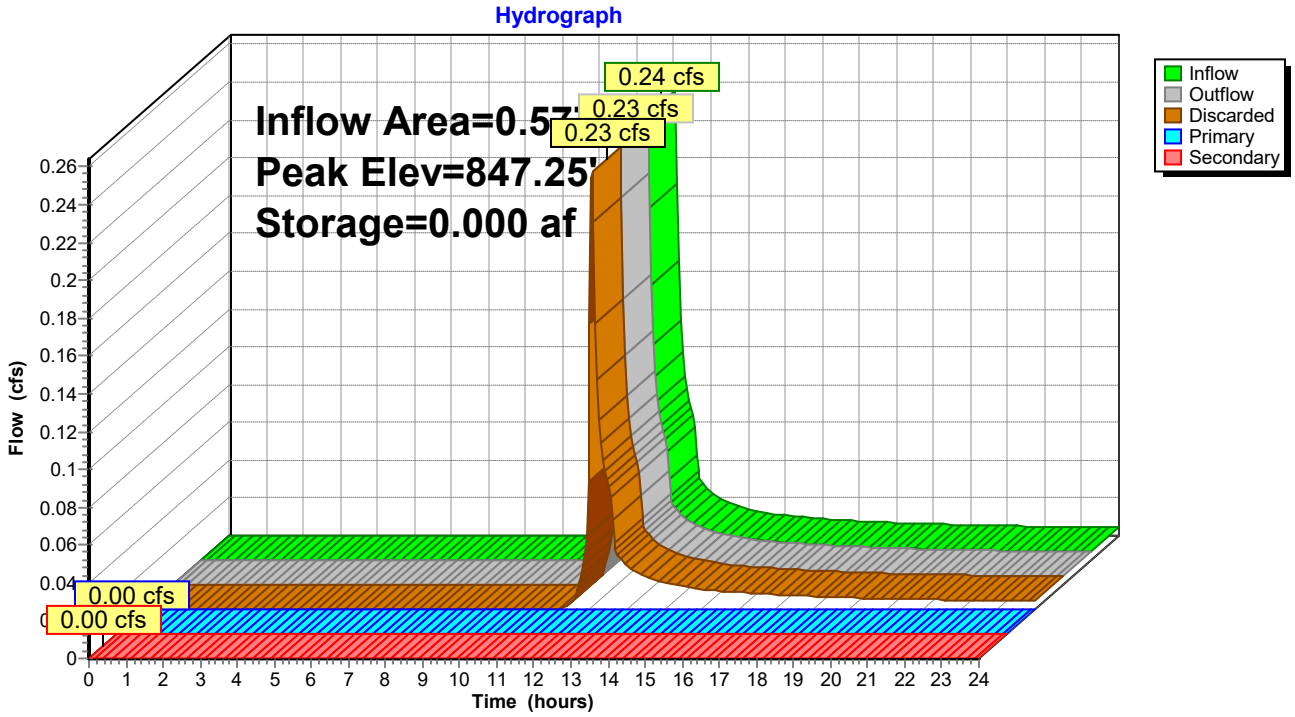
Device	Routing	Invert	Outlet Devices
#1	Primary	848.24'	**12.0" Round OUTLET PIPE** L= 102.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 848.24' / 847.21' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	848.24'	**2.0" Vert. PERF PIPE X 341.66** C= 0.600 Limited to weir flow at low heads
#3	Discarded	847.24'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	852.98'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.95 cfs @ 12.06 hrs HW=847.25' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.95 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=847.24' TW=850.00' (Fixed TW Elev= 850.00')
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=847.24' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-3: SOUTHERN TREE PIT



Summary for Pond T-4: SOUTH EAST TREE PIT

Inflow Area = 0.520 ac, 56.35% Impervious, Inflow Depth > 0.02" for 90%WQv event
Inflow = 0.00 cfs @ 14.25 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 14.23 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 14.23 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 845.75' @ 14.23 hrs Surf.Area= 0.018 ac Storage= 0.000 af
Flood Elev= 851.49' Surf.Area= 0.018 ac Storage= 0.043 af

Plug-Flow detention time= 0.7 min calculated for 0.001 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (1,082.3 - 1,082.0)

Volume	Invert	Avail.Storage	Storage Description
#1	845.75'	0.000 af	**15.18'W x 50.81'L x 5.75'H TREE PIT** 0.102 af Overall - 0.102 af Embedded = 0.000 af
#2	845.75'	0.014 af	**15.18'W x 50.81'L x 2.00'H NO. 2 STONE** Inside #1 0.035 af Overall x 40.0% Voids
#3	847.75'	0.019 af	**15.18'W x 50.81'L x 3.00'H FILTER MEDIA** Inside #1 0.053 af Overall x 35.0% Voids
#4	850.75'	0.001 af	**15.18'W x 50.81'L x 0.25'H MULCH** Inside #1 0.004 af Overall x 30.0% Voids
#5	851.00'	0.009 af	**15.18'W x 50.81'L x 0.50'H PONDING** Inside #1
		0.043 af	Total Available Storage

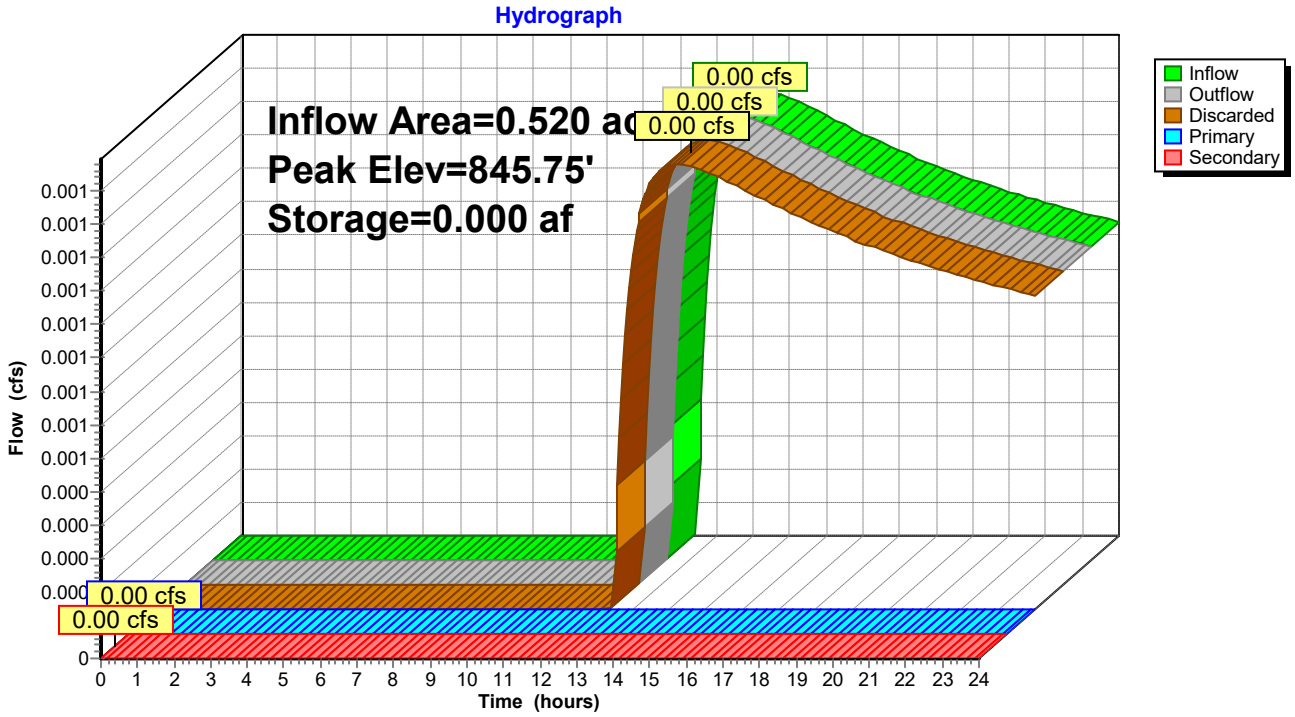
Device	Routing	Invert	Outlet Devices
#1	Primary	846.75'	**12.0" Round OUTLET PIPE** L= 223.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.75' / 844.51' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	846.75'	**2.0" Vert. PERF PIPE X 50.81** C= 0.600 Limited to weir flow at low heads
#3	Discarded	845.75'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	851.49'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.43 cfs @ 14.23 hrs HW=845.75' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.43 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.75' TW=850.50' (Fixed TW Elev= 850.50')
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.75' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-4: SOUTH EAST TREE PIT



Summary for Pond T-5: EASTERN TREE PIT

Inflow Area = 1.237 ac, 81.41% Impervious, Inflow Depth > 0.28" for 90%WQv event
Inflow = 0.28 cfs @ 12.23 hrs, Volume= 0.029 af
Outflow = 0.28 cfs @ 12.24 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.8 min
Discarded = 0.28 cfs @ 12.24 hrs, Volume= 0.029 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach EAST : EAST MS4
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach EAST : EAST MS4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 848.89' @ 12.24 hrs Surf.Area= 0.034 ac Storage= 0.000 af
Flood Elev= 854.61' Surf.Area= 0.034 ac Storage= 0.083 af

Plug-Flow detention time= 0.7 min calculated for 0.029 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (892.2 - 891.7)

Volume	Invert	Avail.Storage	Storage Description
#1	848.87'	0.000 af	**5.00'W x 299.26'L x 5.75'H TREE TRENCH** 0.198 af Overall - 0.198 af Embedded = 0.000 af
#2	848.87'	0.027 af	**5.00'W x 299.26'L x 2.00'H NO. 2 STONE** Inside #1 0.069 af Overall x 40.0% Voids
#3	850.87'	0.036 af	**5.00'W x 299.26'L x 3.00'H FILTER MEDIA** Inside #1 0.103 af Overall x 35.0% Voids
#4	853.87'	0.003 af	**5.00'W x 299.26'L x 0.25'H MULCH** Inside #1 0.009 af Overall x 30.0% Voids
#5	854.12'	0.017 af	**5.00'W x 299.26'L x 0.50'H PONDING** Inside #1
		0.083 af	Total Available Storage

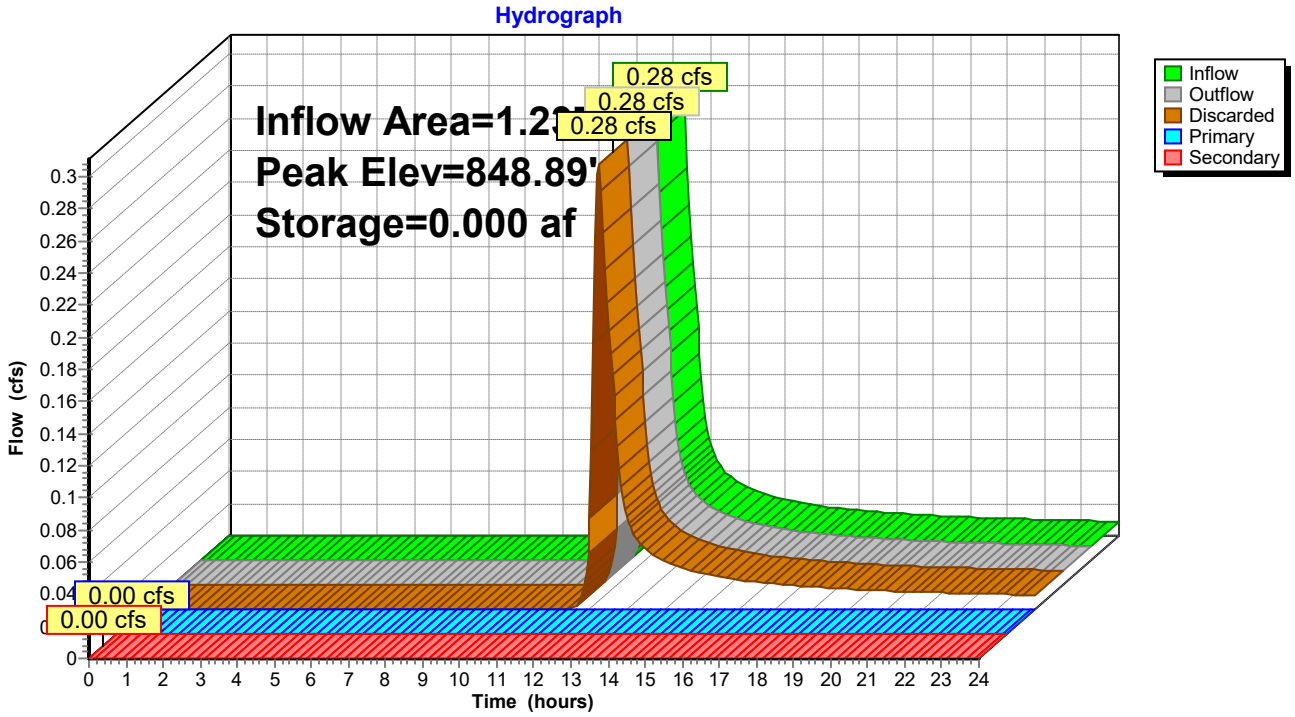
Device	Routing	Invert	Outlet Devices
#1	Primary	849.87'	**12.0" Round OUTLET PIPE** L= 18.8' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 849.87' / 849.68' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	849.87'	**2.0" Vert. PERP PIPE X 299.26** C= 0.600 Limited to weir flow at low heads
#3	Discarded	848.87'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	854.61'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.83 cfs @ 12.24 hrs HW=848.89' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.83 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=848.87' TW=853.50' (Fixed TW Elev= 853.50')
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERP PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=848.87' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-5: EASTERN TREE PIT



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment W-1: PHASE 1 BLDG-1 Runoff Area=0.342 ac 100.00% Impervious Runoff Depth>1.84"
Tc=6.0 min CN=98 Runoff=0.85 cfs 0.053 af

Subcatchment W-10: WESTERN Runoff Area=0.184 ac 66.85% Impervious Runoff Depth>0.52"
Tc=6.0 min CN=78 Runoff=0.12 cfs 0.008 af

Subcatchment W-11: PHASE 2 BLDG-1 Runoff Area=0.395 ac 100.00% Impervious Runoff Depth>1.84"
Tc=6.0 min CN=98 Runoff=0.98 cfs 0.061 af

Subcatchment W-12: PHASE 2 BLDG-2 Runoff Area=0.413 ac 100.00% Impervious Runoff Depth>1.84"
Tc=6.0 min CN=98 Runoff=1.02 cfs 0.063 af

Subcatchment W-13: PHASE 2 NORTHERN Runoff Area=0.386 ac 67.62% Impervious Runoff Depth>0.56"
Tc=6.0 min CN=79 Runoff=0.28 cfs 0.018 af

Subcatchment W-14: PHASE 2 WESTERN Runoff Area=0.048 ac 6.25% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=43 Runoff=0.00 cfs 0.000 af

Subcatchment W-2: PHASE 1 BLDG-2 Runoff Area=0.259 ac 100.00% Impervious Runoff Depth>1.84"
Tc=6.0 min CN=98 Runoff=0.64 cfs 0.040 af

Subcatchment W-3: NORTHERN TREE PIT Runoff Area=0.090 ac 53.33% Impervious Runoff Depth>0.27"
Tc=6.0 min CN=70 Runoff=0.02 cfs 0.002 af

Subcatchment W-4: NORTHERN Runoff Area=0.220 ac 75.00% Impervious Runoff Depth>0.74"
Flow Length=286' Tc=6.0 min CN=83 Runoff=0.23 cfs 0.014 af

Subcatchment W-5: MIDDLE TREE PIT + Runoff Area=1.502 ac 71.11% Impervious Runoff Depth>0.65"
Flow Length=156' Tc=6.0 min CN=81 Runoff=1.31 cfs 0.081 af

Subcatchment W-6: SOUTHERN TREE PIT Runoff Area=0.577 ac 83.36% Impervious Runoff Depth>1.02"
Flow Length=72' Tc=6.0 min CN=88 Runoff=0.85 cfs 0.049 af

Subcatchment W-7: SOUTH EAST TREE PIT Runoff Area=0.520 ac 56.35% Impervious Runoff Depth>0.32"
Tc=6.0 min CN=72 Runoff=0.16 cfs 0.014 af

Subcatchment W-8: EAST PARKING LOT Runoff Area=1.237 ac 81.41% Impervious Runoff Depth>0.96"
Flow Length=215' Tc=17.7 min CN=87 Runoff=1.10 cfs 0.099 af

Subcatchment W-9: EAST PARKING LOT Runoff Area=0.041 ac 85.37% Impervious Runoff Depth>1.08"
Tc=6.0 min CN=89 Runoff=0.06 cfs 0.004 af

Reach EAST: EAST MS4 Inflow=0.06 cfs 0.004 af
Outflow=0.06 cfs 0.004 af

Reach NORTH: NORTH MS4 Inflow=4.00 cfs 0.248 af
Outflow=4.00 cfs 0.248 af

Reach WEST: WEST MS4 Inflow=0.12 cfs 0.008 af
Outflow=0.12 cfs 0.008 af

Pond MH-1: MH-1 Peak Elev=845.05' Inflow=0.85 cfs 0.053 af
12.0" Round Culvert n=0.013 L=91.0' S=0.0100 '/' Outflow=0.85 cfs 0.053 af

Pond MH-2: MH-2 Peak Elev=844.66' Inflow=2.65 cfs 0.164 af
18.0" Round Culvert n=0.013 L=117.2' S=0.0100 '/' Outflow=2.65 cfs 0.164 af

Pond MH-3: MH-3 Peak Elev=842.86' Inflow=3.50 cfs 0.216 af
24.0" Round Culvert n=0.013 L=107.1' S=0.0100 '/' Outflow=3.50 cfs 0.216 af

Pond MH-4: MH-4 Peak Elev=846.89' Inflow=0.98 cfs 0.061 af
12.0" Round Culvert n=0.013 L=77.1' S=0.0100 '/' Outflow=0.98 cfs 0.061 af

Pond T-1: NORTHERN TREE PIT Peak Elev=845.43' Storage=0.000 af Inflow=0.02 cfs 0.002 af
Discarded=0.02 cfs 0.002 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.002 af

Pond T-2: MIDDLE TREE PIT Peak Elev=844.46' Storage=0.012 af Inflow=1.31 cfs 0.081 af
Discarded=0.71 cfs 0.081 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.71 cfs 0.081 af

Pond T-3: SOUTHERN TREE PIT Peak Elev=847.29' Storage=0.001 af Inflow=0.85 cfs 0.049 af
Discarded=0.85 cfs 0.049 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.85 cfs 0.049 af

Pond T-4: SOUTH EAST TREE PIT Peak Elev=845.77' Storage=0.000 af Inflow=0.16 cfs 0.014 af
Discarded=0.15 cfs 0.014 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.014 af

Pond T-5: EASTERN TREE PIT Peak Elev=849.17' Storage=0.004 af Inflow=1.10 cfs 0.099 af
Discarded=0.83 cfs 0.099 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.83 cfs 0.099 af

Total Runoff Area = 6.214 ac Runoff Volume = 0.504 af Average Runoff Depth = 0.97"
21.26% Pervious = 1.321 ac 78.74% Impervious = 4.893 ac

Summary for Subcatchment W-1: PHASE 1 BLDG-1

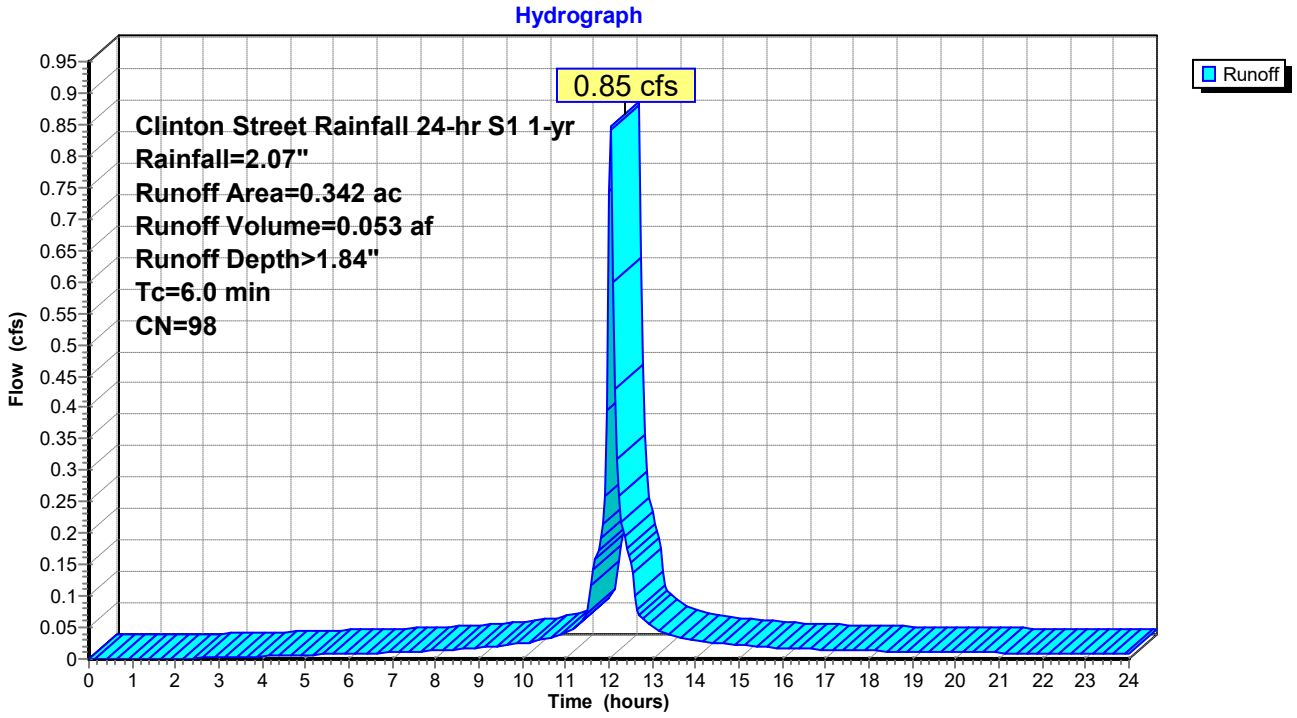
Runoff = 0.85 cfs @ 12.04 hrs, Volume= 0.053 af, Depth> 1.84"
Routed to Pond MH-1 : MH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.342	98	Roofs, HSG A
0.342		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-1: PHASE 1 BLDG-1



Summary for Subcatchment W-10: WESTERN UNTREATED

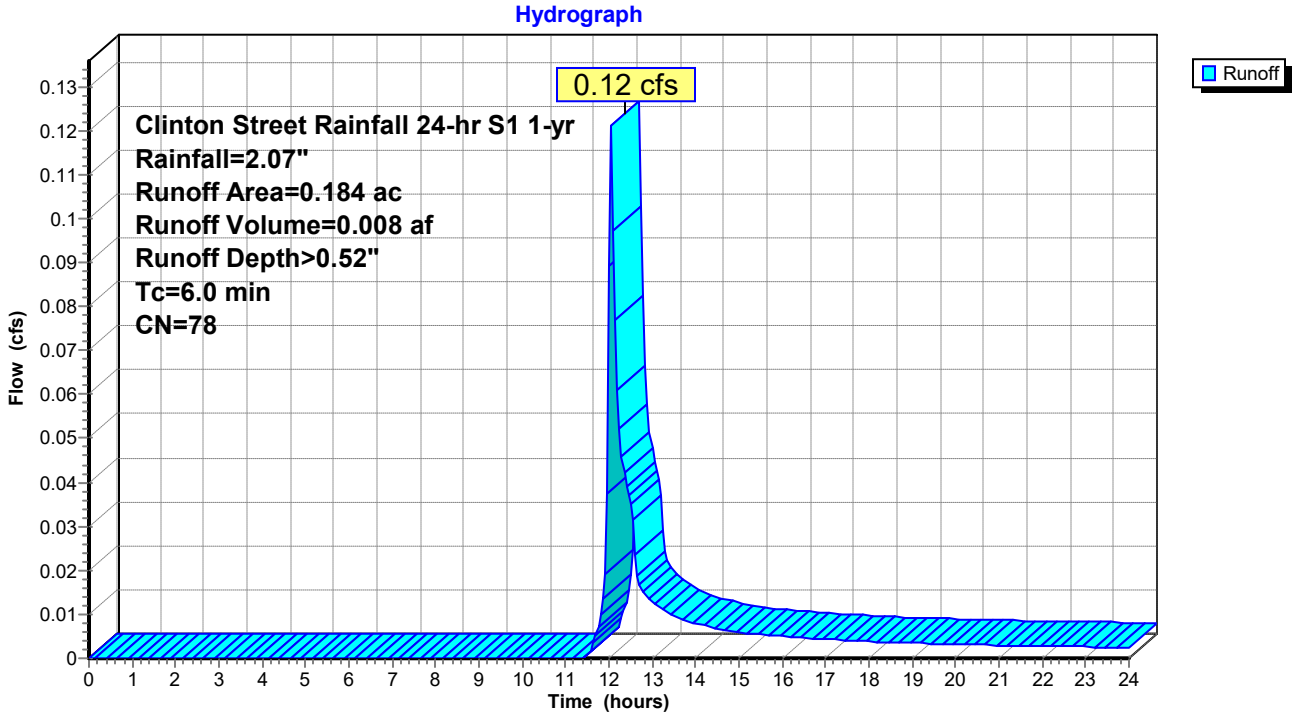
Runoff = 0.12 cfs @ 12.05 hrs, Volume= 0.008 af, Depth> 0.52"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.123	98	Paved parking, HSG A
0.061	39	>75% Grass cover, Good, HSG A
0.184	78	Weighted Average
0.061		33.15% Pervious Area
0.123		66.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-10: WESTERN UNTREATED



Summary for Subcatchment W-11: PHASE 2 BLDG-1

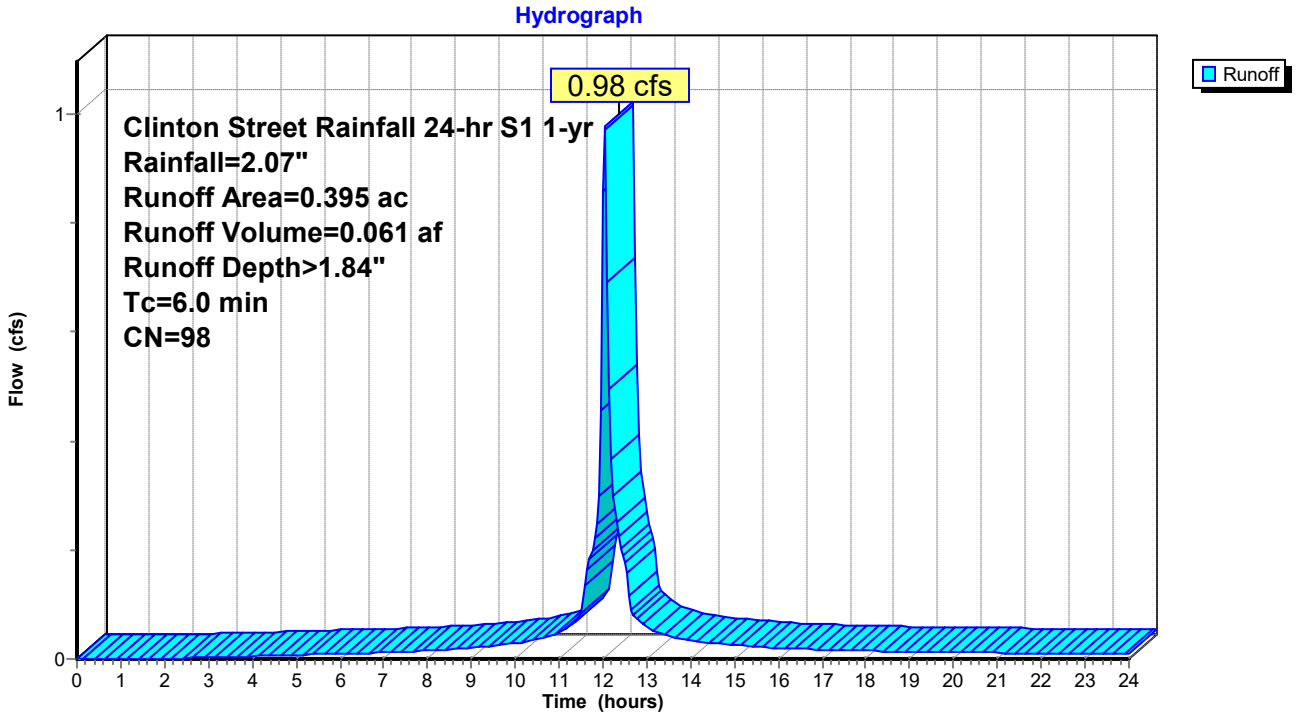
Runoff = 0.98 cfs @ 12.04 hrs, Volume= 0.061 af, Depth> 1.84"
Routed to Pond MH-4 : MH-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.395	98	Roofs, HSG A
0.395		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-11: PHASE 2 BLDG-1



Summary for Subcatchment W-12: PHASE 2 BLDG-2

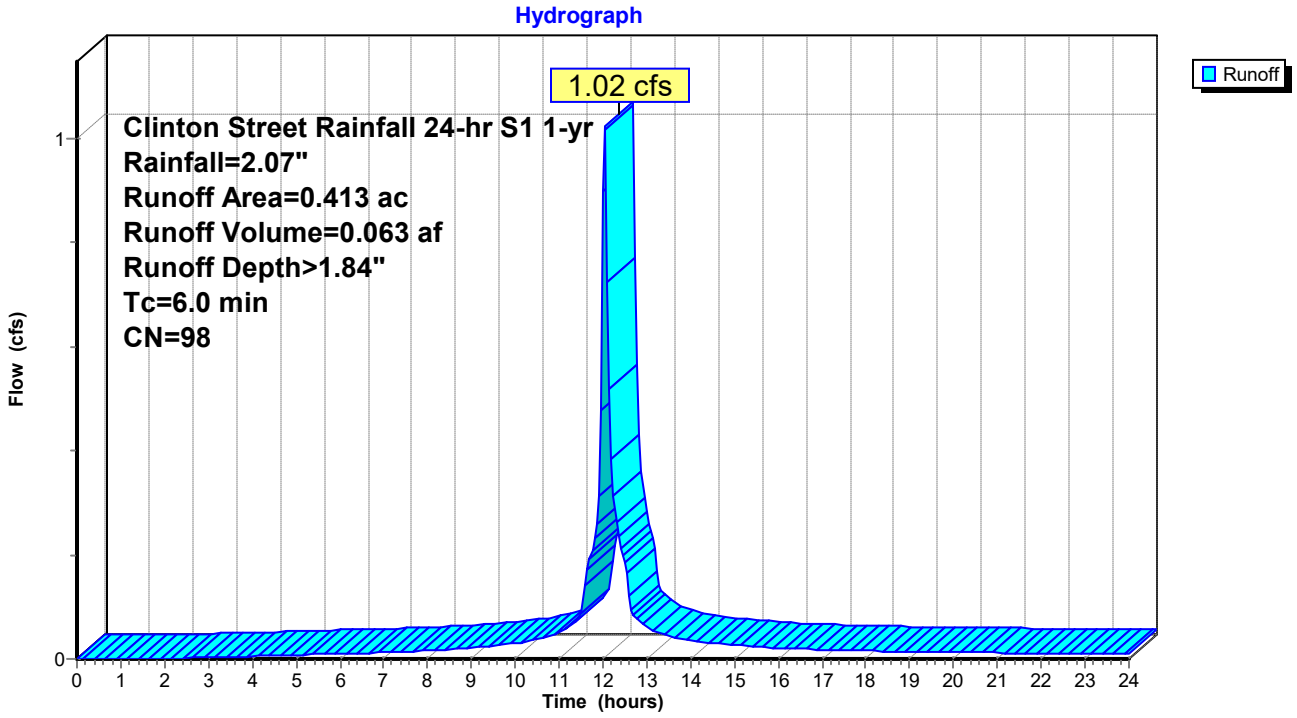
Runoff = 1.02 cfs @ 12.04 hrs, Volume= 0.063 af, Depth> 1.84"
Routed to Pond MH-2 : MH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.413	98	Roofs, HSG A
0.413		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-12: PHASE 2 BLDG-2



Summary for Subcatchment W-13: PHASE 2 NORTHERN UNTREATED

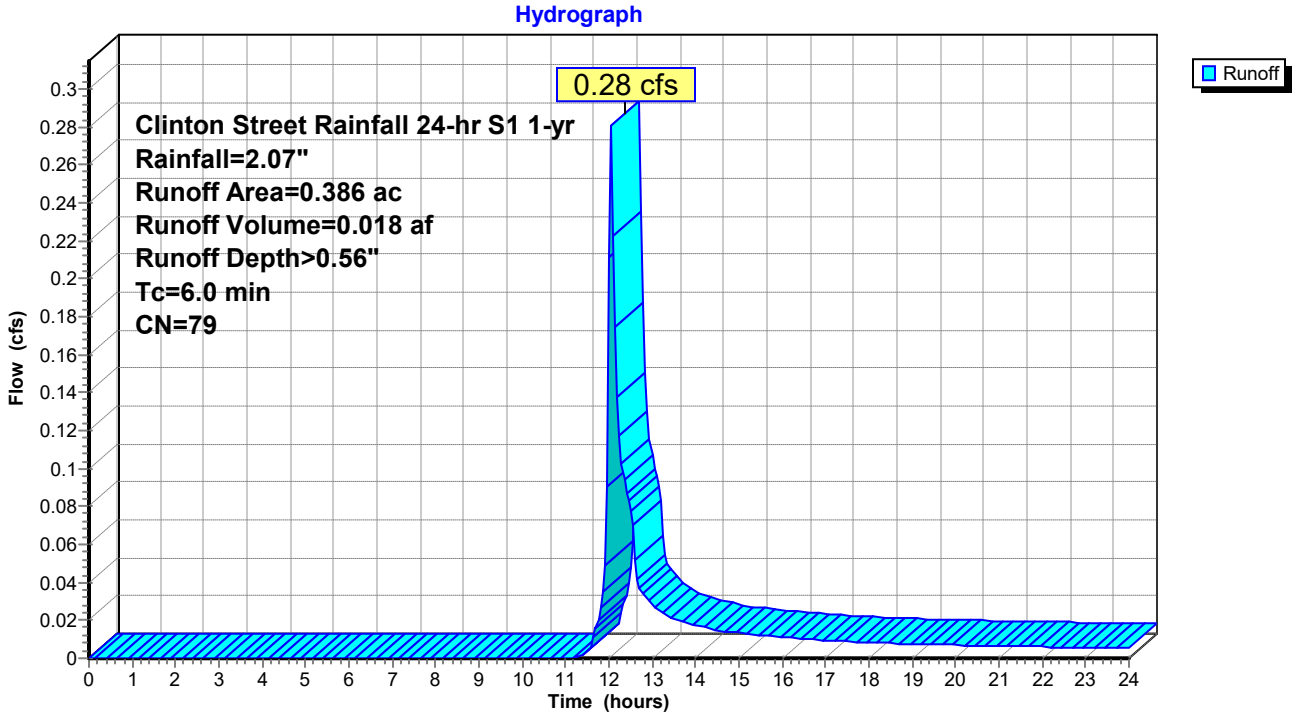
Runoff = 0.28 cfs @ 12.05 hrs, Volume= 0.018 af, Depth> 0.56"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.261	98	Paved parking, HSG A
0.125	39	>75% Grass cover, Good, HSG A
0.386	79	Weighted Average
0.125		32.38% Pervious Area
0.261		67.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-13: PHASE 2 NORTHERN UNTREATED



Summary for Subcatchment W-14: PHASE 2 WESTERN UNTREATED

[45] Hint: Runoff=Zero

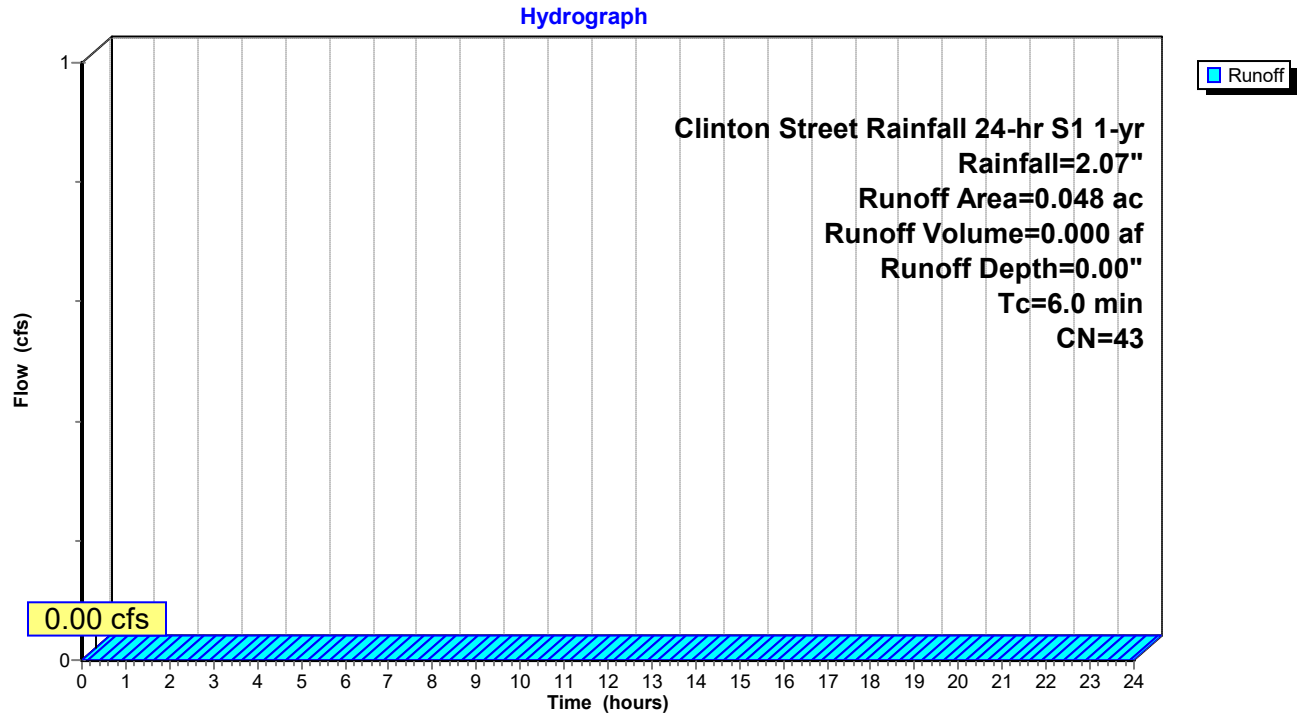
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.003	98	Paved parking, HSG A
0.045	39	>75% Grass cover, Good, HSG A
0.048	43	Weighted Average
0.045		93.75% Pervious Area
0.003		6.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-14: PHASE 2 WESTERN UNTREATED



Summary for Subcatchment W-2: PHASE 1 BLDG-2

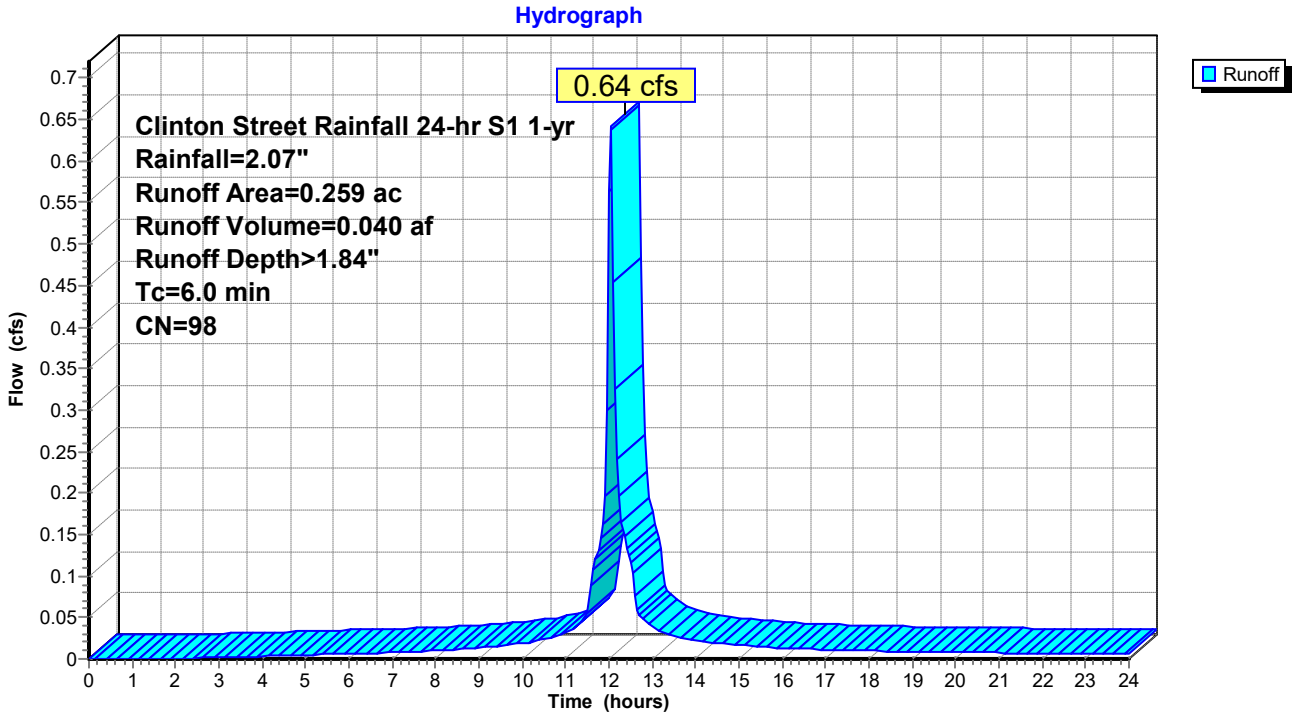
Runoff = 0.64 cfs @ 12.04 hrs, Volume= 0.040 af, Depth> 1.84"
Routed to Pond MH-2 : MH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.259	98	Roofs, HSG A
0.259		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-2: PHASE 1 BLDG-2



Summary for Subcatchment W-3: NORTHERN TREE PIT

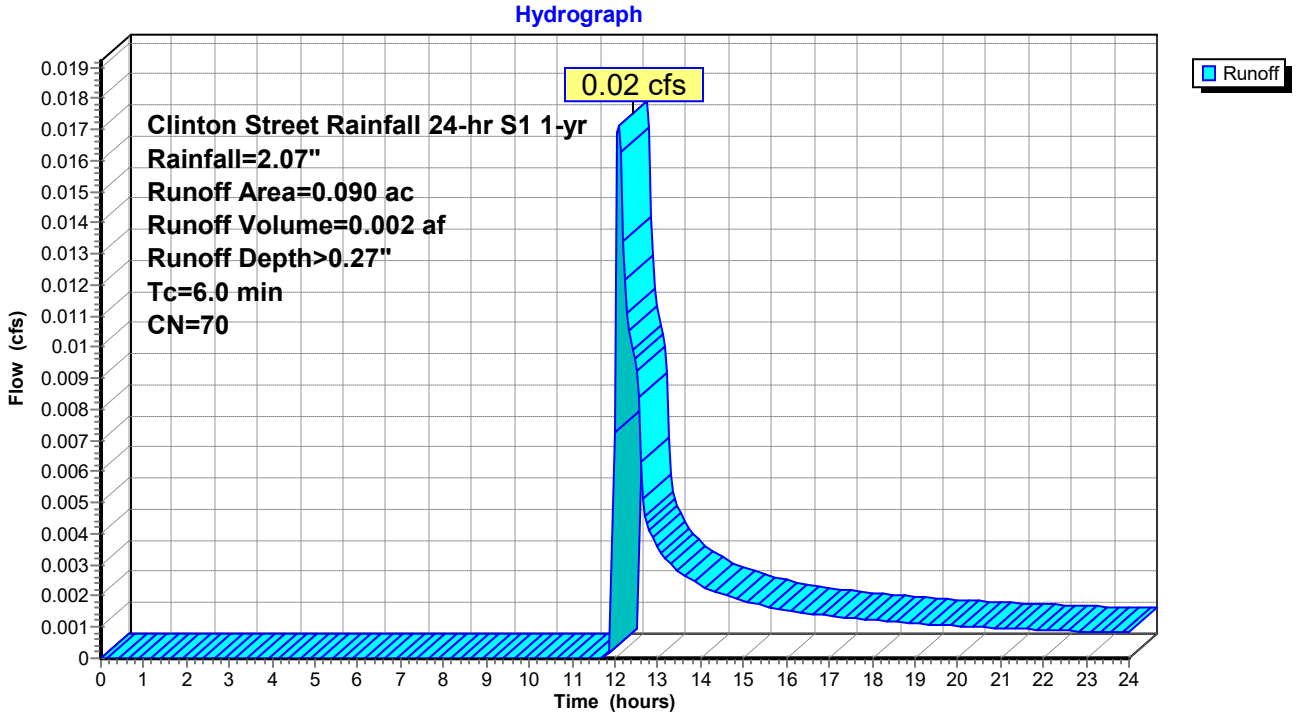
Runoff = 0.02 cfs @ 12.08 hrs, Volume= 0.002 af, Depth> 0.27"
Routed to Pond T-1 : NORTHERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.048	98	Paved parking, HSG A
0.042	39	>75% Grass cover, Good, HSG A
0.090	70	Weighted Average
0.042		46.67% Pervious Area
0.048		53.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-3: NORTHERN TREE PIT



Summary for Subcatchment W-4: NORTHERN UNTREATED

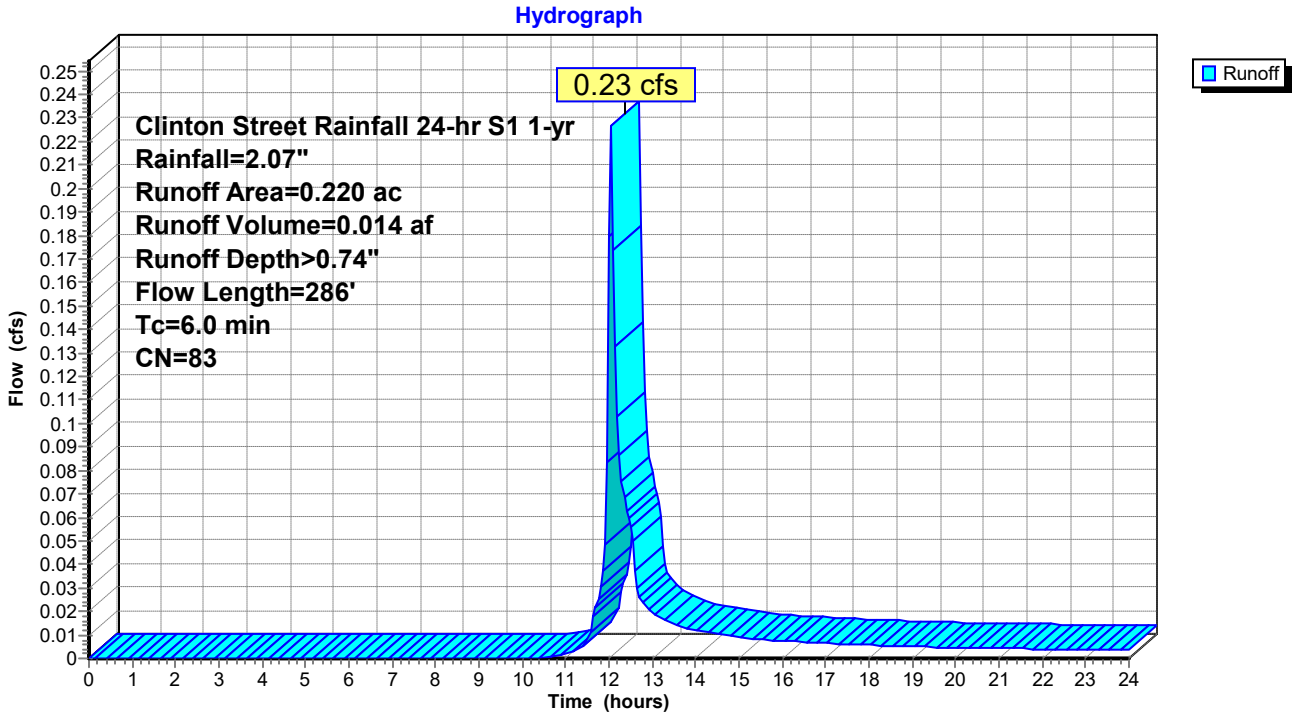
Runoff = 0.23 cfs @ 12.05 hrs, Volume= 0.014 af, Depth> 0.74"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.165	98	Paved parking, HSG A
0.055	39	>75% Grass cover, Good, HSG A
0.220	83	Weighted Average
0.055		25.00% Pervious Area
0.165		75.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	100	0.0050	0.68		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.6	101	0.0198	2.86		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	52	0.0240	3.14		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	33	0.0121	4.42	2.41	**Pipe Channel,** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
2.6					**Direct Entry, MINIMUM**
6.0	286	Total			

Subcatchment W-4: NORTHERN UNTREATED



Summary for Subcatchment W-5: MIDDLE TREE PIT + PHASE 2

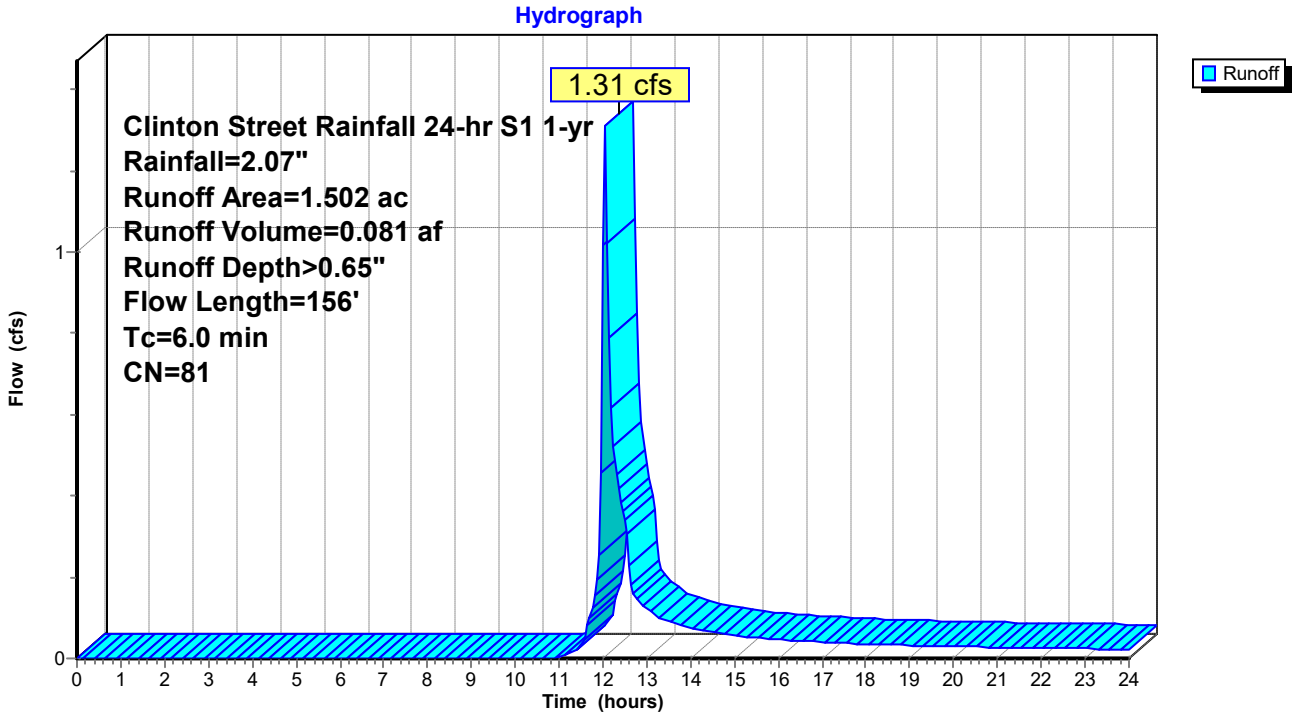
Runoff = 1.31 cfs @ 12.05 hrs, Volume= 0.081 af, Depth> 0.65"
Routed to Pond T-2 : MIDDLE TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
1.068	98	Paved parking, HSG A
0.434	39	>75% Grass cover, Good, HSG A
1.502	81	Weighted Average
0.434		28.89% Pervious Area
1.068		71.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	7	0.5000	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.8	61	0.0328	1.31		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.2	15	0.1000	1.55		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.4	65	0.0231	3.09		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	8	0.2500	3.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.2					**Direct Entry, MIN Tc**
6.0	156	Total			

Subcatchment W-5: MIDDLE TREE PIT + PHASE 2



Summary for Subcatchment W-6: SOUTHERN TREE PIT

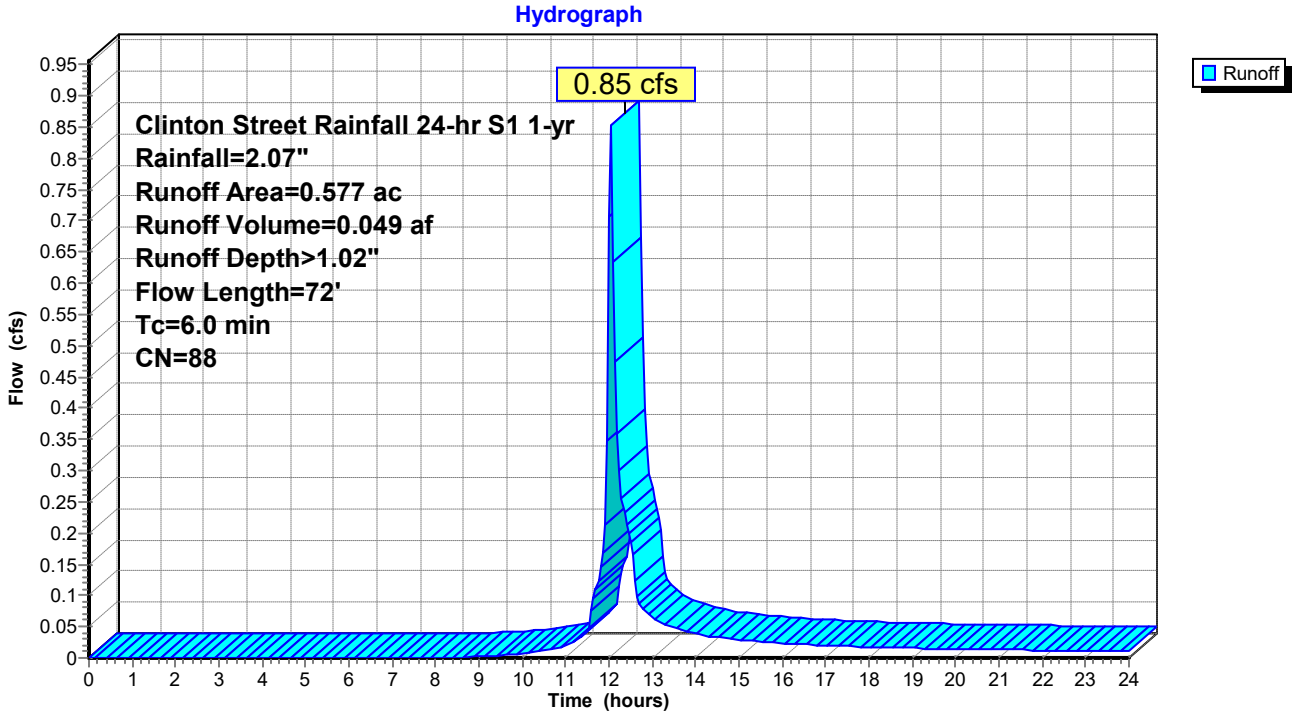
Runoff = 0.85 cfs @ 12.04 hrs, Volume= 0.049 af, Depth> 1.02"
Routed to Pond T-3 : SOUTHERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.481	98	Paved parking, HSG A
0.096	39	>75% Grass cover, Good, HSG A
0.577	88	Weighted Average
0.096		16.64% Pervious Area
0.481		83.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	9	0.3333	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.8	63	0.0317	1.30		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
4.7					**Direct Entry, MINIMUM**
6.0	72	Total			

Subcatchment W-6: SOUTHERN TREE PIT



Summary for Subcatchment W-7: SOUTH EAST TREE PIT

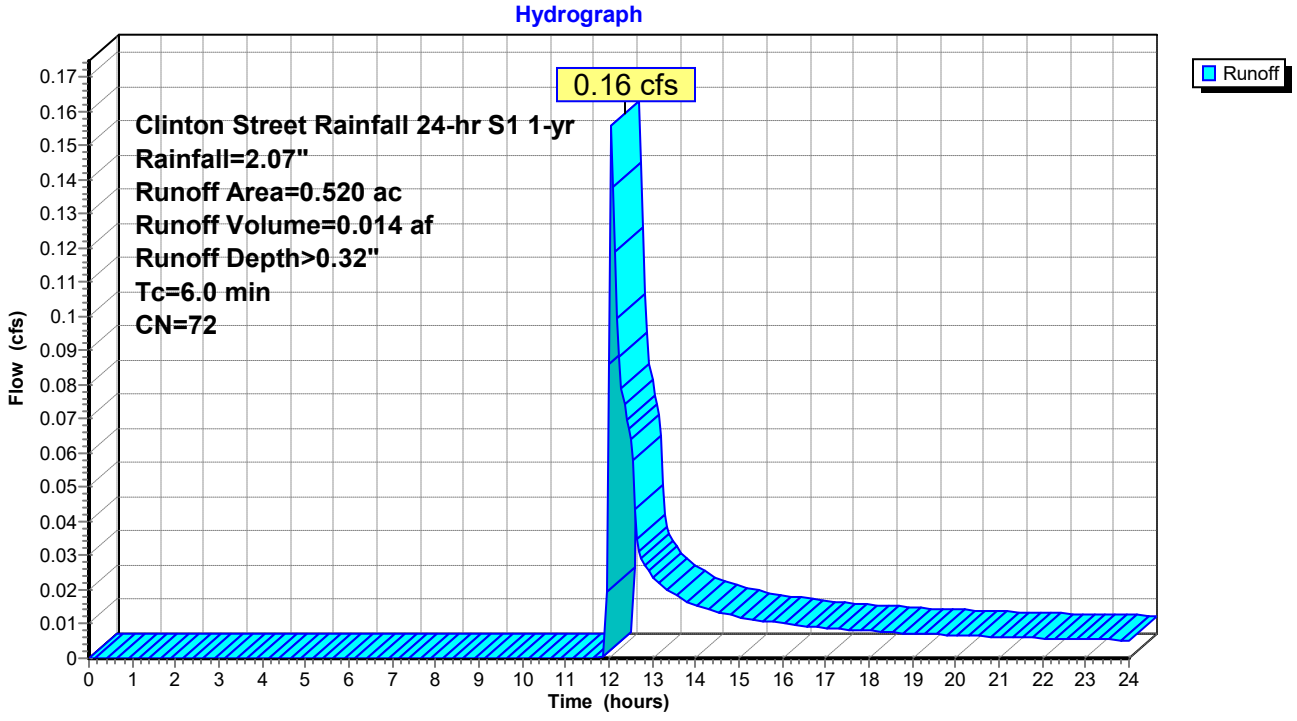
Runoff = 0.16 cfs @ 12.07 hrs, Volume= 0.014 af, Depth> 0.32"
Routed to Pond T-4 : SOUTH EAST TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.293	98	Paved parking, HSG A
0.227	39	>75% Grass cover, Good, HSG A
0.520	72	Weighted Average
0.227		43.65% Pervious Area
0.293		56.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-7: SOUTH EAST TREE PIT



Summary for Subcatchment W-8: EAST PARKING LOT TREE PIT

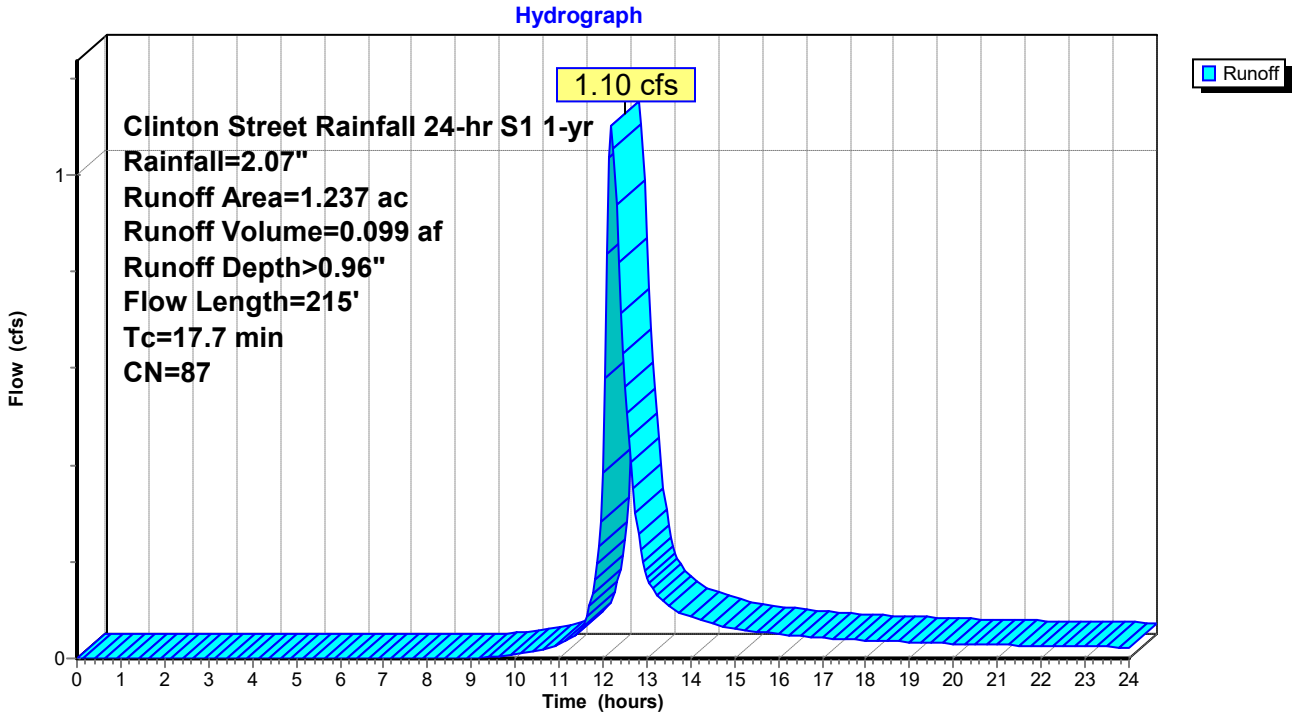
Runoff = 1.10 cfs @ 12.20 hrs, Volume= 0.099 af, Depth> 0.96"
Routed to Pond T-5 : EASTERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
1.007	98	Paved parking, HSG A
0.230	39	>75% Grass cover, Good, HSG A
1.237	87	Weighted Average
0.230		18.59% Pervious Area
1.007		81.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	3	0.1667	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
8.7	53	0.0278	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
4.4	30	0.0500	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
3.5	10	0.0100	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
0.7	119	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.7	215	Total			

Subcatchment W-8: EAST PARKING LOT TREE PIT



Summary for Subcatchment W-9: EAST PARKING LOT UNTREATED

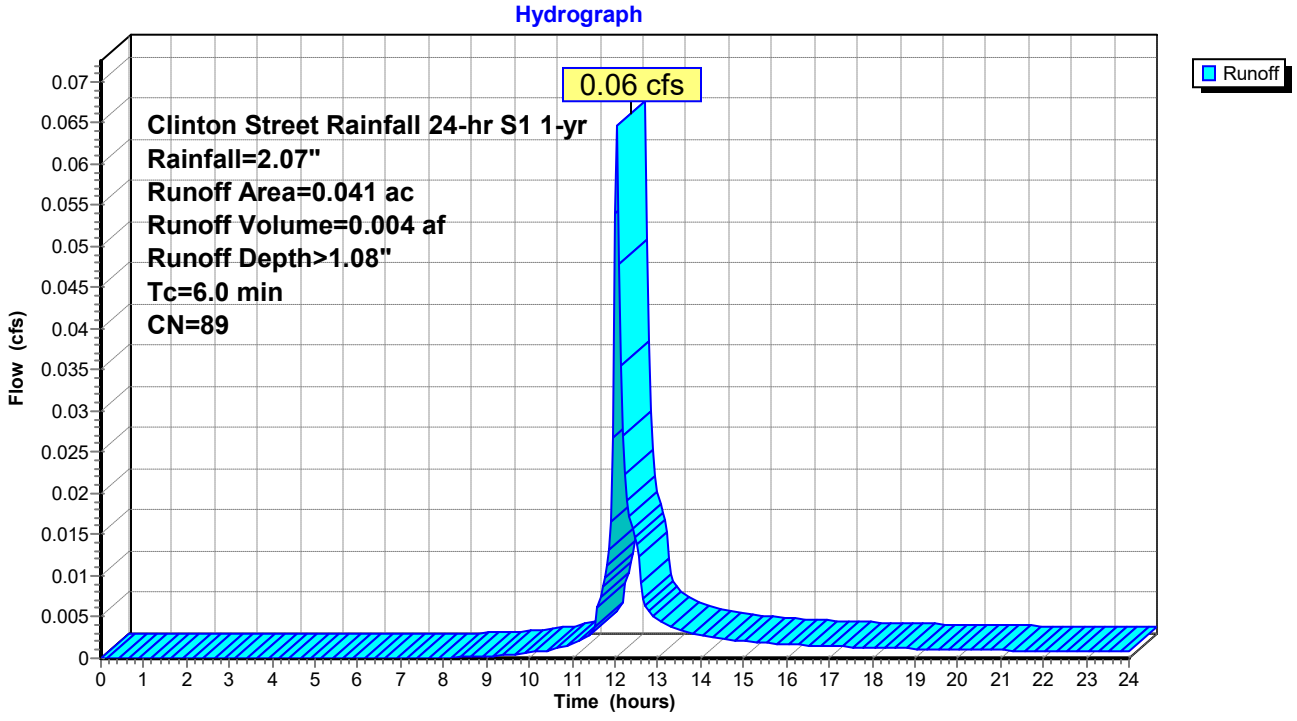
Runoff = 0.06 cfs @ 12.04 hrs, Volume= 0.004 af, Depth> 1.08"
Routed to Reach EAST : EAST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.035	98	Paved parking, HSG A
0.006	39	>75% Grass cover, Good, HSG A
0.041	89	Weighted Average
0.006		14.63% Pervious Area
0.035		85.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-9: EAST PARKING LOT UNTREATED



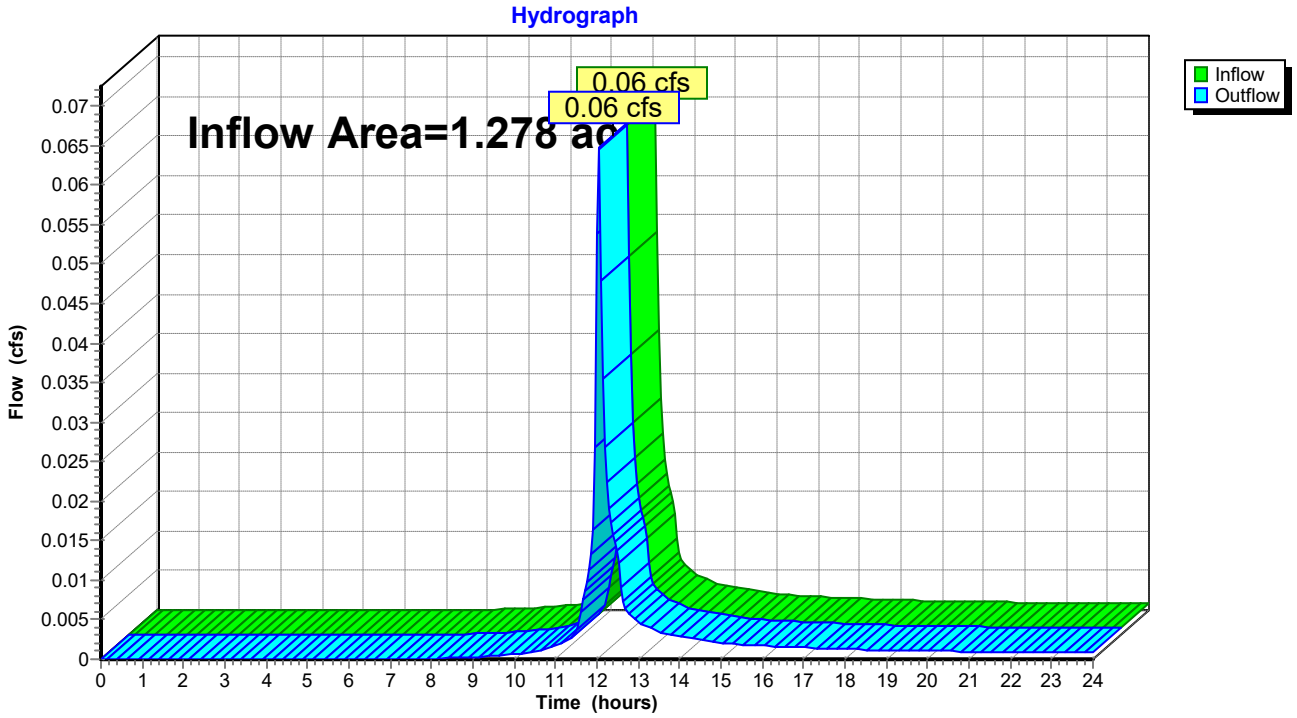
Summary for Reach EAST: EAST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.278 ac, 81.53% Impervious, Inflow Depth > 0.03" for 1-yr event
Inflow = 0.06 cfs @ 12.04 hrs, Volume= 0.004 af
Outflow = 0.06 cfs @ 12.04 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach EAST: EAST MS4



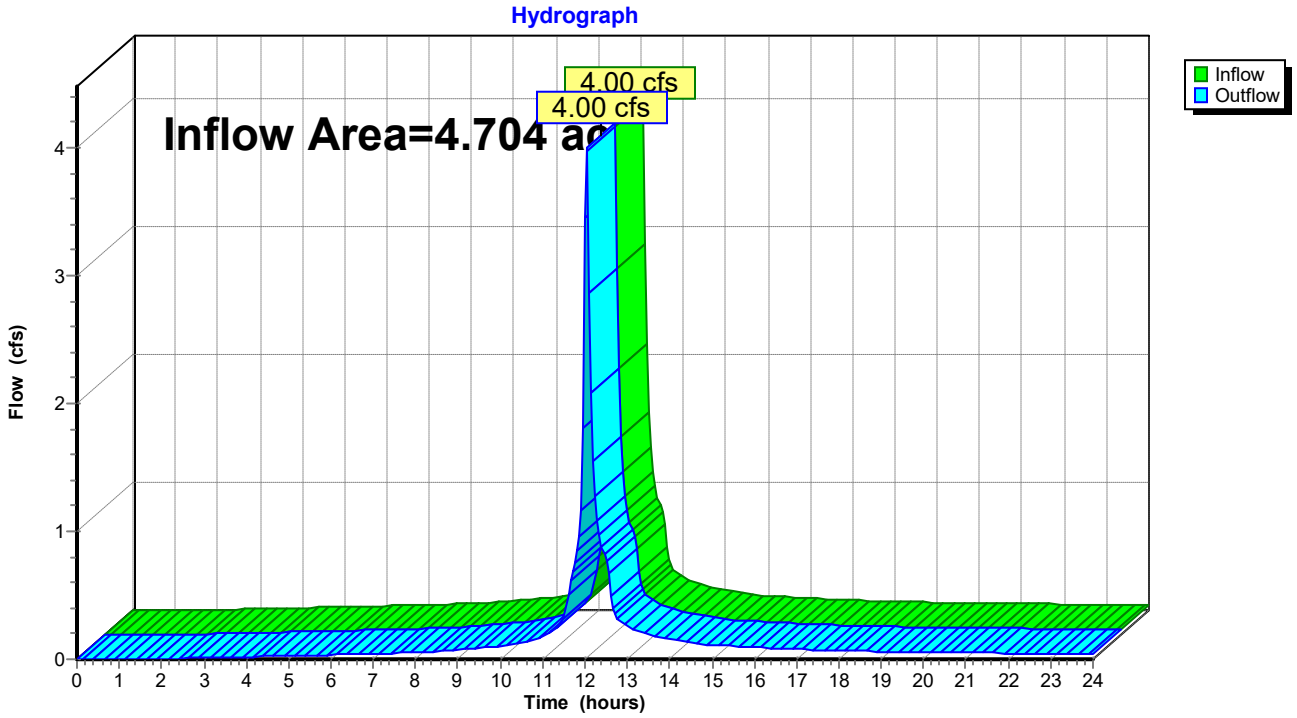
Summary for Reach NORTH: NORTH MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.704 ac, 79.19% Impervious, Inflow Depth > 0.63" for 1-yr event
Inflow = 4.00 cfs @ 12.04 hrs, Volume= 0.248 af
Outflow = 4.00 cfs @ 12.04 hrs, Volume= 0.248 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach NORTH: NORTH MS4



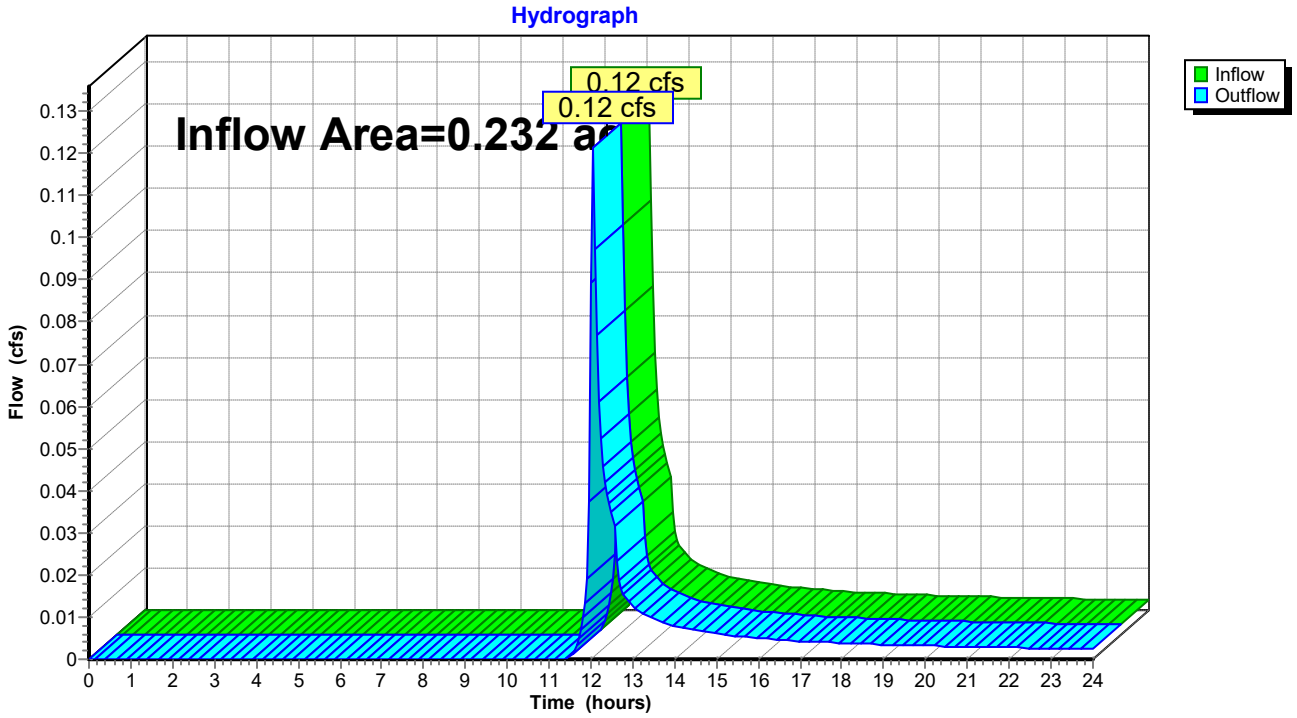
Summary for Reach WEST: WEST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.232 ac, 54.31% Impervious, Inflow Depth > 0.42" for 1-yr event
Inflow = 0.12 cfs @ 12.05 hrs, Volume= 0.008 af
Outflow = 0.12 cfs @ 12.05 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach WEST: WEST MS4



Summary for Pond MH-1: MH-1

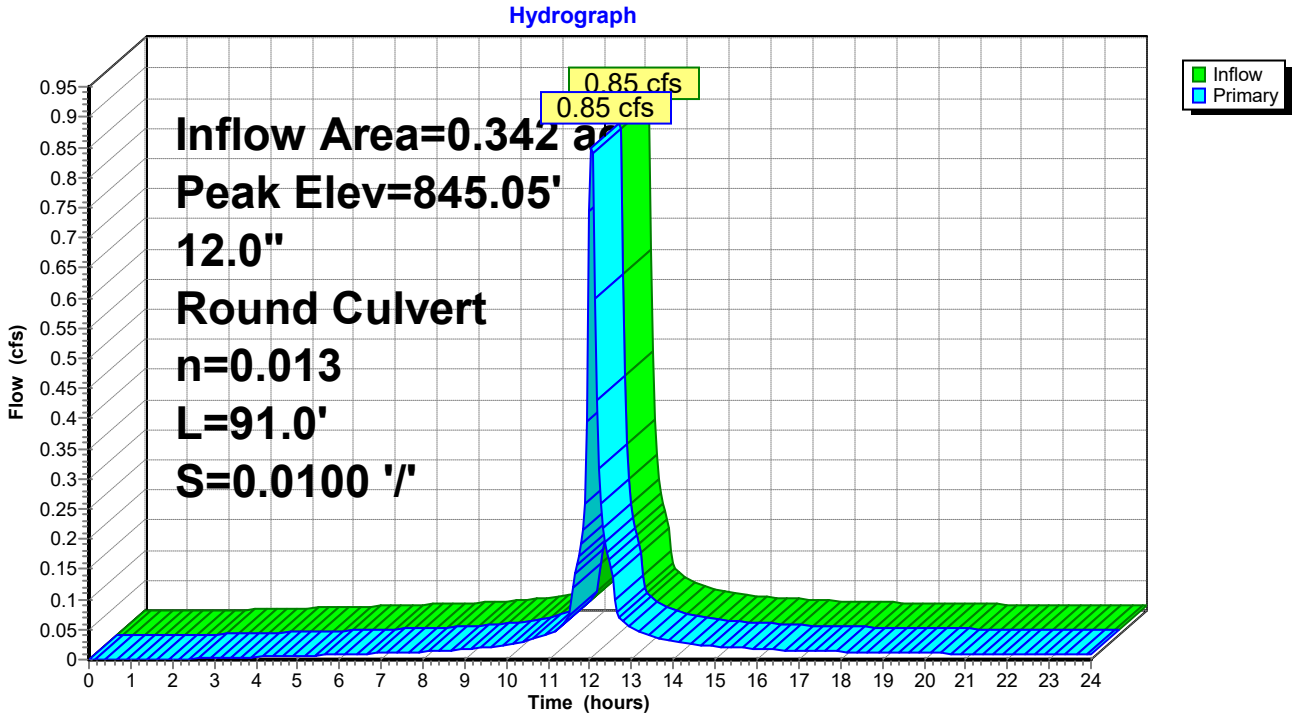
Inflow Area = 0.342 ac,100.00% Impervious, Inflow Depth > 1.84" for 1-yr event
Inflow = 0.85 cfs @ 12.04 hrs, Volume= 0.053 af
Outflow = 0.85 cfs @ 12.04 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.04 hrs, Volume= 0.053 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 845.05' @ 12.04 hrs
Flood Elev= 850.88'

Device	Routing	Invert	Outlet Devices
#1	Primary	844.58'	**12.0" Round OUTLET PIPE** L= 91.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 844.58' / 843.67' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.82 cfs @ 12.04 hrs HW=845.04' (Free Discharge)
1=OUTLET PIPE (Inlet Controls 0.82 cfs @ 2.31 fps)

Pond MH-1: MH-1



Summary for Pond MH-2: MH-2

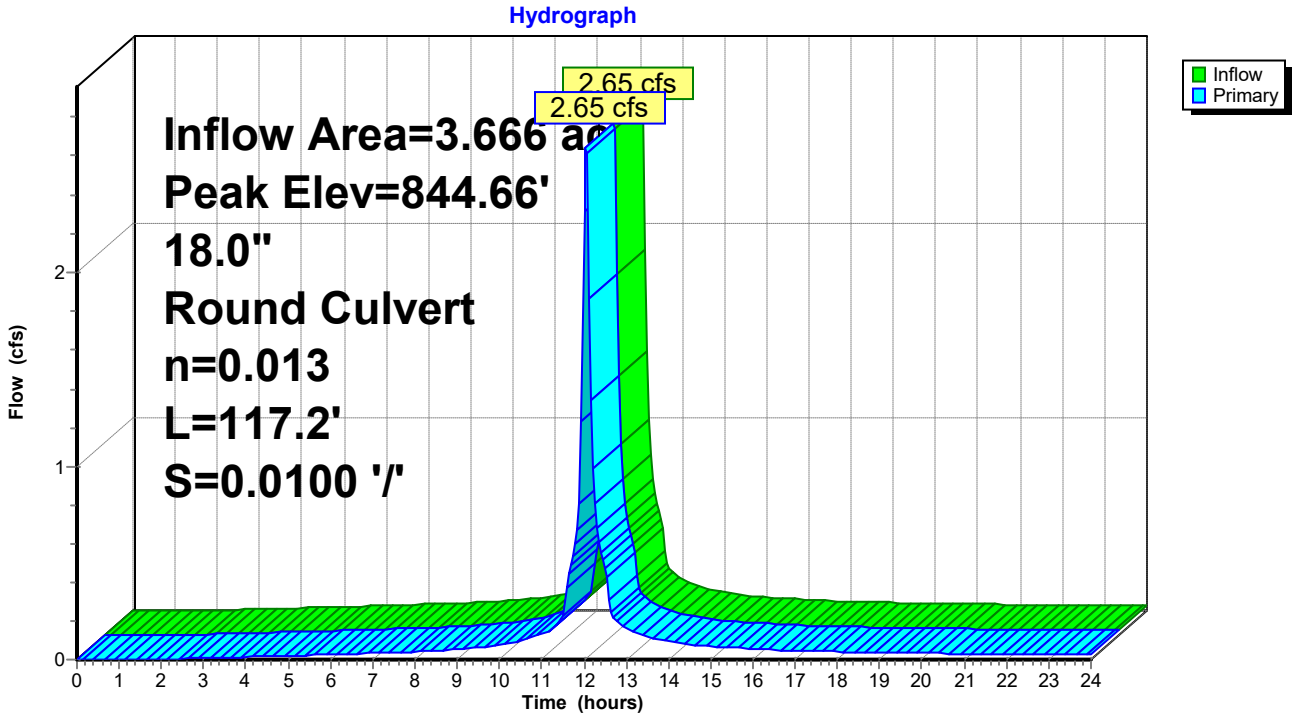
Inflow Area = 3.666 ac, 79.35% Impervious, Inflow Depth > 0.54" for 1-yr event
Inflow = 2.65 cfs @ 12.04 hrs, Volume= 0.164 af
Outflow = 2.65 cfs @ 12.04 hrs, Volume= 0.164 af, Atten= 0%, Lag= 0.0 min
Primary = 2.65 cfs @ 12.04 hrs, Volume= 0.164 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 844.66' @ 12.04 hrs
Flood Elev= 850.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	843.74'	**18.0" Round OUTLET PIPE** L= 117.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 843.74' / 842.57' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.55 cfs @ 12.04 hrs HW=844.64' TW=844.00' (Fixed TW Elev= 844.00')
1=OUTLET PIPE (Outlet Controls 2.55 cfs @ 3.29 fps)

Pond MH-2: MH-2



Summary for Pond MH-3: MH-3

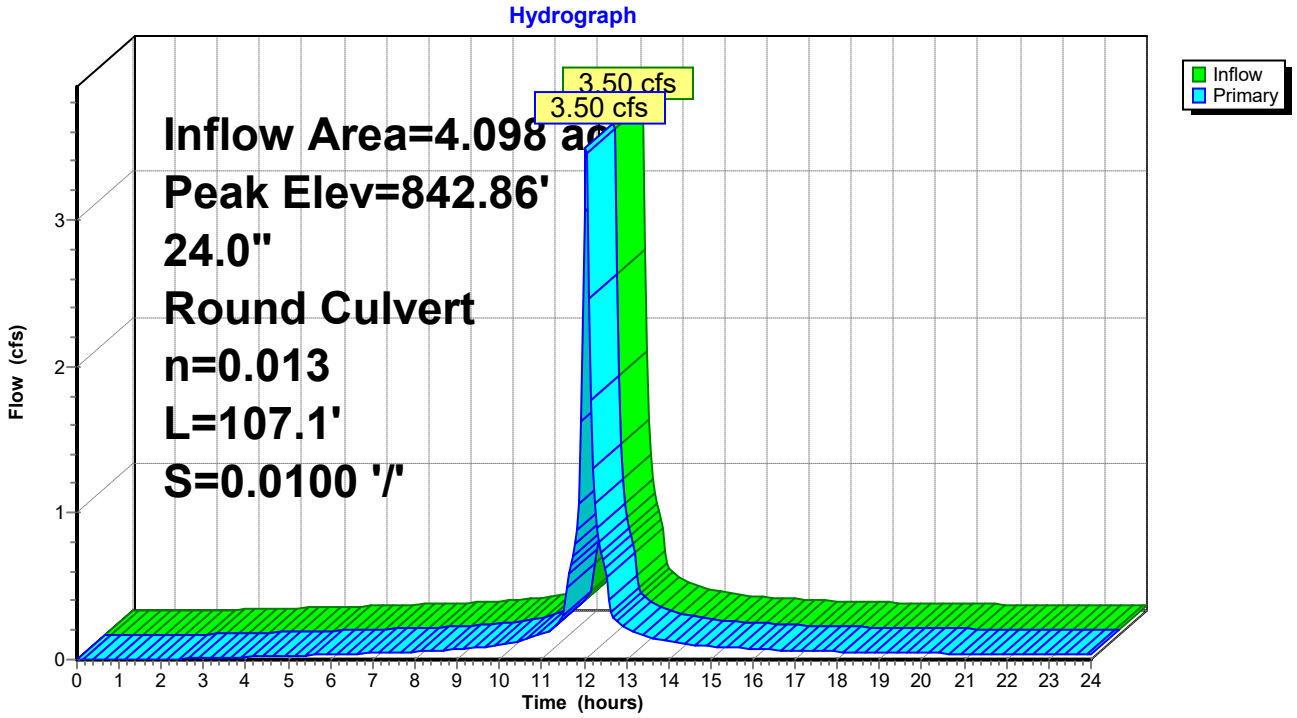
Inflow Area = 4.098 ac, 80.50% Impervious, Inflow Depth > 0.63" for 1-yr event
Inflow = 3.50 cfs @ 12.04 hrs, Volume= 0.216 af
Outflow = 3.50 cfs @ 12.04 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min
Primary = 3.50 cfs @ 12.04 hrs, Volume= 0.216 af
Routed to Reach NORTH : NORTH MS4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 842.86' @ 12.04 hrs
Flood Elev= 851.51'

Device	Routing	Invert	Outlet Devices
#1	Primary	842.07'	**24.0" Round Culvert** L= 107.1' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 842.07' / 841.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.37 cfs @ 12.04 hrs HW=842.84' (Free Discharge)
1=Culvert (Inlet Controls 3.37 cfs @ 3.00 fps)

Pond MH-3: MH-3



Summary for Pond MH-4: MH-4

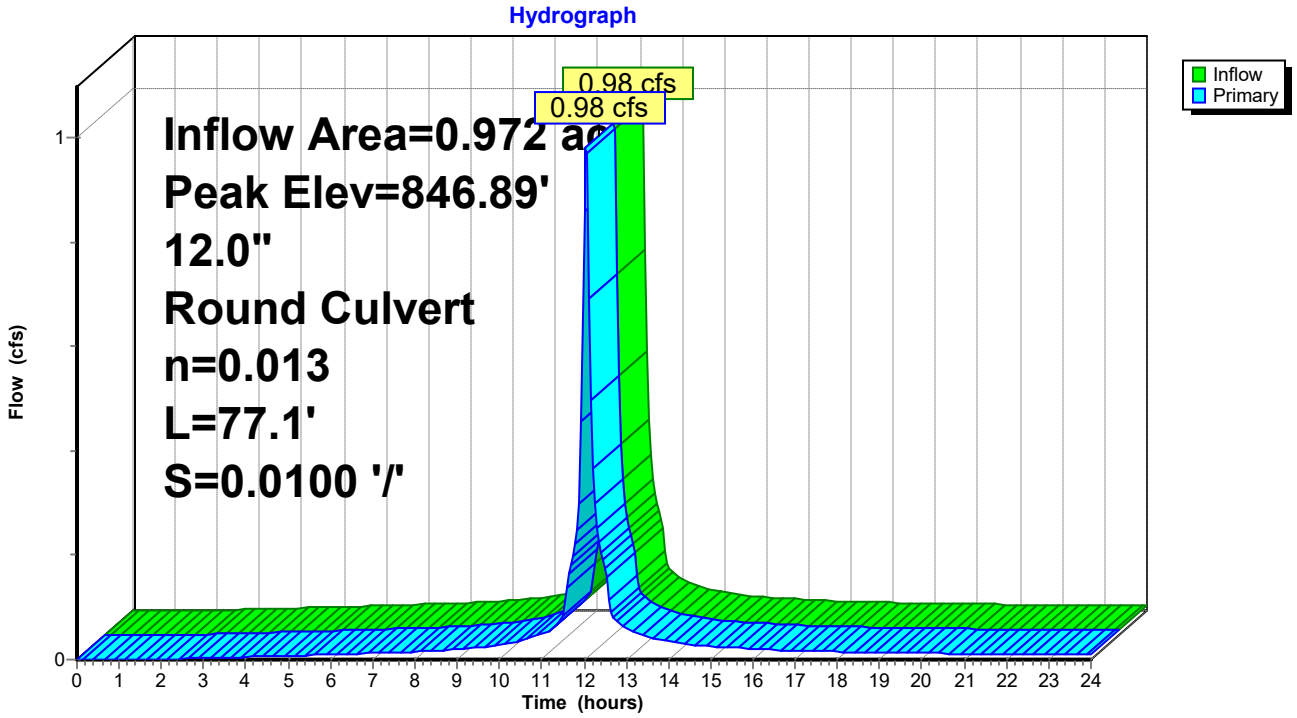
Inflow Area = 0.972 ac, 90.12% Impervious, Inflow Depth > 0.75" for 1-yr event
Inflow = 0.98 cfs @ 12.04 hrs, Volume= 0.061 af
Outflow = 0.98 cfs @ 12.04 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min
Primary = 0.98 cfs @ 12.04 hrs, Volume= 0.061 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 846.89' @ 12.04 hrs
Flood Elev= 851.18'

Device	Routing	Invert	Outlet Devices
#1	Primary	846.21'	**12.0" Round OUTLET** L= 77.1' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.21' / 845.44' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.95 cfs @ 12.04 hrs HW=846.88' TW=846.53' (Fixed TW Elev= 846.53')
1=OUTLET (Outlet Controls 0.95 cfs @ 2.40 fps)

Pond MH-4: MH-4



Summary for Pond T-1: NORTHERN TREE PIT

Inflow Area = 0.090 ac, 53.33% Impervious, Inflow Depth > 0.27" for 1-yr event
Inflow = 0.02 cfs @ 12.08 hrs, Volume= 0.002 af
Outflow = 0.02 cfs @ 12.11 hrs, Volume= 0.002 af, Atten= 0%, Lag= 1.6 min
Discarded = 0.02 cfs @ 12.11 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-3 : MH-3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 845.43' @ 12.11 hrs Surf.Area= 0.016 ac Storage= 0.000 af
Flood Elev= 851.17' Surf.Area= 0.016 ac Storage= 0.039 af

Plug-Flow detention time= 0.7 min calculated for 0.002 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (929.1 - 928.6)

Volume	Invert	Avail.Storage	Storage Description
#1	845.43'	0.000 af	**34.49'W x 20.44'L x 5.75'H TREE PIT** 0.093 af Overall - 0.093 af Embedded = 0.000 af
#2	845.43'	0.013 af	**34.49'W x 20.44'L x 2.00'H NO. 2 STONE** Inside #1 0.032 af Overall x 40.0% Voids
#3	847.43'	0.017 af	**34.49'W x 20.44'L x 3.00'H FILTER MEDIA** Inside #1 0.049 af Overall x 35.0% Voids
#4	850.43'	0.001 af	**34.49'W x 20.44'L x 0.25'H MULCH** Inside #1 0.004 af Overall x 30.0% Voids
#5	850.68'	0.008 af	**34.49'W x 20.44'L x 0.50'H PONDING** Inside #1
		0.039 af	Total Available Storage

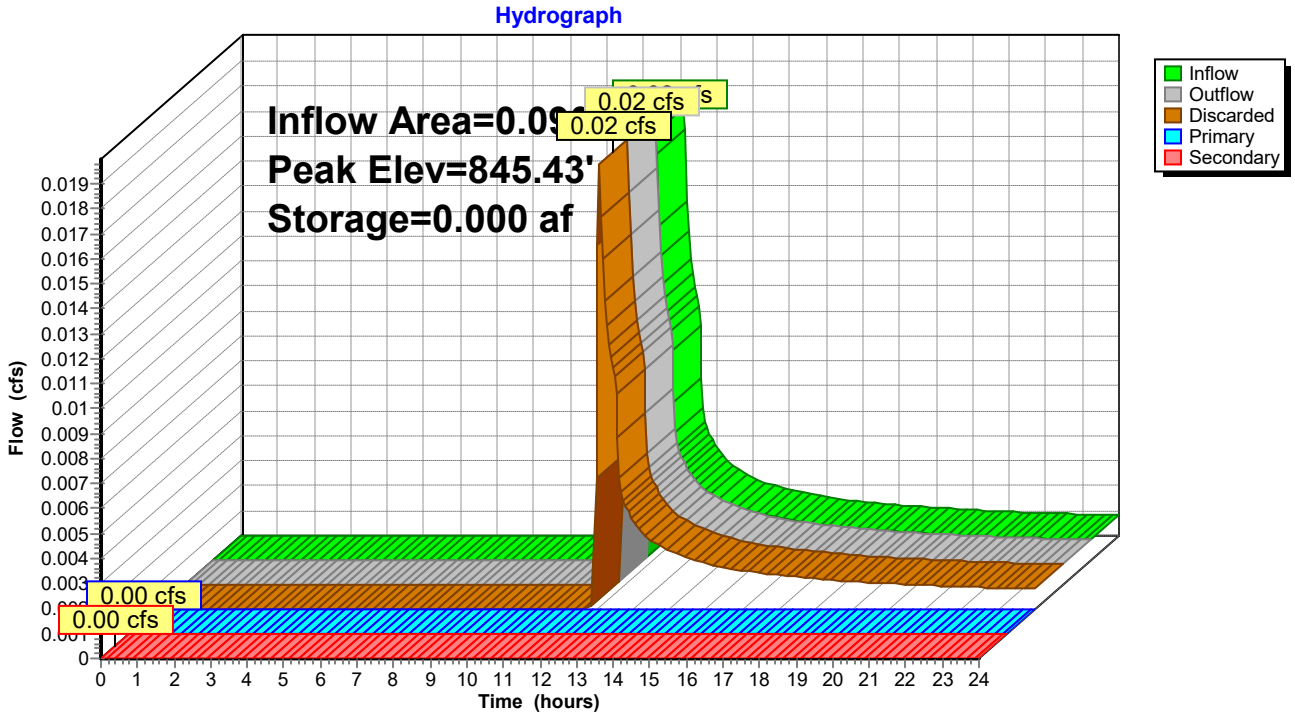
Device	Routing	Invert	Outlet Devices
#1	Primary	846.43'	**12.0" Round OUTLET PIPE** L= 3.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.43' / 846.40' S= 0.0086 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	846.43'	**2.0" Vert. PERF PIPE X 34.48** C= 0.600 Limited to weir flow at low heads
#3	Discarded	845.43'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	851.17'	**12.0" Horiz. SURFACE OVERFLOW** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.39 cfs @ 12.11 hrs HW=845.43' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.39 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.43' (Free Discharge)
└**1=OUTLET PIPE** (Controls 0.00 cfs)
└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.43' (Free Discharge)
└**4=SURFACE OVERFLOW** (Controls 0.00 cfs)

Pond T-1: NORTHERN TREE PIT



Summary for Pond T-2: MIDDLE TREE PIT

Inflow Area = 1.502 ac, 71.11% Impervious, Inflow Depth > 0.65" for 1-yr event
Inflow = 1.31 cfs @ 12.05 hrs, Volume= 0.081 af
Outflow = 0.71 cfs @ 12.18 hrs, Volume= 0.081 af, Atten= 46%, Lag= 7.5 min
Discarded = 0.71 cfs @ 12.18 hrs, Volume= 0.081 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 844.46' @ 12.18 hrs Surf.Area= 0.057 ac Storage= 0.012 af

Plug-Flow detention time= 12.0 min calculated for 0.081 af (99% of inflow)
Center-of-Mass det. time= 9.3 min (879.4 - 870.1)

Volume	Invert	Avail.Storage	Storage Description
#1	843.95'	0.000 af	**49.88'W x 49.88'L x 5.75'H TREE PIT** 0.328 af Overall - 0.328 af Embedded = 0.000 af
#2	843.95'	0.046 af	**49.88'W x 49.88'L x 2.00'H NO. 2 STONE** Inside #1 0.114 af Overall x 40.0% Voids
#3	845.95'	0.060 af	**49.88'W x 49.88'L x 3.00'H FILTER MEDIA** Inside #1 0.171 af Overall x 35.0% Voids
#4	848.95'	0.004 af	**49.88'W x 49.88'L x 0.25'H MULCH** Inside #1 0.014 af Overall x 30.0% Voids
#5	849.20'	0.029 af	**49.88'W x 49.88'L x 0.50'H PONDING DEPTH** Inside #1
		0.139 af	Total Available Storage

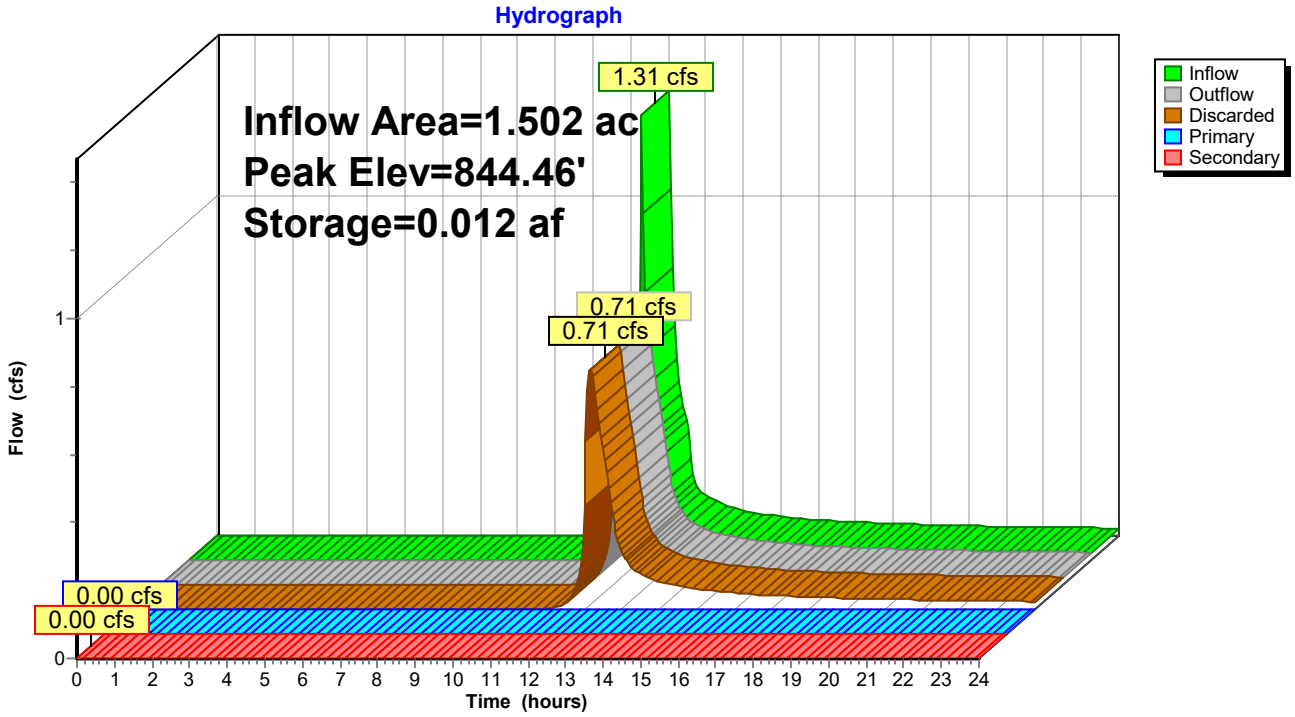
Device	Routing	Invert	Outlet Devices
#0	Secondary	849.70'	**Automatic Storage Overflow** (Discharged without head)
#1	Primary	845.04'	**12.0" Round OUTLET PIPE** L= 78.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 845.04' / 844.65' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	845.04'	**2.0" Vert. PERF PIPE X 123.88** C= 0.600 Limited to weir flow at low heads
#3	Discarded	843.95'	**24.000 in/hr Exfiltration over Surface area** Phase-In= 1.00'
#4	Secondary	849.69'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.70 cfs @ 12.18 hrs HW=844.46' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.70 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=843.95' TW=849.00' (Fixed TW Elev= 849.00')
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=843.95' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-2: MIDDLE TREE PIT



Summary for Pond T-3: SOUTHERN TREE PIT

Inflow Area = 0.577 ac, 83.36% Impervious, Inflow Depth > 1.02" for 1-yr event
Inflow = 0.85 cfs @ 12.04 hrs, Volume= 0.049 af
Outflow = 0.85 cfs @ 12.06 hrs, Volume= 0.049 af, Atten= 1%, Lag= 0.7 min
Discarded = 0.85 cfs @ 12.06 hrs, Volume= 0.049 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-4 : MH-4
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-4 : MH-4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 847.29' @ 12.06 hrs Surf.Area= 0.039 ac Storage= 0.001 af
Flood Elev= 852.99' Surf.Area= 0.039 ac Storage= 0.095 af

Plug-Flow detention time= 0.7 min calculated for 0.049 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (839.7 - 839.2)

Volume	Invert	Avail.Storage	Storage Description
#1	847.24'	0.000 af	**5.00'W x 341.66'L x 5.75'H TREE TRENCH** 0.225 af Overall - 0.225 af Embedded = 0.000 af
#2	847.24'	0.031 af	**5.00'W x 341.66'L x 2.00'H NO. 2 STONE** Inside #1 0.078 af Overall x 40.0% Voids
#3	849.24'	0.041 af	**5.00'W x 341.66'L x 3.00'H FILTER MEDIA** Inside #1 0.118 af Overall x 35.0% Voids
#4	852.24'	0.003 af	**5.00'W x 341.66'L x 0.25'H MULCH** Inside #1 0.010 af Overall x 30.0% Voids
#5	852.49'	0.020 af	**5.00'W x 341.66'L x 0.50'H PONDING** Inside #1
		0.095 af	Total Available Storage

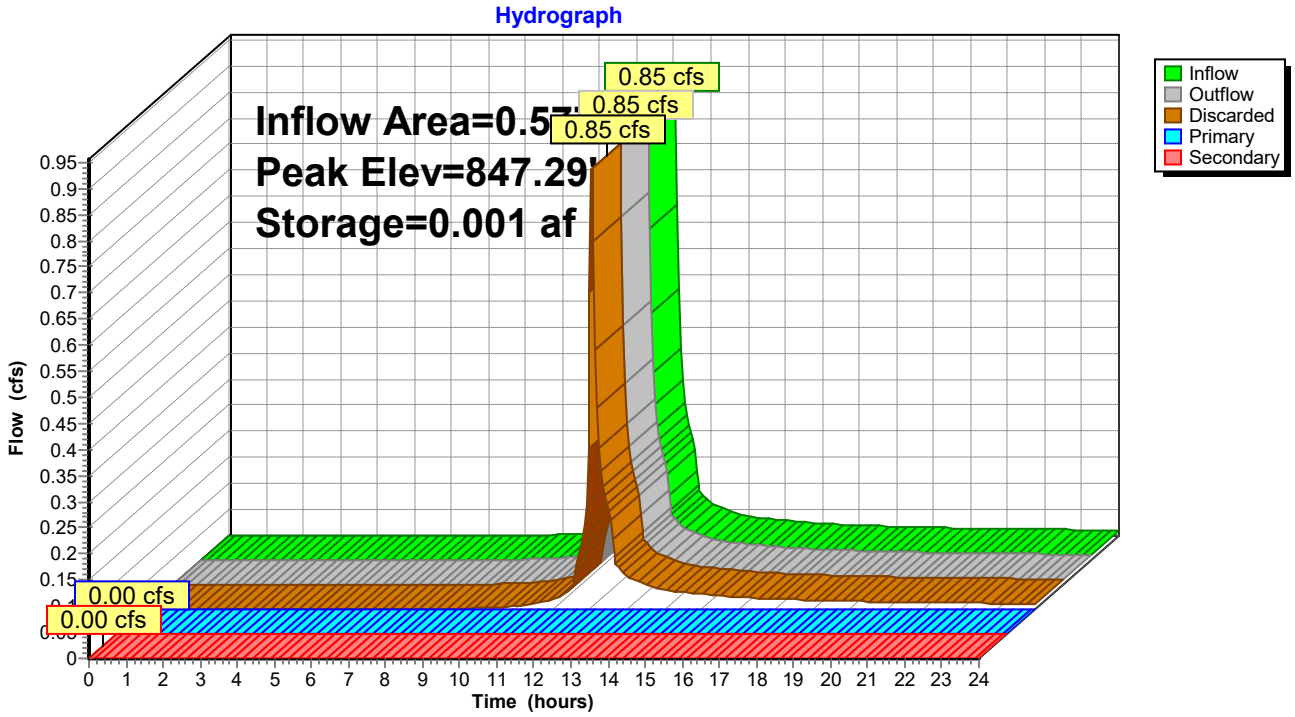
Device	Routing	Invert	Outlet Devices
#1	Primary	848.24'	**12.0" Round OUTLET PIPE** L= 102.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 848.24' / 847.21' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	848.24'	**2.0" Vert. PERF PIPE X 341.66** C= 0.600 Limited to weir flow at low heads
#3	Discarded	847.24'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	852.98'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.95 cfs @ 12.06 hrs HW=847.29' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.95 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=847.24' TW=850.00' (Fixed TW Elev= 850.00')
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=847.24' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-3: SOUTHERN TREE PIT



Summary for Pond T-4: SOUTH EAST TREE PIT

Inflow Area = 0.520 ac, 56.35% Impervious, Inflow Depth > 0.32" for 1-yr event
Inflow = 0.16 cfs @ 12.07 hrs, Volume= 0.014 af
Outflow = 0.15 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 5%, Lag= 1.3 min
Discarded = 0.15 cfs @ 12.09 hrs, Volume= 0.014 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 845.77' @ 12.09 hrs Surf.Area= 0.018 ac Storage= 0.000 af
Flood Elev= 851.49' Surf.Area= 0.018 ac Storage= 0.043 af

Plug-Flow detention time= 0.7 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (916.0 - 915.5)

Volume	Invert	Avail.Storage	Storage Description
#1	845.75'	0.000 af	**15.18'W x 50.81'L x 5.75'H TREE PIT** 0.102 af Overall - 0.102 af Embedded = 0.000 af
#2	845.75'	0.014 af	**15.18'W x 50.81'L x 2.00'H NO. 2 STONE** Inside #1 0.035 af Overall x 40.0% Voids
#3	847.75'	0.019 af	**15.18'W x 50.81'L x 3.00'H FILTER MEDIA** Inside #1 0.053 af Overall x 35.0% Voids
#4	850.75'	0.001 af	**15.18'W x 50.81'L x 0.25'H MULCH** Inside #1 0.004 af Overall x 30.0% Voids
#5	851.00'	0.009 af	**15.18'W x 50.81'L x 0.50'H PONDING** Inside #1
		0.043 af	Total Available Storage

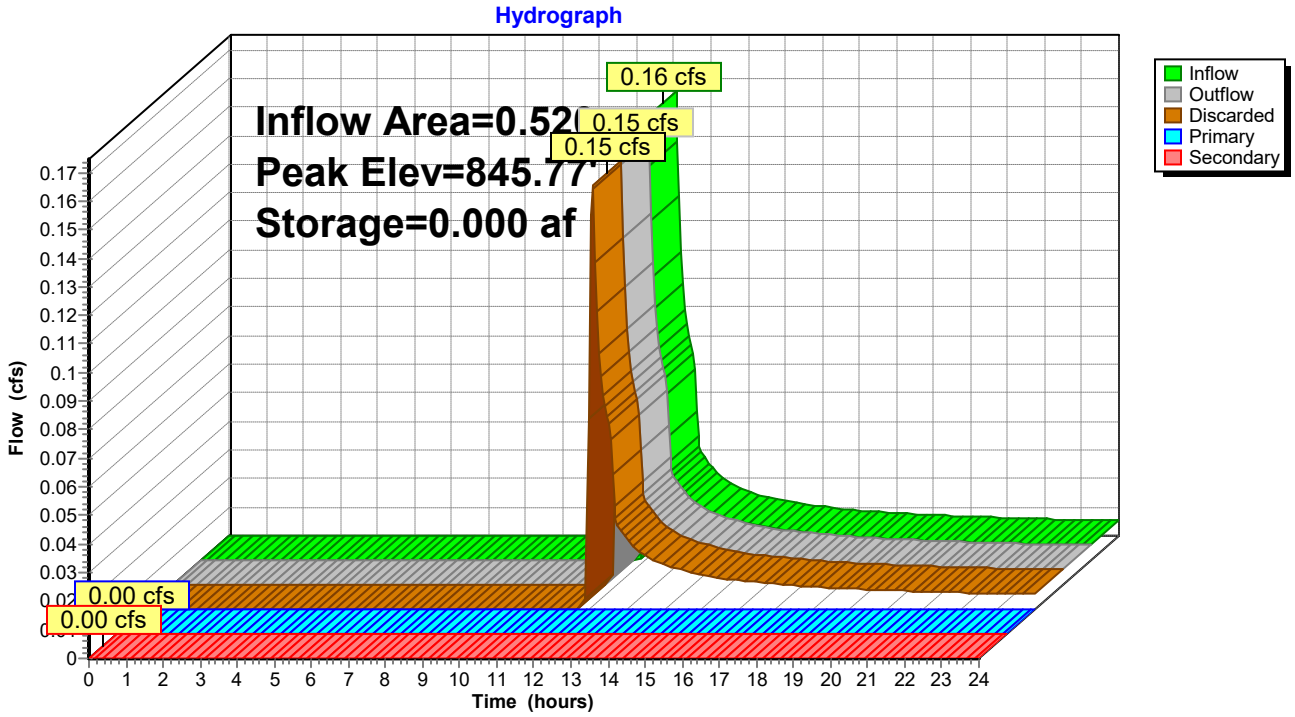
Device	Routing	Invert	Outlet Devices
#1	Primary	846.75'	**12.0" Round OUTLET PIPE** L= 223.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.75' / 844.51' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	846.75'	**2.0" Vert. PERF PIPE X 50.81** C= 0.600 Limited to weir flow at low heads
#3	Discarded	845.75'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	851.49'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.43 cfs @ 12.09 hrs HW=845.77' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.43 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.75' TW=850.50' (Fixed TW Elev= 850.50')
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.75' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-4: SOUTH EAST TREE PIT



Summary for Pond T-5: EASTERN TREE PIT

Inflow Area = 1.237 ac, 81.41% Impervious, Inflow Depth > 0.96" for 1-yr event
Inflow = 1.10 cfs @ 12.20 hrs, Volume= 0.099 af
Outflow = 0.83 cfs @ 12.15 hrs, Volume= 0.099 af, Atten= 25%, Lag= 0.0 min
Discarded = 0.83 cfs @ 12.15 hrs, Volume= 0.099 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach EAST : EAST MS4
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach EAST : EAST MS4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 849.17' @ 12.35 hrs Surf.Area= 0.034 ac Storage= 0.004 af
Flood Elev= 854.61' Surf.Area= 0.034 ac Storage= 0.083 af

Plug-Flow detention time= 1.2 min calculated for 0.099 af (100% of inflow)
Center-of-Mass det. time= 1.1 min (853.7 - 852.6)

Volume	Invert	Avail.Storage	Storage Description
#1	848.87'	0.000 af	**5.00'W x 299.26'L x 5.75'H TREE TRENCH** 0.198 af Overall - 0.198 af Embedded = 0.000 af
#2	848.87'	0.027 af	**5.00'W x 299.26'L x 2.00'H NO. 2 STONE** Inside #1 0.069 af Overall x 40.0% Voids
#3	850.87'	0.036 af	**5.00'W x 299.26'L x 3.00'H FILTER MEDIA** Inside #1 0.103 af Overall x 35.0% Voids
#4	853.87'	0.003 af	**5.00'W x 299.26'L x 0.25'H MULCH** Inside #1 0.009 af Overall x 30.0% Voids
#5	854.12'	0.017 af	**5.00'W x 299.26'L x 0.50'H PONDING** Inside #1
		0.083 af	Total Available Storage

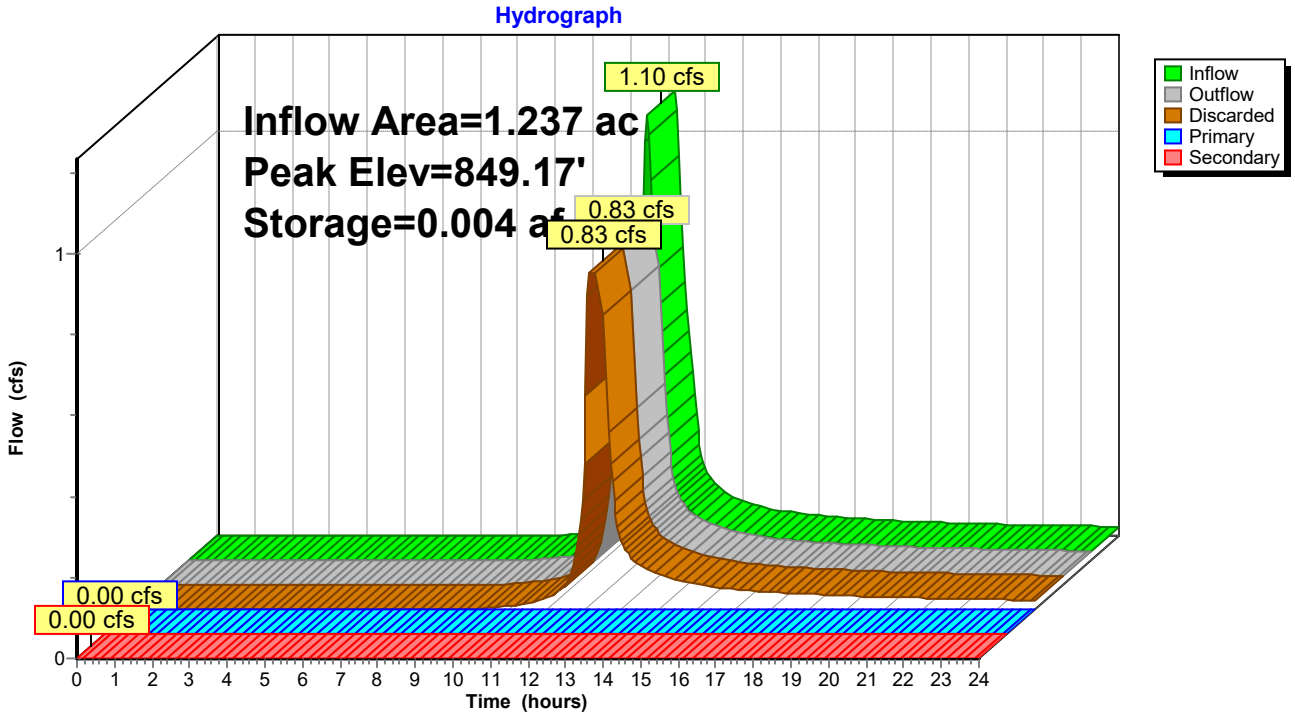
Device	Routing	Invert	Outlet Devices
#1	Primary	849.87'	**12.0" Round OUTLET PIPE** L= 18.8' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 849.87' / 849.68' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	849.87'	**2.0" Vert. PERP PIPE X 299.26** C= 0.600 Limited to weir flow at low heads
#3	Discarded	848.87'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	854.61'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.83 cfs @ 12.15 hrs HW=848.96' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.83 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=848.87' TW=853.50' (Fixed TW Elev= 853.50')
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERP PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=848.87' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-5: EASTERN TREE PIT



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment W-1: PHASE 1 BLDG-1 Runoff Area=0.342 ac 100.00% Impervious Runoff Depth>3.27"
Tc=6.0 min CN=98 Runoff=1.44 cfs 0.093 af

Subcatchment W-10: WESTERN Runoff Area=0.184 ac 66.85% Impervious Runoff Depth>1.50"
Tc=6.0 min CN=78 Runoff=0.39 cfs 0.023 af

Subcatchment W-11: PHASE 2 BLDG-1 Runoff Area=0.395 ac 100.00% Impervious Runoff Depth>3.27"
Tc=6.0 min CN=98 Runoff=1.67 cfs 0.108 af

Subcatchment W-12: PHASE 2 BLDG-2 Runoff Area=0.413 ac 100.00% Impervious Runoff Depth>3.27"
Tc=6.0 min CN=98 Runoff=1.74 cfs 0.113 af

Subcatchment W-13: PHASE 2 NORTHERN Runoff Area=0.386 ac 67.62% Impervious Runoff Depth>1.57"
Tc=6.0 min CN=79 Runoff=0.86 cfs 0.051 af

Subcatchment W-14: PHASE 2 WESTERN Runoff Area=0.048 ac 6.25% Impervious Runoff Depth>0.05"
Tc=6.0 min CN=43 Runoff=0.00 cfs 0.000 af

Subcatchment W-2: PHASE 1 BLDG-2 Runoff Area=0.259 ac 100.00% Impervious Runoff Depth>3.27"
Tc=6.0 min CN=98 Runoff=1.09 cfs 0.071 af

Subcatchment W-3: NORTHERN TREE PIT Runoff Area=0.090 ac 53.33% Impervious Runoff Depth>1.01"
Tc=6.0 min CN=70 Runoff=0.12 cfs 0.008 af

Subcatchment W-4: NORTHERN Runoff Area=0.220 ac 75.00% Impervious Runoff Depth>1.86"
Flow Length=286' Tc=6.0 min CN=83 Runoff=0.59 cfs 0.034 af

Subcatchment W-5: MIDDLE TREE PIT + Runoff Area=1.502 ac 71.11% Impervious Runoff Depth>1.71"
Flow Length=156' Tc=6.0 min CN=81 Runoff=3.66 cfs 0.215 af

Subcatchment W-6: SOUTHERN TREE PIT Runoff Area=0.577 ac 83.36% Impervious Runoff Depth>2.28"
Flow Length=72' Tc=6.0 min CN=88 Runoff=1.87 cfs 0.109 af

Subcatchment W-7: SOUTH EAST TREE PIT Runoff Area=0.520 ac 56.35% Impervious Runoff Depth>1.13"
Tc=6.0 min CN=72 Runoff=0.78 cfs 0.049 af

Subcatchment W-8: EAST PARKING LOT Runoff Area=1.237 ac 81.41% Impervious Runoff Depth>2.18"
Flow Length=215' Tc=17.7 min CN=87 Runoff=2.57 cfs 0.225 af

Subcatchment W-9: EAST PARKING LOT Runoff Area=0.041 ac 85.37% Impervious Runoff Depth>2.36"
Tc=6.0 min CN=89 Runoff=0.14 cfs 0.008 af

Reach EAST: EAST MS4 Inflow=0.14 cfs 0.008 af
Outflow=0.14 cfs 0.008 af

Reach NORTH: NORTH MS4 Inflow=7.38 cfs 0.469 af
Outflow=7.38 cfs 0.469 af

Reach WEST: WEST MS4 Inflow=0.39 cfs 0.023 af
Outflow=0.39 cfs 0.023 af

Pond MH-1: MH-1 Peak Elev=845.22' Inflow=1.44 cfs 0.093 af
12.0" Round Culvert n=0.013 L=91.0' S=0.0100 '/' Outflow=1.44 cfs 0.093 af

Pond MH-2: MH-2 Peak Elev=844.92' Inflow=4.50 cfs 0.291 af
18.0" Round Culvert n=0.013 L=117.2' S=0.0100 '/' Outflow=4.50 cfs 0.291 af

Pond MH-3: MH-3 Peak Elev=843.13' Inflow=5.94 cfs 0.384 af
24.0" Round Culvert n=0.013 L=107.1' S=0.0100 '/' Outflow=5.94 cfs 0.384 af

Pond MH-4: MH-4 Peak Elev=847.07' Inflow=1.67 cfs 0.108 af
12.0" Round Culvert n=0.013 L=77.1' S=0.0100 '/' Outflow=1.67 cfs 0.108 af

Pond T-1: NORTHERN TREE PIT Peak Elev=845.45' Storage=0.000 af Inflow=0.12 cfs 0.008 af
Discarded=0.12 cfs 0.008 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.008 af

Pond T-2: MIDDLE TREE PIT Peak Elev=845.77' Storage=0.042 af Inflow=3.66 cfs 0.215 af
Discarded=1.38 cfs 0.214 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=1.38 cfs 0.214 af

Pond T-3: SOUTHERN TREE PIT Peak Elev=847.85' Storage=0.010 af Inflow=1.87 cfs 0.109 af
Discarded=0.95 cfs 0.109 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.95 cfs 0.109 af

Pond T-4: SOUTH EAST TREE PIT Peak Elev=846.25' Storage=0.004 af Inflow=0.78 cfs 0.049 af
Discarded=0.43 cfs 0.049 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.43 cfs 0.049 af

Pond T-5: EASTERN TREE PIT Peak Elev=852.79' Storage=0.051 af Inflow=2.57 cfs 0.225 af
Discarded=0.83 cfs 0.225 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.83 cfs 0.225 af

Total Runoff Area = 6.214 ac Runoff Volume = 1.106 af Average Runoff Depth = 2.14"
21.26% Pervious = 1.321 ac 78.74% Impervious = 4.893 ac

Summary for Subcatchment W-1: PHASE 1 BLDG-1

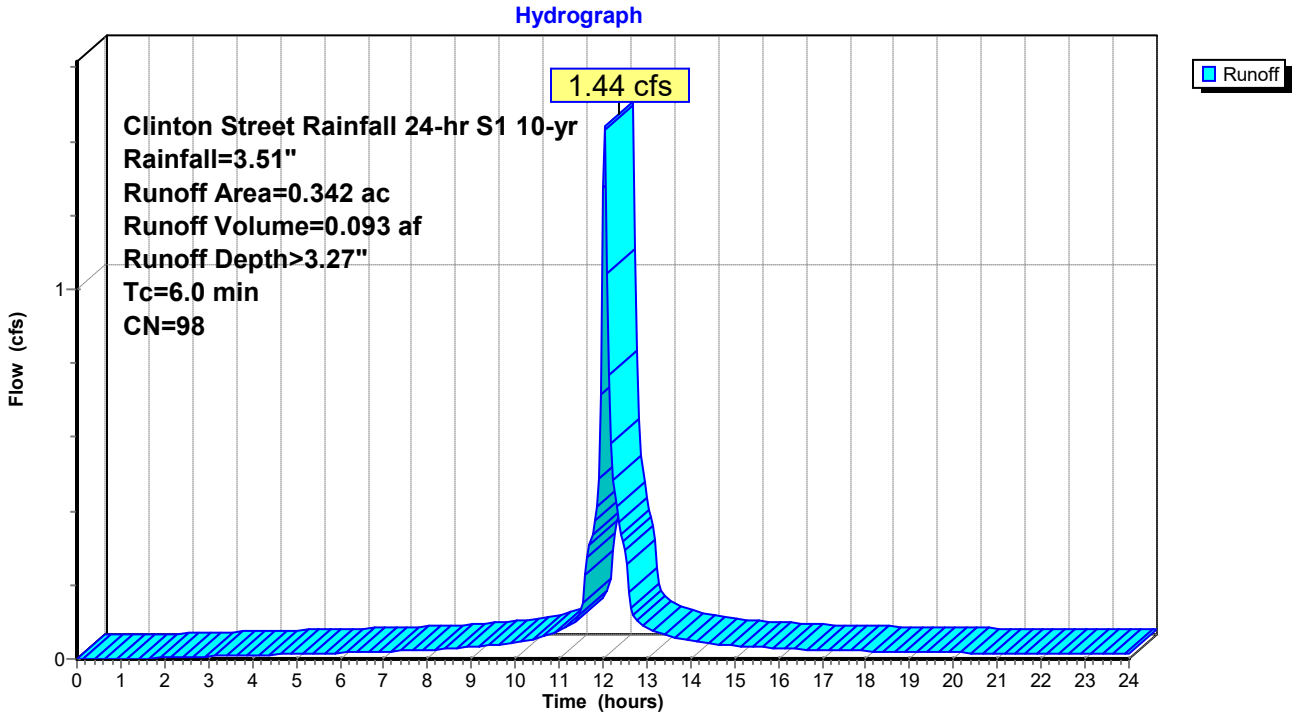
Runoff = 1.44 cfs @ 12.04 hrs, Volume= 0.093 af, Depth> 3.27"
Routed to Pond MH-1 : MH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.342	98	Roofs, HSG A
0.342		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-1: PHASE 1 BLDG-1



Summary for Subcatchment W-10: WESTERN UNTREATED

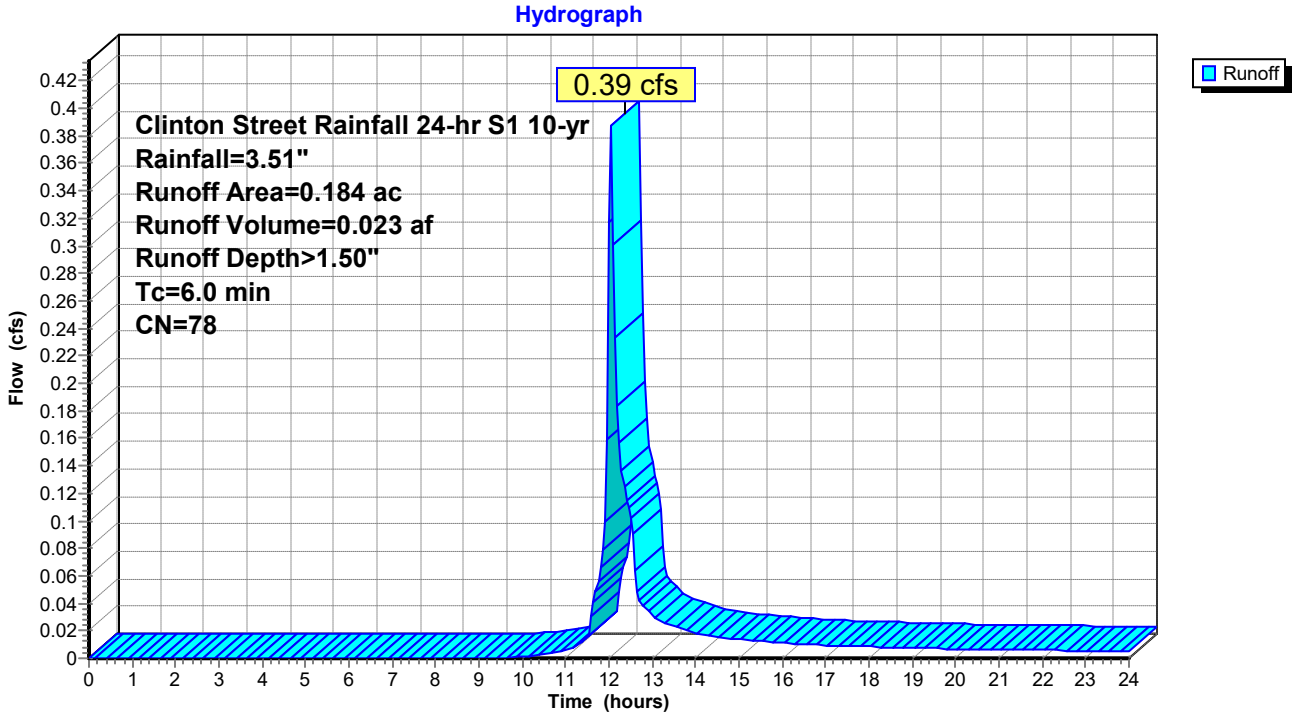
Runoff = 0.39 cfs @ 12.05 hrs, Volume= 0.023 af, Depth> 1.50"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.123	98	Paved parking, HSG A
0.061	39	>75% Grass cover, Good, HSG A
0.184	78	Weighted Average
0.061		33.15% Pervious Area
0.123		66.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-10: WESTERN UNTREATED



Summary for Subcatchment W-11: PHASE 2 BLDG-1

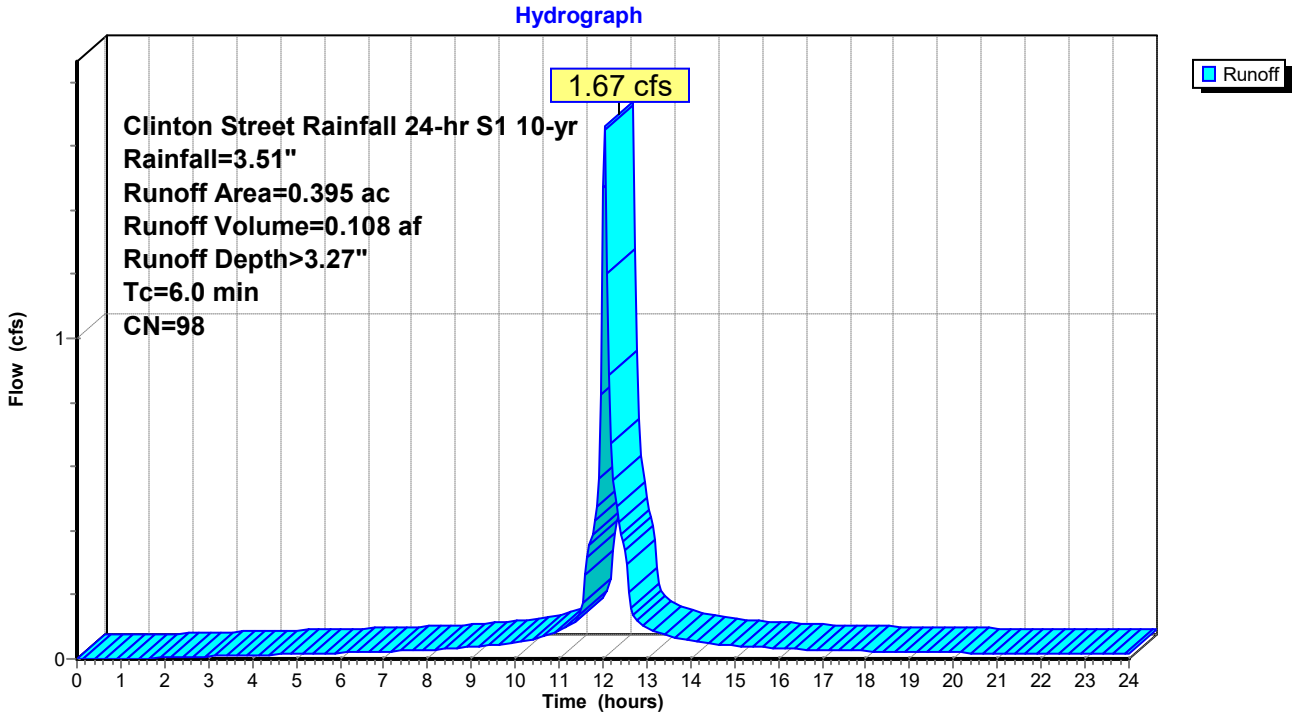
Runoff = 1.67 cfs @ 12.04 hrs, Volume= 0.108 af, Depth> 3.27"
Routed to Pond MH-4 : MH-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.395	98	Roofs, HSG A
0.395		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-11: PHASE 2 BLDG-1



Summary for Subcatchment W-12: PHASE 2 BLDG-2

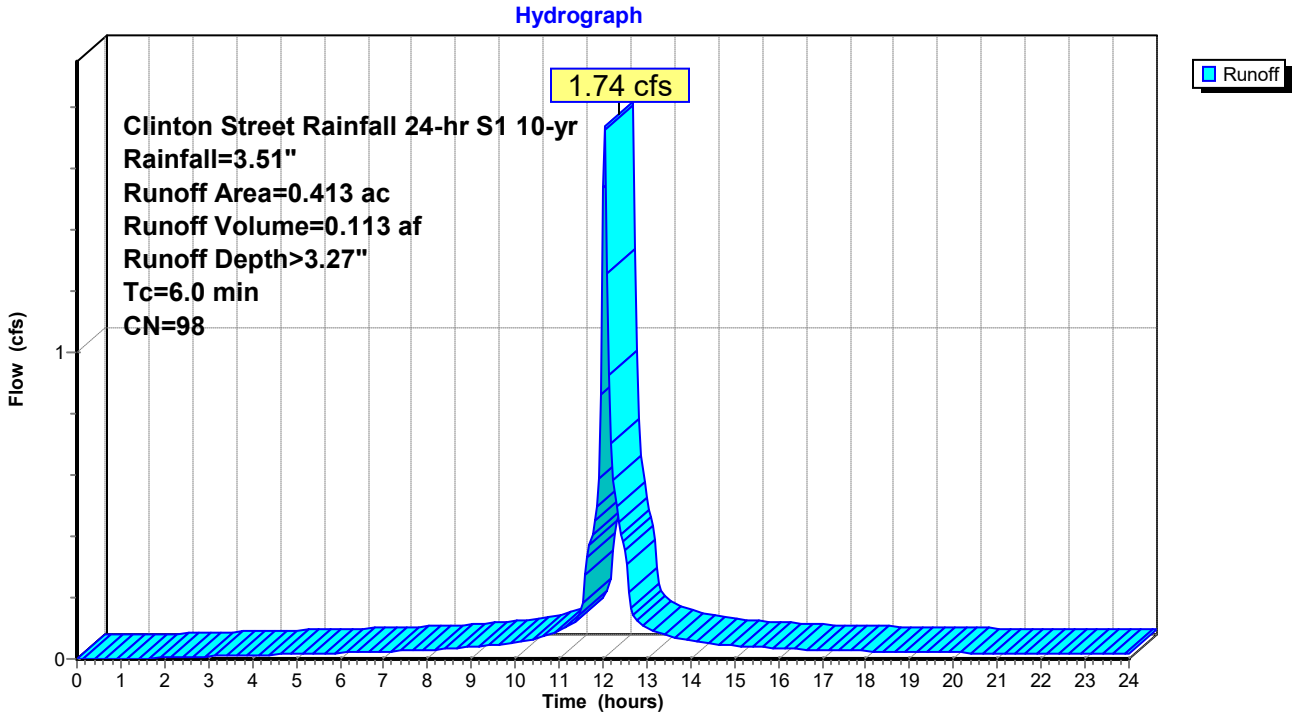
Runoff = 1.74 cfs @ 12.04 hrs, Volume= 0.113 af, Depth> 3.27"
Routed to Pond MH-2 : MH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.413	98	Roofs, HSG A
0.413		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-12: PHASE 2 BLDG-2



Summary for Subcatchment W-13: PHASE 2 NORTHERN UNTREATED

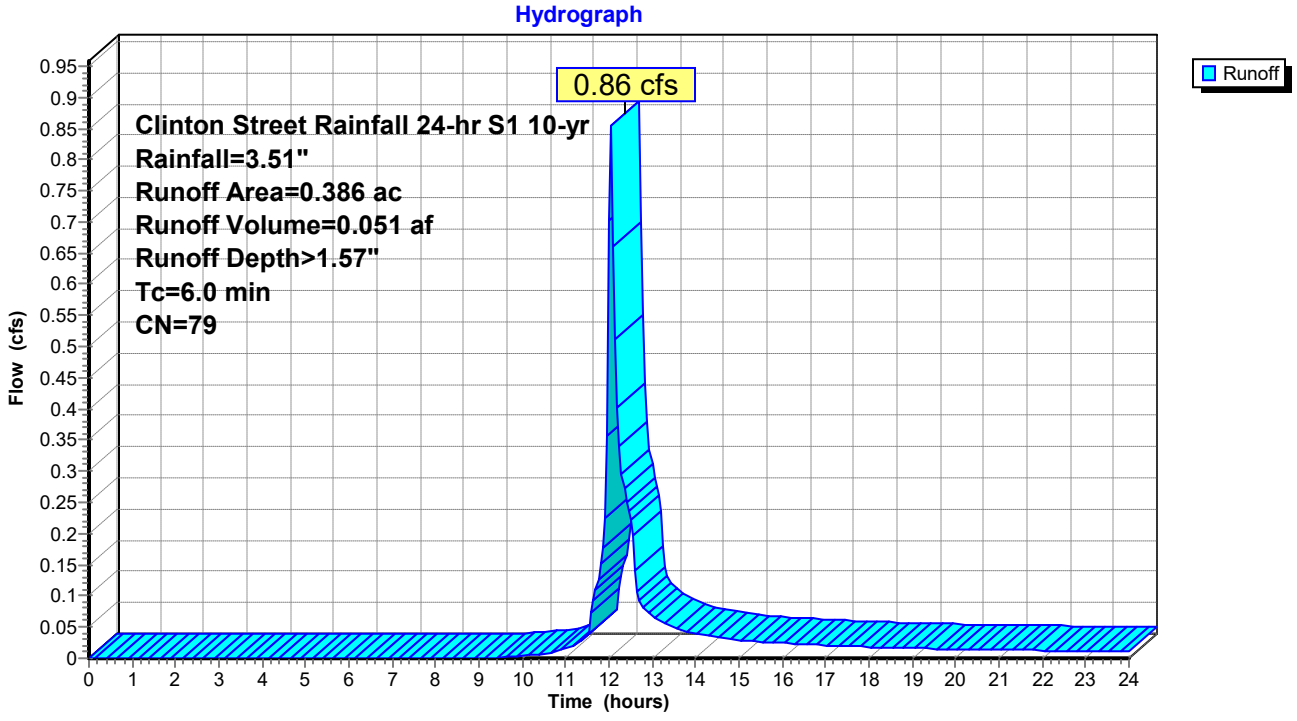
Runoff = 0.86 cfs @ 12.05 hrs, Volume= 0.051 af, Depth> 1.57"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.261	98	Paved parking, HSG A
0.125	39	>75% Grass cover, Good, HSG A
0.386	79	Weighted Average
0.125		32.38% Pervious Area
0.261		67.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-13: PHASE 2 NORTHERN UNTREATED



Summary for Subcatchment W-14: PHASE 2 WESTERN UNTREATED

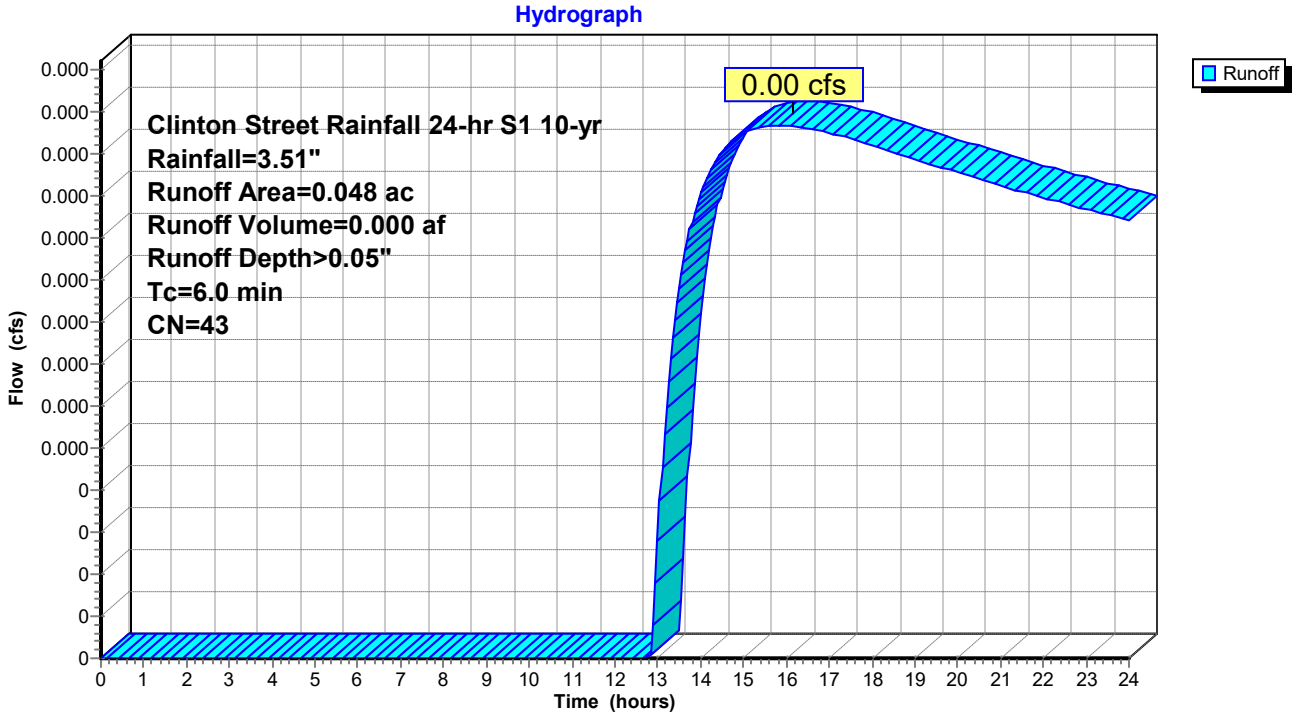
Runoff = 0.00 cfs @ 15.85 hrs, Volume= 0.000 af, Depth> 0.05"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.003	98	Paved parking, HSG A
0.045	39	>75% Grass cover, Good, HSG A
0.048	43	Weighted Average
0.045		93.75% Pervious Area
0.003		6.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-14: PHASE 2 WESTERN UNTREATED



Summary for Subcatchment W-2: PHASE 1 BLDG-2

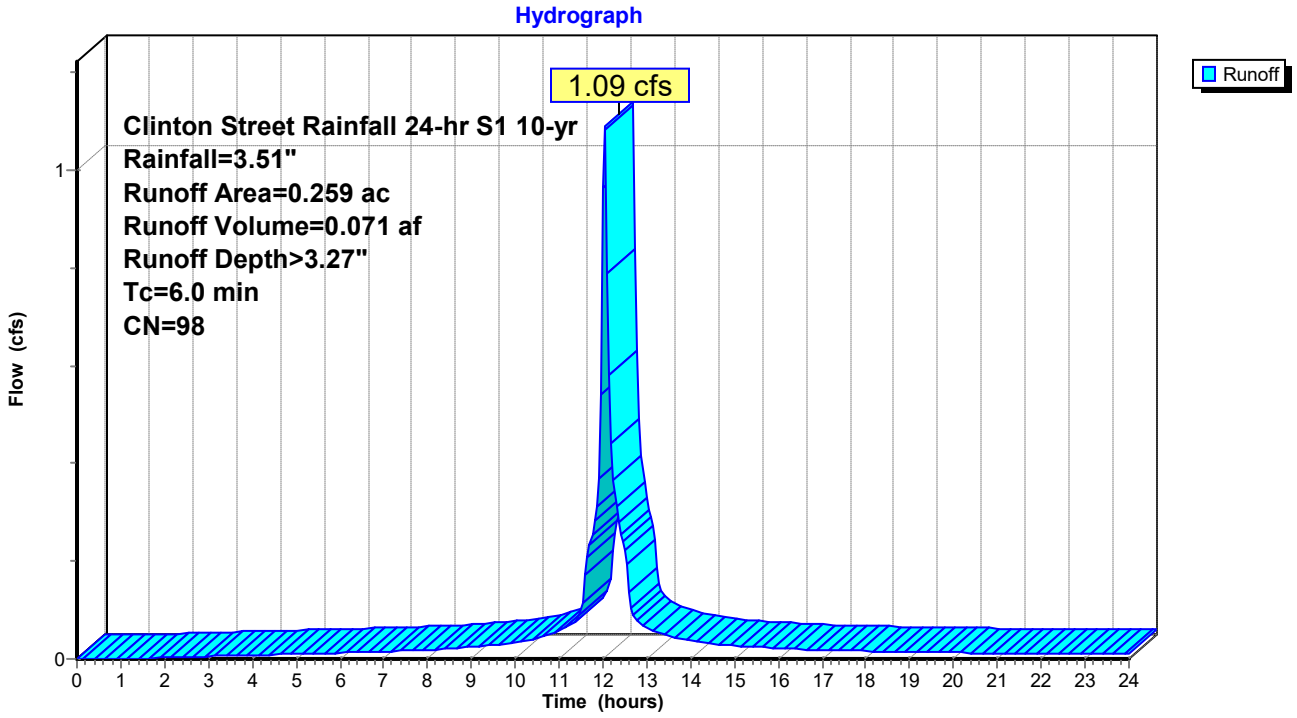
Runoff = 1.09 cfs @ 12.04 hrs, Volume= 0.071 af, Depth> 3.27"
Routed to Pond MH-2 : MH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.259	98	Roofs, HSG A
0.259		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-2: PHASE 1 BLDG-2



Summary for Subcatchment W-3: NORTHERN TREE PIT

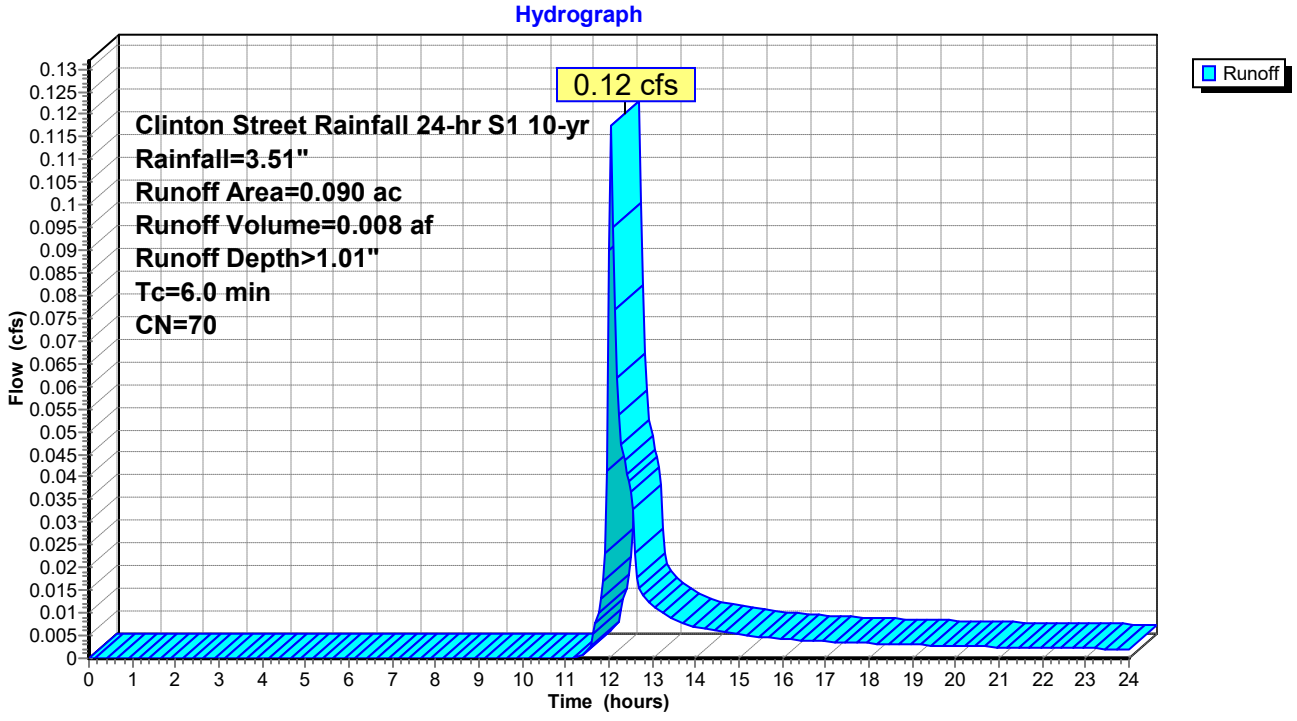
Runoff = 0.12 cfs @ 12.05 hrs, Volume= 0.008 af, Depth> 1.01"
Routed to Pond T-1 : NORTHERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.048	98	Paved parking, HSG A
0.042	39	>75% Grass cover, Good, HSG A
0.090	70	Weighted Average
0.042		46.67% Pervious Area
0.048		53.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-3: NORTHERN TREE PIT



Summary for Subcatchment W-4: NORTHERN UNTREATED

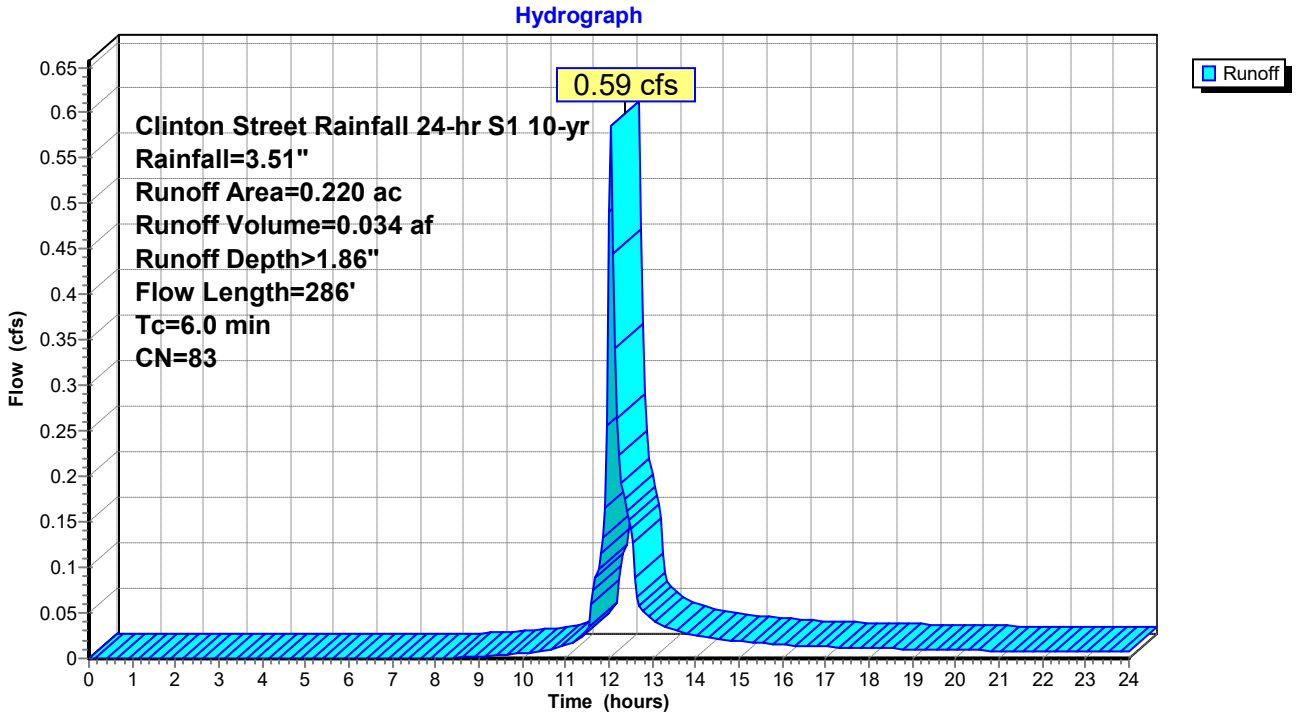
Runoff = 0.59 cfs @ 12.04 hrs, Volume= 0.034 af, Depth> 1.86"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.165	98	Paved parking, HSG A
0.055	39	>75% Grass cover, Good, HSG A
0.220	83	Weighted Average
0.055		25.00% Pervious Area
0.165		75.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	100	0.0050	0.68		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.6	101	0.0198	2.86		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	52	0.0240	3.14		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	33	0.0121	4.42	2.41	**Pipe Channel,** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
2.6					**Direct Entry, MINIMUM**
6.0	286	Total			

Subcatchment W-4: NORTHERN UNTREATED



Summary for Subcatchment W-5: MIDDLE TREE PIT + PHASE 2

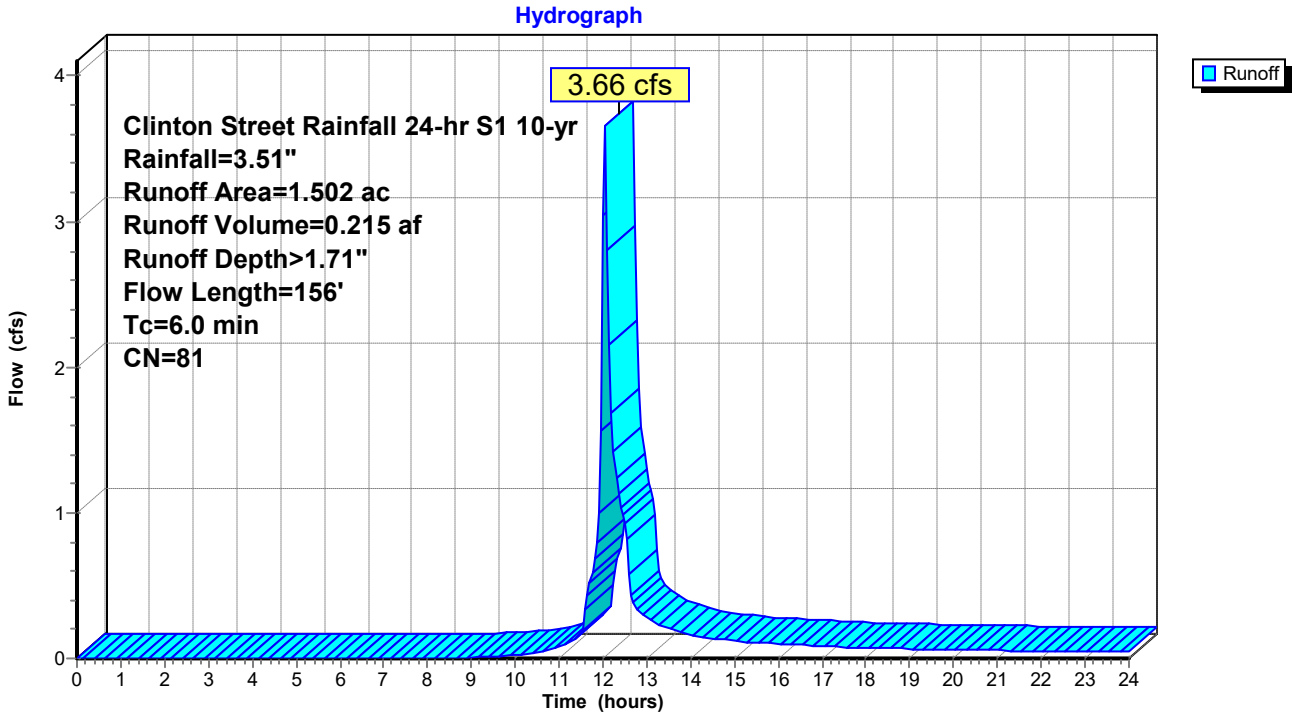
Runoff = 3.66 cfs @ 12.05 hrs, Volume= 0.215 af, Depth> 1.71"
Routed to Pond T-2 : MIDDLE TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
1.068	98	Paved parking, HSG A
0.434	39	>75% Grass cover, Good, HSG A
1.502	81	Weighted Average
0.434		28.89% Pervious Area
1.068		71.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	7	0.5000	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.8	61	0.0328	1.31		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.2	15	0.1000	1.55		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.4	65	0.0231	3.09		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	8	0.2500	3.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.2					**Direct Entry, MIN Tc**
6.0	156	Total			

Subcatchment W-5: MIDDLE TREE PIT + PHASE 2



Summary for Subcatchment W-6: SOUTHERN TREE PIT

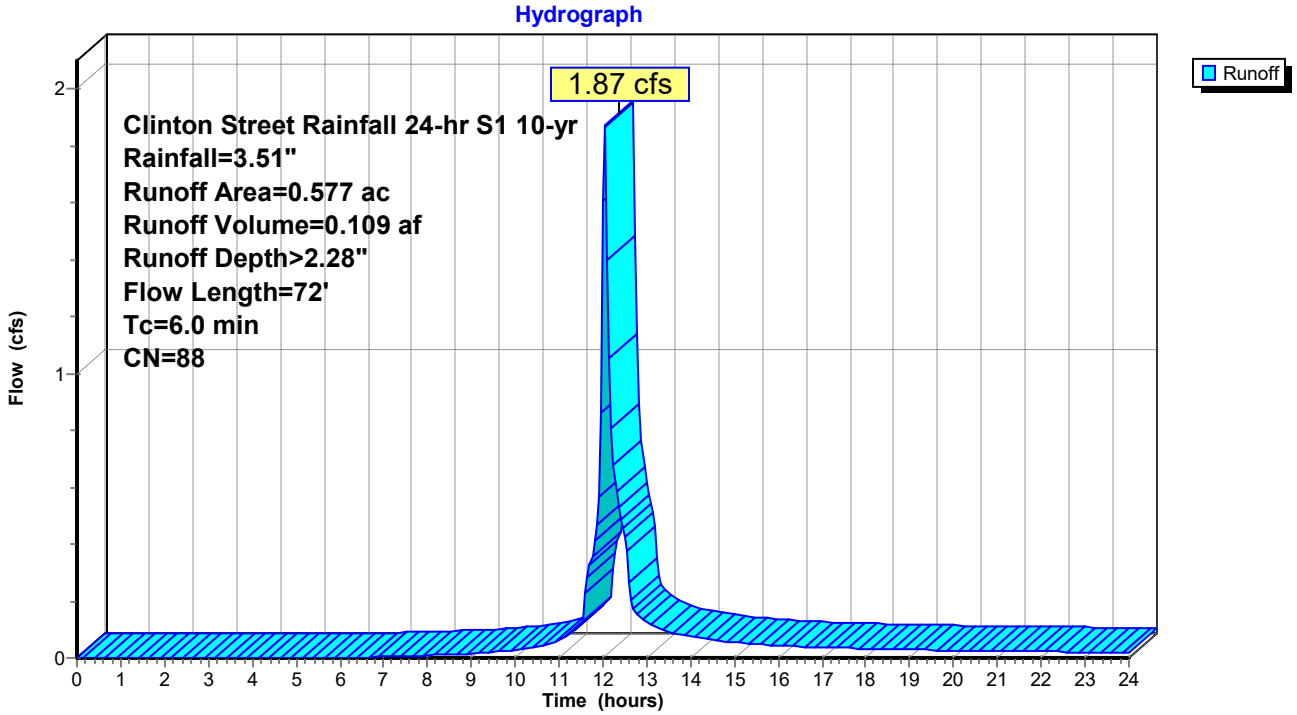
Runoff = 1.87 cfs @ 12.04 hrs, Volume= 0.109 af, Depth> 2.28"
Routed to Pond T-3 : SOUTHERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.481	98	Paved parking, HSG A
0.096	39	>75% Grass cover, Good, HSG A
0.577	88	Weighted Average
0.096		16.64% Pervious Area
0.481		83.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	9	0.3333	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.8	63	0.0317	1.30		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
4.7					**Direct Entry, MINIMUM**
6.0	72	Total			

Subcatchment W-6: SOUTHERN TREE PIT



Summary for Subcatchment W-7: SOUTH EAST TREE PIT

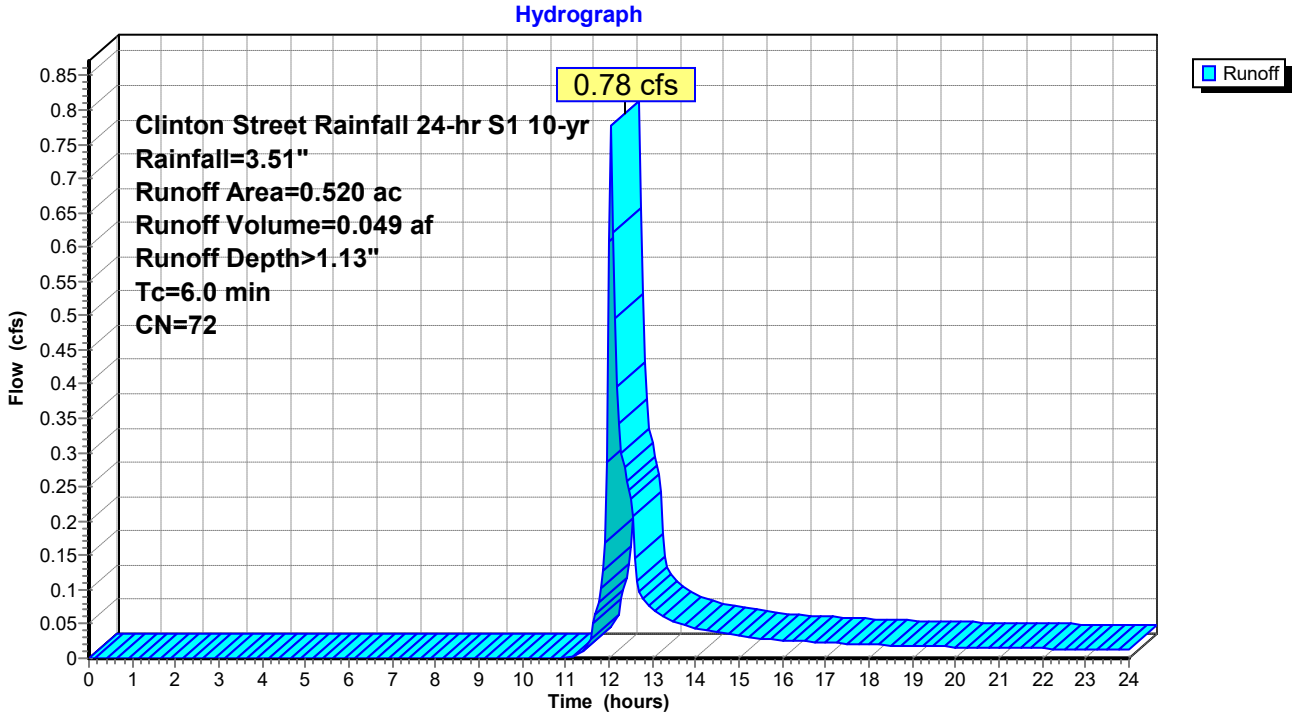
Runoff = 0.78 cfs @ 12.05 hrs, Volume= 0.049 af, Depth> 1.13"
Routed to Pond T-4 : SOUTH EAST TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.293	98	Paved parking, HSG A
0.227	39	>75% Grass cover, Good, HSG A
0.520	72	Weighted Average
0.227		43.65% Pervious Area
0.293		56.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-7: SOUTH EAST TREE PIT



Summary for Subcatchment W-8: EAST PARKING LOT TREE PIT

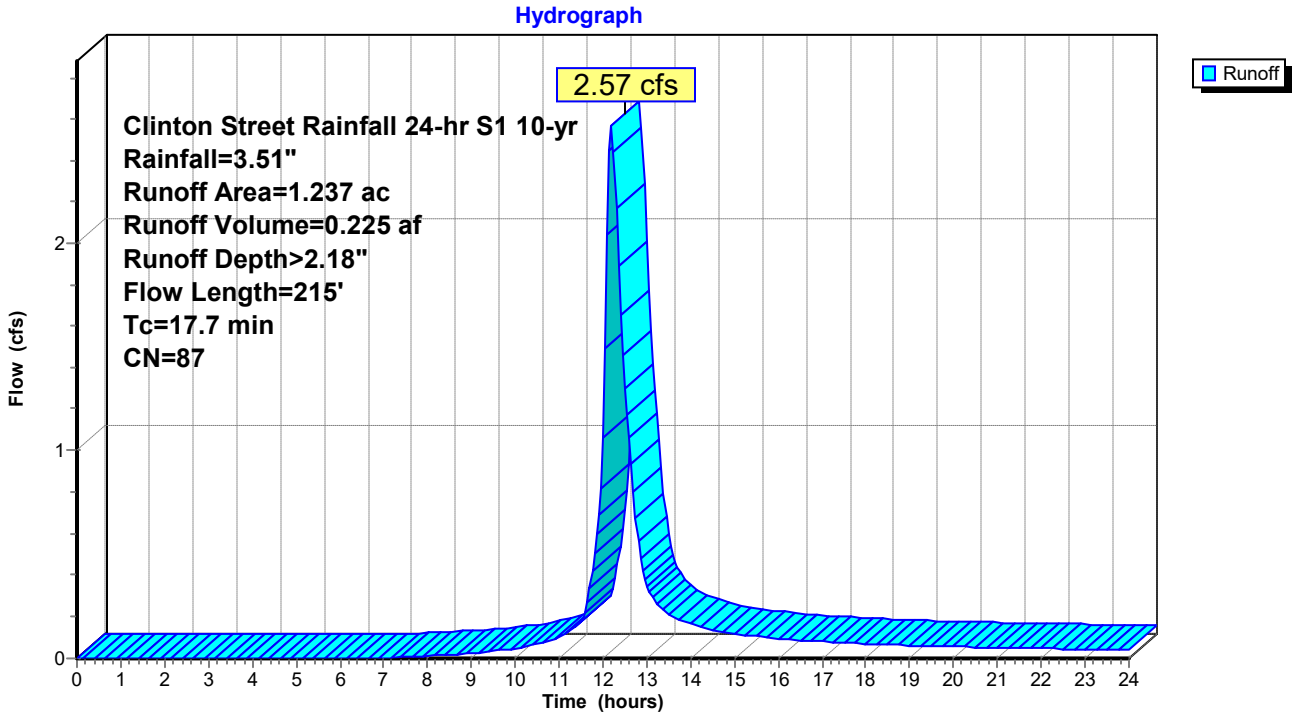
Runoff = 2.57 cfs @ 12.20 hrs, Volume= 0.225 af, Depth> 2.18"
Routed to Pond T-5 : EASTERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
1.007	98	Paved parking, HSG A
0.230	39	>75% Grass cover, Good, HSG A
1.237	87	Weighted Average
0.230		18.59% Pervious Area
1.007		81.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	3	0.1667	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
8.7	53	0.0278	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
4.4	30	0.0500	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
3.5	10	0.0100	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
0.7	119	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.7	215	Total			

Subcatchment W-8: EAST PARKING LOT TREE PIT



Summary for Subcatchment W-9: EAST PARKING LOT UNTREATED

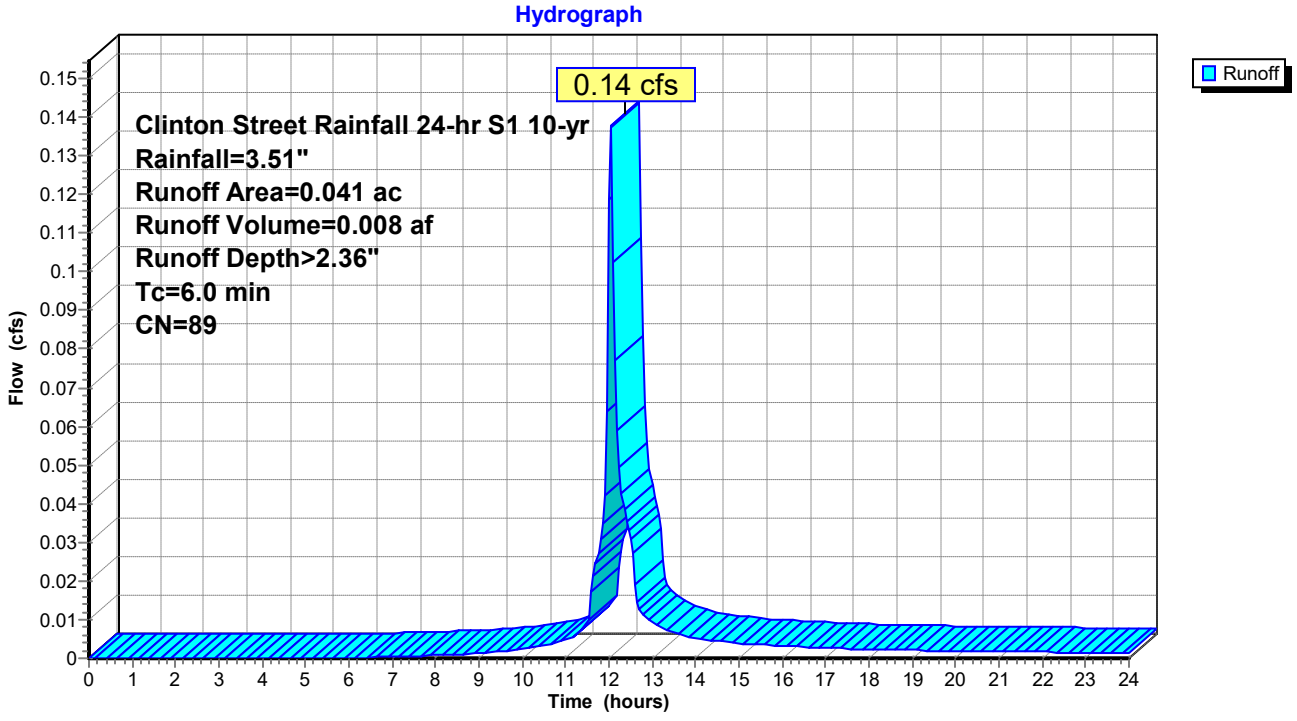
Runoff = 0.14 cfs @ 12.04 hrs, Volume= 0.008 af, Depth> 2.36"
Routed to Reach EAST : EAST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 10-yr Rainfall=3.51"

Area (ac)	CN	Description
0.035	98	Paved parking, HSG A
0.006	39	>75% Grass cover, Good, HSG A
0.041	89	Weighted Average
0.006		14.63% Pervious Area
0.035		85.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-9: EAST PARKING LOT UNTREATED



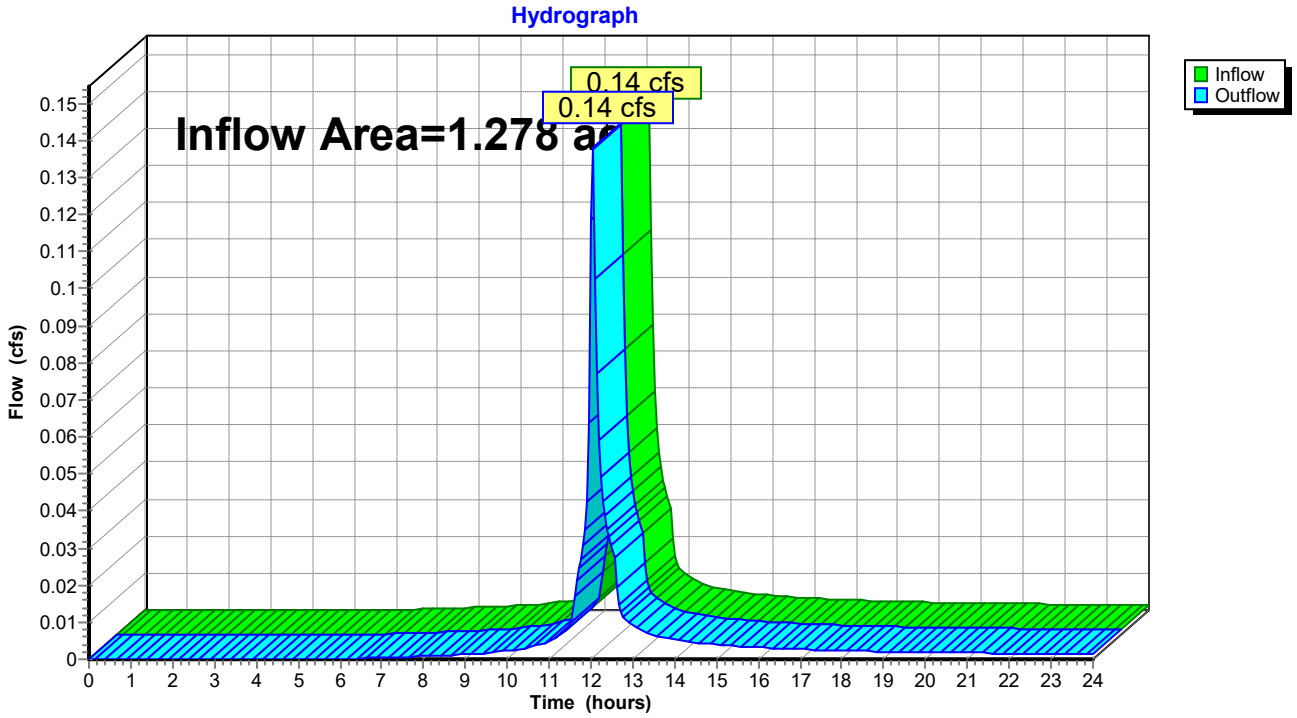
Summary for Reach EAST: EAST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.278 ac, 81.53% Impervious, Inflow Depth > 0.08" for 10-yr event
Inflow = 0.14 cfs @ 12.04 hrs, Volume= 0.008 af
Outflow = 0.14 cfs @ 12.04 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach EAST: EAST MS4



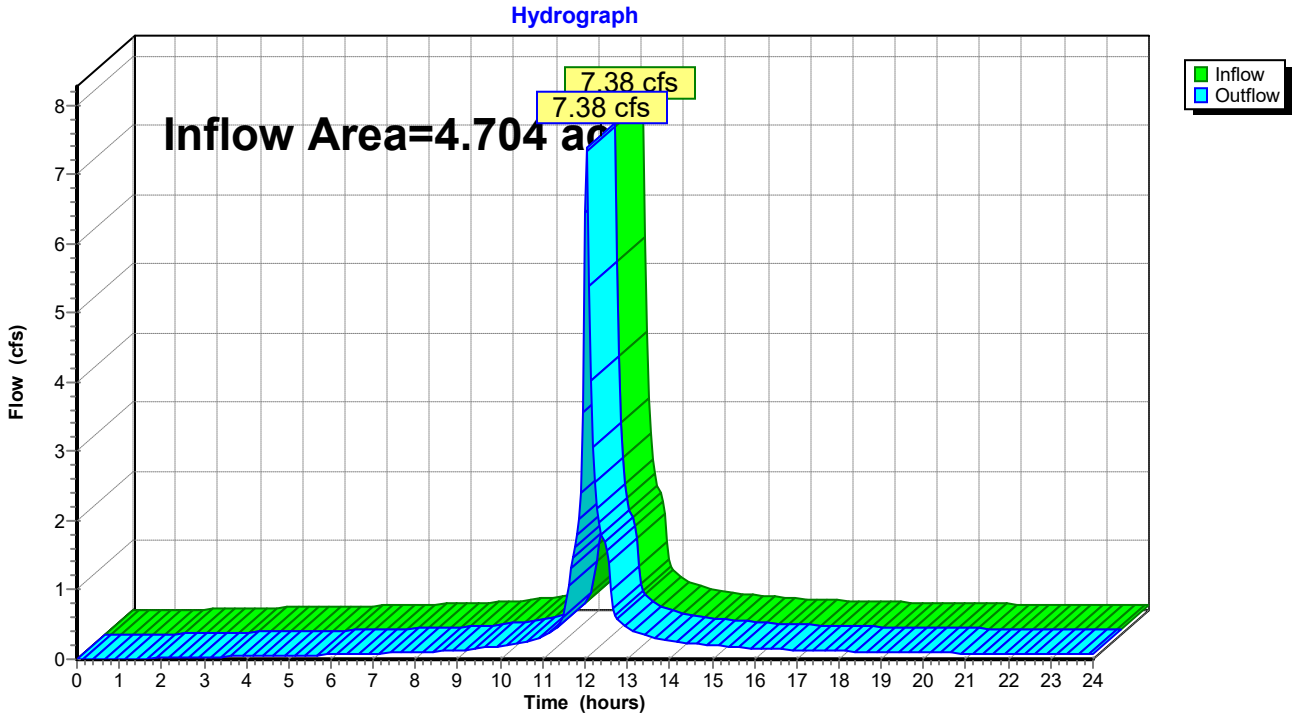
Summary for Reach NORTH: NORTH MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.704 ac, 79.19% Impervious, Inflow Depth > 1.20" for 10-yr event
Inflow = 7.38 cfs @ 12.04 hrs, Volume= 0.469 af
Outflow = 7.38 cfs @ 12.04 hrs, Volume= 0.469 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach NORTH: NORTH MS4



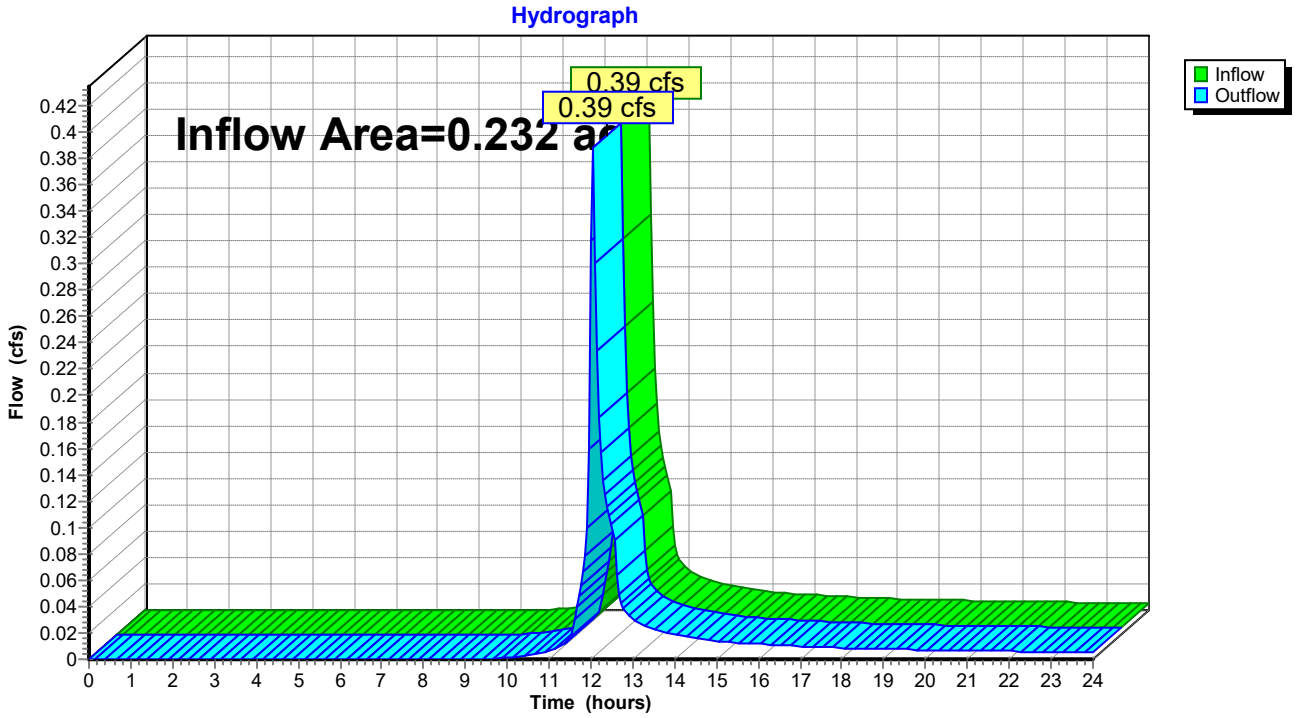
Summary for Reach WEST: WEST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.232 ac, 54.31% Impervious, Inflow Depth > 1.20" for 10-yr event
Inflow = 0.39 cfs @ 12.05 hrs, Volume= 0.023 af
Outflow = 0.39 cfs @ 12.05 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach WEST: WEST MS4



Summary for Pond MH-1: MH-1

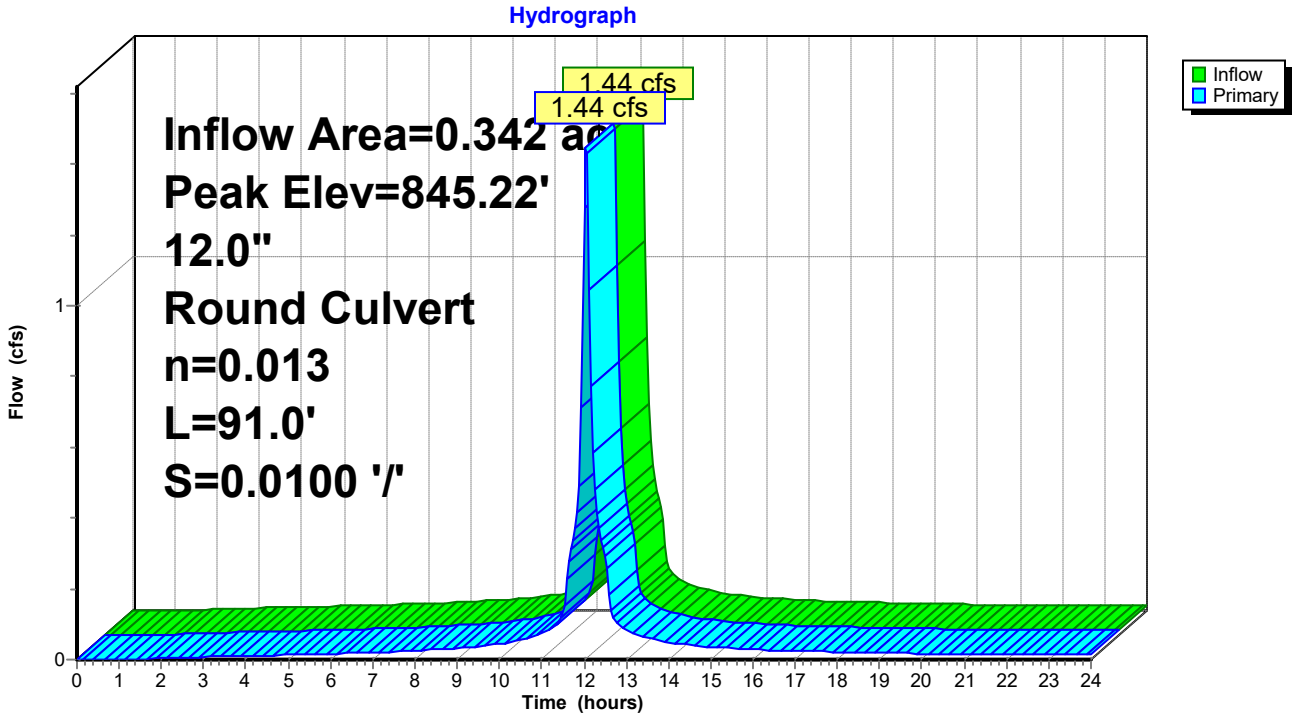
Inflow Area = 0.342 ac,100.00% Impervious, Inflow Depth > 3.27" for 10-yr event
Inflow = 1.44 cfs @ 12.04 hrs, Volume= 0.093 af
Outflow = 1.44 cfs @ 12.04 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min
Primary = 1.44 cfs @ 12.04 hrs, Volume= 0.093 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 845.22' @ 12.04 hrs
Flood Elev= 850.88'

Device	Routing	Invert	Outlet Devices
#1	Primary	844.58'	**12.0" Round OUTLET PIPE** L= 91.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 844.58' / 843.67' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.40 cfs @ 12.04 hrs HW=845.21' (Free Discharge)
1=OUTLET PIPE (Inlet Controls 1.40 cfs @ 2.70 fps)

Pond MH-1: MH-1



Summary for Pond MH-2: MH-2

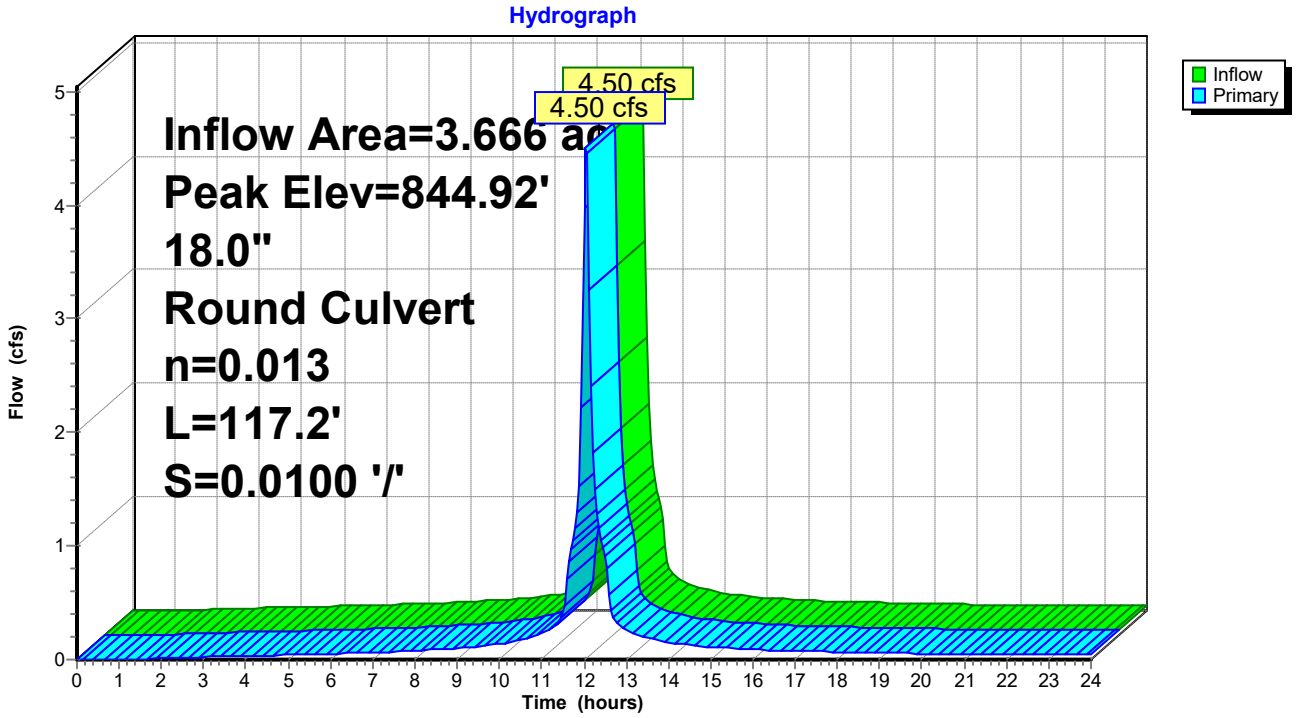
Inflow Area = 3.666 ac, 79.35% Impervious, Inflow Depth > 0.95" for 10-yr event
Inflow = 4.50 cfs @ 12.04 hrs, Volume= 0.291 af
Outflow = 4.50 cfs @ 12.04 hrs, Volume= 0.291 af, Atten= 0%, Lag= 0.0 min
Primary = 4.50 cfs @ 12.04 hrs, Volume= 0.291 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 844.92' @ 12.04 hrs
Flood Elev= 850.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	843.74'	**18.0" Round OUTLET PIPE** L= 117.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 843.74' / 842.57' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.36 cfs @ 12.04 hrs HW=844.90' TW=844.00' (Fixed TW Elev= 844.00')
1=OUTLET PIPE (Outlet Controls 4.36 cfs @ 4.11 fps)

Pond MH-2: MH-2



Summary for Pond MH-3: MH-3

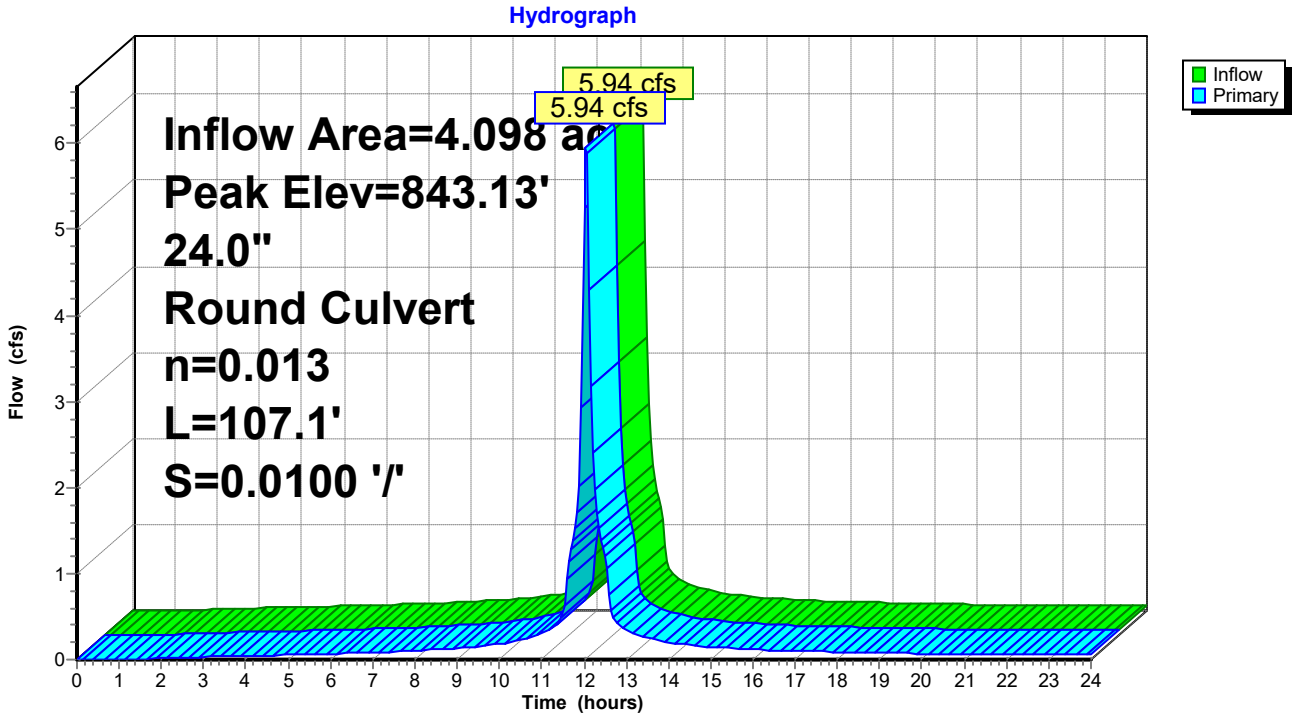
Inflow Area = 4.098 ac, 80.50% Impervious, Inflow Depth > 1.13" for 10-yr event
Inflow = 5.94 cfs @ 12.04 hrs, Volume= 0.384 af
Outflow = 5.94 cfs @ 12.04 hrs, Volume= 0.384 af, Atten= 0%, Lag= 0.0 min
Primary = 5.94 cfs @ 12.04 hrs, Volume= 0.384 af
Routed to Reach NORTH : NORTH MS4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 843.13' @ 12.04 hrs
Flood Elev= 851.51'

Device	Routing	Invert	Outlet Devices
#1	Primary	842.07'	**24.0" Round Culvert** L= 107.1' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 842.07' / 841.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.75 cfs @ 12.04 hrs HW=843.11' (Free Discharge)
1=Culvert (Inlet Controls 5.75 cfs @ 3.48 fps)

Pond MH-3: MH-3



Summary for Pond MH-4: MH-4

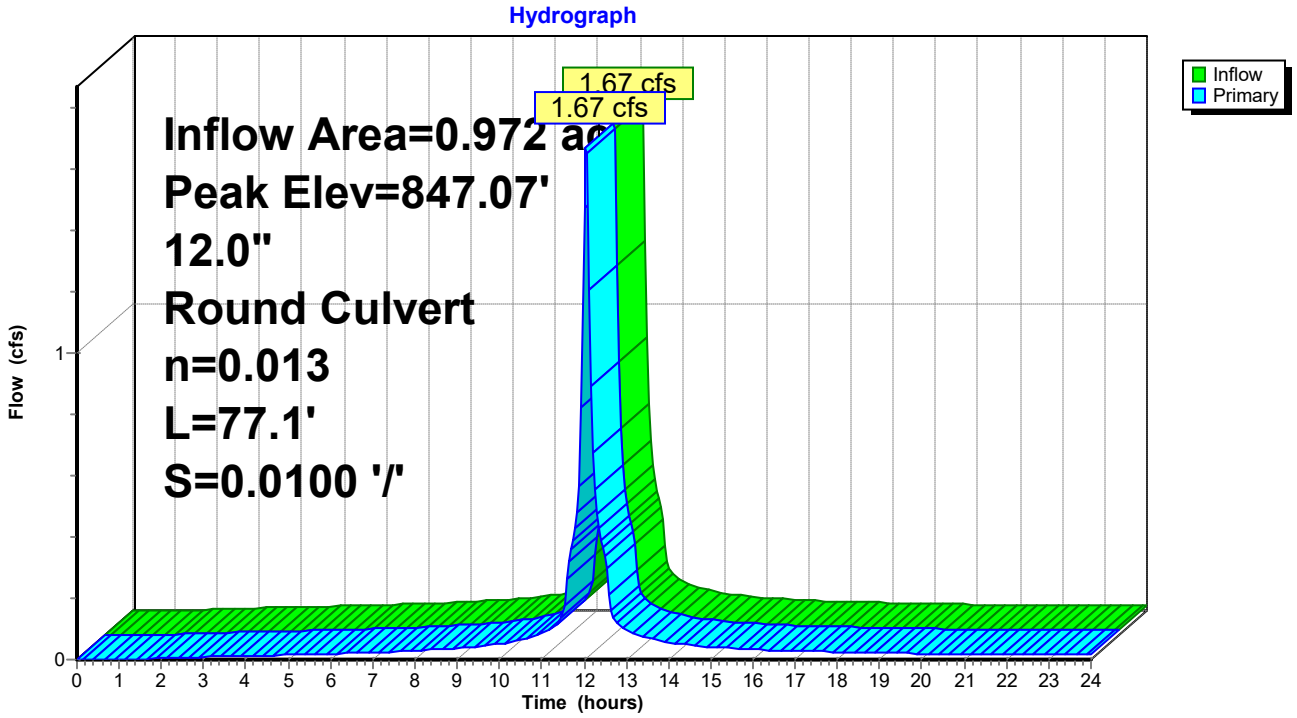
Inflow Area = 0.972 ac, 90.12% Impervious, Inflow Depth > 1.33" for 10-yr event
Inflow = 1.67 cfs @ 12.04 hrs, Volume= 0.108 af
Outflow = 1.67 cfs @ 12.04 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min
Primary = 1.67 cfs @ 12.04 hrs, Volume= 0.108 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 847.07' @ 12.04 hrs
Flood Elev= 851.18'

Device	Routing	Invert	Outlet Devices
#1	Primary	846.21'	**12.0" Round OUTLET** L= 77.1' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.21' / 845.44' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.61 cfs @ 12.04 hrs HW=847.05' TW=846.53' (Fixed TW Elev= 846.53')
1=OUTLET (Outlet Controls 1.61 cfs @ 3.08 fps)

Pond MH-4: MH-4



Summary for Pond T-1: NORTHERN TREE PIT

Inflow Area = 0.090 ac, 53.33% Impervious, Inflow Depth > 1.01" for 10-yr event
Inflow = 0.12 cfs @ 12.05 hrs, Volume= 0.008 af
Outflow = 0.12 cfs @ 12.06 hrs, Volume= 0.008 af, Atten= 2%, Lag= 0.7 min
Discarded = 0.12 cfs @ 12.06 hrs, Volume= 0.008 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-3 : MH-3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 845.45' @ 12.06 hrs Surf.Area= 0.016 ac Storage= 0.000 af
Flood Elev= 851.17' Surf.Area= 0.016 ac Storage= 0.039 af

Plug-Flow detention time= 0.7 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (869.2 - 868.7)

Volume	Invert	Avail.Storage	Storage Description
#1	845.43'	0.000 af	**34.49'W x 20.44'L x 5.75'H TREE PIT** 0.093 af Overall - 0.093 af Embedded = 0.000 af
#2	845.43'	0.013 af	**34.49'W x 20.44'L x 2.00'H NO. 2 STONE** Inside #1 0.032 af Overall x 40.0% Voids
#3	847.43'	0.017 af	**34.49'W x 20.44'L x 3.00'H FILTER MEDIA** Inside #1 0.049 af Overall x 35.0% Voids
#4	850.43'	0.001 af	**34.49'W x 20.44'L x 0.25'H MULCH** Inside #1 0.004 af Overall x 30.0% Voids
#5	850.68'	0.008 af	**34.49'W x 20.44'L x 0.50'H PONDING** Inside #1
		0.039 af	Total Available Storage

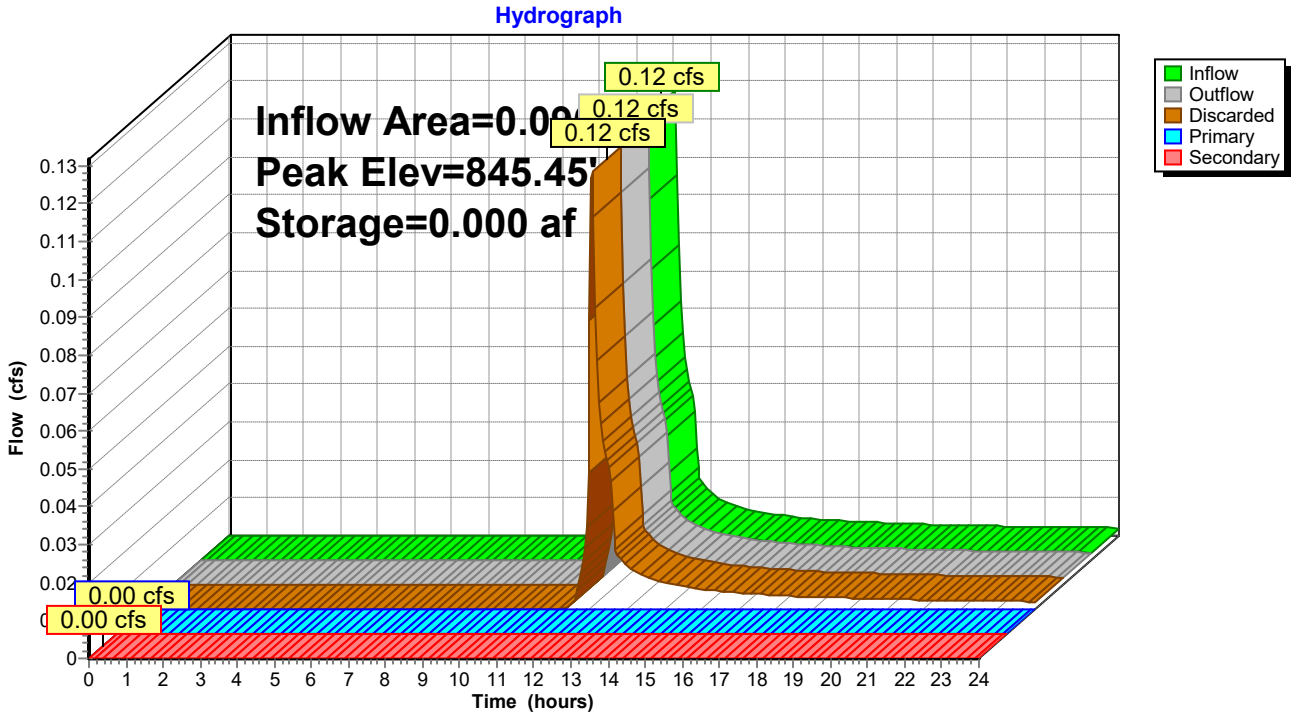
Device	Routing	Invert	Outlet Devices
#1	Primary	846.43'	**12.0" Round OUTLET PIPE** L= 3.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.43' / 846.40' S= 0.0086 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	846.43'	**2.0" Vert. PERF PIPE X 34.48** C= 0.600 Limited to weir flow at low heads
#3	Discarded	845.43'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	851.17'	**12.0" Horiz. SURFACE OVERFLOW** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.39 cfs @ 12.06 hrs HW=845.45' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.39 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.43' (Free Discharge)
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.43' (Free Discharge)
↑└**4=SURFACE OVERFLOW** (Controls 0.00 cfs)

Pond T-1: NORTHERN TREE PIT



Summary for Pond T-2: MIDDLE TREE PIT

Inflow Area = 1.502 ac, 71.11% Impervious, Inflow Depth > 1.71" for 10-yr event
Inflow = 3.66 cfs @ 12.05 hrs, Volume= 0.215 af
Outflow = 1.38 cfs @ 12.05 hrs, Volume= 0.214 af, Atten= 62%, Lag= 0.2 min
Discarded = 1.38 cfs @ 12.05 hrs, Volume= 0.214 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 845.77' @ 12.26 hrs Surf.Area= 0.057 ac Storage= 0.042 af

Plug-Flow detention time= 14.4 min calculated for 0.214 af (100% of inflow)
Center-of-Mass det. time= 12.3 min (847.4 - 835.1)

Volume	Invert	Avail.Storage	Storage Description
#1	843.95'	0.000 af	**49.88'W x 49.88'L x 5.75'H TREE PIT** 0.328 af Overall - 0.328 af Embedded = 0.000 af
#2	843.95'	0.046 af	**49.88'W x 49.88'L x 2.00'H NO. 2 STONE** Inside #1 0.114 af Overall x 40.0% Voids
#3	845.95'	0.060 af	**49.88'W x 49.88'L x 3.00'H FILTER MEDIA** Inside #1 0.171 af Overall x 35.0% Voids
#4	848.95'	0.004 af	**49.88'W x 49.88'L x 0.25'H MULCH** Inside #1 0.014 af Overall x 30.0% Voids
#5	849.20'	0.029 af	**49.88'W x 49.88'L x 0.50'H PONDING DEPTH** Inside #1
		0.139 af	Total Available Storage

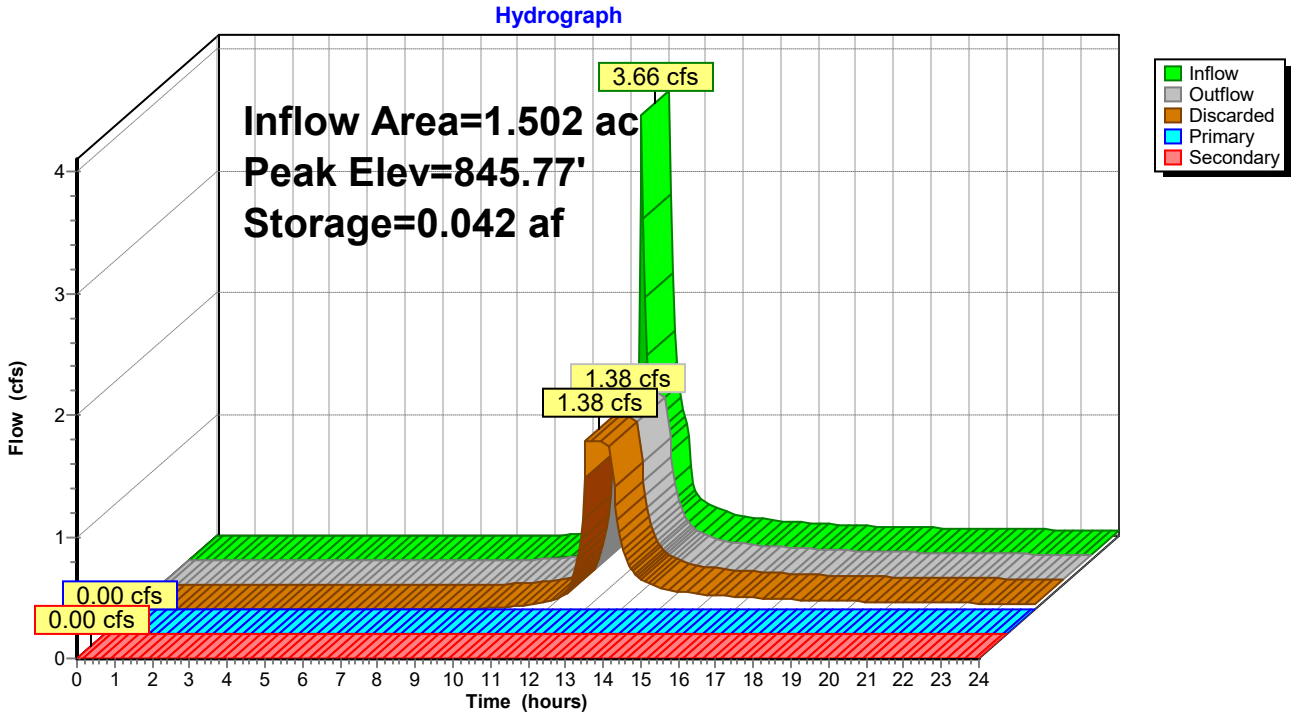
Device	Routing	Invert	Outlet Devices
#0	Secondary	849.70'	**Automatic Storage Overflow** (Discharged without head)
#1	Primary	845.04'	**12.0" Round OUTLET PIPE** L= 78.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 845.04' / 844.65' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	845.04'	**2.0" Vert. PERF PIPE X 123.88** C= 0.600 Limited to weir flow at low heads
#3	Discarded	843.95'	**24.000 in/hr Exfiltration over Surface area** Phase-In= 1.00'
#4	Secondary	849.69'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=1.38 cfs @ 12.05 hrs HW=845.11' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 1.38 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=843.95' TW=849.00' (Fixed TW Elev= 849.00')
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=843.95' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-2: MIDDLE TREE PIT



Summary for Pond T-3: SOUTHERN TREE PIT

Inflow Area = 0.577 ac, 83.36% Impervious, Inflow Depth > 2.28" for 10-yr event
Inflow = 1.87 cfs @ 12.04 hrs, Volume= 0.109 af
Outflow = 0.95 cfs @ 12.00 hrs, Volume= 0.109 af, Atten= 49%, Lag= 0.0 min
Discarded = 0.95 cfs @ 12.00 hrs, Volume= 0.109 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-4 : MH-4
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-4 : MH-4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 847.85' @ 12.17 hrs Surf.Area= 0.039 ac Storage= 0.010 af
Flood Elev= 852.99' Surf.Area= 0.039 ac Storage= 0.095 af

Plug-Flow detention time= 2.1 min calculated for 0.109 af (100% of inflow)
Center-of-Mass det. time= 2.0 min (813.6 - 811.6)

Volume	Invert	Avail.Storage	Storage Description
#1	847.24'	0.000 af	**5.00'W x 341.66'L x 5.75'H TREE TRENCH** 0.225 af Overall - 0.225 af Embedded = 0.000 af
#2	847.24'	0.031 af	**5.00'W x 341.66'L x 2.00'H NO. 2 STONE** Inside #1 0.078 af Overall x 40.0% Voids
#3	849.24'	0.041 af	**5.00'W x 341.66'L x 3.00'H FILTER MEDIA** Inside #1 0.118 af Overall x 35.0% Voids
#4	852.24'	0.003 af	**5.00'W x 341.66'L x 0.25'H MULCH** Inside #1 0.010 af Overall x 30.0% Voids
#5	852.49'	0.020 af	**5.00'W x 341.66'L x 0.50'H PONDING** Inside #1
		0.095 af	Total Available Storage

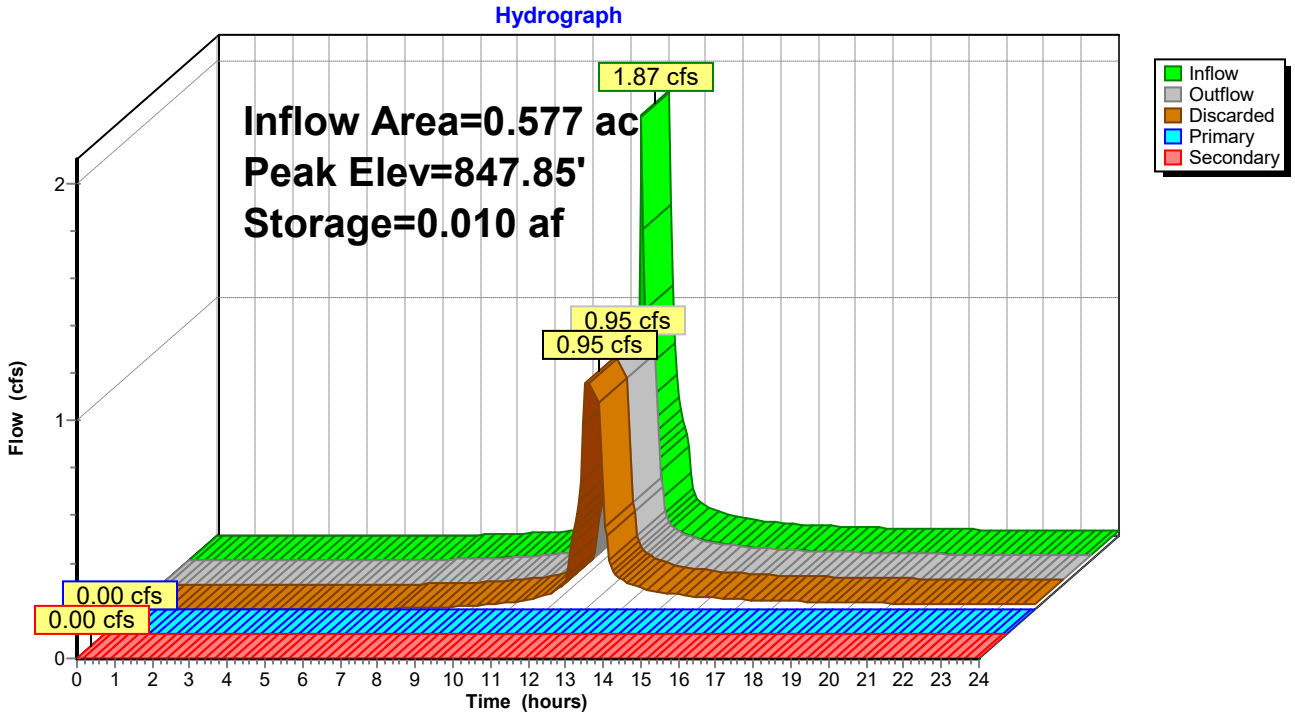
Device	Routing	Invert	Outlet Devices
#1	Primary	848.24'	**12.0" Round OUTLET PIPE** L= 102.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 848.24' / 847.21' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	848.24'	**2.0" Vert. PERF PIPE X 341.66** C= 0.600 Limited to weir flow at low heads
#3	Discarded	847.24'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	852.98'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.95 cfs @ 12.00 hrs HW=847.38' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.95 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=847.24' TW=850.00' (Fixed TW Elev= 850.00')
└**1=OUTLET PIPE** (Controls 0.00 cfs)
└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=847.24' (Free Discharge)
└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-3: SOUTHERN TREE PIT



Summary for Pond T-4: SOUTH EAST TREE PIT

Inflow Area = 0.520 ac, 56.35% Impervious, Inflow Depth > 1.13" for 10-yr event
Inflow = 0.78 cfs @ 12.05 hrs, Volume= 0.049 af
Outflow = 0.43 cfs @ 12.00 hrs, Volume= 0.049 af, Atten= 45%, Lag= 0.0 min
Discarded = 0.43 cfs @ 12.00 hrs, Volume= 0.049 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 846.25' @ 12.19 hrs Surf.Area= 0.018 ac Storage= 0.004 af
Flood Elev= 851.49' Surf.Area= 0.018 ac Storage= 0.043 af

Plug-Flow detention time= 1.9 min calculated for 0.049 af (100% of inflow)
Center-of-Mass det. time= 1.7 min (864.0 - 862.3)

Volume	Invert	Avail.Storage	Storage Description
#1	845.75'	0.000 af	**15.18'W x 50.81'L x 5.75'H TREE PIT** 0.102 af Overall - 0.102 af Embedded = 0.000 af
#2	845.75'	0.014 af	**15.18'W x 50.81'L x 2.00'H NO. 2 STONE** Inside #1 0.035 af Overall x 40.0% Voids
#3	847.75'	0.019 af	**15.18'W x 50.81'L x 3.00'H FILTER MEDIA** Inside #1 0.053 af Overall x 35.0% Voids
#4	850.75'	0.001 af	**15.18'W x 50.81'L x 0.25'H MULCH** Inside #1 0.004 af Overall x 30.0% Voids
#5	851.00'	0.009 af	**15.18'W x 50.81'L x 0.50'H PONDING** Inside #1
		0.043 af	Total Available Storage

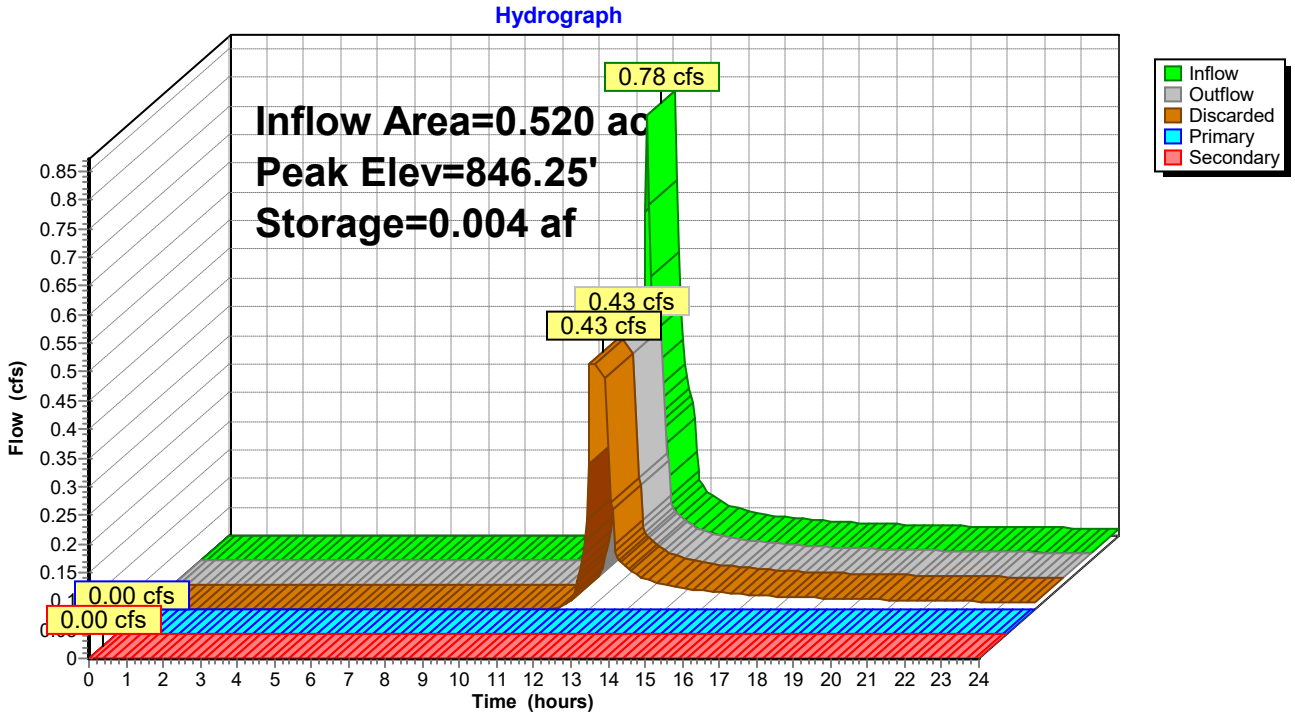
Device	Routing	Invert	Outlet Devices
#1	Primary	846.75'	**12.0" Round OUTLET PIPE** L= 223.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.75' / 844.51' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	846.75'	**2.0" Vert. PERF PIPE X 50.81** C= 0.600 Limited to weir flow at low heads
#3	Discarded	845.75'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	851.49'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.43 cfs @ 12.00 hrs HW=845.85' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.43 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.75' TW=850.50' (Fixed TW Elev= 850.50')
└**1=OUTLET PIPE** (Controls 0.00 cfs)
└**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.75' (Free Discharge)
└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-4: SOUTH EAST TREE PIT



Summary for Pond T-5: EASTERN TREE PIT

Inflow Area = 1.237 ac, 81.41% Impervious, Inflow Depth > 2.18" for 10-yr event
Inflow = 2.57 cfs @ 12.20 hrs, Volume= 0.225 af
Outflow = 0.83 cfs @ 12.00 hrs, Volume= 0.225 af, Atten= 68%, Lag= 0.0 min
Discarded = 0.83 cfs @ 12.00 hrs, Volume= 0.225 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach EAST : EAST MS4
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach EAST : EAST MS4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 852.79' @ 12.69 hrs Surf.Area= 0.034 ac Storage= 0.051 af
Flood Elev= 854.61' Surf.Area= 0.034 ac Storage= 0.083 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 15.1 min (839.6 - 824.4)

Volume	Invert	Avail.Storage	Storage Description
#1	848.87'	0.000 af	**5.00'W x 299.26'L x 5.75'H TREE TRENCH** 0.198 af Overall - 0.198 af Embedded = 0.000 af
#2	848.87'	0.027 af	**5.00'W x 299.26'L x 2.00'H NO. 2 STONE** Inside #1 0.069 af Overall x 40.0% Voids
#3	850.87'	0.036 af	**5.00'W x 299.26'L x 3.00'H FILTER MEDIA** Inside #1 0.103 af Overall x 35.0% Voids
#4	853.87'	0.003 af	**5.00'W x 299.26'L x 0.25'H MULCH** Inside #1 0.009 af Overall x 30.0% Voids
#5	854.12'	0.017 af	**5.00'W x 299.26'L x 0.50'H PONDING** Inside #1
		0.083 af	Total Available Storage

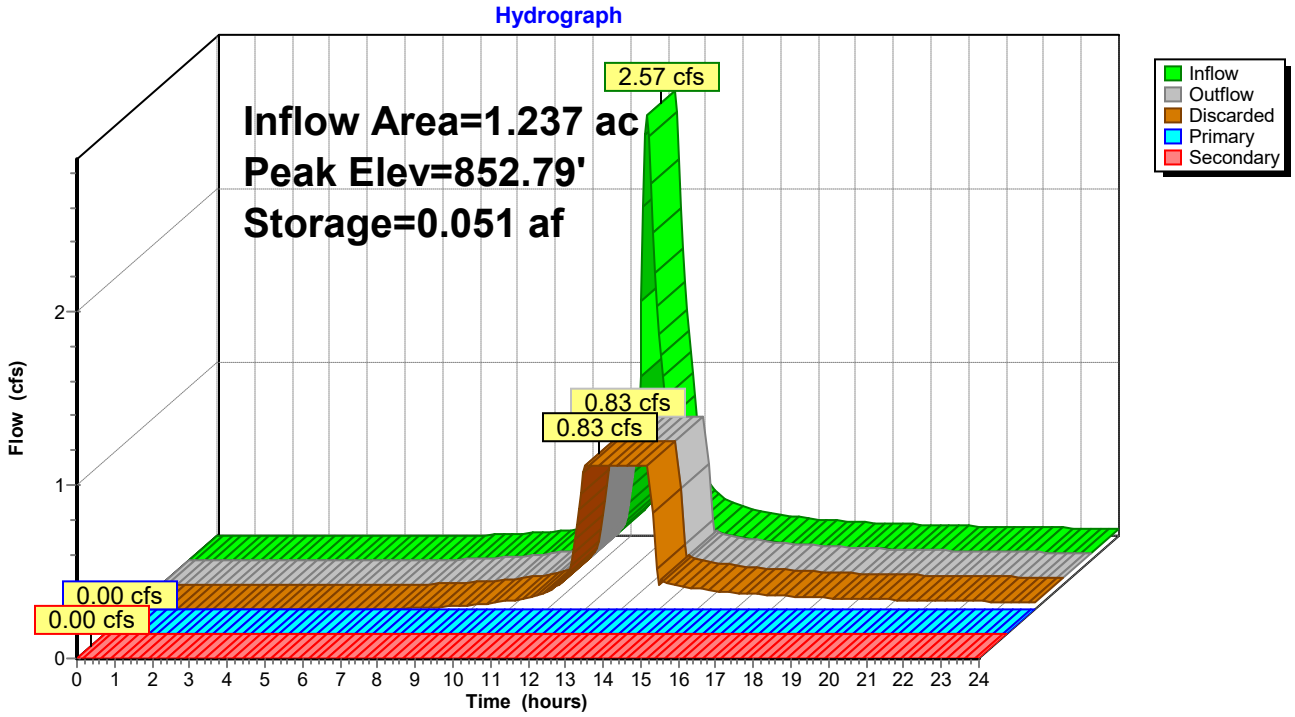
Device	Routing	Invert	Outlet Devices
#1	Primary	849.87'	**12.0" Round OUTLET PIPE** L= 18.8' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 849.87' / 849.68' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	849.87'	**2.0" Vert. PERP PIPE X 299.26** C= 0.600 Limited to weir flow at low heads
#3	Discarded	848.87'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	854.61'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.83 cfs @ 12.00 hrs HW=848.96' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.83 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=848.87' TW=853.50' (Fixed TW Elev= 853.50')
↑└**1=OUTLET PIPE** (Controls 0.00 cfs)
↑└**2=PERP PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=848.87' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-5: EASTERN TREE PIT



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment W-1: PHASE 1 BLDG-1 Runoff Area=0.342 ac 100.00% Impervious Runoff Depth>5.84"
Tc=6.0 min CN=98 Runoff=2.44 cfs 0.166 af

Subcatchment W-10: WESTERN Runoff Area=0.184 ac 66.85% Impervious Runoff Depth>3.65"
Tc=6.0 min CN=78 Runoff=0.93 cfs 0.056 af

Subcatchment W-11: PHASE 2 BLDG-1 Runoff Area=0.395 ac 100.00% Impervious Runoff Depth>5.84"
Tc=6.0 min CN=98 Runoff=2.82 cfs 0.192 af

Subcatchment W-12: PHASE 2 BLDG-2 Runoff Area=0.413 ac 100.00% Impervious Runoff Depth>5.84"
Tc=6.0 min CN=98 Runoff=2.95 cfs 0.201 af

Subcatchment W-13: PHASE 2 NORTHERN Runoff Area=0.386 ac 67.62% Impervious Runoff Depth>3.75"
Tc=6.0 min CN=79 Runoff=2.00 cfs 0.121 af

Subcatchment W-14: PHASE 2 WESTERN Runoff Area=0.048 ac 6.25% Impervious Runoff Depth>0.70"
Tc=6.0 min CN=43 Runoff=0.02 cfs 0.003 af

Subcatchment W-2: PHASE 1 BLDG-2 Runoff Area=0.259 ac 100.00% Impervious Runoff Depth>5.84"
Tc=6.0 min CN=98 Runoff=1.85 cfs 0.126 af

Subcatchment W-3: NORTHERN TREE PIT Runoff Area=0.090 ac 53.33% Impervious Runoff Depth>2.87"
Tc=6.0 min CN=70 Runoff=0.35 cfs 0.021 af

Subcatchment W-4: NORTHERN Runoff Area=0.220 ac 75.00% Impervious Runoff Depth>4.16"
Flow Length=286' Tc=6.0 min CN=83 Runoff=1.26 cfs 0.076 af

Subcatchment W-5: MIDDLE TREE PIT + Runoff Area=1.502 ac 71.11% Impervious Runoff Depth>3.95"
Flow Length=156' Tc=6.0 min CN=81 Runoff=8.20 cfs 0.495 af

Subcatchment W-6: SOUTHERN TREE PIT Runoff Area=0.577 ac 83.36% Impervious Runoff Depth>4.70"
Flow Length=72' Tc=6.0 min CN=88 Runoff=3.66 cfs 0.226 af

Subcatchment W-7: SOUTH EAST TREE PIT Runoff Area=0.520 ac 56.35% Impervious Runoff Depth>3.06"
Tc=6.0 min CN=72 Runoff=2.19 cfs 0.132 af

Subcatchment W-8: EAST PARKING LOT Runoff Area=1.237 ac 81.41% Impervious Runoff Depth>4.58"
Flow Length=215' Tc=17.7 min CN=87 Runoff=5.25 cfs 0.472 af

Subcatchment W-9: EAST PARKING LOT Runoff Area=0.041 ac 85.37% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=89 Runoff=0.26 cfs 0.016 af

Reach EAST: EAST MS4 Inflow=3.52 cfs 0.135 af
Outflow=3.52 cfs 0.135 af

Reach NORTH: NORTH MS4 Inflow=13.31 cfs 0.955 af
Outflow=13.31 cfs 0.955 af

Reach WEST: WEST MS4 Inflow=0.95 cfs 0.059 af
Outflow=0.95 cfs 0.059 af

Pond MH-1: MH-1 Peak Elev=845.49' Inflow=2.44 cfs 0.166 af
12.0" Round Culvert n=0.013 L=91.0' S=0.0100 '/' Outflow=2.44 cfs 0.166 af

Pond MH-2: MH-2 Peak Elev=845.30' Inflow=7.61 cfs 0.592 af
18.0" Round Culvert n=0.013 L=117.2' S=0.0100 '/' Outflow=7.61 cfs 0.592 af

Pond MH-3: MH-3 Peak Elev=843.52' Inflow=10.05 cfs 0.758 af
24.0" Round Culvert n=0.013 L=107.1' S=0.0100 '/' Outflow=10.05 cfs 0.758 af

Pond MH-4: MH-4 Peak Elev=847.35' Inflow=2.82 cfs 0.196 af
12.0" Round Culvert n=0.013 L=77.1' S=0.0100 '/' Outflow=2.82 cfs 0.196 af

Pond T-1: NORTHERN TREE PIT Peak Elev=845.48' Storage=0.000 af Inflow=0.35 cfs 0.021 af
Discarded=0.35 cfs 0.021 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.021 af

Pond T-2: MIDDLE TREE PIT Peak Elev=849.41' Storage=0.122 af Inflow=8.20 cfs 0.495 af
Discarded=1.38 cfs 0.431 af Primary=2.03 cfs 0.062 af Secondary=0.00 cfs 0.000 af Outflow=3.41 cfs 0.493 af

Pond T-3: SOUTHERN TREE PIT Peak Elev=850.03' Storage=0.042 af Inflow=3.66 cfs 0.226 af
Discarded=0.95 cfs 0.222 af Primary=0.41 cfs 0.004 af Secondary=0.00 cfs 0.000 af Outflow=1.36 cfs 0.226 af

Pond T-4: SOUTH EAST TREE PIT Peak Elev=850.53' Storage=0.031 af Inflow=2.19 cfs 0.132 af
Discarded=0.43 cfs 0.126 af Primary=0.37 cfs 0.006 af Secondary=0.00 cfs 0.000 af Outflow=0.80 cfs 0.132 af

Pond T-5: EASTERN TREE PIT Peak Elev=854.33' Storage=0.073 af Inflow=5.25 cfs 0.472 af
Discarded=0.83 cfs 0.353 af Primary=3.43 cfs 0.119 af Secondary=0.00 cfs 0.000 af Outflow=4.27 cfs 0.472 af

Total Runoff Area = 6.214 ac Runoff Volume = 2.304 af Average Runoff Depth = 4.45"
21.26% Pervious = 1.321 ac 78.74% Impervious = 4.893 ac

Summary for Subcatchment W-1: PHASE 1 BLDG-1

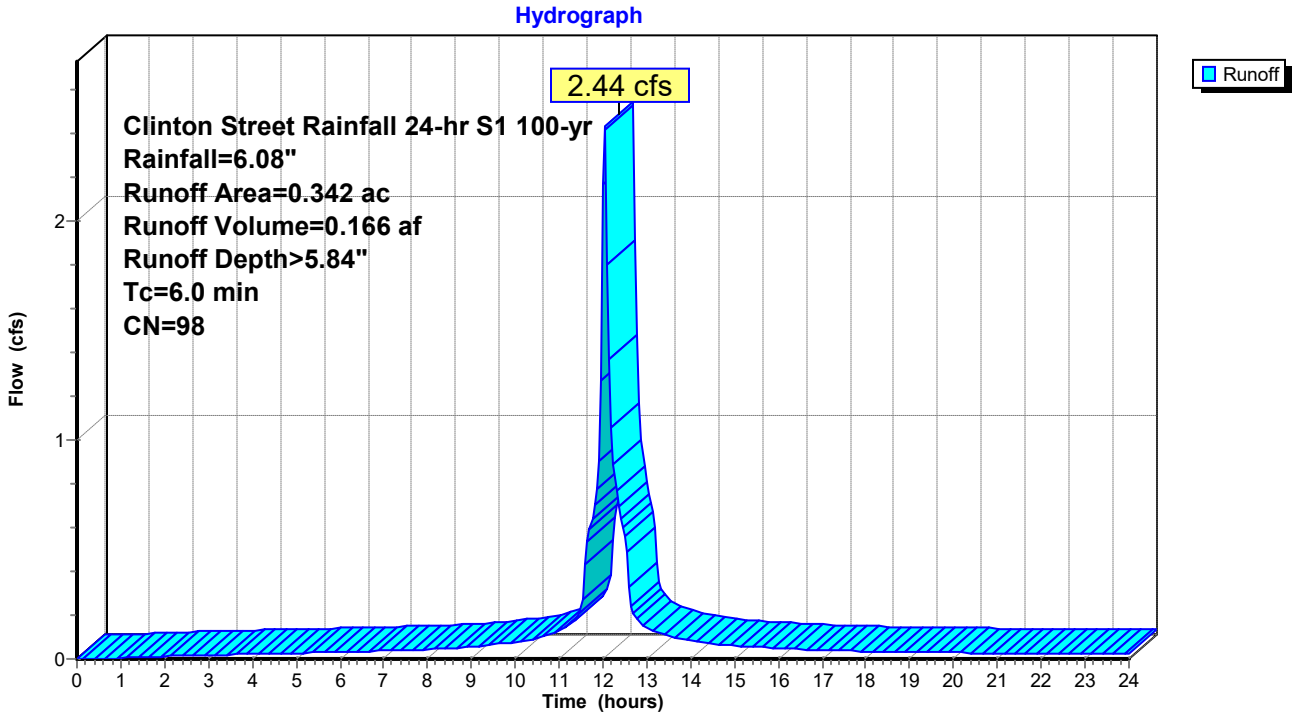
Runoff = 2.44 cfs @ 12.04 hrs, Volume= 0.166 af, Depth> 5.84"
Routed to Pond MH-1 : MH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.342	98	Roofs, HSG A
0.342		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-1: PHASE 1 BLDG-1



Summary for Subcatchment W-10: WESTERN UNTREATED

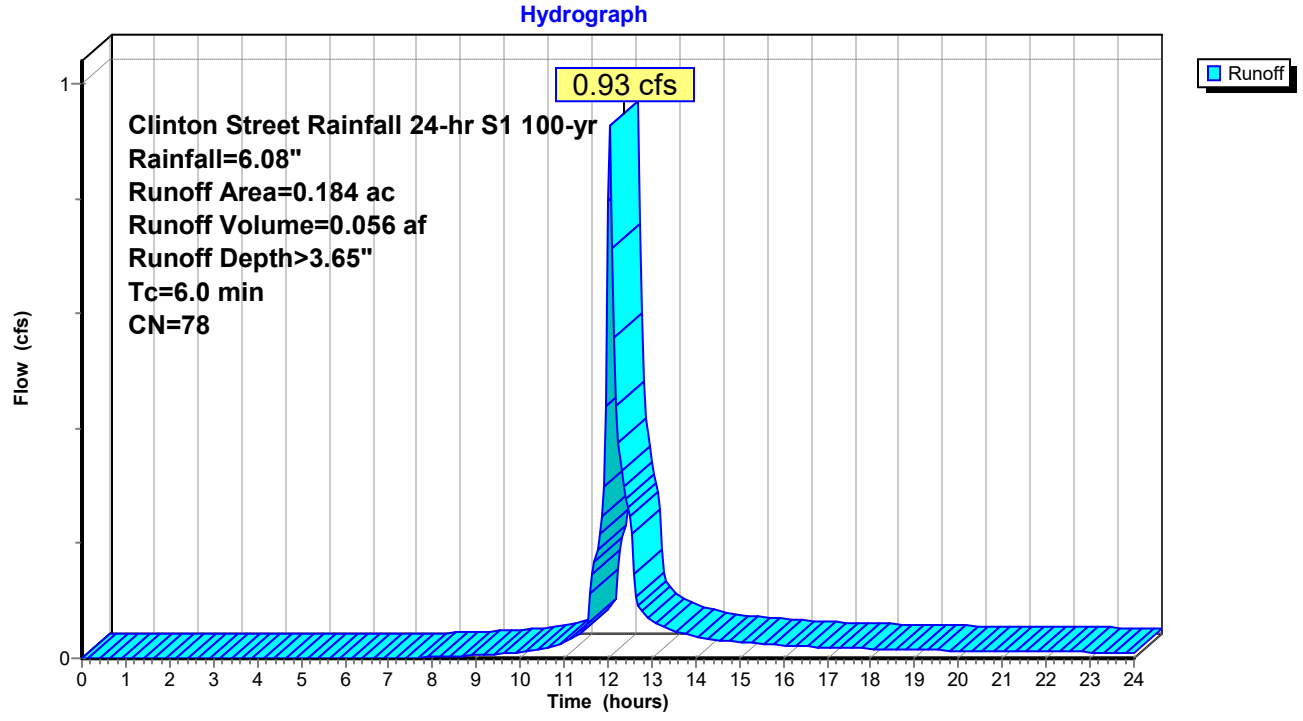
Runoff = 0.93 cfs @ 12.04 hrs, Volume= 0.056 af, Depth> 3.65"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.123	98	Paved parking, HSG A
0.061	39	>75% Grass cover, Good, HSG A
0.184	78	Weighted Average
0.061		33.15% Pervious Area
0.123		66.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-10: WESTERN UNTREATED



Summary for Subcatchment W-11: PHASE 2 BLDG-1

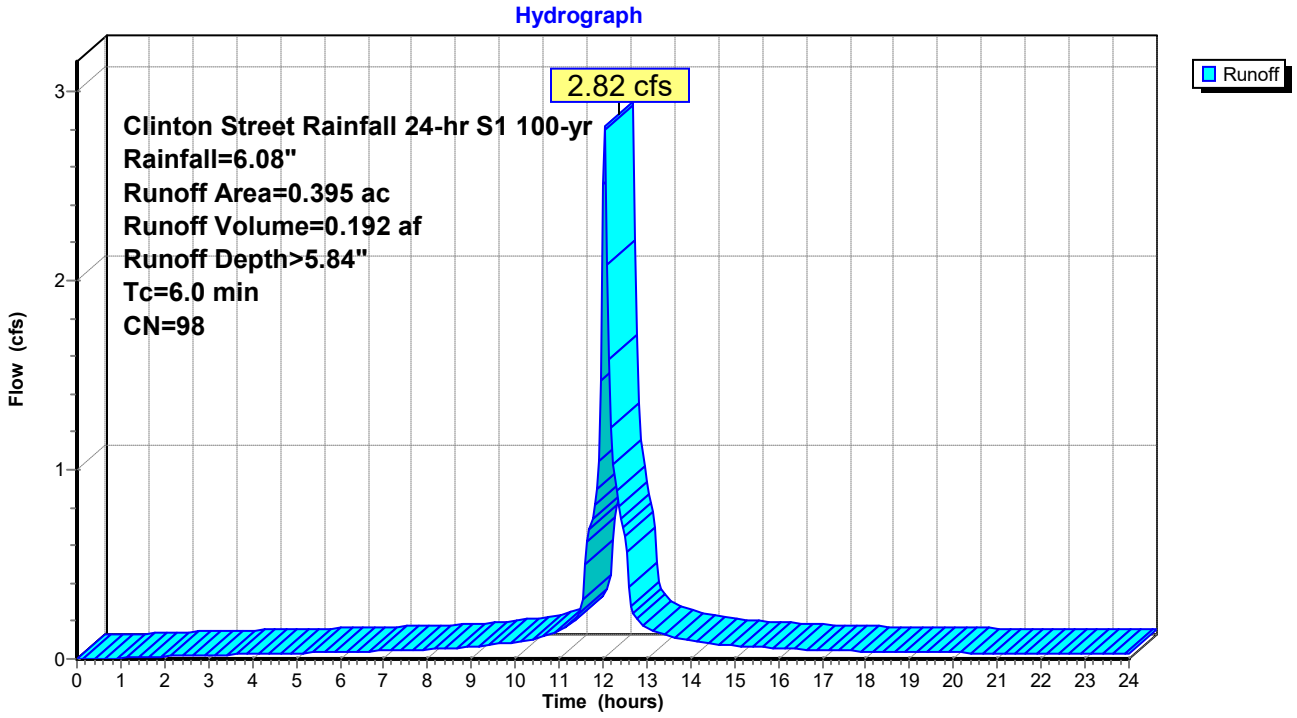
Runoff = 2.82 cfs @ 12.04 hrs, Volume= 0.192 af, Depth> 5.84"
Routed to Pond MH-4 : MH-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.395	98	Roofs, HSG A
0.395		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-11: PHASE 2 BLDG-1



Summary for Subcatchment W-12: PHASE 2 BLDG-2

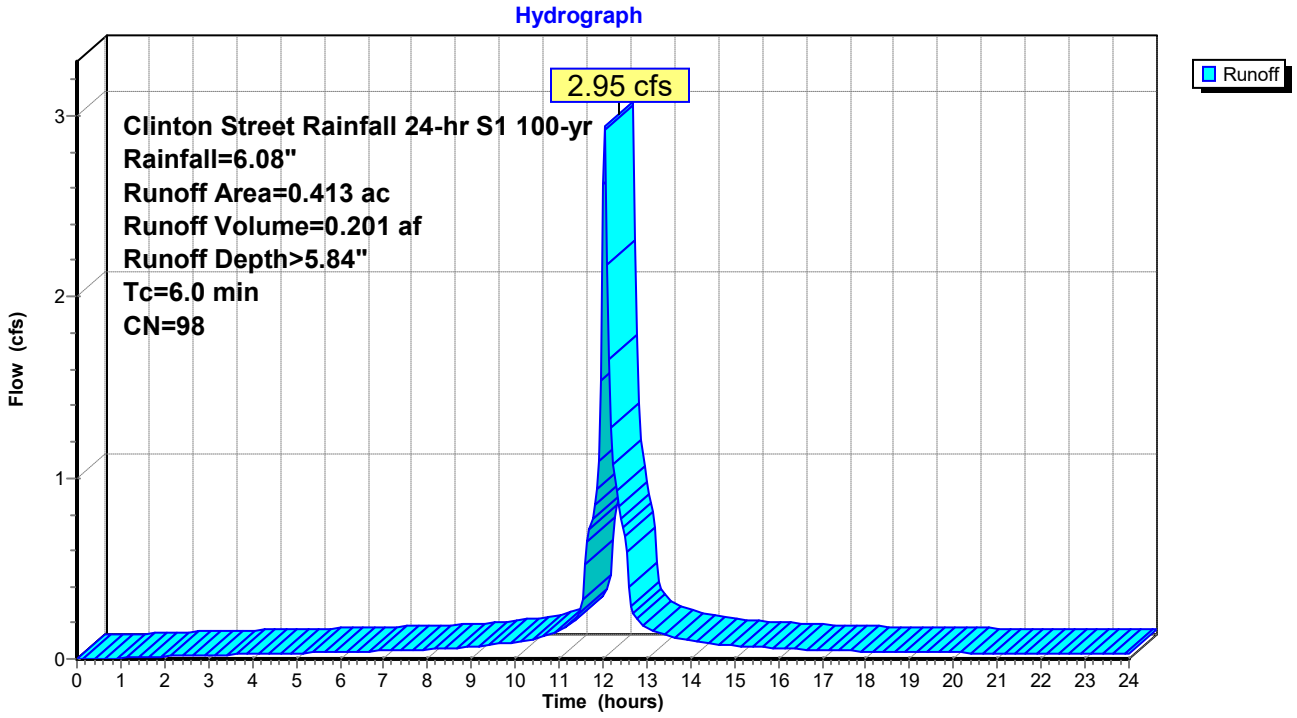
Runoff = 2.95 cfs @ 12.04 hrs, Volume= 0.201 af, Depth> 5.84"
Routed to Pond MH-2 : MH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.413	98	Roofs, HSG A
0.413		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-12: PHASE 2 BLDG-2



Summary for Subcatchment W-13: PHASE 2 NORTHERN UNTREATED

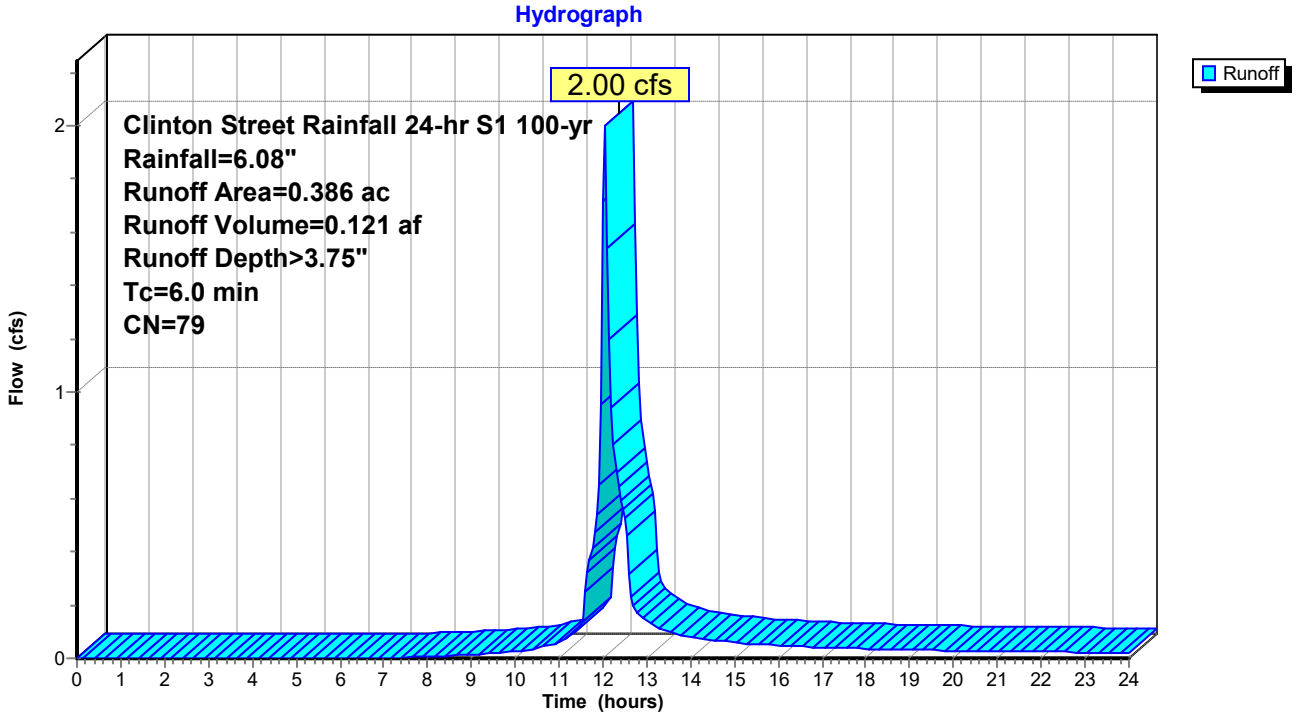
Runoff = 2.00 cfs @ 12.04 hrs, Volume= 0.121 af, Depth> 3.75"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.261	98	Paved parking, HSG A
0.125	39	>75% Grass cover, Good, HSG A
0.386	79	Weighted Average
0.125		32.38% Pervious Area
0.261		67.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-13: PHASE 2 NORTHERN UNTREATED



Summary for Subcatchment W-14: PHASE 2 WESTERN UNTREATED

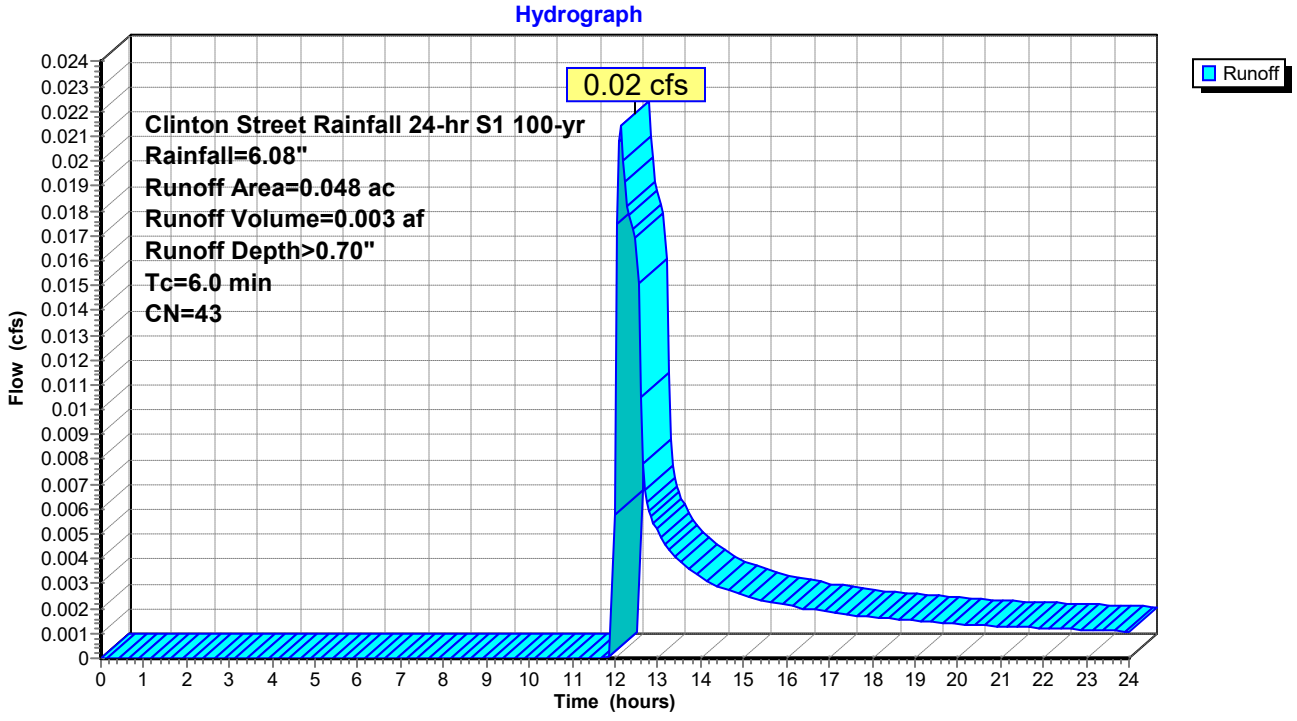
Runoff = 0.02 cfs @ 12.14 hrs, Volume= 0.003 af, Depth> 0.70"
Routed to Reach WEST : WEST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.003	98	Paved parking, HSG A
0.045	39	>75% Grass cover, Good, HSG A
0.048	43	Weighted Average
0.045		93.75% Pervious Area
0.003		6.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-14: PHASE 2 WESTERN UNTREATED



Summary for Subcatchment W-2: PHASE 1 BLDG-2

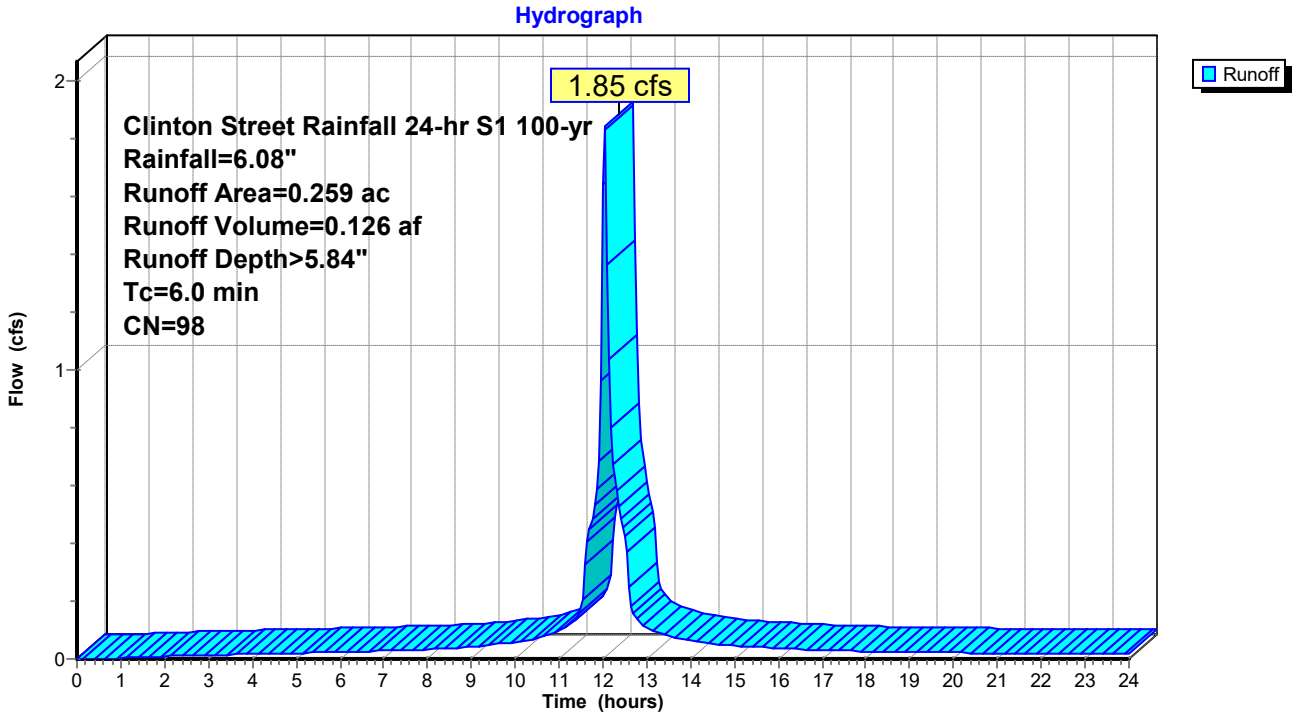
Runoff = 1.85 cfs @ 12.04 hrs, Volume= 0.126 af, Depth> 5.84"
Routed to Pond MH-2 : MH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.259	98	Roofs, HSG A
0.259		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-2: PHASE 1 BLDG-2



Summary for Subcatchment W-3: NORTHERN TREE PIT

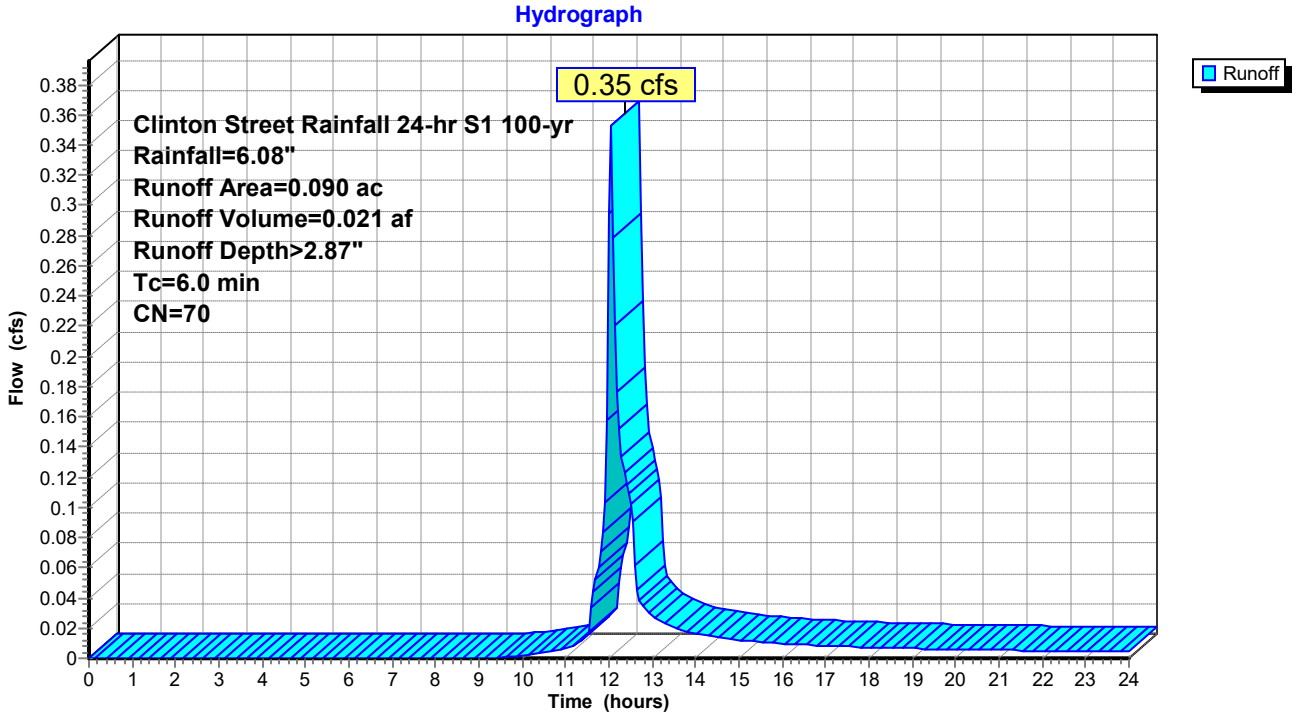
Runoff = 0.35 cfs @ 12.05 hrs, Volume= 0.021 af, Depth> 2.87"
Routed to Pond T-1 : NORTHERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.048	98	Paved parking, HSG A
0.042	39	>75% Grass cover, Good, HSG A
0.090	70	Weighted Average
0.042		46.67% Pervious Area
0.048		53.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-3: NORTHERN TREE PIT



Summary for Subcatchment W-4: NORTHERN UNTREATED

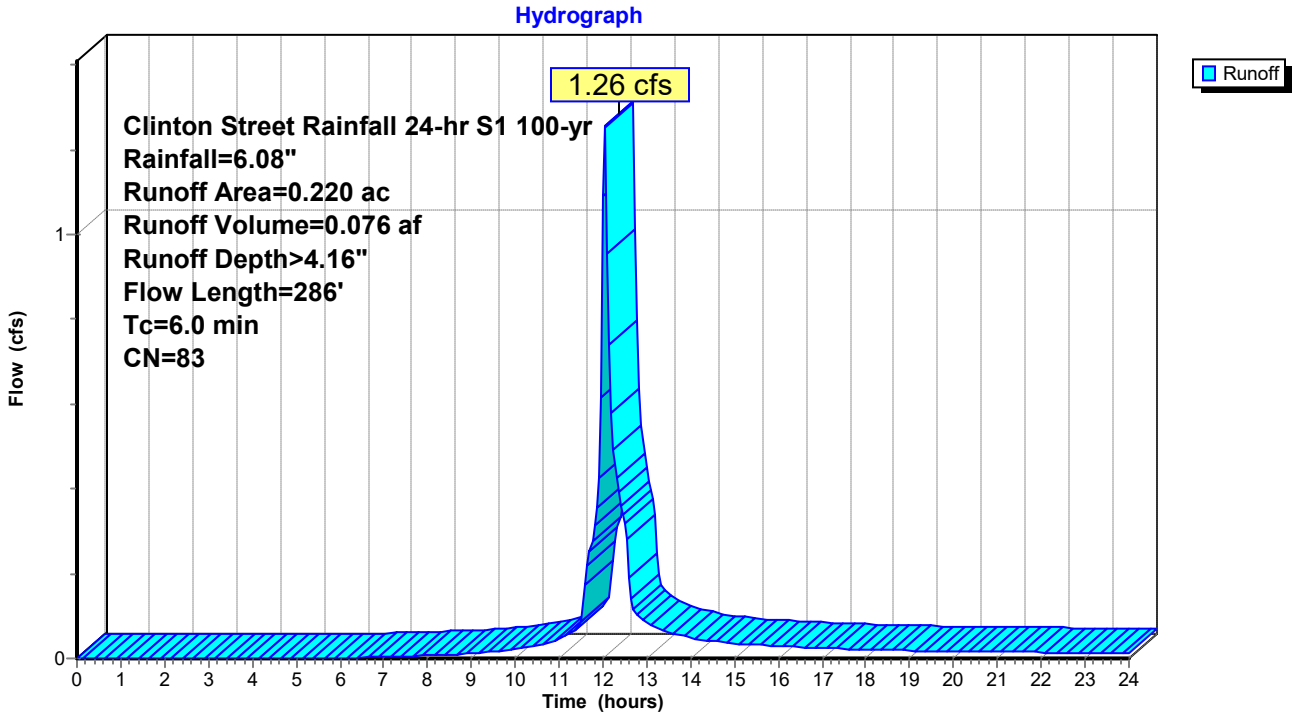
Runoff = 1.26 cfs @ 12.04 hrs, Volume= 0.076 af, Depth> 4.16"
Routed to Reach NORTH : NORTH MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.165	98	Paved parking, HSG A
0.055	39	>75% Grass cover, Good, HSG A
0.220	83	Weighted Average
0.055		25.00% Pervious Area
0.165		75.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	100	0.0050	0.68		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.6	101	0.0198	2.86		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	52	0.0240	3.14		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	33	0.0121	4.42	2.41	**Pipe Channel,** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
2.6					**Direct Entry, MINIMUM**
6.0	286	Total			

Subcatchment W-4: NORTHERN UNTREATED



Summary for Subcatchment W-5: MIDDLE TREE PIT + PHASE 2

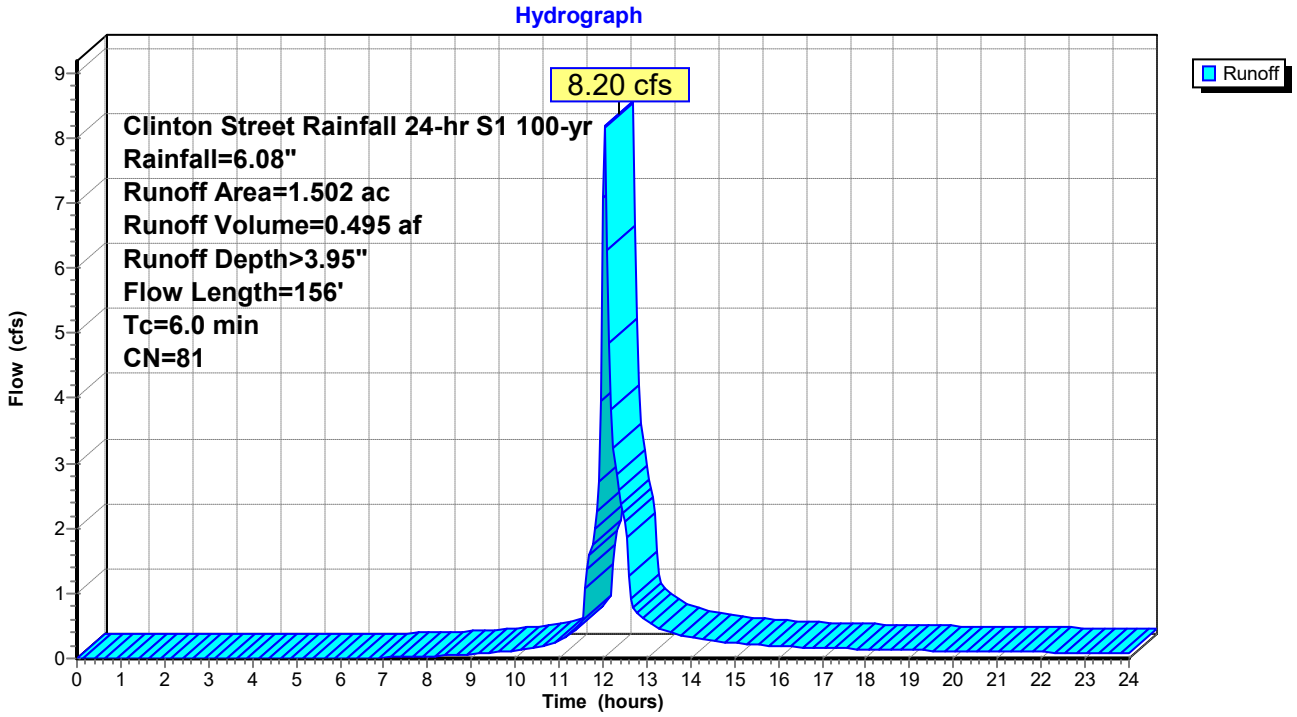
Runoff = 8.20 cfs @ 12.04 hrs, Volume= 0.495 af, Depth> 3.95"
Routed to Pond T-2 : MIDDLE TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
1.068	98	Paved parking, HSG A
0.434	39	>75% Grass cover, Good, HSG A
1.502	81	Weighted Average
0.434		28.89% Pervious Area
1.068		71.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	7	0.5000	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.8	61	0.0328	1.31		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.2	15	0.1000	1.55		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
0.4	65	0.0231	3.09		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	8	0.2500	3.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.2					**Direct Entry, MIN Tc**
6.0	156	Total			

Subcatchment W-5: MIDDLE TREE PIT + PHASE 2



Summary for Subcatchment W-6: SOUTHERN TREE PIT

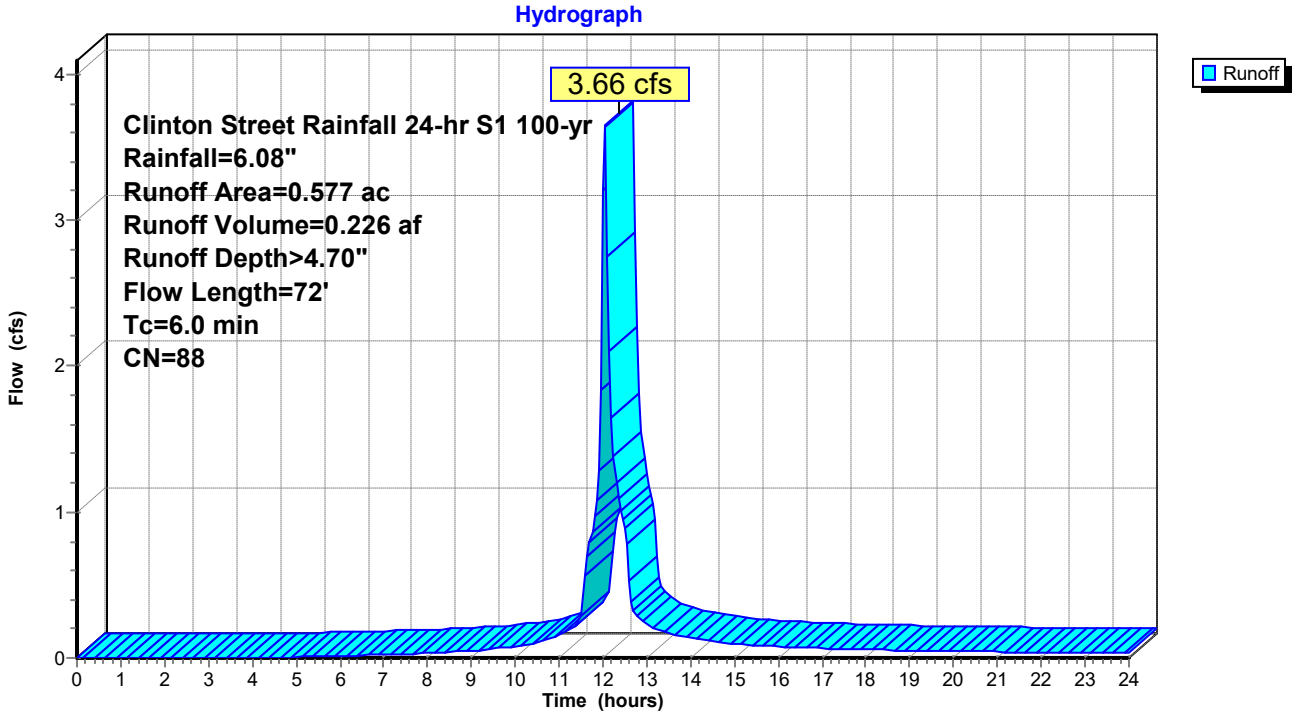
Runoff = 3.66 cfs @ 12.04 hrs, Volume= 0.226 af, Depth> 4.70"
Routed to Pond T-3 : SOUTHERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.481	98	Paved parking, HSG A
0.096	39	>75% Grass cover, Good, HSG A
0.577	88	Weighted Average
0.096		16.64% Pervious Area
0.481		83.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	9	0.3333	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.39"
0.8	63	0.0317	1.30		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.39"
4.7					**Direct Entry, MINIMUM**
6.0	72	Total			

Subcatchment W-6: SOUTHERN TREE PIT



Summary for Subcatchment W-7: SOUTH EAST TREE PIT

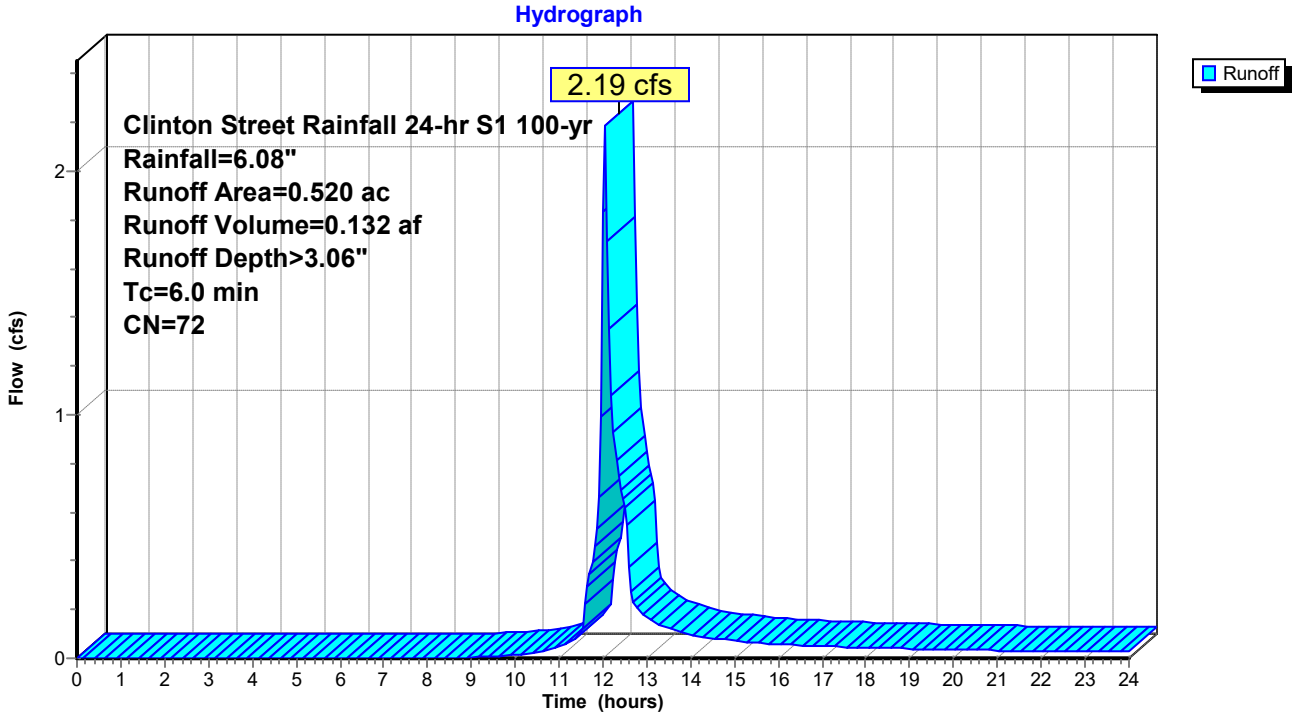
Runoff = 2.19 cfs @ 12.05 hrs, Volume= 0.132 af, Depth> 3.06"
Routed to Pond T-4 : SOUTH EAST TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.293	98	Paved parking, HSG A
0.227	39	>75% Grass cover, Good, HSG A
0.520	72	Weighted Average
0.227		43.65% Pervious Area
0.293		56.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-7: SOUTH EAST TREE PIT



Summary for Subcatchment W-8: EAST PARKING LOT TREE PIT

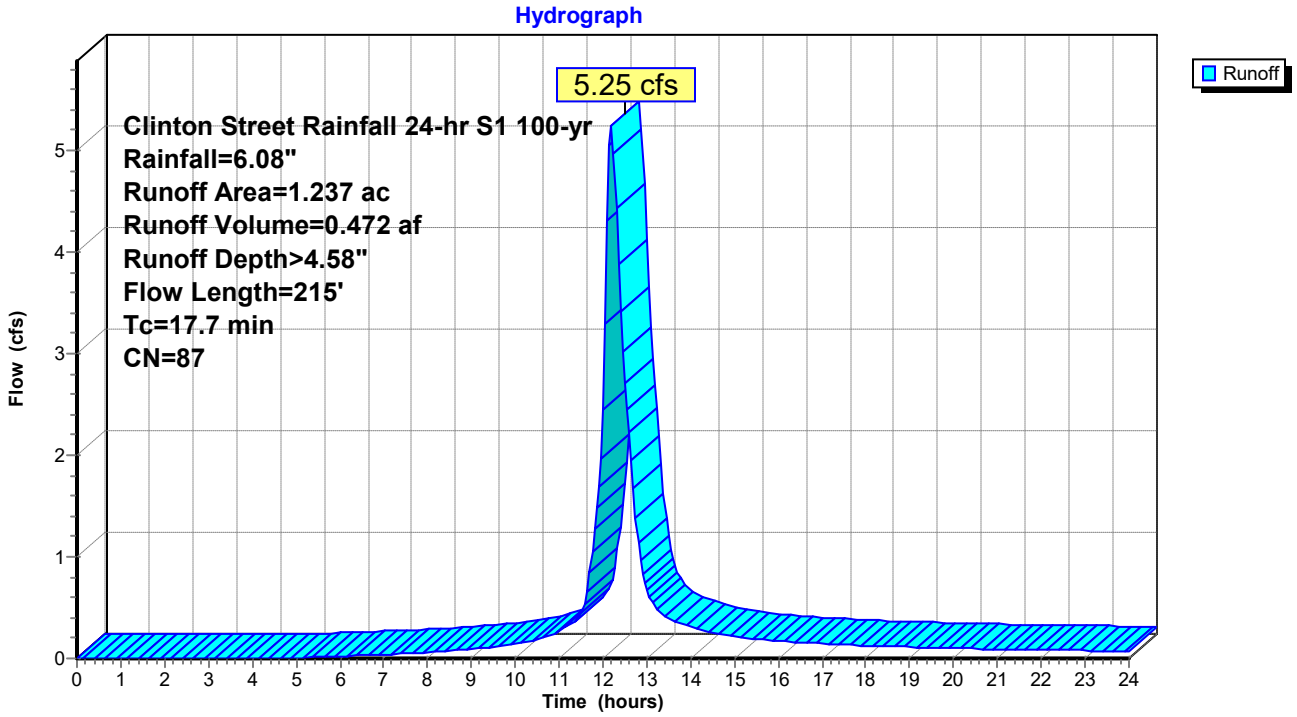
Runoff = 5.25 cfs @ 12.20 hrs, Volume= 0.472 af, Depth> 4.58"
Routed to Pond T-5 : EASTERN TREE PIT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
1.007	98	Paved parking, HSG A
0.230	39	>75% Grass cover, Good, HSG A
1.237	87	Weighted Average
0.230		18.59% Pervious Area
1.007		81.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	3	0.1667	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
8.7	53	0.0278	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
4.4	30	0.0500	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
3.5	10	0.0100	0.05		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.39"
0.7	119	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.7	215	Total			

Subcatchment W-8: EAST PARKING LOT TREE PIT



Summary for Subcatchment W-9: EAST PARKING LOT UNTREATED

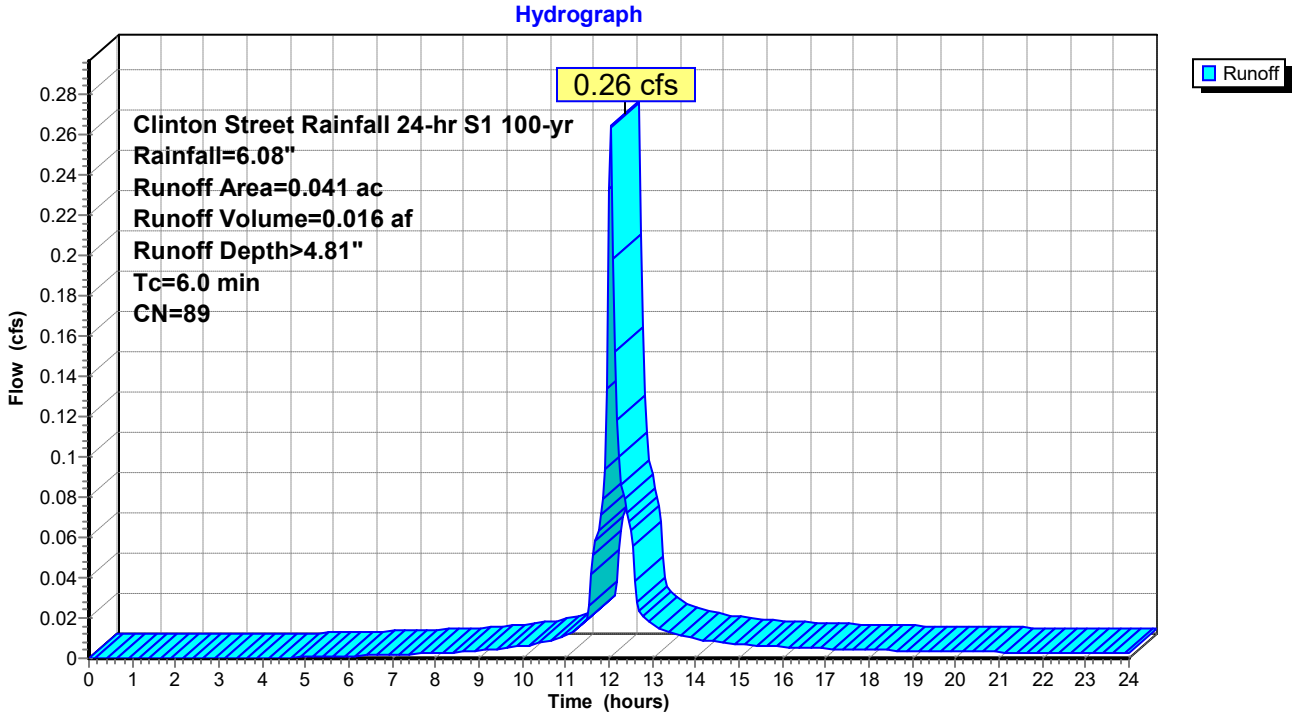
Runoff = 0.26 cfs @ 12.04 hrs, Volume= 0.016 af, Depth> 4.81"
Routed to Reach EAST : EAST MS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Clinton Street Rainfall 24-hr S1 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.035	98	Paved parking, HSG A
0.006	39	>75% Grass cover, Good, HSG A
0.041	89	Weighted Average
0.006		14.63% Pervious Area
0.035		85.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, MINIMUM**

Subcatchment W-9: EAST PARKING LOT UNTREATED



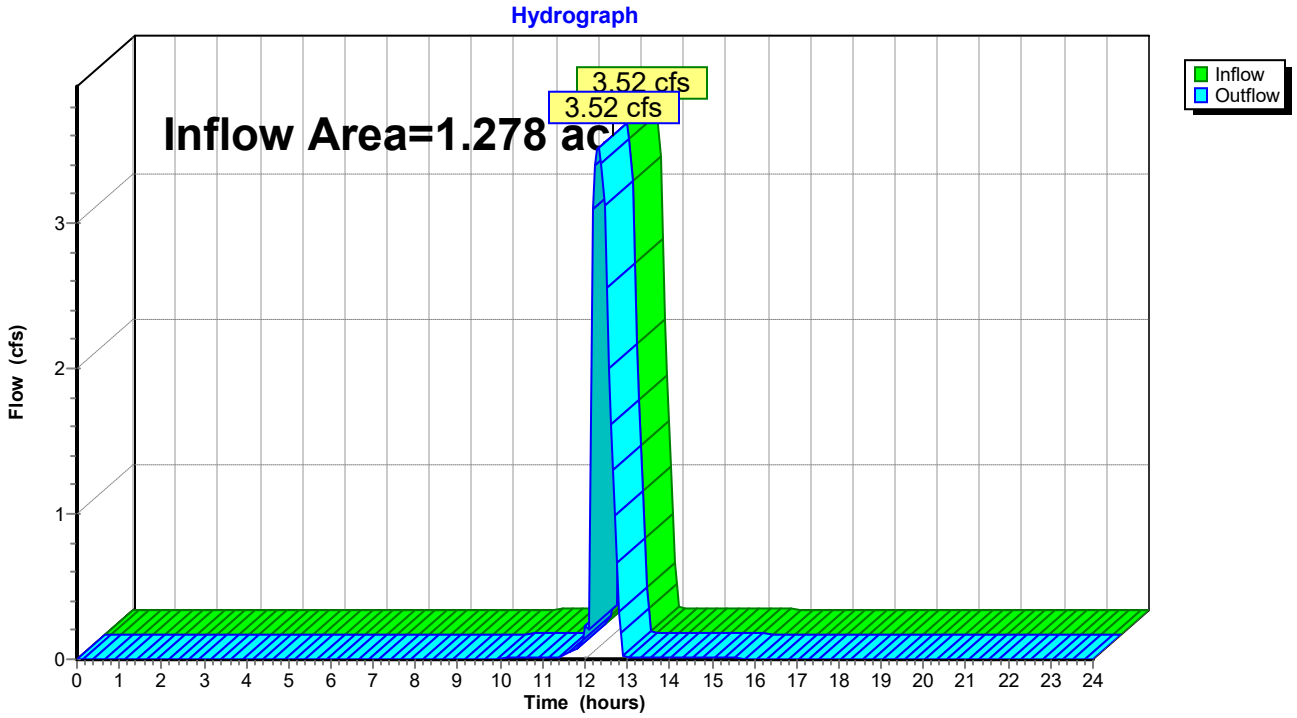
Summary for Reach EAST: EAST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.278 ac, 81.53% Impervious, Inflow Depth > 1.27" for 100-yr event
Inflow = 3.52 cfs @ 12.31 hrs, Volume= 0.135 af
Outflow = 3.52 cfs @ 12.31 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach EAST: EAST MS4



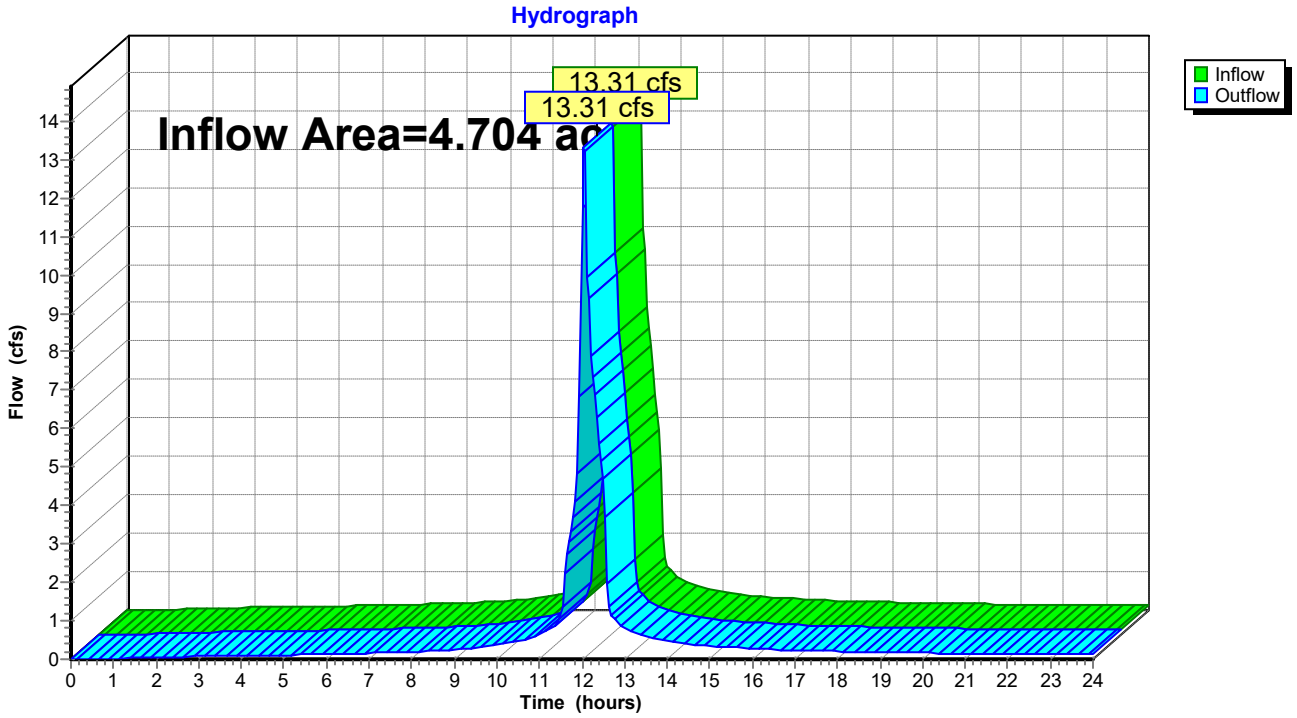
Summary for Reach NORTH: NORTH MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.704 ac, 79.19% Impervious, Inflow Depth > 2.44" for 100-yr event
Inflow = 13.31 cfs @ 12.04 hrs, Volume= 0.955 af
Outflow = 13.31 cfs @ 12.04 hrs, Volume= 0.955 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach NORTH: NORTH MS4



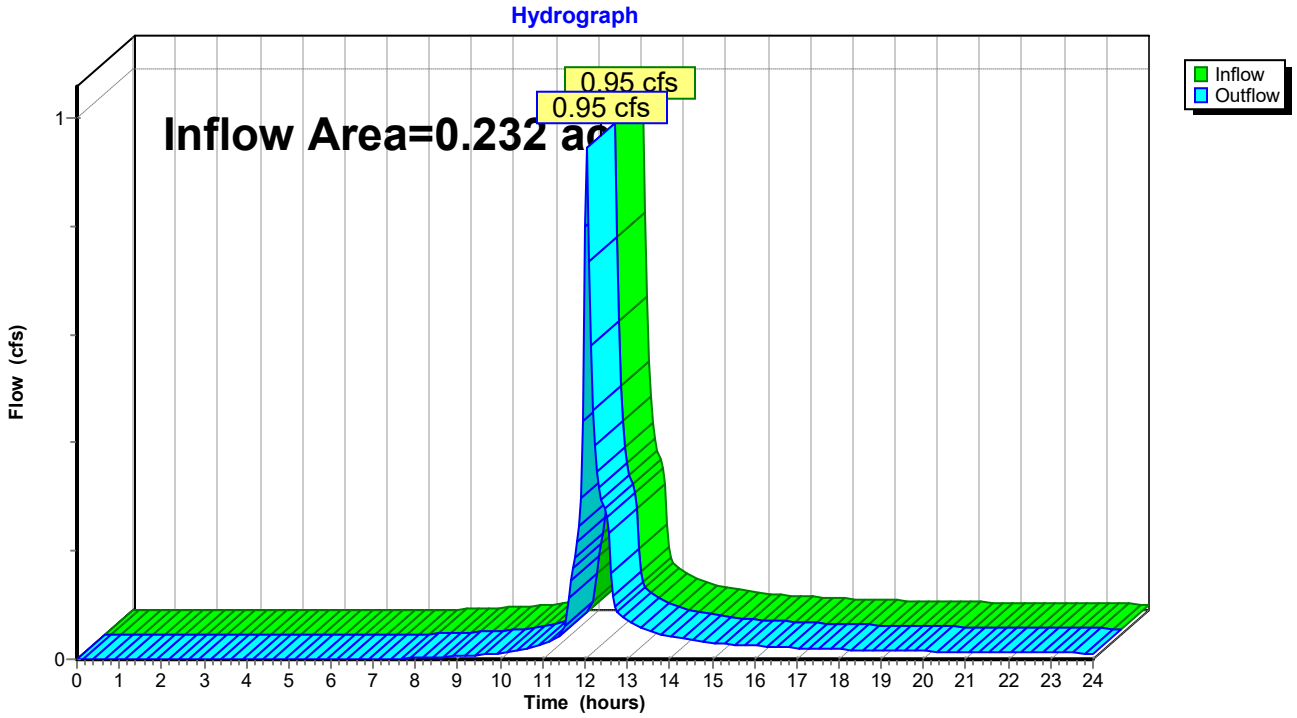
Summary for Reach WEST: WEST MS4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.232 ac, 54.31% Impervious, Inflow Depth > 3.04" for 100-yr event
Inflow = 0.95 cfs @ 12.05 hrs, Volume= 0.059 af
Outflow = 0.95 cfs @ 12.05 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach WEST: WEST MS4



Summary for Pond MH-1: MH-1

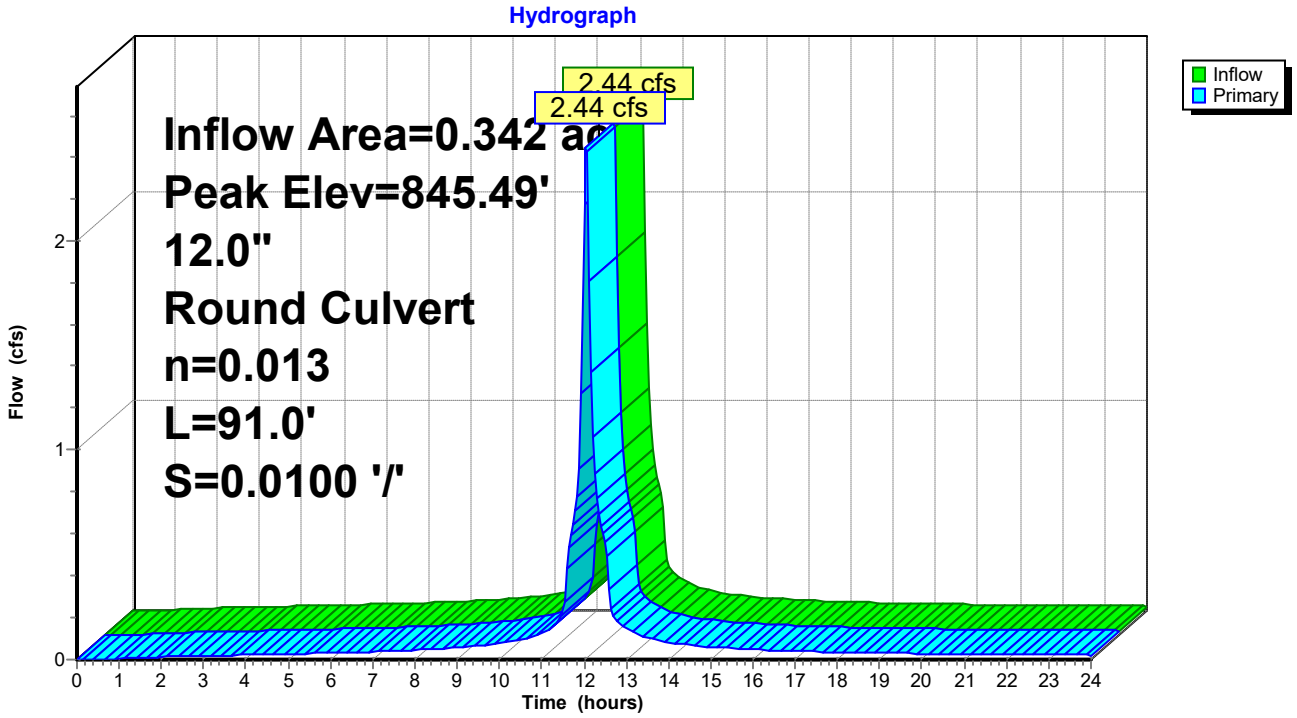
Inflow Area = 0.342 ac,100.00% Impervious, Inflow Depth > 5.84" for 100-yr event
Inflow = 2.44 cfs @ 12.04 hrs, Volume= 0.166 af
Outflow = 2.44 cfs @ 12.04 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min
Primary = 2.44 cfs @ 12.04 hrs, Volume= 0.166 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 845.49' @ 12.04 hrs
Flood Elev= 850.88'

Device	Routing	Invert	Outlet Devices
#1	Primary	844.58'	**12.0" Round OUTLET PIPE** L= 91.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 844.58' / 843.67' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.37 cfs @ 12.04 hrs HW=845.47' (Free Discharge)
1=OUTLET PIPE (Inlet Controls 2.37 cfs @ 3.21 fps)

Pond MH-1: MH-1



Summary for Pond MH-2: MH-2

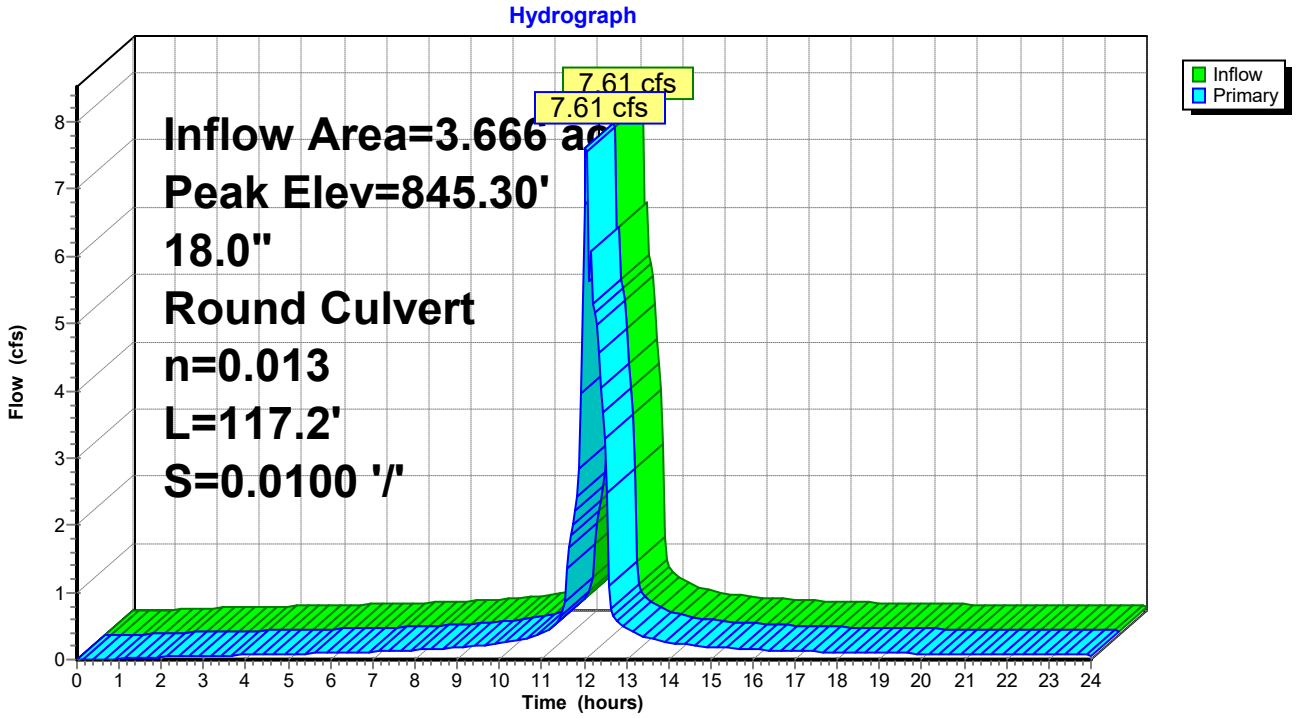
Inflow Area = 3.666 ac, 79.35% Impervious, Inflow Depth > 1.94" for 100-yr event
Inflow = 7.61 cfs @ 12.04 hrs, Volume= 0.592 af
Outflow = 7.61 cfs @ 12.04 hrs, Volume= 0.592 af, Atten= 0%, Lag= 0.0 min
Primary = 7.61 cfs @ 12.04 hrs, Volume= 0.592 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 845.30' @ 12.04 hrs
Flood Elev= 850.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	843.74'	**18.0" Round OUTLET PIPE** L= 117.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 843.74' / 842.57' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=7.39 cfs @ 12.04 hrs HW=845.27' TW=844.00' (Fixed TW Elev= 844.00')
1=OUTLET PIPE (Outlet Controls 7.39 cfs @ 5.09 fps)

Pond MH-2: MH-2



Summary for Pond MH-3: MH-3

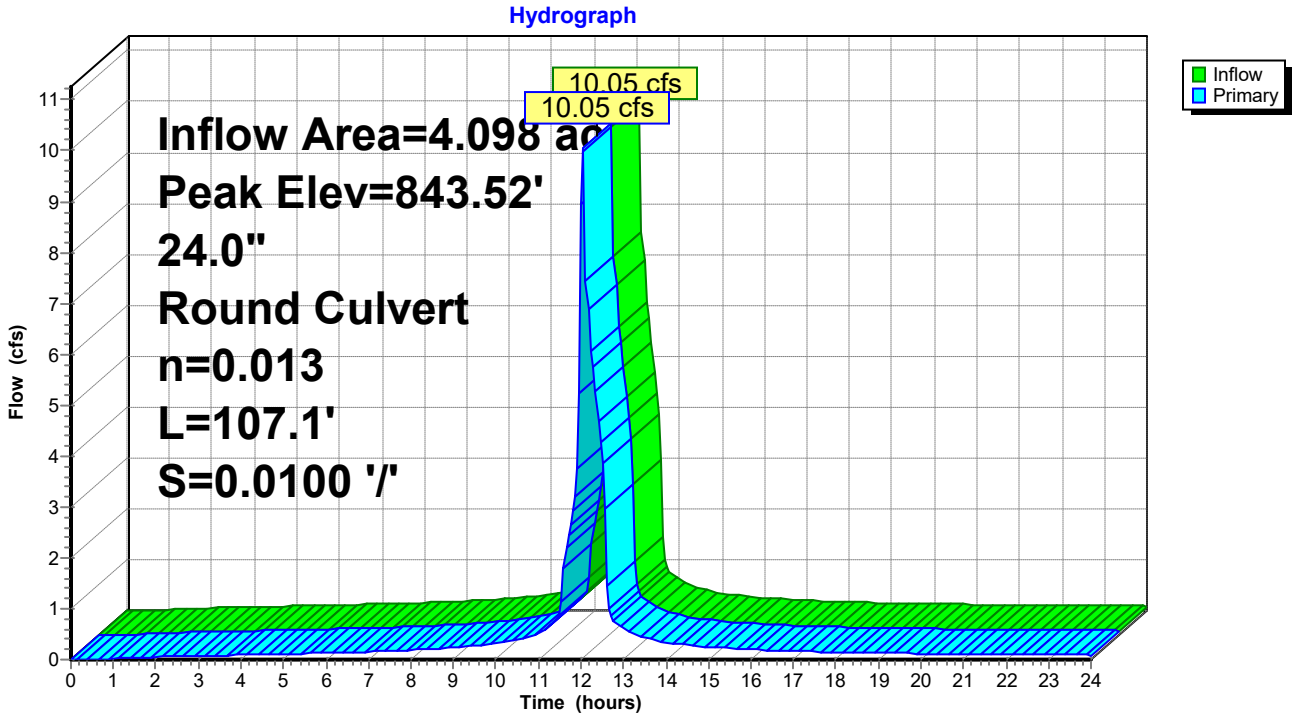
Inflow Area = 4.098 ac, 80.50% Impervious, Inflow Depth > 2.22" for 100-yr event
Inflow = 10.05 cfs @ 12.04 hrs, Volume= 0.758 af
Outflow = 10.05 cfs @ 12.04 hrs, Volume= 0.758 af, Atten= 0%, Lag= 0.0 min
Primary = 10.05 cfs @ 12.04 hrs, Volume= 0.758 af
Routed to Reach NORTH : NORTH MS4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 843.52' @ 12.04 hrs
Flood Elev= 851.51'

Device	Routing	Invert	Outlet Devices
#1	Primary	842.07'	**24.0" Round Culvert** L= 107.1' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 842.07' / 841.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=9.75 cfs @ 12.04 hrs HW=843.50' (Free Discharge)
1=Culvert (Inlet Controls 9.75 cfs @ 4.07 fps)

Pond MH-3: MH-3



Summary for Pond MH-4: MH-4

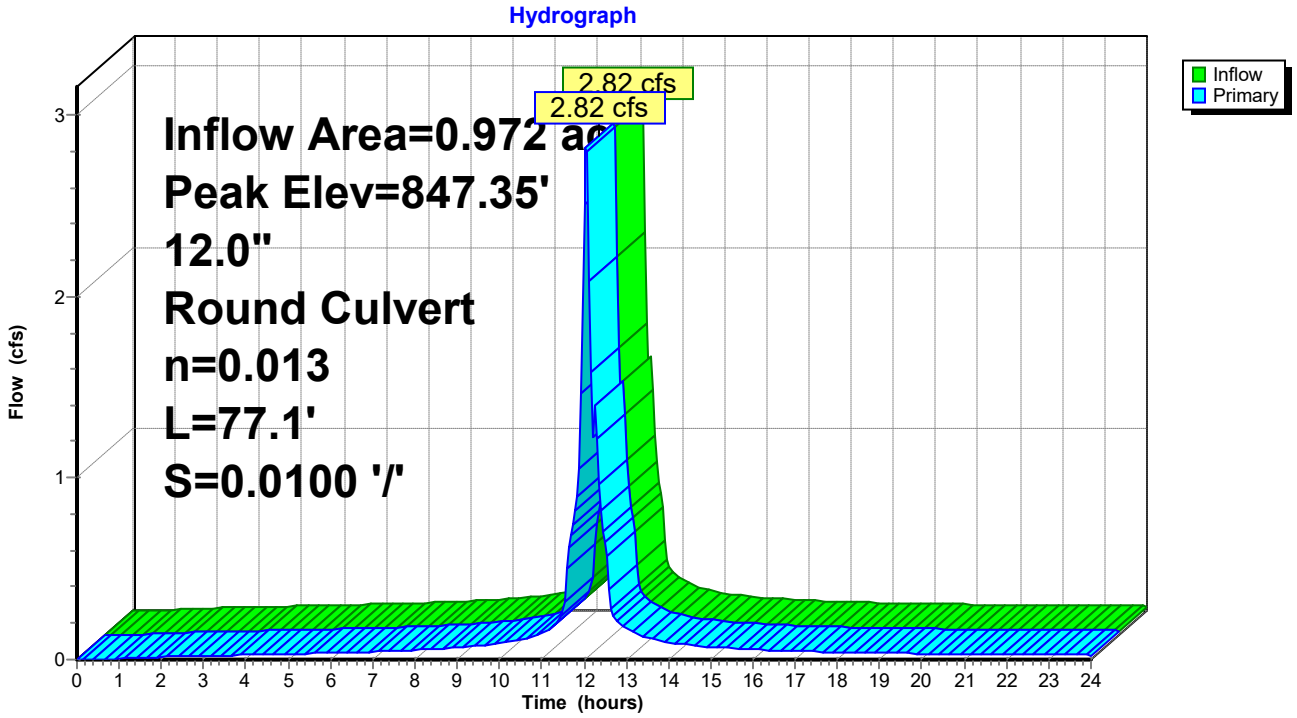
Inflow Area = 0.972 ac, 90.12% Impervious, Inflow Depth > 2.42" for 100-yr event
Inflow = 2.82 cfs @ 12.04 hrs, Volume= 0.196 af
Outflow = 2.82 cfs @ 12.04 hrs, Volume= 0.196 af, Atten= 0%, Lag= 0.0 min
Primary = 2.82 cfs @ 12.04 hrs, Volume= 0.196 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 847.35' @ 12.04 hrs
Flood Elev= 851.18'

Device	Routing	Invert	Outlet Devices
#1	Primary	846.21'	**12.0" Round OUTLET** L= 77.1' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.21' / 845.44' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.74 cfs @ 12.04 hrs HW=847.33' TW=846.53' (Fixed TW Elev= 846.53')
1=OUTLET (Outlet Controls 2.74 cfs @ 3.90 fps)

Pond MH-4: MH-4



Summary for Pond T-1: NORTHERN TREE PIT

Inflow Area = 0.090 ac, 53.33% Impervious, Inflow Depth > 2.87" for 100-yr event
Inflow = 0.35 cfs @ 12.05 hrs, Volume= 0.021 af
Outflow = 0.35 cfs @ 12.06 hrs, Volume= 0.021 af, Atten= 1%, Lag= 0.7 min
Discarded = 0.35 cfs @ 12.06 hrs, Volume= 0.021 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-3 : MH-3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-3 : MH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 845.48' @ 12.06 hrs Surf.Area= 0.016 ac Storage= 0.000 af
Flood Elev= 851.17' Surf.Area= 0.016 ac Storage= 0.039 af

Plug-Flow detention time= 0.7 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (834.9 - 834.3)

Volume	Invert	Avail.Storage	Storage Description
#1	845.43'	0.000 af	**34.49'W x 20.44'L x 5.75'H TREE PIT** 0.093 af Overall - 0.093 af Embedded = 0.000 af
#2	845.43'	0.013 af	**34.49'W x 20.44'L x 2.00'H NO. 2 STONE** Inside #1 0.032 af Overall x 40.0% Voids
#3	847.43'	0.017 af	**34.49'W x 20.44'L x 3.00'H FILTER MEDIA** Inside #1 0.049 af Overall x 35.0% Voids
#4	850.43'	0.001 af	**34.49'W x 20.44'L x 0.25'H MULCH** Inside #1 0.004 af Overall x 30.0% Voids
#5	850.68'	0.008 af	**34.49'W x 20.44'L x 0.50'H PONDING** Inside #1
		0.039 af	Total Available Storage

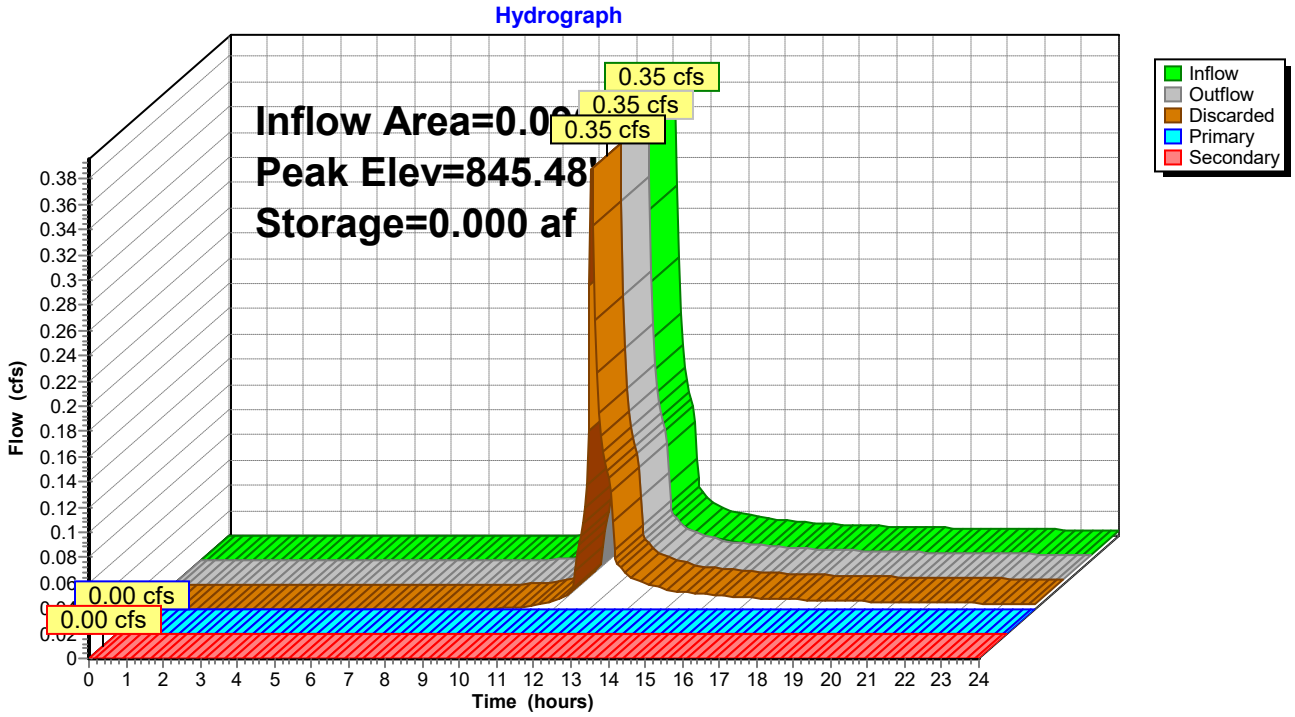
Device	Routing	Invert	Outlet Devices
#1	Primary	846.43'	**12.0" Round OUTLET PIPE** L= 3.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.43' / 846.40' S= 0.0086 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	846.43'	**2.0" Vert. PERF PIPE X 34.48** C= 0.600 Limited to weir flow at low heads
#3	Discarded	845.43'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	851.17'	**12.0" Horiz. SURFACE OVERFLOW** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.39 cfs @ 12.06 hrs HW=845.48' (Free Discharge)
↑—**3=Exfiltration** (Exfiltration Controls 0.39 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.43' (Free Discharge)
↑—**1=OUTLET PIPE** (Controls 0.00 cfs)
↑—**2=PERF PIPE** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.43' (Free Discharge)
↑—**4=SURFACE OVERFLOW** (Controls 0.00 cfs)

Pond T-1: NORTHERN TREE PIT



Summary for Pond T-2: MIDDLE TREE PIT

Inflow Area = 1.502 ac, 71.11% Impervious, Inflow Depth > 3.95" for 100-yr event
Inflow = 8.20 cfs @ 12.04 hrs, Volume= 0.495 af
Outflow = 3.41 cfs @ 12.24 hrs, Volume= 0.493 af, Atten= 58%, Lag= 11.8 min
Discarded = 1.38 cfs @ 11.85 hrs, Volume= 0.431 af
Primary = 2.03 cfs @ 12.24 hrs, Volume= 0.062 af
Routed to Pond MH-2 : MH-2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 849.41' @ 12.24 hrs Surf.Area= 0.057 ac Storage= 0.122 af

Plug-Flow detention time= 23.6 min calculated for 0.493 af (100% of inflow)
Center-of-Mass det. time= 21.9 min (830.9 - 809.0)

Volume	Invert	Avail.Storage	Storage Description
#1	843.95'	0.000 af	**49.88'W x 49.88'L x 5.75'H TREE PIT** 0.328 af Overall - 0.328 af Embedded = 0.000 af
#2	843.95'	0.046 af	**49.88'W x 49.88'L x 2.00'H NO. 2 STONE** Inside #1 0.114 af Overall x 40.0% Voids
#3	845.95'	0.060 af	**49.88'W x 49.88'L x 3.00'H FILTER MEDIA** Inside #1 0.171 af Overall x 35.0% Voids
#4	848.95'	0.004 af	**49.88'W x 49.88'L x 0.25'H MULCH** Inside #1 0.014 af Overall x 30.0% Voids
#5	849.20'	0.029 af	**49.88'W x 49.88'L x 0.50'H PONDING DEPTH** Inside #1
		0.139 af	Total Available Storage

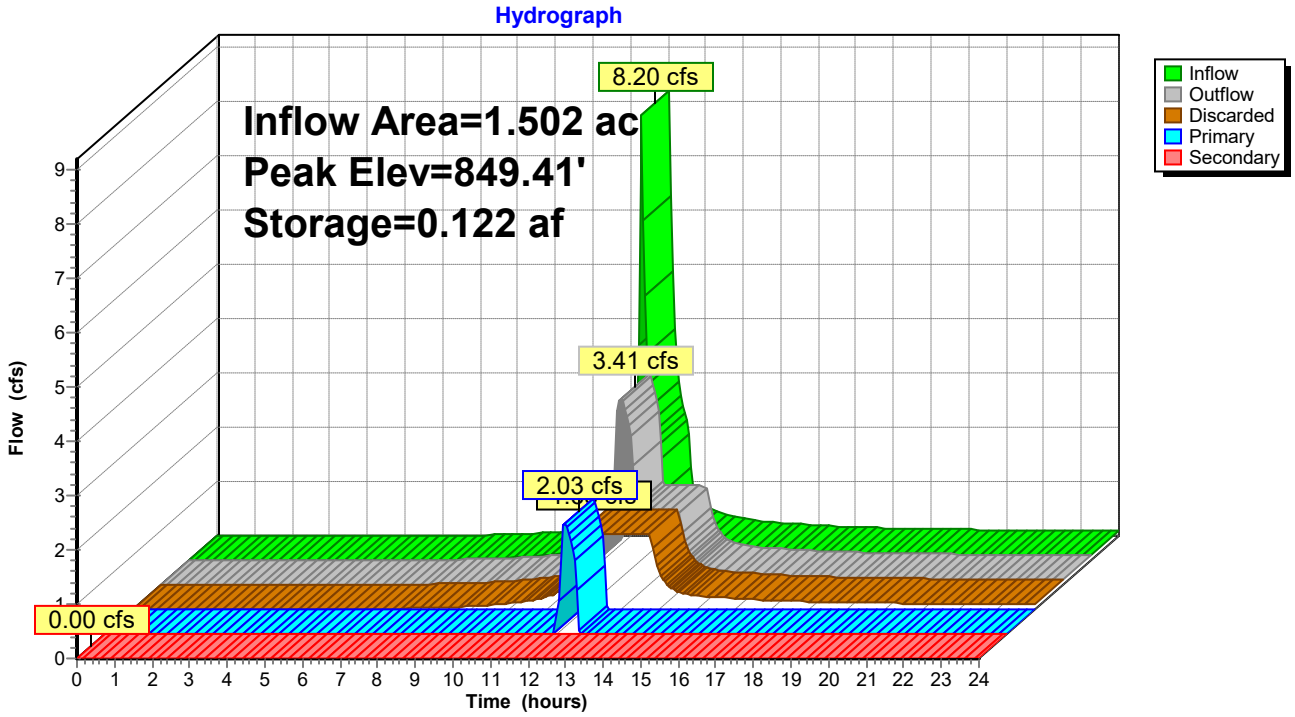
Device	Routing	Invert	Outlet Devices
#0	Secondary	849.70'	**Automatic Storage Overflow** (Discharged without head)
#1	Primary	845.04'	**12.0" Round OUTLET PIPE** L= 78.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 845.04' / 844.65' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	845.04'	**2.0" Vert. PERF PIPE X 123.88** C= 0.600 Limited to weir flow at low heads
#3	Discarded	843.95'	**24.000 in/hr Exfiltration over Surface area** Phase-In= 1.00'
#4	Secondary	849.69'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=1.38 cfs @ 11.85 hrs HW=844.99' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 1.38 cfs)

Primary OutFlow Max=2.02 cfs @ 12.24 hrs HW=849.41' TW=849.00' (Fixed TW Elev= 849.00')
↑└**1=OUTLET PIPE** (Outlet Controls 2.02 cfs @ 2.57 fps)
↑└**2=PERF PIPE** (Passes 2.02 cfs of 8.29 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=843.95' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-2: MIDDLE TREE PIT



Summary for Pond T-3: SOUTHERN TREE PIT

Inflow Area = 0.577 ac, 83.36% Impervious, Inflow Depth > 4.70" for 100-yr event
Inflow = 3.66 cfs @ 12.04 hrs, Volume= 0.226 af
Outflow = 1.36 cfs @ 12.27 hrs, Volume= 0.226 af, Atten= 63%, Lag= 13.7 min
Discarded = 0.95 cfs @ 11.85 hrs, Volume= 0.222 af
Primary = 0.41 cfs @ 12.27 hrs, Volume= 0.004 af
Routed to Pond MH-4 : MH-4
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-4 : MH-4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 850.03' @ 12.25 hrs Surf.Area= 0.039 ac Storage= 0.042 af
Flood Elev= 852.99' Surf.Area= 0.039 ac Storage= 0.095 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 10.3 min (800.0 - 789.6)

Volume	Invert	Avail.Storage	Storage Description
#1	847.24'	0.000 af	**5.00'W x 341.66'L x 5.75'H TREE TRENCH** 0.225 af Overall - 0.225 af Embedded = 0.000 af
#2	847.24'	0.031 af	**5.00'W x 341.66'L x 2.00'H NO. 2 STONE** Inside #1 0.078 af Overall x 40.0% Voids
#3	849.24'	0.041 af	**5.00'W x 341.66'L x 3.00'H FILTER MEDIA** Inside #1 0.118 af Overall x 35.0% Voids
#4	852.24'	0.003 af	**5.00'W x 341.66'L x 0.25'H MULCH** Inside #1 0.010 af Overall x 30.0% Voids
#5	852.49'	0.020 af	**5.00'W x 341.66'L x 0.50'H PONDING** Inside #1
		0.095 af	Total Available Storage

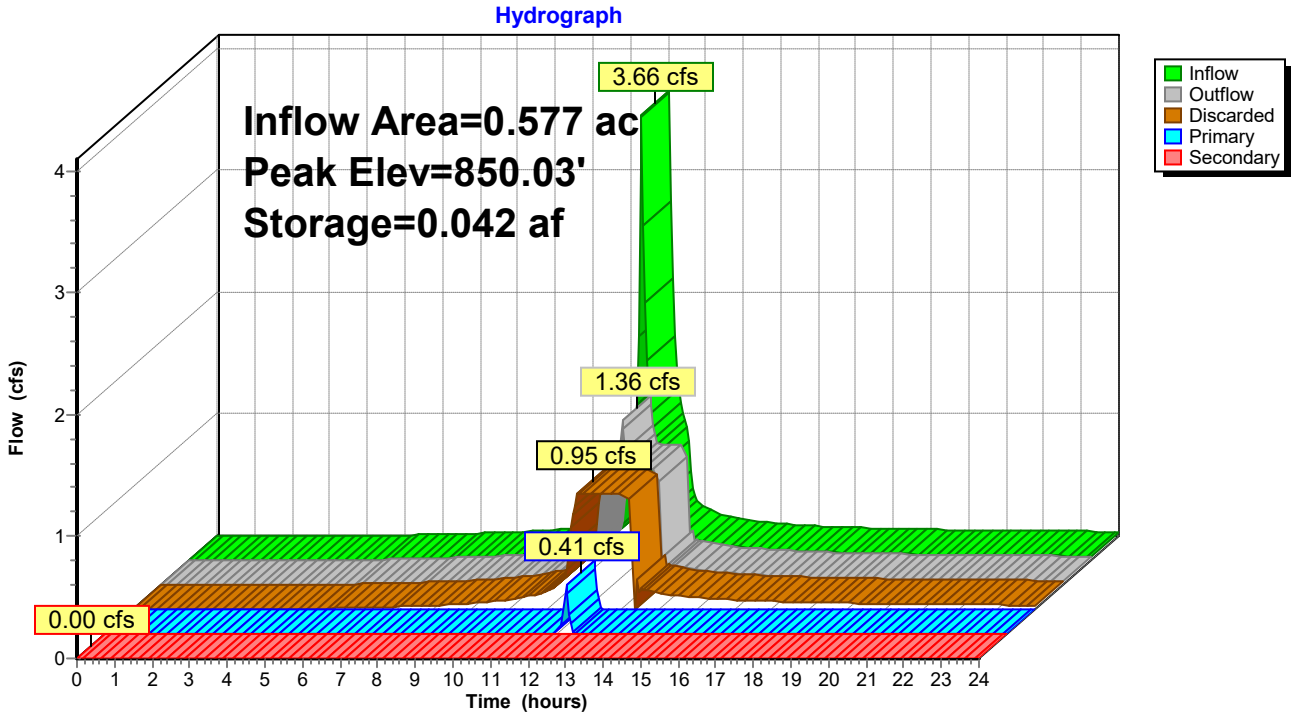
Device	Routing	Invert	Outlet Devices
#1	Primary	848.24'	**12.0" Round OUTLET PIPE** L= 102.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 848.24' / 847.21' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	848.24'	**2.0" Vert. PERF PIPE X 341.66** C= 0.600 Limited to weir flow at low heads
#3	Discarded	847.24'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	852.98'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.95 cfs @ 11.85 hrs HW=847.32' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.95 cfs)

Primary OutFlow Max=0.50 cfs @ 12.27 hrs HW=850.03' TW=850.00' (Fixed TW Elev= 850.00')
↑└**1=OUTLET PIPE** (Outlet Controls 0.50 cfs @ 0.64 fps)
↑└**2=PERF PIPE** (Passes 0.50 cfs of 6.18 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=847.24' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-3: SOUTHERN TREE PIT



Summary for Pond T-4: SOUTH EAST TREE PIT

Inflow Area = 0.520 ac, 56.35% Impervious, Inflow Depth > 3.06" for 100-yr event
Inflow = 2.19 cfs @ 12.05 hrs, Volume= 0.132 af
Outflow = 0.80 cfs @ 12.34 hrs, Volume= 0.132 af, Atten= 63%, Lag= 17.9 min
Discarded = 0.43 cfs @ 11.80 hrs, Volume= 0.126 af
Primary = 0.37 cfs @ 12.34 hrs, Volume= 0.006 af
Routed to Pond MH-2 : MH-2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond MH-2 : MH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 850.53' @ 12.35 hrs Surf.Area= 0.018 ac Storage= 0.031 af
Flood Elev= 851.49' Surf.Area= 0.018 ac Storage= 0.043 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 18.2 min (848.1 - 829.9)

Volume	Invert	Avail.Storage	Storage Description
#1	845.75'	0.000 af	**15.18'W x 50.81'L x 5.75'H TREE PIT** 0.102 af Overall - 0.102 af Embedded = 0.000 af
#2	845.75'	0.014 af	**15.18'W x 50.81'L x 2.00'H NO. 2 STONE** Inside #1 0.035 af Overall x 40.0% Voids
#3	847.75'	0.019 af	**15.18'W x 50.81'L x 3.00'H FILTER MEDIA** Inside #1 0.053 af Overall x 35.0% Voids
#4	850.75'	0.001 af	**15.18'W x 50.81'L x 0.25'H MULCH** Inside #1 0.004 af Overall x 30.0% Voids
#5	851.00'	0.009 af	**15.18'W x 50.81'L x 0.50'H PONDING** Inside #1
		0.043 af	Total Available Storage

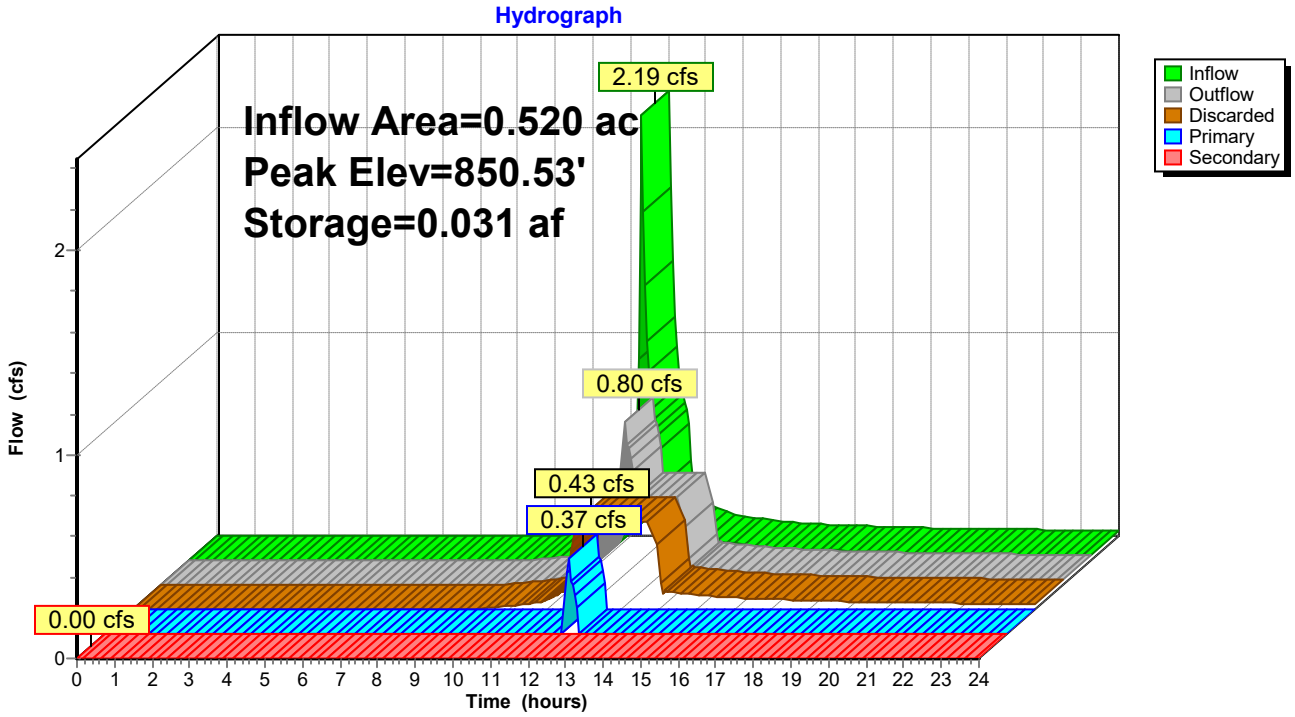
Device	Routing	Invert	Outlet Devices
#1	Primary	846.75'	**12.0" Round OUTLET PIPE** L= 223.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 846.75' / 844.51' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	846.75'	**2.0" Vert. PERF PIPE X 50.81** C= 0.600 Limited to weir flow at low heads
#3	Discarded	845.75'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	851.49'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.43 cfs @ 11.80 hrs HW=845.81' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.43 cfs)

Primary OutFlow Max=0.38 cfs @ 12.34 hrs HW=850.53' TW=850.50' (Fixed TW Elev= 850.50')
↑└**1=OUTLET PIPE** (Outlet Controls 0.38 cfs @ 0.48 fps)
↑└**2=PERF PIPE** (Passes 0.38 cfs of 0.94 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=845.75' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-4: SOUTH EAST TREE PIT



Summary for Pond T-5: EASTERN TREE PIT

Inflow Area = 1.237 ac, 81.41% Impervious, Inflow Depth > 4.58" for 100-yr event
Inflow = 5.25 cfs @ 12.20 hrs, Volume= 0.472 af
Outflow = 4.27 cfs @ 12.32 hrs, Volume= 0.472 af, Atten= 19%, Lag= 7.3 min
Discarded = 0.83 cfs @ 11.75 hrs, Volume= 0.353 af
Primary = 3.43 cfs @ 12.32 hrs, Volume= 0.119 af
Routed to Reach EAST : EAST MS4
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach EAST : EAST MS4

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 854.33' @ 12.32 hrs Surf.Area= 0.034 ac Storage= 0.073 af
Flood Elev= 854.61' Surf.Area= 0.034 ac Storage= 0.083 af

Plug-Flow detention time= 14.4 min calculated for 0.471 af (100% of inflow)
Center-of-Mass det. time= 14.3 min (816.4 - 802.1)

Volume	Invert	Avail.Storage	Storage Description
#1	848.87'	0.000 af	**5.00'W x 299.26'L x 5.75'H TREE TRENCH** 0.198 af Overall - 0.198 af Embedded = 0.000 af
#2	848.87'	0.027 af	**5.00'W x 299.26'L x 2.00'H NO. 2 STONE** Inside #1 0.069 af Overall x 40.0% Voids
#3	850.87'	0.036 af	**5.00'W x 299.26'L x 3.00'H FILTER MEDIA** Inside #1 0.103 af Overall x 35.0% Voids
#4	853.87'	0.003 af	**5.00'W x 299.26'L x 0.25'H MULCH** Inside #1 0.009 af Overall x 30.0% Voids
#5	854.12'	0.017 af	**5.00'W x 299.26'L x 0.50'H PONDING** Inside #1
		0.083 af	Total Available Storage

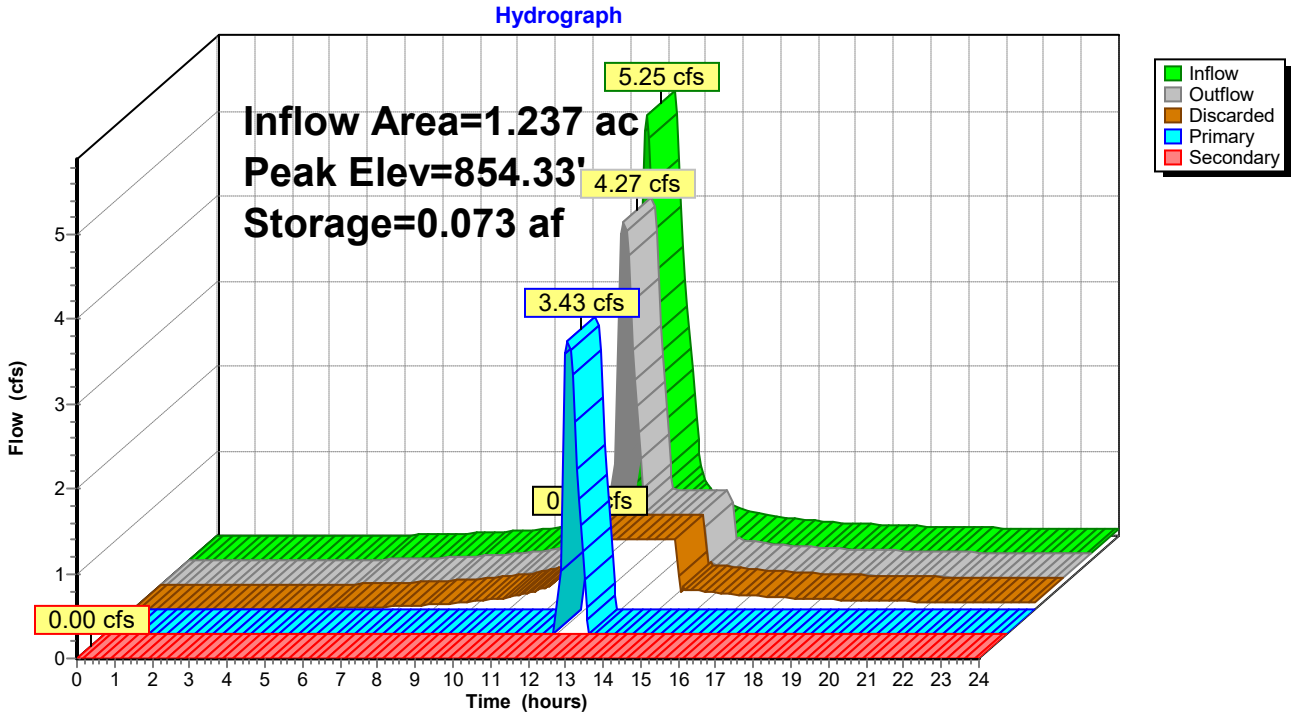
Device	Routing	Invert	Outlet Devices
#1	Primary	849.87'	**12.0" Round OUTLET PIPE** L= 18.8' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 849.87' / 849.68' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	849.87'	**2.0" Vert. PERP PIPE X 299.26** C= 0.600 Limited to weir flow at low heads
#3	Discarded	848.87'	**24.000 in/hr Exfiltration over Surface area**
#4	Secondary	854.61'	**12.0" Horiz. OVERFLOW PIPE** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.83 cfs @ 11.75 hrs HW=848.97' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.83 cfs)

Primary OutFlow Max=3.42 cfs @ 12.32 hrs HW=854.32' TW=853.50' (Fixed TW Elev= 853.50')
↑└**1=OUTLET PIPE** (Inlet Controls 3.42 cfs @ 4.35 fps)
↑└**2=PERP PIPE** (Passes 3.42 cfs of 28.41 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=848.87' (Free Discharge)
↑└**4=OVERFLOW PIPE** (Controls 0.00 cfs)

Pond T-5: EASTERN TREE PIT



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APPENDIX E

Miscellaneous Forms

CONTRACTOR CERTIFICATION STATEMENT

187 Clinton Street SWPPP, Binghamton NY

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Signature: _____ Date: _____

Name: _____

Title: _____

Company: NRP Contractors II, LLC

Address: 1228 Euclid Avenue, 4th Floor, Cleveland, Ohio 44115

Phone: 646-303-8065

Fax: _____

Trained Contractor responsible for SWPPP Implementation:

Name: _____

Title: _____

Responsible for the following elements of the SWPPP:

_____

_____

_____

_____

_____

_____

NOTICE TO REDUCE FREQUENCY OF SPDES SITE INSPECTIONS

SPDES General Permit for Stormwater Discharges from Construction Activity

In accordance with Part IV.C.2.c of the SPDES General Permit for Stormwater Discharges from Construction Activity, the Contractor hereby notifies the New York State Department of Environmental Conservation that work on this site will be temporarily suspended and temporary stabilization measures have been applied to all disturbed areas.

A Qualified Inspector will conduct a site inspection at least once every 30 calendar days during this period. The standard site inspection frequency will resume when construction activities recommence.

Description: _____

Town, Village, City: _____

County: _____

Reason for temporary suspension of work:

- ☐ Winter Shutdown
- ☐ Other _____

Approximate date work will be suspended: _____

Approximate date work will resume: _____

Signature _____

Name: _____

Title: _____

Phone: _____

E-Mail: _____

Date Submitted to NYSDEC: _____

I. **PRE-CONSTRUCTION MEETING DOCUMENTS**

Project Name _____

Permit No. _____ **Date of Authorization** _____

Name of Operator _____

Prime Contractor _____

a. **Preamble to Site Assessment and Inspections**

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified inspector[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements. A preconstruction meeting should be held to review all of the SWPPP requirements with construction personnel.

When construction starts, site inspections shall be conducted by the qualified inspector at least every 7 calendar days. The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified inspector perform a final site inspection. The qualified inspector shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 Refer to "Qualified Inspector" inspection requirements in the current SPDES General Permit for Stormwater Discharges from Construction Activity for complete list of inspection requirements.
2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.
3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Pre-construction Site Assessment Checklist
(NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?
[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.
[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.
[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Access

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.
[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals
[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.
[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
[ ] [ ] [ ] The plan is contained in the SWPPP on page _____
[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:

Inspection Forms will be filled out during the entire construction phase of the project.

Required Elements:

1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL
CONSERVATION (NYSDEC)

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP-0-25-001

Construction General Permit (CGP)

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2025 Expiration Date: January 28, 2030

Scott E. Sheeley

Chief Permit Administrator

Scott E. Sheeley JAN. 29, 2025

Authorized Signature Date

Address: NYSDEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act (CWA), and 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), *stormwater discharges* from certain *construction activities* are unlawful unless they are authorized by a National Pollutant Discharge Elimination System (NPDES) permit or by a state permit program. New York State administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7 and 8, and Article 70, as well as 6 NYCRR Parts 621 and 750.

C*onstruction activities* constitute construction of a *point source* and, therefore, pursuant to ECL sections 17-0505, 17-0701, and 17-0803, the *owner or operator* must have coverage under a SPDES permit prior to *commencement of construction activities*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES CONSTRUCTION GENERAL PERMIT (CGP) GP-0-25-001
FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Part I. How to Obtain Coverage and General Requirements

To be covered under this permit, the *owner or operator* must meet all eligibility requirements in Part I.A. and follow the requirements for obtaining permit coverage in Part I.D., F., or G.

A. Eligibility Requirements

For a *common plan of development or sale*, the *phase(s)* that meet the eligibility requirements in Part I.A. may obtain coverage under this permit even if other *phase(s)* of the same *common plan of development or sale* do not meet the eligibility requirements and require an individual SPDES permit.

1. The *owner's or operator's construction activities* involve soil disturbances of:

    a. one or more acres; or

    b. less than one acre which are part of a *common plan of development or sale* that will ultimately disturb one or more acres; or

    c. less than one acre where NYSDEC has determined that a SPDES permit is required for *stormwater discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of pollutants to *surface waters of the State*.

        i. 5,000 square feet or more, but less than one acre, and are in the New York City Watershed located east of the Hudson River, Appendix C Figure 1; or

        ii. 20,000 square feet or more, but less than one acre, within the municipal boundaries of the City of New York (NYC); or

        iii. less than 20,000 square feet which are part of a *common plan of development or sale* that will ultimately disturb 20,000 square feet or more, but less than one acre, within the municipal boundaries of NYC; or

        iv. that creates 5,000 square feet or more of *impervious area* within the municipal boundaries of NYC.

2. *Discharges* from the *owner's or operator's construction activities* are/were not:

    a. already covered by a different SPDES permit; or

    b. covered under a different SPDES permit that was denied, terminated, or revoked; or

    c. identified in an expired individual SPDES permit that was not renewed; or

    d. required to obtain an individual SPDES permit or another general SPDES permit in accordance with Part VII.K.

3. If *construction activities* may adversely affect a species that is endangered or threatened, the *owner or operator* must obtain a:

    a. permit issued pursuant to 6 NYCRR Part 182 for the project; or

    b. letter issued by NYSDEC of non-jurisdiction pursuant to 6 NYCRR Part 182 for the project.

4. If *construction activities* have the potential to affect an *historic property*, the *owner or operator* must obtain one of the following:

    a. documentation that the *construction activity* is not within an archeological buffer area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant:

        i. 1-5 acres of disturbance - 20 feet; or

        ii. 5-20 acres of disturbance - 50 feet; or

iii. 20+ acres of disturbance - 100 feet.

b. NYSDEC consultation form sent to OPRHP,[1] and copied to NYSDEC's Agency Historic Preservation Officer (APO), and

i. the State Environmental Quality Review Act (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or

ii. documentation from OPRHP that the *construction activity* will result in No Impact; or

iii. documentation from OPRHP providing a determination of No Adverse Impact; or

iv. a Letter of Resolution signed by the *owner or operator*, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA).

c. documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

i. No Affect; or

ii. No Adverse Affect; or

iii. Executed Memorandum of Agreement.

d. documentation that SHPA Section 14.09 has been completed by NYSDEC or another state agency.

5. If *construction activities* are subject to SEQR, the *owner or operator* must obtain documentation that SEQR has been satisfied.

6. If *construction activities* are not subject to SEQR, but subject to the equivalent environmental review from another New York State or federal agency, the

[1] The consultation form can be submitted, along with other project information, through OPRHP's Cultural Resource Information System (CRIS) portal. If submitted through CRIS, paper copies of the consultation form need not be mailed.

owner or operator must obtain documentation that project review, pursuant to a process equivalent to SEQR from another New York State or federal agency, has been satisfied.

7. If *construction activities* require Uniform Procedures Act (UPA) Permits (see 6 NYCRR Part 621) from NYSDEC, or the equivalent from another New York State or federal agency, the *owner or operator* must:

    a. obtain all such necessary permits; or

    b. receive notification from NYSDEC pursuant to 6 NYCRR 621.3(a)(4) excepting Part I.A.7.a.

8. *Construction activities* are not eligible if they meet the following criteria in Part I.A.8.a. or b.:

    a. For linear transportation and linear utility project types, the *construction activities*:

        i. are within the watershed of *surface waters of the State* classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website; and

        ii. are undertaken on land with no existing *impervious cover*; and

        iii. disturb two or more acres of *steep slope*.

    b. For all other project types, the *construction activities*:

        i. are within the watershed of *surface waters of the State* classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website; and

        ii. are undertaken on land with no existing *impervious cover*; and

        iii. disturb one or more acres of *steep slope*.

B. Types of *Discharges* Authorized

1. The following *stormwater discharges* are authorized under this permit:

   a. *Stormwater discharges*, including *stormwater* runoff, snowmelt runoff, and surface runoff and drainage, associated with *construction activity*, are authorized under this permit provided that appropriate *stormwater* controls are designed, installed, and maintained in accordance with Part II. and Part III.

   b. *Stormwater discharges* from construction support activities at the *construction site* (including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, and borrow areas) if the following requirements are met:

      i. The support activity is directly related to the *construction site* required to have permit coverage for *stormwater discharges*; and

      ii. The support activity is not a commercial operation, nor does it serve multiple unrelated *construction sites*; and

      iii. The support activity does not continue to operate beyond the completion of the *construction activity* at the site it supports; and

      iv. *Stormwater* controls are implemented in accordance with Part II. and Part III. for *discharges* from the support activity areas.

2. The following non-*stormwater discharges* associated with *construction activity* are authorized under this permit:

   a. Non-*stormwater discharges* listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "*Discharges* from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; and

   b. Non-*stormwater discharges* of waters to which other components have not been added that are used in accordance with the *SWPPP* to control dust or irrigate vegetation in stabilized areas; and

   c. Uncontaminated *discharges* from *dewatering* operations

3. Authorized *discharges* of *stormwater* or authorized *discharges* of non-*stormwater*, commingled with a *discharge* authorized by a different SPDES permit and/or a *discharge* that does not require SPDES permit authorization, are also authorized under this permit.

C. Prohibited *Discharges*

1. Non-*stormwater discharges* prohibited under this permit include but are not limited to:

    a. Wastewater from washout of concrete; and

    b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials; and

    c. Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance; and

    d. Soaps, solvents, or detergents used in vehicle and equipment washing or external building washdown; and

    e. Toxic or hazardous substances from a spill or other release.

D. Electronic Notice of Intent (eNOI) Submittal

To receive authorization in accordance with Part I.D.3.b., the *owner or operator* must submit a complete eNOI in accordance with the requirements in Part I.D. The eNOI contains questions to: ensure eligibility requirements in Part I.A. have been met; obtain *owner or operator* contact information; obtain the total area to be disturbed and the existing/future *impervious areas* (rounded to the nearest tenth of an acre); confirm *Traditional Land Use Control MS4 Operator* jurisdiction over construction projects; satisfy the EPA eRule requirements; confirm that the Water Quality-Based Effluent Limitations in Part II. have been met; demonstrate consideration of the future risks due to climate change in accordance with Part III.A.2.; and confirm that the other *Stormwater Pollution Prevention Plan (SWPPP)* requirements in Part III. have been met.

1. An eNOI may be submitted for:

    a. *construction activities* that are not part of a *common plan of development or sale*; or

b. an entire *common plan of development or sale*; or

c. separate *phase(s)* of a *common plan of development or sale* if the following requirements are met:

    i. the *common plan of development or sale* meets the eligibility requirements of Part I.A.5. or 6.; and

    ii. the *phase(s)* meet(s) all other eligibility requirements of Part I.A.; and

    iii. Part III.C. Required *SWPPP* Components by Project Type is based on the *common plan of development or sale*, not the *phase(s)*; or

d. *tree clearing* that is associated with, or will support, a *renewable energy* generation, transmission, or storage project that meets Part I.A.5. and 6., if the *tree clearing*:

    i. meets all other eligibility requirements of Part I.A.; and

    ii. will occur in NYSDEC's Regions 3-9; and

    iii. is not within ¼ mile of a bat hibernaculum protected pursuant to 6 NYCRR Part 182; and

    iv. will occur between November 1st and March 31st.

2. As prerequisites for submitting an eNOI, the *owner or operator* must:

    a. prepare a *SWPPP* for Part I.D.1.a., b., c., or d. in accordance with Part III.; and

    b. based on the following criteria, upload the following signature forms signed in accordance with Part VII.J. to the eNOI prior to submission:

        i. for all eNOIs:

            1. the SWPPP Preparer Certification Form, Appendix F, signed by the *SWPPP* preparer; and

2. the Owner/Operator Certification Form, Appendix J, signed by the *owner or operator*; and

ii. if an eNOI includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that will *discharge* to the *MS4(s)*:

1. determine if the *Traditional Land Use Control MS4 Operator(s)* have review authority. A *Traditional Land Use Control MS4 Operator* does not have review authority where:

a. the *owner or operator* of the *construction activities* in Part I.D.2.b.ii. is the same entity as the *Traditional Land Use Control MS4 Operator* identified in Part I.D.2.b.ii.; or

b. there is a statute exempting the *owner or operator* from zoning review by the *Traditional Land Use Control MS4 Operator*; or

c. there is no such statute per Part I.D.2.b.ii.1.b., the *Traditional Land Use Control MS4 Operator* concludes, after public hearing, that it does not have zoning review authority in accordance with Legal Memorandum LU14 Updated January 2020 “Governmental Immunity from Zoning and Other Legislation”; and

2. if the *Traditional Land Use Control MS4 Operator(s)* have review authority, submit the *SWPPP* to the *Traditional Land Use Control MS4 Operator(s)* for review and have:

a. if outside the municipal boundaries of NYC: the MS4 SWPPP Acceptance Form, Appendix G, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator,* or by a duly authorized representative of that person in accordance with Part VII.J.2.; or

b. if within the municipal boundaries of NYC: The City of New York Department of Environmental Protection (NYCDEP) SWPPP Acceptance/Approval Form, Appendix H, signed by the principal executive officer or ranking elected official from the Traditional Land Use Control MS4 Operator, or by a duly authorized representative of that person in accordance with Part VII.J.2.; and

3. if the *Traditional Land Use Control MS4 Operator* does not have review authority, have the MS4 No Jurisdiction Form, Appendix I, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator,* or by a duly authorized representative of that person in accordance with Part VII.J.2.

3. Submitting an eNOI:

a. The *owner or operator* must submit a complete Notice of Intent electronically using a NYSDEC approved form.[2]

b. The *owner or operator* is authorized to *commence construction activity* as of the authorization date indicated in the Letter of Authorization (LOA), which is sent by NYSDEC after a complete eNOI is submitted.

i. If an eNOI is received for a *SWPPP* that deviates from one of the technical standards but demonstrates *equivalence* in accordance with Part III.B.1.a.ii. or Part III.B.2.b.ii., if the *SWPPP* includes *construction activities* that are not within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)*, and/or if the *SWPPP* includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that do not have review authority in accordance with Part I.D.2.b.ii.1., the authorization date indicated in the LOA will be 60 business days after the eNOI submission date.

[2] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

c. If *Traditional Land Use Control MS4 Operator(s)* have review authority in accordance with Part I.D.2.b.ii.2., the *owner or operator* must, within five business days of receipt of the LOA, send an electronic copy of the LOA to the *Traditional Land Use Control MS4 Operator(s)* with review authority.

E. General Requirements for *Owners or Operators* with Permit Coverage

1. As of the date the LOA is received, the *owner or operator* must make the eNOI, *SWPPP*, and LOA available for review and copying in accordance with the requirements in Part VII.H. When applicable, as of the date an updated LOA is received, the *owner or operator* must make the updated LOA available for review and copying in accordance with the requirements in Part VII.H.

2. The *owner or operator* must ensure compliance with all requirements of this permit and that the provisions of the *SWPPP*, including any changes made to the *SWPPP* in accordance with Part III.A.5., are properly implemented and maintained from the *commencement of construction activity* until:

   a. all areas of disturbance have achieved *final stabilization;* and

   b. the owner's or operator's coverage under this permit is terminated in accordance with Part V.A.5.a.

3. As of the date of the *commencement of construction activities* until Part I.E.2.a. and b. have been met, the *owner or operator* must maintain at the *construction site*, a copy of:

   a. all documentation necessary to demonstrate eligibility with this permit; and

   b. this permit; and

   c. the *SWPPP*; and

   d. the signed SWPPP Preparer Certification Form; and

   e. the signed MS4 SWPPP Acceptance Form or signed NYCDEP SWPPP Acceptance/Approval Form or signed MS4 No Jurisdiction Form (when applicable); and

   f. the signed Owner/Operator Certification Form; and

g. the eNOI; and

h. the LOA; and

i. the LOA transmittal to the Traditional Land Use Control MS4 Operator in accordance with Part I.D.3.c. (when applicable).

4. The *owner or operator* must maintain at the *construction site*, until Part I.E.2.a. and b. have been met, as of the date the documents become final or are received, a copy of the:

   a. responsible contractor's or subcontractor's certification statement(s) in accordance with Part III.A.7.; and

   b. inspection reports in accordance with Part IV.C.4. and 6.; and

   c. Request to Disturb Greater Than Five Acres and the Authorization Letter to Disturb Greater Than Five Acres in accordance with Part I.E.6. (when applicable); and

   d. Request to Continue Coverage and the Letter of Continued Coverage (LOCC) in accordance with Part I.F.2. and 4. (when applicable); and

   e. The updated LOA(s) in accordance with Part I.E.9. (when applicable).

5. The *owner or operator* must maintain the documents in Part I.E.3. and 4. in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection. The documents must be paper documents unless electronic documents are accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be. If electronic documents are kept on site, the *owner or operator* must maintain functional equipment on site available to an inspector during normal hours of operation such that an inspector may view the electronic documents in a format that can be read in a similar manner as a paper record and in a legally dependable format with no less evidentiary value than their paper equivalent.

6. The *owner or operator* must meet the following requirements prior to disturbing greater than five acres of soil at any one time:

   a. The *owner or operator* must submit a written Request to Disturb Greater Than Five Acres to:

i. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, if a *Traditional Land Use Control MS4 Operator* does not have review authority in accordance with Part I.D.2.b.ii.1.; or

ii. the *Traditional Land Use Control MS4 Operator*, if a *Traditional Land Use Control MS4 Operator* has review authority in accordance with Part I.D.2.b.ii.1.; or

iii. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, and each involved *Traditional Land Use Control MS4 Operator*, if the project spans multiple municipalities with more than one *Traditional Land Use Control MS4 Operator* involved with review authority in accordance with Part I.D.2.b.ii.1.

b. The written Request to Disturb Greater Than Five Acres must include:

i. The SPDES permit identification number (Permit ID); and

ii. Full technical justification demonstrating why alternative methods of construction that would result in five acres of soil disturbance or less at any one time are not feasible; and

iii. The phasing plan for the project and sequencing plans for all *phases* from the *SWPPP* in accordance with Part III.B.1.d.; and

iv. Plans with locations and details of erosion and sediment control practices such that the heightened concern for erosion when disturbing greater than five acres at one time has been addressed; and

v. Acknowledgment that "the *owner or operator* will comply with the requirements in Part IV.C.2.b."; and

vi. Acknowledgment that "the *owner or operator* will comply with the requirements in Part II.B.1.b."

c. The *owner or operator* must be in receipt of an Authorization Letter to Disturb Greater Than Five Acres, which will include when the

authorization begins and ends and indicate a maximum area (acres) of soil disturbance allowed at any one time, from:

i. NYSDEC, if Part I.E.6.a.i. or iii. apply; or

ii. the *Traditional Land Use Control MS4 Operator*, if Part I.E.6.a.ii. applies.

7. Upon a finding of significant non-compliance with the practices described in the *SWPPP* or violation of this permit, NYSDEC may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order must be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

8. If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE).[3] *Construction activity* shall not resume until written permission to do so has been received from the RWE.

9. To be authorized to implement modifications to the information previously submitted in the eNOI, the *owner or operator* must:

   a. notify NYSDEC via email at Stormwater_info@dec.ny.gov requesting access to update the eNOI; and

   b. update the eNOI to reflect the modifications and resubmit the eNOI in accordance with Part I.D.; and

   c. receive an updated LOA.

10. The eNOI, *SWPPP*, LOA, updated LOAs (when applicable), and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

[3] The Regional Water Manager where a DEC Region does not have a RWE.

F. Permit Coverage for *Discharges* Authorized Under GP-0-20-001

When applicable:

1. Upon the effective date of this permit, an *owner or operator* of *a construction activity*, with coverage under GP-0-20-001, will have interim coverage under GP-0-25-001 for 45 calendar days starting on the effective date of GP-0-25-001 so long as the *owner or operator* maintains compliance with all applicable requirements of this permit.

2. Within 30 calendar days of the effective date of this permit, the *owner or operator*, with coverage under GP-0-20-001, must submit a complete Request to Continue Coverage electronically using a NYSDEC approved form,[4] which contains the information identified in Part I.F.3. below, if:

   a. the *owner or operator* continues to implement the SMP component in conformance with the technical standards in place at the time of initial project authorization; and

   b. the *owner or operator* will comply with all non-design requirements of GP-0-25-001.

3. The Request to Continue Coverage form contains questions to: ensure eligibility requirements in Part I.A. have been met; verify *owner or operator* contact information; verify the permit identification number; verify the original eNOI submission ID, if applicable; verify Part I.F.2.a. and b.; verify the version of the Design Manual that the technical/design components conform to; and receive an updated Owner/Operator Certification Form, Appendix I.

4. The *owner or operator* has obtained continued coverage under GP-0-25-001 as of the date indicated in the LOCC, which is sent by NYSDEC after a complete Request to Continue Coverage form is submitted.

5. If the owner or operator does not submit the Request to Continue Coverage form in accordance with Part I.F.2. and 3., coverage under this permit is automatically terminated after interim coverage expires.

[4] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

G. Change of *Owner or Operator*

When applicable:

1. When property ownership changes, or when there is a change in operational control over the construction plans and specifications, the following process applies:

    a. The new *owner or operator* must meet the applicable prerequisites for submitting an eNOI in accordance with Part I.D.2.; and

    b. The new *owner or operator* must submit an eNOI in accordance with Part I.D.3.; and

    c. Permit coverage for the new *owner or operator* will be effective upon receipt of the LOA in accordance with Part I.D.3.b.; and

    d. The new *owner or operator*, upon receipt of their LOA, must provide their Permit ID to the original *owner or operator*; and

    e. If the original *owner or operator* will no longer be the *owner or operator* of the *construction activity* identified in the original *owner's or operator's* eNOI, the original *owner or operator*, upon receipt of the new *owner's or operator's* Permit ID in accordance with Part I.G.1.d., must submit to NYSDEC a completed eNOT in accordance with Part V. that includes the name and Permit ID of the new *owner or operator*; or

    f. If the original *owner or operator* maintains ownership of a portion of the *construction activity*, the original *owner or operator* must maintain their coverage under the permit by modifying their eNOI; modifications to the eNOI must include:

        i. the revised area of disturbance and/or *impervious area(s)*; and

        ii. the revised SMP information, if applicable; and

        iii. a narrative description of what has changed; and

        iv. the new *owner's or operator's* Permit ID for the portion of the project removed from the eNOI.

    Owners or operators must follow Part I.E.9. to modify the eNOI.

Part II. Water Quality-Based Effluent Limitations

A. Maintaining Water Quality

NYSDEC expects that compliance with the requirements of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any *discharge* to either cause or contribute to a violation of the following *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York:

1. There must be no increase in turbidity that will cause a substantial visible contrast to natural conditions; and

2. There must be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There must be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the *stormwater discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standard,* the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this permit and document in accordance with Part IV.C.4. of this permit. To address the *water quality standard* violation the *owner or operator* must include and implement appropriate controls in the *SWPPP* to correct the problem or obtain an individual SPDES permit.

If, despite compliance with the requirements of this permit, it is demonstrated that the *stormwater discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if NYSDEC determines that a modification of this permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit, and the *owner or operator* must obtain an individual SPDES permit prior to further *discharges* from the *construction site*.

B. Effluent Limitations Applicable to *Discharges* from *Construction Activities*

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part II.B.1.a., b., c., d., and e. These limitations represent the

degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement, and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part II.B.1.a., b., c., d., and e. and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control (BB), dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in *SWPPP* the reason(s) for the deviation, or alternative design, and provide information in the *SWPPP* demonstrating that the deviation or alternative design is *equivalent* to the technical standard.

    a. **Erosion and Sediment Controls.** At a minimum, erosion and sediment controls must be selected, designed, installed, implemented, and maintained to:

        i. *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s; and

        ii. Control *stormwater discharge*s, including both peak flow rates and total *stormwater* volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points; and

        iii. *Minimize* the amount of soil exposed during *construction activity*; and

        iv. *Minimize* the disturbance of *steep slope*; and

        v. *Minimize* sediment *discharge*s from the site; and

        vi. Provide and maintain *natural buffers* around surface waters, direct *stormwater* to vegetated areas and maximize *stormwater* infiltration to reduce *pollutant discharge*s, unless *infeasible*; and

        vii. *Minimize* soil compaction. *Minimizing* soil compaction is not required

where the intended function of a specific area of the site dictates that it be compacted; and

viii. Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

ix. *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of *pollutants* that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has ceased, whether permanently or *temporarily ceased*, the application of soil stabilization measures must be initiated by the end of the next business day and completed within 14 calendar days from the date the current soil disturbance activity ceased. For *construction sites* that *directly discharge* to one of the 303(d) segments listed in Appendix D, or are located in one of the watersheds listed in Appendix C, or are authorized to disturb greater than five acres in accordance with Part I.E.5.a.viii., the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven calendar days from the date the soil disturbance activity ceased.

c. **Dewatering**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Select, design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be selected, designed, installed, implemented, and maintained to:

i. *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. Soaps, detergents and solvents cannot be used; and

ii. *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation

and to *stormwater*. *Minimization* of exposure is not required in cases where the exposure to precipitation and to *stormwater* will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of *stormwater* contamination (such as final products and materials intended for outdoor use); and

iii. Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Surface Outlets.** When discharging from basins and impoundments, the surface outlets must be designed, constructed, and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-Construction Stormwater Management Practice (SMP) Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction SMPs, in accordance with Part III.C., must select, design, install, implement, and maintain the SMPs to meet the *performance criteria* in the New York State Stormwater Management Design Manual, dated July 31, 2024 (DM), using sound engineering judgment. Where SMPs are not designed in conformance with the *performance criteria* in the DM, the *owner or operator* must include in the *SWPPP* the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity*, that requires SMPs in accordance with Part III.C., must design the practices to meet the applicable *sizing criteria* in Part II.C.2.a., b., c., or d.

a. Sizing Criteria for *New Development*

i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):

1. Reduce the total WQv by application of RR techniques and standard SMPs with RRv capacity. The total WQv must be calculated in accordance with the criteria in Section 4.2 of the DM; or

2. Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the requirements in Part II.C.2.a.i.1. due to *site limitations* must direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv must be documented in the *SWPPP*. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the *SWPPP* must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

   In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.4 of the DM. The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. The CPv requirement does not apply when:

   1. Reduction of the entire CPv is achieved by application of runoff reduction techniques or infiltration systems; or

   2. The 1-year post-development peak *discharge* is less than or equal to 2.0 cfs without detention or velocity controls; or

   3. The site *directly discharges* into a fifth order or larger water body (stream, river, or lake), or tidal waters, where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.

iii. *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams, or

2. A downstream analysis reveals that *overbank* control is not required.

iv. Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams, or

2. A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watersheds

i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):

1. Reduce the WQv by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24-hour design storm over the post-developed watershed and must be calculated in accordance with the criteria in Section 4.3 of the DM; or

2. Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part II.C.2.b.i.1. due to *site limitations* must direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv must be documented in the *SWPPP*. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the *SWPPP* must include

documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.5 of the DM. The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. The CPv requirement does not apply when:

1. Reduction of the entire CPv is achieved by application of runoff reduction techniques or infiltration systems; or

2. The 1-year post-development peak *discharge* is less than or equal to 2.0 cfs; or

3. The site *directly discharges* to tidal waters, or a fifth order or larger water body (stream, river, or lake) where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.

iii. *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams; or

2. A downstream analysis reveals that *overbank* control is not required.

iv. Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

1. the site *directly discharges* to tidal waters or fifth order or larger streams; or

2. A downstream analysis reveals that *overbank* control is not required.

c. *Sizing Criteria* for *Redevelopment Activity*

i. Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* must be addressed by one of the following options, as outlined in Section 9.2.1. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C) must calculate the WQv in accordance with Section 4.3 of the DM. All other *redevelopment activities* must calculate the WQv in accordance with Section 4.2 of the DM.

1. Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the DM must be applied to all newly created pervious areas; or

2. Capture and treat 100% of the required WQv, for a minimum of 25% of the disturbed redevelopment *impervious area*, by implementation of standard SMPs or reduced by application of runoff reduction techniques; or

3. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a volume-based alternative SMP, as defined in Section 9.4 of the DM; or

4. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a flow-through alternative SMP sized to treat the peak rate of runoff from the WQv design storm; or

5. Application of a combination of 1 through 4 above that provide a weighted average of at least two of the above methods. Application of this method must be in accordance with the criteria in Section 9.2.1(A)(V) of the DM; or

6. If there is an existing SMP located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 through 5 above.

ii. Channel Protection Volume (CPv) is not required if there is 0% change to hydrology that increases the *discharge* rate and volume from the project site.

iii. *Overbank* Flood Control (Qp) is not required if there is 0% change to hydrology that increases the *discharge* rate from the project site.

iv. Extreme Flood Control (Qf) is not required if there is 0% change to hydrology that increases the *discharge* rate from the project site.

d. *Sizing Criteria* for Combination of *Redevelopment Activity* and *New Development*

Construction projects, that include both *new development* and *redevelopment activity*, must use SMPs that meet the *sizing criteria* calculated as an aggregate of the *sizing criteria* in Part II.C.2.a. or b. for the *new development* portion of the project and Part II.C.2.c. for the *redevelopment activity* portion of the project.

Part III. Stormwater Pollution Prevention Plan (SWPPP)

A. General *SWPPP* Requirements

1. A *SWPPP* must be prepared and implemented by the *owner or operator* of all *construction activity* covered by this permit. All authorized *discharges* must be identified in the *SWPPP*. The *SWPPP* must document the selection, design, installation, implementation and maintenance of the control measures and

practices that will be used to meet the effluent limitations in Part II.B. and, where applicable, the SMP requirements in Part II.C.

2. The *SWPPP* must demonstrate consideration in narrative format of the future physical risks due to climate change pursuant to the Community Risk and Resiliency Act (CRRA), 6 NYCRR Part 490, and associated guidance.

    a. The owner or operator must consider:

        i. the following physical risks due to climate change:

            (i) increasing temperature; and

            (ii) increasing precipitation; and

            (iii) increasing variability in precipitation, including chance of drought; and

            (iv) increasing frequency and severity of flooding; and

            (v) rising sea level; and

            (vi) increasing storm surge; and

            (vii) shifting ecology.

        ii. for each of the following:

            (i) overall site planning; and

            (ii) location, elevation, and sizing of:

                a. control measures and practices; and

                b. conveyance system(s); and

                c. detention system(s).

3. The *SWPPP* must describe the erosion and sediment control practices and where required, SMPs that will be used and/or constructed to reduce the *pollutants* in *stormwater discharges* and to assure compliance with the

requirements of this permit. In addition, the *SWPPP* must identify potential sources of pollution which may reasonably be expected to affect the quality of *stormwater discharges*.

4. All *SWPPPs*, that require the SMP component in accordance with Part III.B.2., must be prepared by a *qualified professional*.

5. The *owner or operator* must keep the *SWPPP* current so that, at all times, it accurately documents the erosion and sediment control practices that are being used or will be used during construction, and all SMPs that will be constructed on the site. At a minimum, the *owner or operator* must modify the *SWPPP*, including construction drawings:

   a. whenever the current provisions prove to be ineffective in *minimizing pollutants* in *stormwater discharges* from the site; and

   b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*; and

   c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* NYSDEC, or other regulatory authority; and

   d. to document the final construction conditions in an as-built drawing.

6. NYSDEC may notify the *owner or operator* at any time that the *SWPPP* does not meet one or more of the minimum requirements of this permit. The notification must be in writing and identify the provisions of the *SWPPP* that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by NYSDEC, the *owner or operator* must make the required changes to the *SWPPP* and submit written notification to NYSDEC that the changes have been made. If the *owner or operator* does not respond to NYSDEC's comments in the specified time frame, NYSDEC may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4.

7. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting, and maintaining the erosion and sediment control practices included in the *SWPPP* and the

contractor(s) and subcontractor(s) that will be responsible for constructing the SMPs included in the *SWPPP*. The *owner or operator* must have each of the contractors and subcontractors identify at least one person from their company to be *trained contractor* that will be responsible for implementation of the *SWPPP*. The *owner or operator* must ensure that at least one *trained contractor* is on site daily when soil disturbance activities are being performed.

The *owner or operator* must have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before the *commencement of construction activities*:

> "I hereby certify under penalty of law that I understand and agree to comply with the requirements of the *SWPPP* and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the requirements of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) Construction General Permit (CGP) for Stormwater Discharges from Construction Activities and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the *SWPPP* that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for *SWPPP* implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* must attach the certification statement(s) to the copy of the *SWPPP* that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the *SWPPP* after the *commencement of construction activities*, they must also sign the certification statement and provide the information listed above prior to performing *construction activities*.

B. Required *SWPPP* Contents

1. Erosion and sediment control component - The *owner or operator* must prepare a *SWPPP* that includes erosion and sediment control practices.

    a. Erosion and sediment control practices must be designed:

        i. in conformance with the BB; or

        ii. *equivalent* to the BB if deviating from Part III.B.1.a.i.

    b. If the erosion and sediment control practices are designed in conformance with Part III.B.1.a.ii., the *SWPPP* must include a demonstration of *equivalence* to the BB.

    c. At a minimum, the erosion and sediment control component of the *SWPPP* must include the following:

        i. Background information about the scope of the project, including the location, type and size of project; and

        ii. A site map/construction drawing(s) with north arrows for the project, including a general location map. At a minimum, the site map must show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the *stormwater discharge*(s) and receiving surface water(s); and

        iii. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG); and

        iv. A phasing plan for the project and sequencing plans for all *phases*, both of which must address clearing and grubbing, excavation and grading, utility and infrastructure installation, *final stabilization*,

and any other *construction activity* at the site that will result in soil disturbance.

1. The phasing plan must include:

    a. a map delineating and labeling the limits of soil disturbance for all *phases* of a project; and

    b. a table identifying the order and intended schedule of when each *phase* will begin and end its sequencing plan. The table must identify the total disturbed area for each *phase* at any one time and the total disturbed area for the overall project at any one time all on one timeline showing all overlapping quantities of disturbed area at any one time; and

2. A sequencing plan for a specific *phase* must include:

    a. a table indicating the order and intended schedule of *construction activities* within a *phase*, and corresponding construction drawings with a description of the work to be performed; and

    b. all permanent and *temporary stabilization* measures; and

v. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented; and

vi. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice; and

vii. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any

temporary sediment basins and structural practices that will be used to divert flows from exposed soils; and

viii. A maintenance inspection schedule for the contractor(s) and subcontractor(s) identified in Part III.A.7. to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule must be in accordance with the requirements in the BB technical standard; and

ix. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the *stormwater discharges*; and

x. A description and location of any *stormwater discharges* associated with industrial activity other than construction at the site, including, but not limited to, *stormwater discharges* from asphalt plants and concrete plants located on the *construction site*; and

xi. Identification of any elements of the design that are not in conformance with the design criteria in the BB technical standard. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. SMP component – The *owner or operator* of *construction activity* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs.

   a. SMPs must be designed in conformance with the applicable *sizing criteria* in Part II.C.2.a., c., or d.; and

   b. SMPs must be designed in conformance with the *performance criteria*:

      i. in the DM; or

      ii. *equivalent* to the DM if deviating from Part III.B.2.b.i.; or

      iii. in the New York State Stormwater Management Design Manual, dated January 2015 (2015 Design Manual), or *equivalent* to it, if the following criteria are met:

1. The eNOI is submitted in accordance with Part I.D. before January 29, 2027 for *construction activities* that are either:

    a. subject to governmental review and approval:

        i. where the *owner or operator* made any application to that governmental entity prior to the effective date of this permit; and

        ii. such application included a *SWPPP* developed using the 2015 Design Manual or *equivalent* to it; or

    b. not subject to governmental review and approval:

        i. where a fiscal allocation for the *construction activities* has been developed and approved by a governmental entity; and

        ii. the *SWPPP* was developed using the 2015 Design Manual or *equivalent* to it; and

c. If SMPs are designed in conformance with Part III.B.2.b.ii., the *SWPPP* must include the reason(s) for the deviation or alternative design and a demonstration of *equivalence* to the DM; and

d. If SMPs are designed in conformance with Part III.B.2.b.iii., the *SWPPP* must include supporting information or documentation demonstrating that Part III.B.2.b.iii.1.a. or b. apply; and

e. The SMP component of the *SWPPP* must include the following:

    i. Identification of all SMPs to be constructed as part of the project, including which option the SMP designs conform to, either Part III.B.2.b.i., ii., or iii. Include the dimensions, material specifications and installation details for each SMP; and

    ii. A site map/construction drawing(s) showing the specific location and size of each SMP; and

iii. A Stormwater Modeling and Analysis Report that includes:

(i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points; and

(ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and SMPs; and

(iii) Results of *stormwater* modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre- and post-development runoff rates and volumes for the different storm events; and

(iv) Summary table, with supporting calculations, which demonstrates that each SMP has been designed in conformance with the *sizing criteria* included in the DM; and

(v) Identification of any *sizing criteria* that is not required based on the requirements included in Part II.C.; and

(vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the DM. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the DM.

iv. Soil testing results and locations (test pits, borings); and

v. Infiltration test results, when required in accordance with Part III.B.2.a.; and

vi. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each SMP. The plan must identify the entity

that will be responsible for the long-term operation and maintenance of each practice; and

3. Enhanced Phosphorus Removal Standards - The *owner or operator* of *construction activity* identified in Table 2 of Appendix B that is located in a watershed identified in Appendix C must prepare a *SWPPP* that includes SMPs designed in conformance with the applicable *sizing criteria* in Part II.C.2.b., c., or d. and the *performance criteria* Enhanced Phosphorus Removal Standards included in the DM. At a minimum, the SMP component of the *SWPPP* must meet the requirements of Part III.B.2.

C. Required *SWPPP* Components by Project Type

Owners or operators of *construction activities*, identified in Table 1 of Appendix B, are required to prepare a *SWPPP* that only includes erosion and sediment control practices designed in accordance with Part III.B.1. *Owners or operators* of the *construction activities*, identified in Table 2 of Appendix B, must prepare a *SWPPP* that also includes SMPs designed in accordance with Part III.B.2 or 3.

For the entire area of disturbance, including the entire *common plan of development or sale* if applicable, the owner or operator must evaluate every bullet from Appendix B Table 1 and Table 2 separately. If bullets from both Table 1 and Table 2 apply, the *SWPPP* must include erosion and sediment control practices for all *construction activities* but SMPs for only those portions of the *construction activities* that fall under Table 2 bullet(s).

Part IV. Inspection and Maintenance Requirements

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures), and all SMPs identified in the *SWPPP*, are inspected and maintained in accordance with Part IV.B. and C.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity*, identified in Tables 1 and 2 of Appendix B, must have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being

implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor must:

a. if the corrective action does not require engineering design:

    i. begin implementing corrective actions within one business day; and

    ii. complete the corrective actions within five business days; or

b. if the corrective action requires engineering design:

    i. begin the engineering design process within five business days; and

    ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.

2. For *construction sites* where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections in accordance with Part IV.B.1. The *trained contractor* must begin conducting the maintenance inspections in accordance with Part IV.B.1. as soon as soil disturbance activities resume.

3. For *construction sites* where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections in accordance with Part IV.B.1. if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational.

C. *Qualified Inspector* Inspection Requirements

1. With the exception of the following *construction activities* identified in Tables 1 and 2 of Appendix B, a *qualified inspector* must conduct site inspections for all other *construction activities* identified in Tables 1 and 2 of Appendix B:

    a. the construction of a single-family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than or equal to five (5) acres and is

not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D; and

b. the construction of a single-family home that involves soil disturbances of one (1) or more acres but less than or equal to five (5) acres and is not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D; and

c. construction on *agricultural property* that involves soil disturbances of one (1) or more acres but less than five (5) acres; and

d. *construction activities* located in the New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances of 5,000 square feet or more, but less than one acre.

2. The *qualified inspector* must conduct site inspections in accordance with the following timetable:

a. For *construction sites* where soil disturbance activities are on-going, the *qualified inspector* must conduct a site inspection at least once every seven (7) calendar days; or

b. For *construction sites* where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part I.E.6. to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days; or

c. For *construction sites* where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* must conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas under the jurisdiction of a *Traditional Land Use Control MS4 Operator,* the *Traditional Land Use Control MS4 Operator* (provided the *Traditional Land Use Control MS4 Operator* is not the *owner or operator* of the *construction activity*) by hard copy or email prior to reducing the inspections to this frequency and again by hard copy or email prior to re-commencing construction; or

d. For *construction sites* where soil disturbance activities have been shut down with partial project completion, the requirement to have the *qualified inspector* conduct inspections ceases if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1., the *Traditional Land Use Control MS4 Operator(s)* (provided the *Traditional Land Use Control MS4 Operator(s)* are not the *owners or operators* of the *construction activity*) in writing prior to the shutdown and again in writing prior to resuming *construction activity*. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* must terminate coverage by meeting the requirements of Part V; or

e. For *construction sites* involving soil disturbance of one (1) or more acres that *directly discharge* to one of the 303(d) segments listed in Appendix D or is located in one of the watersheds listed in Appendix C, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* must inspect:

   a. all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness; and

   b. all SMPs under construction to ensure that they are constructed in conformance with the *SWPPP*; and

   c. all areas of disturbance that have not achieved *final stabilization*; and

   d. all points of *discharge* to *surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site*; and

   e. all points of *discharge* from the *construction site*.

4. The *qualified inspector* must prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report must include and/or address all of the following, for all *construction activities* except those listed in Part IV.C.1.:

   a. Permit identification number; and

   b. Date and time of inspection; and

   c. Name and title of person(s) performing inspection; and

   d. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection, including the temperature at the time of the inspection; and

   e. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This must include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow; and

   f. A description of the condition of all *surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This must include identification of any *discharges* of sediment to the *surface waters of the State*; and

   g. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance; and

   h. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced; and

   i. Description and sketch (map) of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection; and

   j. Estimates, in square feet or acres, of the following areas:

i. Total area with active soil disturbance (not requiring either *temporary stabilization* or *final stabilization*); and

ii. Total area with inactive soil disturbance (requiring either *temporary stabilization* or *final stabilization*); and

iii. Total area that has achieved *temporary stabilization*; and

iv. Total area that has achieved *final stabilization*; and

k. Current stage of construction of all SMPs and identification of all *construction activity* on site that is not in conformance with the *SWPPP* and technical standards; and

l. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the SMP(s); and

m. Identification and status of all corrective actions that were required by previous inspection; and

n. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* must attach color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* must also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* must attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* must notify the *owner or operator*, and appropriate contractor or subcontractor identified in Part III.A.7., of any corrective actions that need to be taken. The contractor or subcontractor must:

a. if the corrective action does not require engineering design:

i. begin implementing corrective actions within one business day; and

ii. complete the corrective actions within five business days; or

b. if the corrective action requires engineering design:

i. begin the engineering design process within five business days; and

ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.

6. All inspection reports must be signed by the *qualified inspector.* In accordance with Part I.E.3., the inspection reports must be maintained on site with the *SWPPP*.

Part V. How to Terminate CGP Coverage

A. Electronic Notice of Termination (eNOT) Submittal

The eNOT contains questions to ensure requirements in Part V.A. have been met.

1. An *owner or operator* must terminate coverage when one or more of the following requirements have been met:

a. Total project completion:

i. all *construction activity* identified in the *SWPPP* has been completed; and

ii. all areas of disturbance have achieved *final stabilization*; and

iii. all temporary, structural erosion and sediment control measures have been removed; and

iv. all SMPs have been constructed in conformance with the *SWPPP* and are operational; and

v. an as-built drawing has been prepared; or

b. Planned shutdown with partial project completion:

   i. all soil disturbance activities have ceased; and

   ii. all areas disturbed as of the project shutdown date have achieved *final stabilization*; and

   iii. all temporary, structural erosion and sediment control measures have been removed; and

   iv. all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational; and

   v. an as-built drawing has been prepared; or

c. In accordance with Part I.G. Change of Owner or Operator; or

d. The *owner or operator* has obtained coverage under an alternative general SPDES permit or an individual SPDES permit.

2. For *construction activities* that require *qualified inspector* inspections in accordance with Part IV.C.1. and have met Part V.A.1.a. or b., the *owner or operator* must have the *qualified inspector* perform a final site inspection prior to submitting the eNOT. The *qualified inspector* must, by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice(s)" certification statements on the eNOT, certify that all the requirements in Part V.A.1.a. or b. have been achieved.

3. For *construction activities* that are subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1. and meet Part V.A.1.a. or b., the *owner or operator* must have the *Traditional Land Use Control MS4 Operator(s)* sign the "MS4 Acceptance" statement on the eNOT in accordance with the requirements in Part VII.J. A *Traditional Land Use Control MS4 Operator* official, by signing this statement, determined that it is acceptable for the *owner or operator* to submit the eNOT in accordance with the requirements of this Part. A *Traditional Land Use Control MS4 Operator* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) when required in Part V.A.2.

4. For *construction activities* that require SMPs and meet Part V.A.1.a. or b., the *owner or operator* must, prior to submitting the eNOT, ensure one of the following:

    a. for SMP(s) that were constructed by a private entity, but will be owned, operated, and maintained by a public entity, the SMP(s) and any right-of-way(s) needed to operate and maintain such practice(s) have been deeded to the municipality in which the practice(s) is located; or

    b. for SMP(s) that are privately owned, but will be operated and maintained by a public entity, an executed operation and maintenance agreement is in place with the municipality that will operate and maintain the SMP(s); or

    c. for SMP(s) that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record; or

    d. for SMP(s) that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility, the *owner or operator* has policies and procedures in place that ensure operation and maintenance of the practices in accordance with the operation and maintenance plan.

5. An *owner or operator* that has met the requirements of Part V.A.1., 2., 3., and 4. must request termination of coverage under this permit by submitting a complete Notice of Termination form electronically using a NYSDEC approved form.[5]

    a. The owner's or operator's coverage is terminated as of the termination date indicated in the Letter of Termination (LOT), which is sent by NYSDEC after a complete eNOT is submitted.

[5] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

Part VI. Record Retention and Reporting

A. Record Retention

The *owner or operator* must retain a copy of the documents listed in Part I.E.3. and a copy of the LOT for a period of at least five years from the date that NYSDEC accepts a complete NOT submitted in accordance with Part V.

B. Reporting

Except for the eNOI, the signature forms associated with the eNOI, and the eNOT, all other written correspondence requested by NYSDEC, including individual permit applications, must be sent to the address of the appropriate DOW (SPDES) Program contact at the Regional Office listed in Appendix E.

Part VII. Standard Permit Requirements

For the purposes of this permit, examples of contractors and subcontractors include: third-party maintenance and construction contractors.

A. Duty to Comply

The *owner or operator*, and all contractors or subcontractors, must comply with all requirements of this permit. Any non-compliance with the requirements of this permit constitutes a violation of the New York State Environmental Conservation Law (ECL), and its implementing regulations, and is grounds for enforcement action. Filing of a request for termination of coverage under this permit, or a notification of planned changes or anticipated non-compliance, does not limit, diminish or stay compliance with any requirements of this permit.

B. Need to Halt or Reduce Activity Not a Defense

The necessity to halt or reduce the *construction activity* regulated by this permit, in order to maintain compliance with the requirements of this permit, must not be a defense in an enforcement action.

C. Penalties

There are substantial criminal, civil, and administrative penalties associated with violating the requirements of this permit. Fines of up to $37,500 per day for each

violation and imprisonment for up to 15 years may be assessed depending upon the nature and degree of the offense.

D. False Statements

Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, or other document filed or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance must, upon conviction, be punished in accordance with ECL §71-1933 and or New York State Penal Law Articles 175 and 210.

E. Re-Opener Clause

Upon issuance of this permit, a determination has been made on the basis of a submitted Notice of Intent, plans, or other available information, that compliance with the specified permit requirements will reasonably protect classified water use and assure compliance with applicable *water quality standards*. Satisfaction of the requirements of this permit notwithstanding, if operation pursuant to this permit causes or contributes to a condition in contravention of State *water quality standards* or guidance values, or if NYSDEC determines that a modification is necessary to prevent impairment of the best use of the waters or to assure maintenance of *water quality standards* or compliance with other provisions of ECL Article 17 or the Clean Water Act (CWA), or any regulations adopted pursuant thereto, NYSDEC may require such modification and the Commissioner may require abatement action to be taken by the *owner or operator* and may also prohibit such operation until the modification has been implemented.

F. Duty to Mitigate

The *owner or operator*, and its contractors and subcontractors, must take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

G. Requiring Another General Permit or Individual SPDES Permit

NYSDEC may require any *owner or operator* authorized to *discharge* in accordance with this permit to apply for and obtain an individual SPDES permit or apply for authorization to *discharge* in accordance with another general SPDES permit.

1. Cases where an individual SPDES permit or authorization to discharge in accordance with another general SPDES permit may be required include, but is not limited to the following:

a. the *owner or operator* is not in compliance with the conditions of this permit or does not meet the requirements for coverage under this permit; and

b. a change has occurred in the availability of demonstrated technology or practices for the control or abatement of *pollutants* applicable to the *point source*; and

c. new effluent limitation guidelines or new source performance standards are promulgated that are applicable to *point sources* authorized to *discharge* in accordance with this permit; and

d. existing effluent limitation guidelines or new source performance standards that are applicable to *point sources* authorized to *discharge* in accordance with this permit are modified; and

e. a water quality management plan containing requirements applicable to such *point sources* is approved by NYSDEC; and

f. circumstances have changed since the time of the request to be covered so that the *owner or operator* is no longer appropriately controlled under this permit, or either a temporary or permanent reduction or elimination of the authorized *discharge* is necessary; and

g. the *discharge* is in violation of section 17-0501 of the ECL; and

h. the *discharge(s)* is a significant contributor of *pollutants*. In making this determination, NYSDEC may consider the following factors:

   i. the location of the *discharge(s)* with respect to *surface waters of the State*; and

   ii. the size of the *discharge(s)*; and

   iii. the quantity and nature of the *pollutants discharged* to *surface waters of the State*; and

   iv. other relevant factors including compliance with other provisions of ECL Article 17, or the CWA.

2. When NYSDEC requires any *owner or operator* authorized by this permit to apply for an individual SPDES permit as provided for in this subdivision, it must notify the *owner or operator* in writing that a permit application is required. This notice must include a brief statement of the reasons for this decision, an application

form, a statement setting a time for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from the *owner's or operator's* receipt of the notification letter, whereby the authorization to *discharge* under this permit must be terminated. NYSDEC may grant additional time upon demonstration, to the satisfaction of the RWE,[6] that additional time to apply for an alternative authorization is necessary or where NYSDEC has not provided a permit determination in accordance with 6 NYCRR Part 621.

3. When an individual SPDES permit is issued to an *owner or operator* authorized to *discharge* under this permit for the same *discharge(s)*, this permit authorization for *construction activities* authorized under the individual SPDES permit is automatically terminated on the effective date of the individual SPDES permit unless termination is earlier in accordance with 6 NYCRR Part 750.

H. Duty to Provide Information

The *owner or operator* must furnish to NYSDEC, within five business days, unless otherwise set forth by NYSDEC, any information that NYSDEC may request to determine whether cause exists to determine compliance with this permit or to determine whether cause exists for requiring an individual SPDES permit in accordance with 6 NYCRR 750-1.21(e) (see Part VII.G. Requiring Another General Permit or Individual Permit).

The *owner or operator* must make available to NYSDEC, for inspection and copying, or furnish to NYSDEC within 25 business days of receipt of a NYSDEC request for such information, any information retained in accordance with this permit.

Except for Part I.D.4. and 5. and Part I.G., the following applies: where the *owner or operator* becomes aware that it failed to submit any relevant facts on the Notice of Intent, or submitted incorrect information in a Notice of Intent or in any report to NYSDEC, the *owner or operator* must submit such facts or corrected information to NYSDEC within five business days.

I. Extension

In the event a new permit is not issued and effective prior to the expiration of this permit, and this permit is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, then the *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the requirements of this permit until a new permit is issued and effective.

[6] The Regional Water Manager where a DEC Region does not have a RWE.

J. Signatories and Certification

The Notice of Intent, Notice of Termination, and reports required by this permit must be signed as provided in 40 CFR §122.22.

1. All Notices of Intent and Notices of Termination must be signed as follows:

    a. For a corporation. By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

        (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or

        (ii) the manager of one or more manufacturing, production or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for Notice of Intent or Notice of Termination requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

        Note: NYSDEC does not require specific assignments or delegations of authority to responsible corporate officers identified in 40 CFR §122.22(a)(1)(i). NYSDEC will presume that these responsible corporate officers have the requisite authority to sign the Notice of Intent or Notice of Termination unless the corporation has notified NYSDEC to the contrary. Corporate procedures governing authority to sign a Notice of Intent or Notice of Termination may provide for assignment or delegation to applicable corporate positions under 40 CFR §122.22(a)(1)(ii) rather than to specific individuals.

    b. For a partnership or sole proprietorship. By a general partner or the proprietor, respectively.

c. For a municipality, State, Federal, or other public agency. By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

    1. the chief executive officer of the agency; or

    2. a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. All reports required by this permit, and other information requested by NYSDEC, must be signed by a person described in Part VII.J.1., or by a duly authorized representative of that person. A person is a duly authorized representative only if:

    a. The authorization is made in writing by a person described in Part VII.J.1. or using the Duly Authorized Form, found on the DEC website; and

    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

    c. The written authorization is submitted to NYSDEC.

3. Changes to authorization. If an authorization under Part VII.J.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the *construction activity*, a new authorization satisfying the requirements of Part VII.J.2. must be submitted to NYSDEC prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under Part VII.J.1. or 2. must make the following certification:

    I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who

manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

5. Electronic reporting. If documents described in Part VII.J.1. or 2. are submitted electronically by or on behalf of the *construction activity* with coverage under this permit, any person providing the electronic signature for such documents must meet all relevant requirements of this section, and must ensure that all of the relevant requirements of 40 CFR Part 3 (including, in all cases, subpart D to Part 3) (Cross-Media Electronic Reporting) and 40 CFR Part 127 (NPDES Electronic Reporting Requirements) are met for that submission.

K. Inspection and Entry

The *owner or operator* must allow NYSDEC, the USEPA Regional Administrator, the applicable county health department, or any authorized representatives of those entities, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the *discharge*, upon the presentation of credentials and other documents as may be required by law, to:

1. enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the requirements of this permit; and

2. have access to and copy at reasonable times, any records that must be kept under the requirements of this permit, including records required to be maintained for purposes of operation and maintenance; and

3. inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

4. sample or monitor at reasonable times, for the purposes of assuring general SPDES permit compliance or as otherwise authorized by the CWA or ECL, any substances or parameters at any location; and

5. enter upon the property of any contributor to the regulated facility or activity under authority of the *owner or operator*.

L. Confidentiality of Information

The following must not be held confidential: this permit, the fact sheet for this permit, the name and address of any *owner or operator*, effluent data, the Notice of Intent, and information regarding the need to obtain an individual permit or an alternative general SPDES permit. This includes information submitted on forms themselves and any attachments used to supply information required by the forms (except information submitted on usage of substances). Upon the request of the *owner or operator*, NYSDEC must make determinations of confidentiality in accordance with 6 NYCRR Part 616, except as set forth in the previous sentence. Any information accorded confidential status must be disclosed to the Regional Administrator upon his or her written request. Prior to disclosing such information to the Regional Administrator, NYSDEC will notify the Regional Administrator of the confidential status of such information.

M. Other Permits May Be Required

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

N. NYSDEC Orders or Civil Decrees/Judgments

The issuance of this permit by the NYSDEC, and the coverage under this permit by the *owner or operator*, does not supersede, revoke, or rescind any existing order on consent or civil Decree/Judgment, or modification to any such documents or to any order issued by the Commissioner, or any of the terms, conditions, or requirements contained in such order or modification therefore, unless expressly noted.

O. Property Rights

Coverage under this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations, nor does it obviate the necessity of obtaining the assent of any other jurisdiction as required by law for the *discharge* authorized.

P. Compliance with Interstate Standards

If the *construction activity* covered by this permit originates within the jurisdiction of an interstate water pollution control agency, then the *construction activity* must also comply with any applicable effluent standards or *water quality standards* promulgated by that interstate agency and as set forth in this permit for such *construction activities*.

Q. Oil and Hazardous Substance Liability

Coverage under this permit does not affect the imposition of responsibilities upon, or the institution of any legal action against, the *owner or operator* under section 311 of the CWA, which must be in conformance with regulations promulgated pursuant to section 311 governing the applicability of section 311 of the CWA to *discharges* from facilities with *NPDES* permits, nor must such issuance preclude the institution of any legal action or relieve the *owner or operator* from any responsibilities, liabilities, or penalties to which the *owner or operator* is or may be subject pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. section 9601 et seq. (CERCLA).

R. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, must not be affected thereby.

S. NYSDEC Approved Forms

The *owner or operator* must provide all relevant information that is requested by NYSDEC, and required by this permit, on all NYSDEC approved forms.

APPENDIX A – Abbreviations and Definitions

Abbreviations

APO – Agency Preservation Officer
BB – New York State Standards and Specifications for Erosion and Sediment Control (Blue Book), dated November 2016
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
CPv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DM – New York State Stormwater Management Design Manual (Design Manual), dated July 31, 2024
DOW – Division of Water
EAF – Environmental Assessment Form
ECL – chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law
EPA – U.S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
NYC – The City of New York
NYCDEP – The City of New York Department of Environmental Protection
NYSDEC – The New York State Department of Environmental Conservation
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RR – Runoff Reduction
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SMP – Post-Construction Stormwater Management Practice
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit. If a word is not italicized in the permit, use its common definition.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property – the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023).

Alter Hydrology from Pre- to Post-Development Conditions – the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer System – a sewer system which conveys sewage and *stormwater* through a single pipe system to a publicly owned treatment works.

Commence (Commencement of) Construction Activities – the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the *SWPPP*. See definition for "*Construction Activity(ies)*" also.

Common Plan of Development or Sale – a contiguous area where multiple separate and distinct *construction activities* are occurring, or may occur, under one plan. The "common plan" of development or sale is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQR) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating *construction activities* may occur on a specific plot. A *common plan of development or sale* is comprised of two or more *phases*.

Common plan of development or sale does not include separate and distinct *construction activities* that are occurring, or may occur, under one plan that are at least 1/4 mile apart provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Construction Activity(ies) – identified within 40 CFR 122.26(b)(14)(x), 122.26(b)(15)(i), and 122.26(b)(15)(ii), any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, mechanized logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal.

Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, which is excluded from the calculation of the soil disturbance for a project. Routine maintenance includes, but is not limited to:

- Re-grading of gravel roads or parking lots; and
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of the ditch; and
- Replacement of existing culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of a ditch; and
- Replacement of existing bridges that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity beneath the bridges; and
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch); and
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*; and
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material; and
- Long-term use of equipment storage areas at or near highway maintenance facilities; and
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*; and
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts; and
- Maintenance of ski trails including brush hog use and mowing; and
- Above ground snowmaking pipe replacement; and
- Replacement of existing utility poles; etc.

Construction Site – the land area where *construction activity(ies)* will occur. See also the definitions for "*Commence (Commencement of) Construction Activities"* and "*Common Plan of Development or Sale."*

Dewatering – the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Directly Discharge(s)(ing) (to a specific surface waterbody) – runoff flows from a *construction site* by overland flow and the first point of *discharge* is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system and the first point of *discharge* from the separate storm sewer system is the specific surface waterbody.

Discharge(s)(d) – any addition of any *pollutant* to waters of the State through an outlet or *point source*.

Embankment – an earthen or rock slope that supports a road/highway.

Equivalent (Equivalence) – the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization – all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other *equivalent* stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

Historic Property – any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) – all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and compacted gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – not technologically possible, or not economically practicable and achievable considering best industry practices.

Minimize(ing)(ation) – reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer System (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

1. owned or operated by a State, city, town, village, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, *stormwater*, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA, that *discharges* to *surface waters of the State*; and

2. designed or used for collecting or conveying *stormwater*; and

3. which is not a *combined sewer system*; and

4. which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Natural Buffer(s) – an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – any land disturbance that does not meet the definition of *Redevelopment Activity* included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

Nonpoint Source(s) – any source of water pollution or *pollutants* which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank – flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator – the person, persons, or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit requirements.

Performance Criteria – the six performance criteria for each group of SMPs in Chapters 5 and 6 of the technical standard, New York State Stormwater Management Design Manual (DM), dated July 31, 2024. These include feasibility, conveyance, pretreatment, treatment, landscaping, and maintenance. It does not include the *Sizing Criteria* (i.e. WQv, RRv, CPv, Qp and Qf) in Part I.C.2. of the permit.

Phase – a defined area in which *construction activities* are occurring or will occur separate from other defined area(s).

Point Source – any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be *discharged*.

Pollutant(s) – dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast *discharged* into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq.

Qualified Inspector – a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, *New York State Erosion and Sediment Control Certificate Program* holder or other NYSDEC endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any SMPs that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional – a person that is knowledgeable in the principles and practices of *stormwater* management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other NYSDEC endorsed individual(s). Individuals preparing *SWPPPs* that require the SMP component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the *SWPPP* that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – the disturbance and reconstruction of existing *impervious area*, including *impervious areas* that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Renewable Energy – electricity or thermal energy generated by renewable energy systems through use of the following technologies: solar thermal, photovoltaics, on land and offshore wind, hydroelectric, geothermal electric, geothermal ground source heat, tidal energy, wave energy, ocean thermal, and fuel cells which do not utilize a fossil fuel resource in the process of generating electricity.

Site Limitations – site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical *site limitations* include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of *site limitations* shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – the criteria included in Part I.C.2 of the permit that are used to size SMPs. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

Steep Slope – land area designated on the current United States Department of Agriculture (USDA) Soil Survey as Soil Slope Phase D, (provided the map unit name or description is inclusive of slopes greater than 25%), or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Stormwater – that portion of precipitation that, once having fallen to the ground, is in excess of the evaporative or infiltrative capacity of soils, or the retentive capacity of surface features, which flows or will flow off the land by surface runoff to waters of the State.

Streambank – the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – a project specific report, including construction drawings, that among other things: describes the *construction activity(ies)*, identifies the potential sources of pollution at the *construction site*; describes and shows the *stormwater* controls that will be used to control the *pollutants* (i.e. erosion and sediment controls; for many projects, includes SMPs); and identifies procedures the *owner or operator* will implement to comply with the requirements of the permit. See Part III of the permit for a complete description of the information that must be included in the *SWPPP*.

Surface Waters of the State – shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization – exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Load (TMDL) – the sum of the allowable loads of a single *pollutant* from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a *pollutant* that a waterbody can receive and still meet *water quality standards*, and an allocation of that amount to the *pollutant's* sources. A TMDL stipulates Waste Load Allocations (WLA) for *point source discharges*, Load Allocations (LA) for *nonpoint source*s, and a margin of safety (MOS).

Traditional Land Use Control MS4 Operator – a city, town, or village with land use control authority that is authorized to *discharge* under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Trained Contractor – an employee from the contracting (construction) company, identified in Part III.A.7., that has received four (4) hours of NYSDEC endorsed training

in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.7., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, *New York State Erosion and Sediment Control Certificate Program* holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity).

The *trained contractor* is responsible for the day-to-day implementation of the *SWPPP*.

Tree Clearing – *construction activities* limited to felling and removal of trees.

Tree clearing does not include hand felling and leaving the trees in place with no support from mechanized equipment, which is not considered *construction activity* requiring coverage under this permit.

Water Quality Standard – such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following *construction activities* that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single-family home not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family residential subdivisions with 25% or less *impervious cover* at total site build-out and not located in one of the watersheds listed in Appendix C and not *directly discharging* to one of the 303(d) segments listed in Appendix D
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.
- Structural agricultural conservation practices as identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023) that include construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.

The following *construction activities* that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

- All construction activities located in the New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

Within the municipal boundaries of NYC:

- Stand-alone road reconstruction, where the total soil disturbance from only that road construction, is less than one (1) acre of land.

The following *construction activities*:

- Installation of underground linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation, *stormwater* retrofits, stream restoration, and resiliency projects that reconstruct shoreline areas to address sea level rise
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an *impervious cover*
- Cross-country ski trails, walking/hiking trails, and mountain biking trails, including a de minimis parking lot (maximum 10 spaces total, sized for passenger cars) with 35 feet minimum preservation of undisturbed area downgradient from the parking lot
- Dam rehabilitation (the structure of the dam itself)
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are not part of residential, commercial, or institutional development;
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path, or walking path.

Table 1 (Continued)
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following *construction activities*:

- Slope stabilization
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Vegetated open space (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) that do not *alter hydrology from pre- to post-development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre- to post-development* conditions
- Demolition where vegetation will be established, and no *redevelopment activity* is planned[1]
- Installation or replacement of either an overhead electric transmission line or a ski lift tower that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*.
- Solar array field areas that have tables elevated off the ground, spaced one table width apart, do not *alter hydrology from pre- to post-development conditions*, and address water quality volume and runoff reduction volume by maintaining sheet flow on slopes less than 8%.
- Structural agricultural conservation practices as identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023) that do not include construction or reconstruction of *impervious area* and do not *alter hydrology from pre- to post-development* conditions.
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary *impervious areas* that will be restored to pre-construction conditions once the *construction activity* is complete (in this context, "temporary" means the *impervious area* will be in place for two years or less)
- Other *construction activities* that do not include the construction or reconstruction of *impervious area*, and do not *alter hydrology from pre- to post-development* conditions, and are not listed in Table 2.

1. If the site is redeveloped in the future, a new eNOI must be submitted.

Table 2
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPS)

The following *construction activities*:

- Single-family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family home that disturbs five (5) or more acres of land
- Single-family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% *impervious cover* at total site build-out
- Single-family residential subdivisions that involve soil disturbances of between 20,000 square feet and one (1) acre of land within the municipal boundaries of NYC with greater than 25% *impervious cover* at total site build-out
- Single-family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single-family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a *common plan of development or sale* that will ultimately disturb five (5) or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Creation of 5,000 square feet or more of *impervious area* in the municipal boundaries of NYC
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of *impervious area* (>5% of disturbed area) or *alter the hydrology from pre- to post-development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) that involves soil disturbance greater than five acres.
- Structural agricultural conservation practices as identified in Table II in the “Agricultural Best Management Practice Systems Catalogue” (dated June 2023) that involves soil disturbance greater than five acres and include the construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.
- Facility buildings, including ski lodges, restroom buildings, pumphouses, ski lift terminals, and maintenance and groomer garages
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills; including creation of landfills or capping landfills.
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTWs, water treatment plants, and water storage tanks
- Golf courses
- Office complexes

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPS)

The following *construction activities*:

- Permanent laydown yards and equipment storage lots
- Playgrounds that include the construction or reconstruction of *impervious area*
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surfaces
- Road construction or reconstruction, outside the municipal boundaries of NYC
- Road construction within the municipal boundaries of NYC
- Stand-alone road reconstruction, within the municipal boundaries of NYC where the total soil disturbance from that road reconstruction involves soil disturbance of one (1) acre or more of land
- Parking lot construction or reconstruction (as with all Table 2 bullets, this includes parking lots constructed as part of the *construction activities* listed in Table 1, unless a Table 1 bullet specifies otherwise)
- Athletic fields (natural grass) that include the construction or reconstruction of *impervious area* (>5% of disturbed area) or *alter the hydrology from pre- to post-development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations, and well drilling pads, surfaced with *impervious cover,* and constructed as part of an overhead electric transmission line, wind-power, cell tower, oil or gas well drilling, sewer or water main, ski lift, or other linear utility project
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of a residential, commercial or institutional development
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of highway construction or reconstruction
- Solar array field areas on slopes greater than 8% that cannot maintain sheet flow using management practices identified in the BB or the DM
- Solar array field areas on slopes less than 8% that will *alter the hydrology from pre- to post-development* conditions
- Solar array field areas with tables that are not elevated high enough to achieve *final stabilization* beneath the tables
- Traditional *impervious areas* associated with solar development (e.g. roads, buildings, transformers)
- Utility pads surfaced with *impervious cover*, including electric vehicle charging stations
- All other *construction activities* that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre- to post-development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of *construction activities* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs designed in conformance with the Enhanced Phosphorus Removal Standards included in the DM technical standard.

- Entire New York City Watershed located east of the Hudson River – Figure 1
- Onondaga Lake Watershed – Figure 2
- Greenwood Lake Watershed – Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

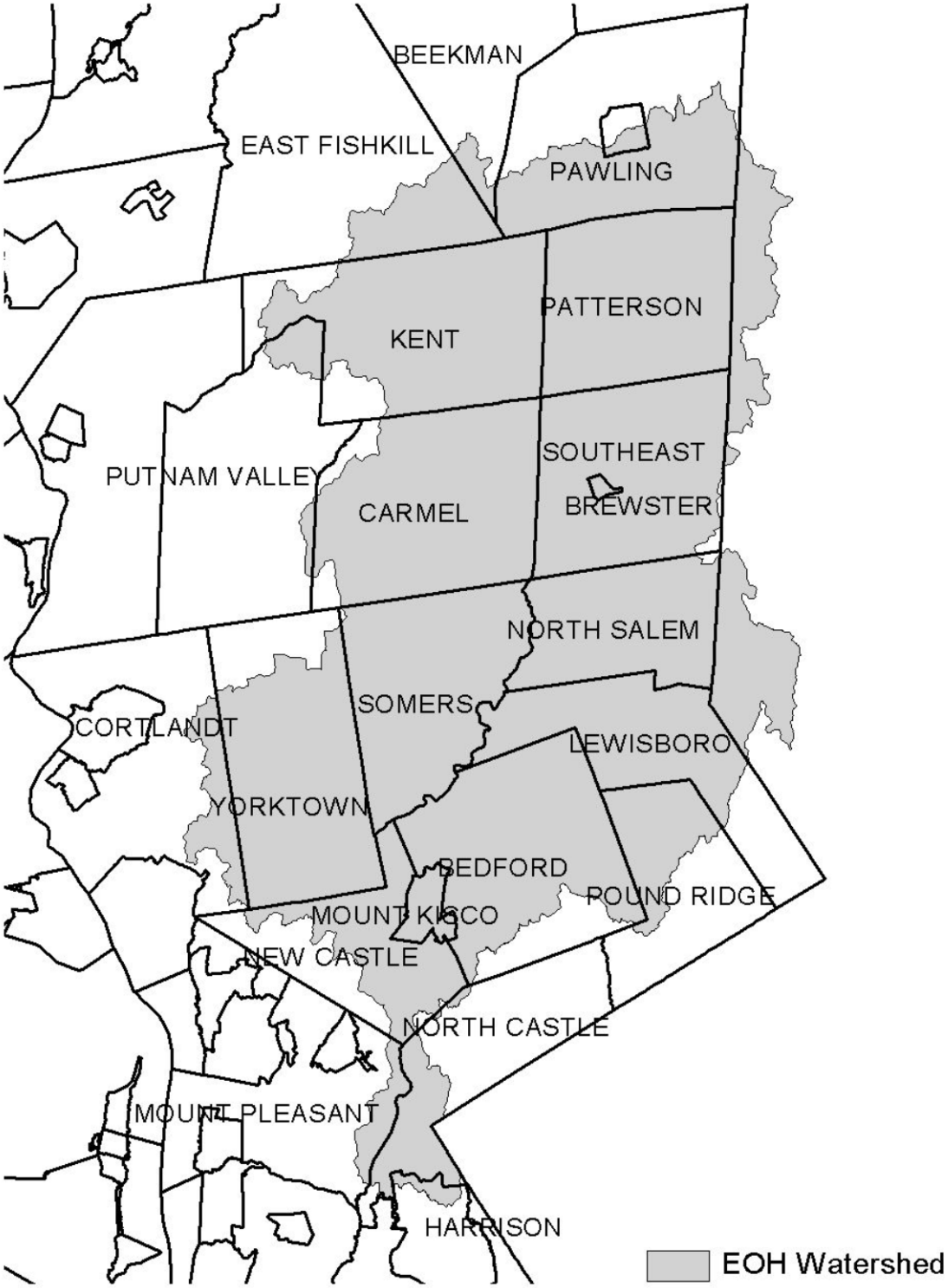


Figure 2 - Onondaga Lake Watershed



Figure 3 - Greenwood Lake Watershed

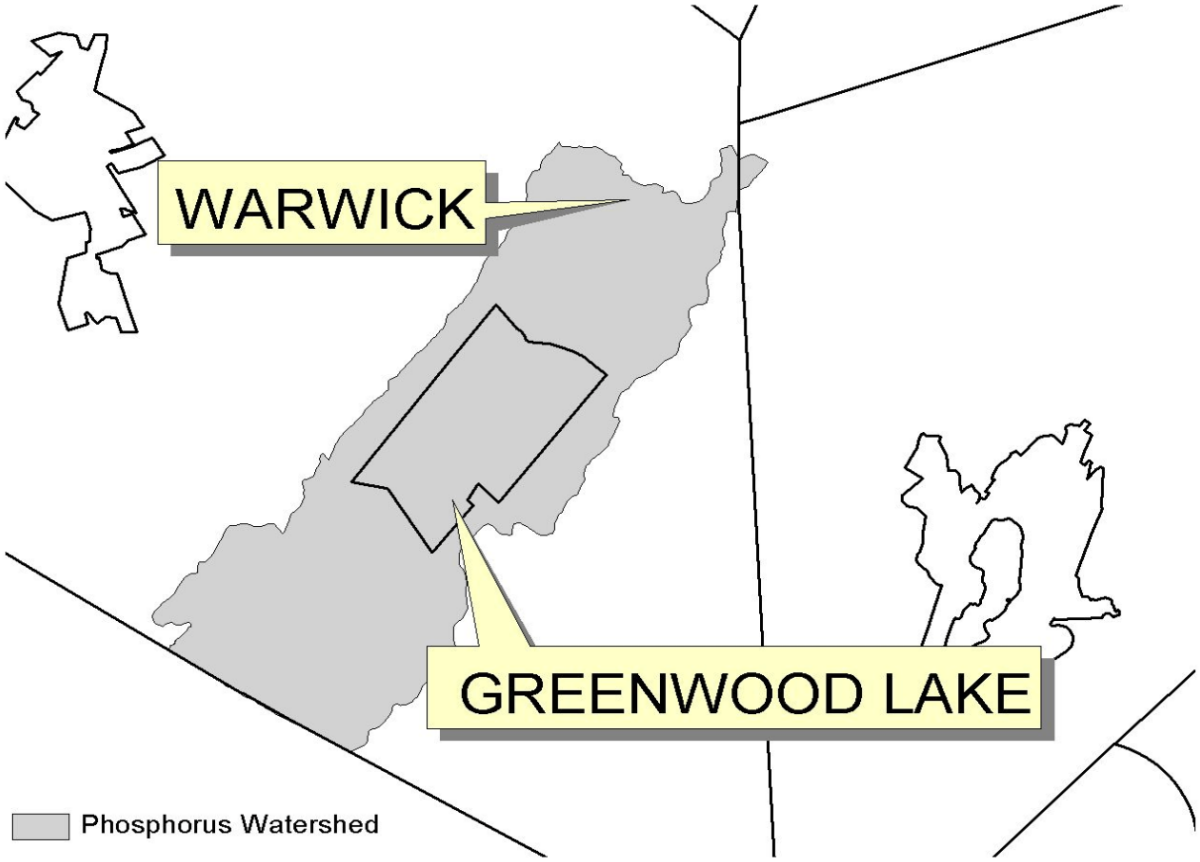


Figure 4 - Oscawana Lake Watershed

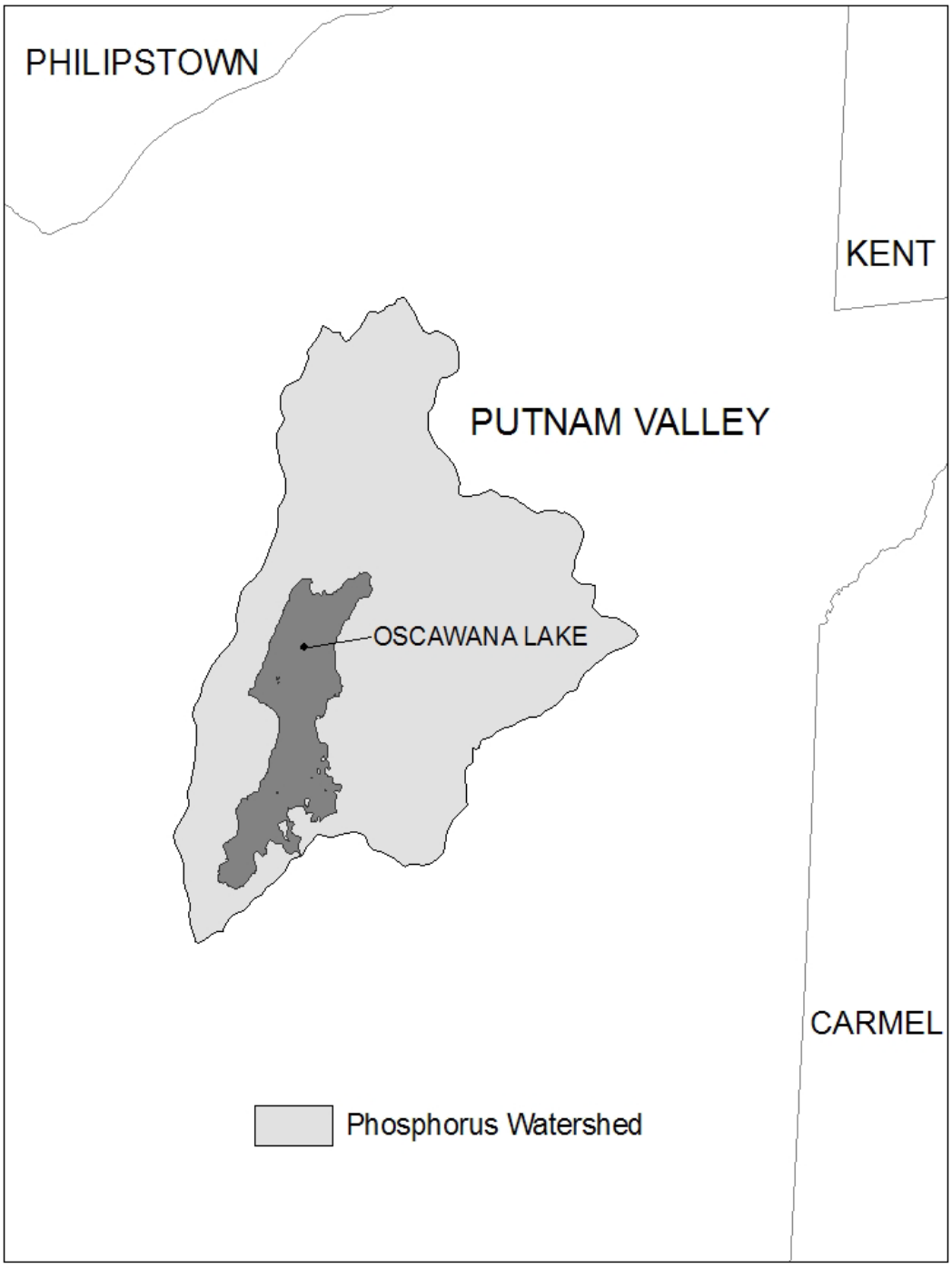
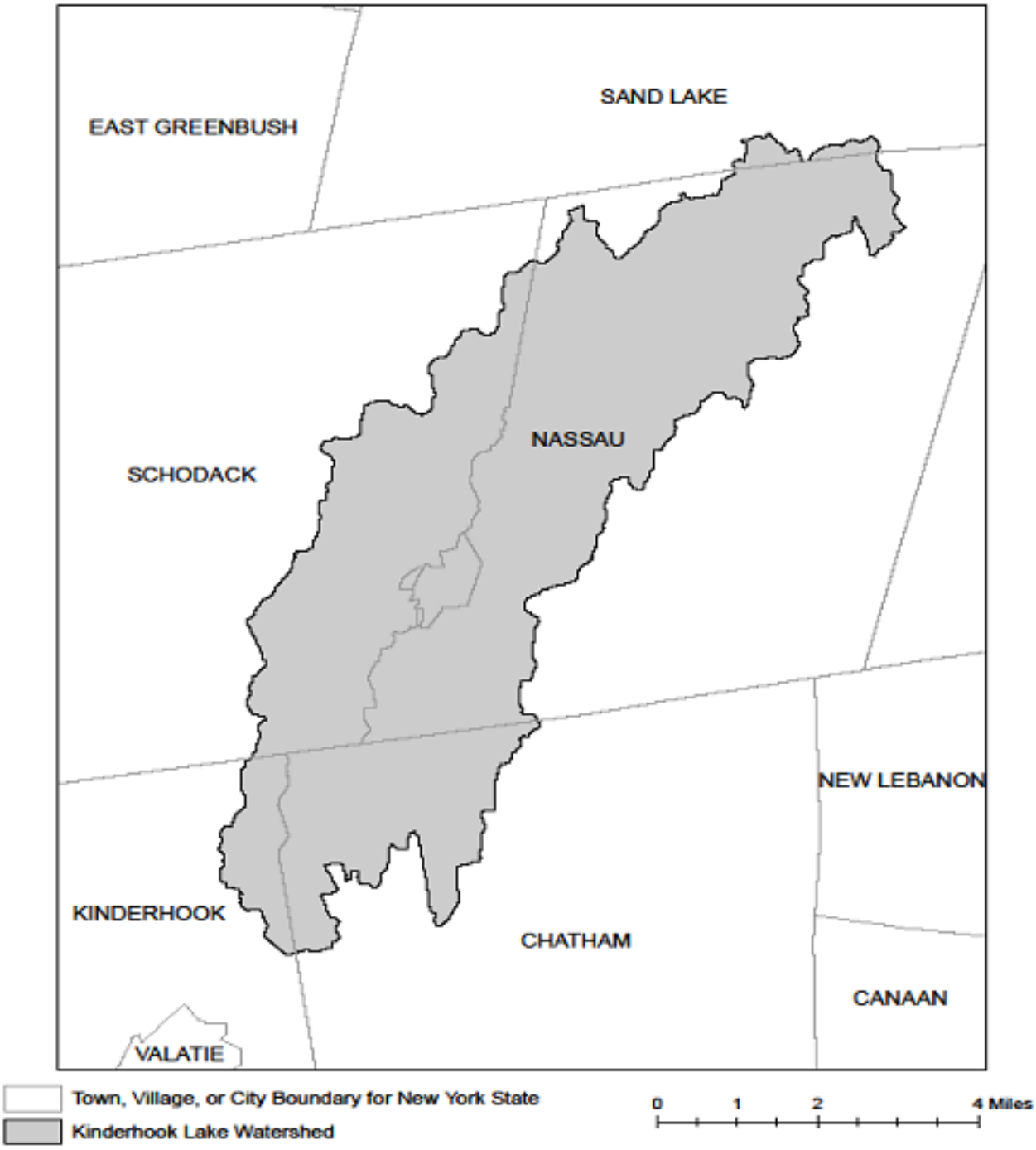


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Impaired Waterbodies (by Construction Related Pollutants)

List of waterbodies impaired by *pollutants* related to *construction activity*, including turbidity, silt/sediment, and nutrients (e.g. nitrogen, phosphorus). This list is a subset of "The Final New York State 2018 Section 303(d) List of Impaired Waters Requiring a TMDL" dated June 2020.

County	Waterbody	Pollutant
Albany	Ann Lee (Shakers) Pond, Stump Pond (1201-0096)	Phosphorus
Albany	Lawsons Lake (1301-0235)	Phosphorus
Allegany	Amity Lake, Saunders Pond (0403-0054)	Phosphorus
Allegany	Andover Pond (0403-0056)	Phosphorus
Bronx	Reservoir No.1/Lake Isle (1702-0075)	Phosphorus
Bronx	Van Cortlandt Lake (1702-0008)	Phosphorus
Broome	Blueberry, Laurel Lakes (1404-0033)	Phosphorus
Broome	Fly Pond, Deer Lake (1404-0038)	Phosphorus
Broome	Minor Tribs to Lower Susquehanna (0603-0044)	Phosphorus
Broome	Whitney Point Lake/Reservoir (0602-0004)	Phosphorus
Cattaraugus	Allegheny River/Reservoir (0201-0023)	Phosphorus
Cattaraugus	Beaver Lake/Alma Pond (0201-0073)	Phosphorus
Cattaraugus	Case Lake (0201-0020)	Phosphorus
Cattaraugus	Linlyco/Club Pond (0201-0035)	Phosphorus
Cayuga	Duck Lake (0704-0025)	Phosphorus
Cayuga	Owasco Inlet, Upper, and tribs (0706-0014)	Nutrients
Chautauqua	Chadakoin River and tribs (0202-0018)	Phosphorus
Chautauqua	Hulburt/Clymer Pond (0202-0079)	Phosphorus
Chautauqua	Middle Cassadaga Lake (0202-0002)	Phosphorus
Clinton	Great Chazy River, Lower, Main Stem (1002-0001)	Silt/Sediment
Columbia	Robinson Pond (1308-0003)	Phosphorus
Cortland	Dean Pond (0602-0077)	Phosphorus
Dutchess	Fallkill Creek (1301-0087)	Phosphorus
Dutchess	Hillside Lake (1304-0001)	Phosphorus
Dutchess	Wappingers Lake (1305-0001)	Phosphorus
Dutchess	Wappingers Lake (1305-0001)	Silt/Sediment
Erie	Beeman Creek and tribs (0102-0030)	Phosphorus
Erie	Delaware Park Pond (0101-0026)	Phosphorus
Erie	Ellicott Creek, Lower, and tribs (0102-0018)	Phosphorus
Erie	Ellicott Creek, Lower, and tribs (0102-0018)	Silt/Sediment
Erie	Green Lake (0101-0038)	Phosphorus
Erie	Little Sister Creek, Lower, and tribs (0104-0045)	Phosphorus
Erie	Murder Creek, Lower, and tribs (0102-0031)	Phosphorus

Erie	Rush Creek and tribs (0104-0018)	Phosphorus
Erie	Scajaquada Creek, Lower, and tribs (0101-0023)	Phosphorus
Erie	Scajaquada Creek, Middle, and tribs (0101-0033)	Phosphorus
Erie	Scajaquada Creek, Upper, and tribs (0101-0034)	Phosphorus
Erie	South Branch Smoke Cr, Lower, and tribs (0101-0036)	Phosphorus
Erie	South Branch Smoke Cr, Lower, and tribs (0101-0036)	Silt/Sediment
Genesee	Bigelow Creek and tribs (0402-0016)	Phosphorus
Genesee	Black Creek, Middle, and minor tribs (0402 0028)	Phosphorus
Genesee	Black Creek, Upper, and minor tribs (0402-0048)	Phosphorus
Genesee	Bowen Brook and tribs (0102-0036)	Phosphorus
Genesee	LeRoy Reservoir (0402-0003)	Phosphorus
Genesee	Mill Pond (0402-0050)	Phosphorus
Genesee	Oak Orchard Cr, Upper, and tribs (0301-0014)	Phosphorus
Genesee	Oatka Creek, Middle, and minor tribs (0402-0031)	Phosphorus
Genessee	Tonawanda Cr, Middle, Main Stem (0102-0002)	Phosphorus
Greene	Schoharie Reservoir (1202-0012)	Silt/Sediment
Greene	Sleepy Hollow Lake (1301-0059)	Silt/Sediment
Herkimer	Steele Creek tribs (1201-0197)	Phosphorus
Herkimer	Steele Creek tribs (1201-0197)	Silt/Sediment
Kings	Hendrix Creek (1701-0006) 18	Nitrogen
Kings	Prospect Park Lake (1701-0196)	Phosphorus
Lewis	Mill Creek/South Branch, and tribs (0801-0200)	Nutrients
Livingston	Christie Creek and tribs (0402-0060)	Phosphorus
Livingston	Conesus Lake (0402-0004)	Phosphorus
Livingston	Mill Creek and minor tribs (0404-0011)	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs (0402-0033)	Phosphorus
Monroe	Buck Pond (0301-0017)	Phosphorus
Monroe	Cranberry Pond (0301-0016)	Phosphorus
Monroe	Durand, Eastman Lakes (0302-0037)	Phosphorus
Monroe	Lake Ontario Shoreline, Western (0301-0069) 9	Phosphorus
Monroe	Long Pond (0301-0015)	Phosphorus
Monroe	Mill Creek and tribs (0302-0025)	Phosphorus 2
Monroe	Mill Creek/Blue Pond Outlet and tribs (0402-0049)	Phosphorus
Monroe	Minor Tribs to Irondequoit Bay (0302-0038)	Phosphorus
Monroe	Rochester Embayment - East (0302-0002) [9]	Phosphorus
Monroe	Rochester Embayment - West (0301-0068) 9	Phosphorus
Monroe	Shipbuilders Creek and tribs (0302-0026)	Phosphorus 2
Monroe	Thomas Creek/White Brook and tribs (0302-0023)	Phosphorus

Nassau	Bannister Creek/Bay (1701-0380)	Nitrogen
Nassau	Beaver Lake (1702-0152)	Phosphorus
Nassau	Browswere Bay (1701-0383)	Nitrogen
Nassau	Camaans Pond (1701-0052)	Phosphorus
Nassau	East Meadow Brook, Upper, and tribs (1701-0211)	Silt/Sediment
Nassau	East Rockaway Channel (1701-0381)	Nitrogen
Nassau	Glen Cove Creek, Lower, and tribs (1702-0146)	Silt/Sediment
Nassau	Grant Park Pond (1701-0054)	Phosphorus
Nassau	Hempstead Bay, Broad Channel (1701-0032)	Nitrogen
Nassau	Hempstead Lake (1701-0015)	Phosphorus
Nassau	Hewlett Bay (1701-0382)	Nitrogen
Nassau	Hog Island Channel (1701-0220)	Nitrogen
Nassau	Massapequa Creek, Upper, and tribs (1701-0174)	Phosphorus
Nassau	Milburn/Parsonage Creeks, Upp, and tribs (1701-0212)	Phosphorus
Nassau	Reynolds Channel, East (1701-0215) [12]	Nitrogen
Nassau	Reynolds Channel, West (1701-0216) 12	Nitrogen
Nassau	Tidal Tribs to Hempstead Bay (1701-0218)	Nitrogen
Nassau	Tribs (fresh) to East Bay (1701-0204)	Silt/Sediment
Nassau	Tribs (fresh) to East Bay (1701-0204)	Phosphorus
Nassau	Tribs to Smith Pond/Halls Pond (1701-0221)	Phosphorus
Nassau	Woodmere Channel (1701-0219)	Nitrogen
New York	Harlem Meer (1702-0103)	Phosphorus
New York	The Lake in Central Park (1702-0105)	Phosphorus
Niagara	Bergholtz Creek and tribs (0101-0004)	Phosphorus
Niagara	Hyde Park Lake (0101-0030)	Phosphorus
Niagara	Lake Ontario Shoreline, Western (0301-0053) 9	Phosphorus
Niagara	Lake Ontario Shoreline, Western (0301-0072) 9	Phosphorus
Oneida	Ballou, Nail Creeks (1201-0203)	Phosphorus
Onondaga	Ley Creek and tribs (0702-0001) 10	Nutrients (phosphorus)
Onondaga	Minor Tribs to Onondaga Lake (0702-0022) 10	Nutrients (phosphorus)
Onondaga	Minor Tribs to Onondaga Lake (0702-0022) 10	Nitrogen (NH3, NO2)
Onondaga	Onondaga Creek, Lower (0702-0023) 10	Nutrients (phosphorus)
Onondaga	Onondaga Creek, Lower, and tribs (0702-0023)	Turbidity
Onondaga	Onondaga Creek, Middle, and tribs (0702-0004)	Turbidity
Onondaga	Onondaga Creek, Upper, and tribs (0702-0024)	Turbidity
Ontario	Great Brook and minor tribs (0704-0034)	Phosphorus 2
Ontario	Great Brook and minor tribs (0704-0034)	Silt/Sediment

Ontario	Hemlock Lake Outlet and minor tribs (0402-0013)	Phosphorus
Ontario	Honeoye Lake (0402-0032)	Phosphorus
Orange	Brown Pond Reservoir (1303-0013)	Phosphorus
Orange	Lake Washington (1303-0012)	Phosphorus
Orange	Minor Tribs to Middle Wallkill (1306-0061)	Phosphorus
Orange	Monhagen Brook and tribs (1306-0074)	Phosphorus
Orange	Orange Lake (1301-0008) [16]	Phosphorus
Orange	Quaker Creek and tribs (1306-0025)	Phosphorus
Orange	Wallkill River, Middle, Main Stem (1306-0038)	Phosphorus
Orange	Wallkill River, Upper, and Minor tribs (1306-0017)	Phosphorus
Orleans	Glenvwood Lake (0301-0041)	Phosphorus
Orleans	Lake Ontario Shoreline, Western (0301-0070) 9	Phosphorus
Orleans	Lake Ontario Shoreline, Western (0301-0071) 9	Phosphorus
Oswego	Lake Neatahwanta (0701-0018)	Nutrients (phosphorus)
Oswego	Pleasant Lake (0703-0047)	Phosphorus
Putnam	Lost Lake, Putnam Lake (1302-0053)	Phosphorus
Putnam	Minor Tribs to Croton Falls Reservoir (1302-0001)	Phosphorus
Queens	Bergen Basin (1701-0009) 18	Nitrogen
Queens	Jamaica Bay, Eastern, and tribs, Queens (1701-0005) 18	Nitrogen
Queens	Kissena Lake (1702-0258)	Phosphorus
Queens	Meadow Lake (1702-0030)	Phosphorus
Queens	Shellbank Basin (1701-0001) 18	Nitrogen
Queens	Willow Lake (1702-0031)	Phosphorus
Rensselaer	Nassau Lake (1310-0001)	Phosphorus
Rensselaer	Snyders Lake (1301-0043)	Phosphorus
Richmond	Grassmere Lake/Bradys Pond (1701-0357)	Phosphorus
Rockland	Congers Lake, Swartout Lake (1501-0019)	Phosphorus
Rockland	Rockland Lake (1501-0021)	Phosphorus
Saratoga	Ballston Lake (1101-0036)	Phosphorus
Saratoga	Dwaas Kill and tribs (1101-0007)	Phosphorus
Saratoga	Dwaas Kill and tribs (1101-0007)	Silt/Sediment
Saratoga	Lake Lonely (1101-0034)	Phosphorus
Saratoga	Round Lake (1101-0060)	Phosphorus
Saratoga	Tribs to Lake Lonely (1101-0001)	Phosphorus
Schenectady	Collins Lake (1201-0077)	Phosphorus
Schenectady	Duane Lake (1311-0006)	Phosphorus
Schenectady Lake	Mariaville Lake (1201-0113)	Phosphorus
Schuyler	Cayuta Lake (0603-0005)	Phosphorus

Seneca	Reeder Creek and tribs (0705-0074)	Phosphorus
St.Lawrence	Black Lake Outlet, Black Lake (0906-0001)	Phosphorus
St.Lawrence	Fish Creek and minor tribs (0906-0026)	Phosphorus
Steuben	Smith Pond (0502-0012)	Phosphorus
Suffolk	Agawam Lake (1701-0117)	Phosphorus
Suffolk	Big/Little Fresh Ponds (1701-0125)	Phosphorus
Suffolk	Canaan Lake (1701-0018)	Phosphorus
Suffolk	Canaan Lake (1701-0018)	Silt/Sediment
Suffolk	Fresh Pond (1701-0241)	Phosphorus
Suffolk	Great South Bay, East (1701-0039)	Nitrogen
Suffolk	Great South Bay, Middle (1701-0040)	Nitrogen
Suffolk	Great South Bay, West (1701-0173)	Nitrogen
Suffolk	Lake Ronkonkoma (1701-0020)	Phosphorus
Suffolk	Mattituck/Marratooka Pond (1701-0129)	Phosphorus
Suffolk	Mill and Seven Ponds (1701-0113)	Phosphorus
Suffolk	Millers Pond (1702-0013)	Phosphorus
Suffolk	Moriches Bay, East (1701-0305)	Nitrogen
Suffolk	Moriches Bay, West (1701-0038)	Nitrogen
Suffolk	Quantuck Bay (1701-0042)	Nitrogen
Suffolk	Shinnecock Bay and Inlet (1701-0033)	Nitrogen
Suffolk	Tidal Tribs to West Moriches Bay (1701-0312)	Nitrogen
Sullivan	Bodine, Mongomery Lakes (1401-0091)	Phosphorus
Sullivan	Davies Lake (1402-0047)	Phosphorus
Sullivan	Evens Lake (1402-0004)	Phosphorus
Sullivan	Pleasure Lake (1402-0055)	Phosphorus
Sullivan	Swan Lake (1401-0063)	Phosphorus
Tompkins	Cayuga Lake, Southern End (0705-0040)	Phosphorus
Tompkins	Cayuga Lake, Southern End (0705-0040)	Silt/Sediment
Ulster	Ashokan Reservoir (1307-0004)	Silt/Sediment
Ulster	Esopus Creek, Lower, Main Stem (1307-0010) [17]	Turbidity
Ulster	Esopus Creek, Middle, Main Stem (1307-0003) 17	Turbidity
Ulster	Esopus Creek, Upper, and minor tribs (1307-0007)[3]	Silt/Sediment
Ulster	Wallkill River, Lower, Main Stem (1306-0027)	Phosphorus
Warren	Hague Brook and tribs (1006-0006)	Silt/Sediment
Warren	Huddle/Finkle Brooks and tribs (1006-0003)	Silt/Sediment
Warren	Indian Brook and tribs (1006-0002)	Silt/Sediment
Warren	Lake George (1006-0016) and tribs	Silt/Sediment
Warren	Tribs to Lake George, East Shore (1006-0020)	Silt/Sediment
Warren	Tribs to Lake George, Lk.George Village (1006-0008)	Silt/Sediment

Washington	Wood Cr/Champlain Canal and tribs (1005-0036)	Phosphorus
Westchester	Lake Katonah (1302-0136)	Phosphorus
Westchester	Lake Lincolndale (1302-0089)	Phosphorus
Westchester	Lake Meahagh (1301-0053)	Phosphorus
Westchester	Lake Mohegan (1301-0149)	Phosphorus
Westchester	Lake Shenorock (1302-0083)	Phosphorus
Westchester	Mamaroneck River, Lower (1702-0071)	Silt/Sediment
Westchester	Mamaroneck River, Upp, & minor tribs (1702-0123)	Silt/Sediment
Westchester	Saw Mill River (1301-0007)	Phosphorus
Westchester	Saw Mill River, Middle, and tribs (1301-0100)	Phosphorus
Westchester	Sheldrake River (1702-0069)	Phosphorus
Westchester	Sheldrake River (1702-0069)	Silt/Sedimnt
Westchester	Silver Lake (1702-0040)	Phosphorus
Westchester	Teatown Lake (1302-0150)	Phosphorus
Westchester	Truesdale Lake (1302-0054)	Phosphorus
Westchester	Wallace Pond (1301-0140)	Phosphorus

APPENDIX E – List of NYSDEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	220 White Plains Road, Suite 110 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	5786 WIDEWATERS PARKWAY SYRACUSE, NY 13214-1867 TEL. (315) 426-7438	5786 WIDEWATERS PARKWAY SYRACUSE, NY 13214-1867 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	700 DELAWARE AVENUE BUFFALO, NY 14209-2999 TEL. (716) 851-7165	700 DELAWARE AVENUE BUFFALO, NY 14209-2999 TEL. (716) 851-7070

APPENDIX F – SWPPP Preparer Certification Form

The SWPPP Preparer Certification Form required by this permit begins on the following page.

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

Project/Site Name:	187 Clinton Street Development
eNOI Submission ID:	HQA-D5ZC-KT0GW
Owner/Operator Name:	Metro Group Properties, Inc.

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with the requirements of GP-0-25-001. I certify under penalty of law that the SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Kelsey	R	Farr, PE
SWPPP Preparer First Name	MI	SWPPP Preparer Last Name

Kelsey Farr — Signature

01/13/2026 — Date

Revised: January 2025

APPENDIX G – MS4 SWPPP Acceptance Form

The MS4 SWPPP Acceptance Form required by this permit begins on the following page.

NEW YORK STATE | Department of Environmental Conservation

MS4 SWPPP Acceptance Form

for construction activities seeking authorization under the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	The Metro Group Properties, inc.
2. Contact Person:	Myles Monoghan
3. Street Address:	9 Northwood Lane
4. City/State/Zip:	Patchogue, NY 11772
II. Project Site Information	
5. Project/Site Name:	187 Clinton Street Development
6. Street Address:	187 Clinton Street
7. City/State/Zip:	Binghamton, NY 13905
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	Shane Dutton
9. Title/Position:	Assistant Engineer
10. Date Final SWPPP Reviewed and Accepted:	02/21/2025
IV. Regulated MS4 Information	
11. Name of MS4 Operator:	Binghamton
12. MS4 SPDES Permit Identification Number:	NY002 4414
13. Street Address:	38 Hawley ST
14. City/State/Zip:	Binghamton/NY/13901
15. Telephone Number:	(607) 772-7007

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in section II. of this form has been reviewed and meets the substantive requirements in the SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP). Note: The MS4 Operator, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 Operator does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name[1]:	Jared Kraham
Title/Position:	Mayor
Signature:	
Date:	2/21/25

VI. Additional Information

[1] Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.

APPENDIX H – NYCDEP SWPPP Acceptance/Approval Form

The City of New York Department of Environmental Protection (NYCDEP) SWPPP Acceptance/Approval form required by this permit begins on the following page.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Planning and Analysis
59-17 Junction Blvd., 9th Floor; Flushing, NY 11373

SWPPP Acceptance/Approval

Application Number:

I. Project Owner/Operator Information

1. Owner/Operator Name:
2. Contact Person:
3. Street Address:
4. City/State/Zip:

II. Project Site Information

5. Project/Site Name:
6. Street Address:
7. City/State/Zip:

III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance/Approval

8. SWPPP Reviewed by:
9. Title/Position: /
10. Date Final SWPPP Reviewed and Accepted:
11. Acceptance/Approval Expiration Date:

IV. Regulated MS4 Information for projects that require coverage under the NY State Pollution Discharge Elimination System General Permit for Stormwater Discharges from Construction Activity

12. Name of MS4: *CITY OF NEW YORK*
13. MS4 SPDES Permit Identification Number: *NY-0287890*
14. Contact Person:
15. Street Address: *59-17 Junction Blvd. 9th Floor*
16. City/State/Zip: *Flushing, NY 11373*
17. Telephone Number:

Projects in the MS4 area must submit a copy of this SWPPP Acceptance with a Notice of Intent for coverage under the NY SPDES General Permit for Stormwater Discharges from Construction Activity to: NYS Department of Environmental Conservation, Division of Water; 625 Broadway, 4th Floor; Albany, New York 12233-3505.

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).

Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Conditions of Acceptance/Approval and Additional Information

Projects in the MS4 area must submit a copy of this SWPPP Acceptance with a Notice of Intent for coverage under the NY SPDES General Permit for Stormwater Discharges from Construction Activity to: NYS Department of Environmental Conservation, Division of Water; 625 Broadway, 4th Floor; Albany, New York 12233-3505.

APPENDIX I – MS4 No Jurisdiction Form

The MS4 No Jurisdiction Form required by this permit begins on the following page.

MS4 No Jurisdiction Form

for construction activities seeking authorization under the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

I. Project Owner/Operator Information

a. Owner/Operator Name:

b. Contact Person:

c. Street Address:

d. City/State/Zip:

II. Project Site Information

a. Project/Site Name:

b. Street Address:

c. City/State/Zip:

d. eNOI Submission ID:

III. Traditional Land Use Control MS4 Operator Information

a. Name of MS4 Operator:

b. MS4 SPDES Permit ID Number: NYR20A

c. Street Address:

d. City/State/Zip:

e. Telephone Number:

IV. Certification Statement

In accordance with CGP Part I.D.2.b.ii.3., I hereby certify that the Traditional Land Use Control MS4 Operator identified in section III. of this form does not have review authority over the construction project identified in section II. of this form, which is owned/operated by the entity identified in section I. of this form. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

a. Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.:

b. Title/Position:

c. Signature:

d. Date:

APPENDIX J – Owner/Operator Certification Form

The Owner/Operator Certification Form required by this permit begins on the following page.

NEW YORK STATE | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b. or Part I.F.2. and 3., the completed form must be attached to the eNOI or the Request to Continue Coverage, and submitted to NYSDEC electronically.

Project/Site Name: 187 Clinton Street Developent

eNOI Submission ID: HQA-D5ZC-KT0GW

eNOI Submitted by: ☐ **Owner/Operator** ☐ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I hereby certify that I read, and will comply with, the GP-0-25-001 permit requirements. I understand that authorization to discharge under the permit for the project/site named above is dependent on receipt of a Letter of Authorization (LOA) or a Letter of Continued Coverage (LOCC) from the New York State Department of Environmental Conservation (NYSDEC) in accordance with CGP Part I.D.3.b. or Part I.F.4. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Robert L. Muchnick, Pres Metro Group Properties, Inc

Owner/Operator First Name | MI | Owner/Operator Last Name

, President

Signature

2-19-25

Date

Revised: January 2025

SITE PLAN/SKETCH

Inspector (print name)	**Date of Inspection**
Qualified Inspector (print name)	**Qualified Inspector Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes No NA

[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions at the outfalls?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease at the outfalls?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA

[ ] [ ] [ ] Is construction site litter, debris and spoils appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA

[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

3. Stabilized Construction Access

Yes No NA

[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

Runoff Control Practices

1. Excavation Dewatering

Yes No NA

[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

Runoff Control Practices (continued)

2. Flow Spreader

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

4. Stone Check Dam

Yes No NA

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Silt Fence and Linear Barriers

Yes No NA

[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation is ___% of design capacity.

Sediment Control Practices (continued)

2. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated; Filter Sock or Manufactured practices)

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
[ ] [ ] [ ] Manufactured insert fabric is free of tears and punctures.
[ ] [ ] [ ] Filter Sock is not torn or flattened and fill material is contained within the mesh sock.

Sediment accumulation ___% of design capacity.

3. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.
[ ] [ ] [ ] Sediment trap slopes and disturbed areas are stabilized.

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
[ ] [ ] [ ] Sediment basin dewatering pool is dewatering at appropriate rate.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design. All practices shall be maintained in accordance with their respective standards.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
   a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
   b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

CONR 8
(03/14)

SPDES STORMWATER POLLUTION PREVENTION PLAN (SWPPP) REVISION

JOB STAMP

Date: _____

Day of Week: S M T W T F S

Sheet No. ____ of ____

This form is to be used when revisions to the current Stormwater Pollution Prevention Plan (SWPPP) are required by SPDES General Permit for Stormwater Discharges from Construction Activity. The completed form must be filed in the Engineer's Field Office.

Reason for the Revision(s): Revision(s) were requested by NYSDEC: ☐ Yes ☐ No

Describe the Revision(s) to the SWPPP:

Engineer-in-Charge Signature: _____

EICs Name & Title: _____

Date Completed: _____

Copy to Contractor: _____

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Infiltration Stormwater Management Practices Level 1 Inspection Checklist

SMP ID #		**SMP Owner**		☐ Private ☐ Public
SMP Location (Address; Latitude & Longitude)				
	Latitude		**Longitude**	

Party Responsible for Maintenance	**System Type**		**Type of Site**
☐ Same as SMP Owner ☐ Other _____	☐ Seasonal ☐ Continuous Use ☐ Other	☐ Above Ground ☐ Below Ground	☐ Commercial ☐ Industrial ☐ Residential ☐ State

Inspection Date		**Inspection Time**	
Inspector			
Date of Last Inspection			

IN Drainage Area

Look for both pervious and impervious areas that are uphill from the Infiltration cell.

Problem (Check if Present)		**Follow-Up Actions**
	☐ Bare soil, erosion of the ground (rills washing out the dirt)	☐ Seed and straw areas of bare soil to establish vegetation. ☐ Fill in erosion areas with soil, compact, and seed and straw to get vegetation established. ☐ If a rill or small channel is forming, try to redirect water flowing to this area by creating a small berm or adding topsoil to areas that are heavily compacted. ☐ Other:

IN Drainage Area

Look for both pervious and impervious areas that are uphill from the Infiltration cell.

Problem (Check if Present)		Follow-Up Actions
		☐ Kick-Out to Level 2 Inspection: Large areas of soil have been eroded, or larger channels are forming. May require rerouting of flow paths.
☐ For Dry Wells: Leaves, sticks, or other debris in gutters and downspouts		☐ Remove all debris by hand. ☐ Other:
	☐ Piles of grass clippings, mulch, dirt, salt, or other materials	☐ Remove or cover piles of grass clippings, mulch, dirt, etc. ☐ Other:
	☐ Open containers of oil, grease, paint, or other substances	☐ Cover or properly dispose of materials; consult your local solid waste authority for guidance on materials that may be toxic or hazardous. ☐ Other:

IN Inlets

Look for all the places where water flows into the Infiltration practice.

Problem (Check if Present)	Follow-Up Actions
 ☐ Inlets are collecting grit and debris or grass/weeds are growing. Some water may not be getting into the Infiltration practice.	☐ Use a flat shovel to remove grit and debris (especially at curb inlets or openings). Parking lots generate fine grit that will accumulate at these spots. ☐ Pull out clumps of growing grass or weeds and scoop out the soil or grit that the plants are growing in. ☐ Remove any grass clippings, leaves, sticks, and other debris that is collecting at inlets. ☐ For pipes and ditches, remove sediment and debris that is partially blocking the pipe or ditch opening where it enters the Infiltration practice. ☐ Dispose of all material properly in an area where it will not re-enter the practice. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Inlets are blocked to the extent that most of the water does not seem to be entering the Infiltration practice.
☐ Some or all of the inlets are eroding so that rills, gullies, and other erosion is present, or there is bare dirt that is washing into the Infiltration practice.	☐ For small areas of erosion, smooth out the eroded part and apply rock or stone (e.g., river cobble) to prevent further erosion. Usually, filter fabric is placed under the rock or stone. ☐ In some cases, reseeding and applying erosion-control matting can be used to prevent further erosion. Some of these materials may be available at a garden center, but it may be best to consult a landscape contractor. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Erosion is occurring at most of the inlets and it looks like there is too much water that is concentrating at these points. The inlet design may have to be modified.

IN Infiltration Area

Examine the surface of the infiltration area and the observation well. Note: The following Problem and Follow-Up Actions apply to infiltration practice pretreatment areas also.

Problem (Check if Present)	Follow-Up Actions
 ☐ For grass-covered Infiltration practices: grass has grown very tall, *Photo credit: Stormwater Maintenance, LLC*	☐ Mow infiltration area at least twice per year. ☐ Other:
 ☐ For grass-covered Infiltration practices: sparse vegetation cover or bare spots	☐ Add topsoil (as needed), grass seed, straw, and water during the growing season to re-establish consistent grass coverage. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Sparse vegetation cover can be a sign that the infiltration area is not infiltrating at the proper rate and water is standing too long after a storm. The surface may be saturated or squishy, and the conditions do not enable grass to grow. This situation should be evaluated by a Level 2 Inspection and likely corrected by a qualified contractor.
☐ Minor areas of sediment, grit, trash, or other debris are accumulating on the surface.	☐ Use a shovel to scoop out minor areas of sediment or grit, especially in the spring after winter sanding materials may wash in and accumulate. Dispose of the material where it cannot re-enter the Infiltration practice. ☐ If removing the material creates a hole or low area, rake the surface smooth and level. ☐ Remove trash, debris, and other undesirable materials. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Sediment has accumulated more than 2-inches deep and covers 25% or more of the surface of the Infiltration area.

IN Infiltration Area

Examine the surface of the infiltration area and the observation well. Note: The following Problem and Follow-Up Actions apply to infiltration practice pretreatment areas also.

Problem (Check if Present)	Follow-Up Actions
 ☐ There is erosion on the surface; water seems to be carving out rills as it flows across the surface of the Infiltration area or sinkholes are forming in certain areas.	☐ For minor areas of erosion, try filling the eroded areas with clean topsoil, sand, or stone (whatever the existing cover is). ☐ If the problem recurs, you may have to use larger stone (e.g., river cobble) to fill in problem areas. ☐ Other: ☐ Kick-Out to Level 2 Inspection: The problem persists or the erosion is more than 3-inches deep and seems to be an issue with how water enters and moves through the infiltration area. ☐ Kick-Out to Level 2 Inspection: The problem does not seem to be caused by flowing water but a collapse or sinking of the surface (e.g., “sinkhole”) due to some underground problem.
 ☐ Observation well is damaged or cap is missing	☐ Kick-Out to Level 2 Inspection: Requires replacing pipes or caps.

IN Infiltration Area

Examine the surface of the infiltration area and the observation well. Note: The following Problem and Follow-Up Actions apply to infiltration practice pretreatment areas also.

Problem (Check if Present)	Follow-Up Actions
 ☐ Water still visible in the observation well more than 72 hours after a rain storm. The Infiltration practice does not appear to be draining properly.	☐ Kick-Out to Level 2 Inspection: This is generally a serious problem, and it will be necessary to activate a Level 2 Inspection.

IN Outlets

Locate and inspect all outlets.

Problem (Check if Present)	Follow-Up Actions
 ☐ Outlet obstructed with sediment, debris, trash, etc.	☐ Remove the debris and dispose of it where it cannot re-enter the infiltration area. ☐ Other:
	☐ Kick-Out to Level 2 Inspection: Outlet is completely obstructed; there is too much material to remove by hand or with simple hand tools.
☐ Rills or gullies are forming at outlet.	☐ For minor rills, fill in with soil, compact, and seed and straw to establish vegetation. ☐ Other:
	☐ Kick-Out to Level 2 Inspection: Rills are more than 2" to 3" deep and require more than just hand raking and re-seeding.

Additional Notes:

Inspector:_____ Date: _____

Complete the following if follow-up/corrective actions were identified during this inspection:

Certified Completion of Follow-Up Actions:

"I hereby certify that the follow-up/corrective actions identified in the inspection performed on _____ (DATE) have been completed and any required maintenance deficiencies have been adequately corrected."

Inspector/Operator: _____ Date: _____

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Infiltration Stormwater Management Practices Level 2 Inspection Checklist

SMP ID #		**SMP Owner**		☐ Private ☐ Public
SMP Location (Address; Latitude & Longitude)				
	Latitude		**Longitude**	

Party Responsible for Maintenance	**System Type**		**Type of Site**
☐ Same as SMP Owner ☐ Other _____	☐ Seasonal ☐ Continuous Use ☐ Other	☐ Above Ground ☐ Below Ground	☐ Commercial ☐ Industrial ☐ Residential ☐ State

Inspection Date		**Inspection Time**	
Inspector			
Date of Last Inspection			

Level 2 Inspection: INFILTRATION

Recommended Repairs	Triggers for Level 3 Inspection
Observed Condition: Water Stands on Surface for More than 72 Hours after Storm	
☐ Condition 1: Small pockets of standing water For infiltration basins with soil, use a soil probe or auger to examine the soil profile. For gravel infiltration trenches or basins, use a shovel to dig into the gravel layer where the problem is occurring. If isolated areas have accumulated grit, fine silt, or vegetative debris or have bad soil or clogged gravel, try removing and replacing with clean material. If the practice is supposed to have grass cover, it will likely be necessary to replant once the problem is resolved. ☐ Condition 2: Standing water is widespread or covers entire surface Look in the observation well (if it exists) and use a tape measure to estimate the depth of water standing in the soil or gravel. Requires diagnosis and resolution of problem: • Too much sediment/grit washing in from drainage area? • Too much ponding depth? • Improper infiltration media? • Underlying soil not suitable for infiltration? As above, the resolution will likely require replanting and re-establishment of good grass cover if this is part of the design.	• Infiltration media is clogged and problem cannot be diagnosed from Level 2 inspection. • Level 2 inspection identifies problem, but it cannot be resolved easily or it is associated with the original design of the practice. ☐ Level 3 Inspection necessary
Observed Condition: Severe erosion of infiltration bed, inlets, or around outlets	
☐ Condition 1: Erosion at inlets The lining (e.g., grass, matting, stone, rock) may not be adequate for the actual flow velocities coming through the inlets. First line of defense is to try a less erosive lining and/or extending the lining further down to where inlet slopes meet the infiltration surface. If problem persists, analysis by a Qualified Professional is warranted. ☐ Condition 2: Erosion of infiltration bed This is often caused by “preferential flow paths” along the surface. The source of flow should be analyzed and methods employed to dissipate energy and disperse the flow (e.g., check dams, rock splash pads).	• Erosion (rills, gullies) is more than 12 inches deep • The issue is not caused by moving water but some sort of subsurface defect, which may manifest as a sinkhole or linear depression and be associated with problems with the underlying stone or soil. ☐ Level 3 Inspection necessary

Notes:

Inspector:_____ Date: _____

Complete the following if follow-up/corrective actions were identified during this inspection:

Certified Completion of Follow-Up Actions:

"I hereby certify that the follow-up/corrective actions identified in the inspection performed on _____ (DATE) have been completed and any required maintenance deficiencies have been adequately corrected."

Inspector/Operator: _____ Date: _____

Construction General Permit (CGP) Electronic Notice of Intent (eNOI) GP-0-25-001

version 1.14

(Submission #: HQA-D5ZC-KT0GW, version 1)

Details

Originally Started By	Morgan Zwierlein
Submitted	1/13/2026 (0 days ago) by Anakin Major
Alternate Identifier	187 Clinton Street Development—Region 7
Submission ID	HQA-D5ZC-KT0GW
Status	Deemed Complete
Active Steps	Issue SPDES Permit ID

Form Input

Eligibility

Disturbance Threshold

1. Will the construction activity involve soil disturbances listed in Part I.A.1 of GP-0-25-001?
Yes

1.a. Will any runoff from the site enter a sewer system classified as a combined sewer?
No

1.b. Is this a remediation project being done under a Department approved work plan (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) with a SWPPP which meets the substantive requirements of GP-0-25-001?
No

1.c. Is the construction activity related to a stormwater discharge that does not require a permit as described in 40 CFR 122.3(e), e.g. non-point source agriculture or silviculture activities?
No

Other SPDES Permits

2. Will the discharge from the construction activity meet all conditions listed in Part I.A.2 of GP-0-25-001?
Yes

Threatened and Endangered Species

3. Will the construction activity potentially adversely affect a species that is endangered or threatened per Part I.A.3.?
No

State Historic Preservation Act (SHPA)

4. Is the construction activity designated by the Commissioner of the Office of Parks, Recreation and Historic Preservation (OPRHP), pursuant to 9 NYCRR §§428.12 or 428.13 as exempt from the SHPA review (see Attachment 2 of the Letter of Resolution between NYSDEC and OPRHP, dated January 9, 2015)?
No

4.a. Will the construction activity:

a) occur within an archeologically sensitive area indicated on the sensitivity map, or

b) have the potential to affect a property that is listed or determined to be eligible for listing on the Na or State Registers of Historic Places, or

c) include a new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old and OPRHP, a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determinec historically/archeologically significant building, structure, or object:

- 1-5 acres of disturbance—20 feet
- 5-20 acres of disturbance—50 feet
- 20+ acres of disturbance—100 feet?

No

4.b. Is there documentation at the construction site demonstrating:

a) that the construction activity is not within an archeologically sensitive area indicated on the sensiti map, and that the construction activity is not immediately adjacent to a property listed or determined t eligible for listing on the National or State Registers of Historic Places, and

b) that there is no new permanent building to be built on the construction site within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the construction site within those parameters that OPRHP, a Historic Preserva Commission of a Certified Local Government, or a qualified preservation professional has determinec the building, structure, or object more than 50 years old is not historically/archeologically significant:

- 1-5 acres of disturbance – 20 feet
- 5-20 acres of disturbance – 50 feet
- 20+ acres of disturbance – 100 feet?

Yes

State Environmental Quality Review (SEQR)

5. Is the construction activity subject to SEQR (Part I.A.5.), or the equivalent environmental review from another NYS or federal agency (Part I.A.6.)?
Yes

5.a. Has the owner/operator obtained documentation that the project review pursuant to SEQR, or the equivalent, has been satisfied per Part I.A.5. or I.A.6. of GP-0-25-001?
Yes

Uniform Procedures Act (UPA) Permits

6. Has the owner/operator obtained all necessary UPA permits from NYSDEC, or the equivalent from another NYS or federal agency per Part I.A.7.a. of GP-0-25-001? Select "Yes" if no UPA permits, or the equivalent, are required for this construction activity.
Yes

Steep Slope

7. Is the construction activity within the watershed of surface waters of the State classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website?
No

Owner/Operator Information

8. Owner/Operator Name
Metro Group Properties, Inc.

9. Owner/Operator Contact Person Information

First and Last Name	Phone	E-mail
Robert Muchnick	9147143748	rmuchnick@themetrogroup.com

10. Owner/Operator Mailing Address

9 Northwood Lane
Patchogue, NY 11772
USA

11. Is the billing contact different from the Owner/Operator Contact?
No

12. What type of organization is the owner/operator?
Corporation

12.b. Is the owner/operator registered with the Department of State to do business in New York State?
Yes

12.b.i. Department of State ID #
2449560

The Department of State ID can be found using the following link:
Department of State | Division of Corporations

Site Information

13. Project/Site Name
187 Clinton Street Development

14. Site Address

187 Clinton Street
Binghamton, NY 13905
Broome

DEC Region
7

15. Site Latitude & Longitude
42.10539051051685,-75.92800610966515

Project Details

16. This eNOI submission is for:
An entire common plan of development or sale in accordance with Part I.D.1.b.

17. Does the project type fall under Table 1 or Table 2 of Appendix B of GP-0-25-001? If any portion of the construction activity falls under Table 2, regardless of the size of the disturbance, select "Table 2".
Table 2

18. Consistent with Part III.B.1.c.i. of GP-0-25-001, provide a concise overview of the project. Describe existing and proposed conditions, and include any other relevant information.
This project is the development of an apartment complex. The apartment complex will consist of two buildings that contain approximately 121 and 150 apartments respectively. It also contains the construction of parking lots for the tenants of the apartments. The project will also include the addition of new green spaces as well as the preservation of a portion of the current green space. The complex will be zoned as Neighborhood Commercial. The project sites current condition is an abandoned site that is overgrown and unused.

Enter the total project site acreage, the acreage to be disturbed, and the future impervious area (acreage) within the disturbed area, rounded to the nearest tenth of an acre.

19. Total Site Area (acres)
6.2

20. Total Area to be Disturbed (acres)
6.2

21. Existing Impervious Area to be Disturbed (acres)
4.8

22. Future Impervious Area Within Disturbed Area (acres)
4.9

Nature of the project:
Redevelopment with increase in impervious area

23. Do you plan to disturb more than 5 acres of soil at any one time?
No

---

24. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

A (%)
100

B (%)
0

C (%)
0

D (%)
0

25. Enter the planned start and end dates of the disturbance activities.

Start Date
10/31/2026

End Date
10/31/2028

26. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Susquehanna River, Lower, Main Stem - 0603-0002

27. Type of waterbody identified in question 26?
River Off Site

28. Has the surface waterbody in question 26 been identified as a 303(d) segment in Appendix D of GP-0-25-001?
No

29. Is this project located in one of the Watersheds identified in Appendix C of GP-0-25-001?
No

30. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?
No

31. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
Yes

31.a. What is the name of the municipality/entity that owns the separate storm sewer system? If the separate sewer system is owned by an MS4 Operator, enter the MS4 Operator name.
Binghamton

32. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?
No

33. Is this property owned by a state authority, state agency, federal government or local government?
No

Required SWPPP Components

General SWPPP Requirements

34. Has a SWPPP been developed in conformance with the requirements in Part III. of GP-0-25-001?
Yes

35. Does the SWPPP demonstrate consideration of the future physical risks due to climate change pursuant to the CRRA, 6 NYCRR Part 490, and associated guidance per Part III.A.2. of GP-0-25-001?
Yes

36. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

37. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the NYS Stormwater Management Design Manual?
Yes

37.a. Which version of the NYS Stormwater Management Design Manual was used to develop the SWPPP?
2024

SWPPP Preparer

---

39. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

40. Name of the person who prepared the SWPPP
Kelsey R. Farr

41. SWPPP Preparer Organization Name
Delta Engineers, Architects, Suveyors, and Landscape Architect's

42. SWPPP Preparer Contact Information

First and Last Name	Phone	E-mail
Kelsey Farr	607-231-6628	kfarr@delta-eas.com

43. SWPPP Preparer Address

860 HOOPER RD
ENDWELL, NY 13760-1564

Download SWPPP Preparer Certification Form

Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form
3) Upload the completed form
Download SWPPP Preparer Certification Form

44. Please upload the SWPPP Preparer Certification

f - 2025_SWPPP Preparer Certification Form_Signed.pdf - 01/13/2026 08:59 AM
Comment
NONE PROVIDED

44.a. Has the SWPPP Preparer Certification Form been signed by the SWPPP preparer in accordance with Part VII.J of GP-0-25-001?
Yes

Erosion & Sediment Control Criteria

45. Has a construction sequence schedule for the planned management practices been prepared?
Yes

Post-Construction Criteria

Site Planning and Soil Restoration

46. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Sidewalk Reduction
Building Footprint Reduction

47. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6 ("Soil Restoration") of the Design Manual.
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

Water Quality Criteria

49. Water Quality Sizing Criteria

Total WQv required (acre-feet)	Total RRv provided (acre-feet)	Minimum RRv (acre-feet)	Total WQv provided (acre-feet)	Sum of RRv and WQv provided
0.120	0.168			NaN

Water Quantity Criteria

50. Per Section 9.2.1.C.VI and VII of the 2024 Design Manual, is there 0% change to hydrology that increases the discharge rate and volume from the project site?
No

51. Does one of the waiver conditions apply to the channel protection for this construction activity?
Yes

51.a. The need to provide channel protection has been waived because:
Reduction of the entire CPv is achieved by application of runoff reduction techniques or infiltration systems.

52. Does one of the waiver conditions apply to the Qp and Qf for this construction activity?
No

Overbank Flood Control Criteria (Qp)

52.b.i. Pre-Development (CFS)
18.36

52.b.ii. Post-Development (CFS)
7.91

Total Extreme Flood Control Criteria (Qf)

52.b.iii. Pre-Development (CFS)
30.14

52.b.iv. Post-Development (CFS)
17.74

Operation and Maintenance

53. Has a long-term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
Yes

53.a. Identify the entity responsible for the long-term Operation and Maintenance.
The Metro Group Properties, Inc.

Post-Construction SMP Identification

54. Post-Construction RR Techniques and Standard SMPs

RR Techniques and SMPs	Contributing Impervious Area (acres)	Total Contributing Area (acres)
Tree Planting/Tree Pit/Tree Trench (RR-3)	3.062	4.146

55. Alternative SMPs

Type of Alternative SMP	Manufacturer of the Alternative SMP	Name of the Alternative SMP	Contributing Impervious Area (acres)
NONE PROVIDED	*NONE PROVIDED*	*NONE PROVIDED*	*NONE PROVIDED*

Other Permits

56. Identify other permits, existing and new, that are required for this project/facility.
None

57. Is this NOI for a change in owner/operator per Part I.G.?
No

MS4 SWPPP Acceptance

59. Will the construction activities be within the municipal boundary(ies) of Traditional Land Use Control MS4 Operator(s) and discharge to the MS4(s)?
Yes

59.a. Which form is required per Part I.D.2.b.ii.?
MS4 SWPPP Acceptance Form

MS4 SWPPP Acceptance Form Download

Download the MS4 SWPPP Acceptance Form from the link below.
MS4 SWPPP Acceptance Form

60. MS4 Acceptance or No Jurisdiction Form Upload

j - 2025_MS4 SWPPP Acceptance Form_Signed.pdf - 05/05/2025 03:56 PM

Comment

NONE PROVIDED

60.a. Has the form been signed by the principal executive officer or ranking elected official—or duly authorized representative of that person—in accordance with Part VII.J. and submitted along with this NOI?

Yes

Owner/Operator Certification

Owner/Operator Certification Form Download

Download the Owner/Operator Certification Form by clicking the link below.
Owner/Operator Certification Form

61. Upload Owner/Operator Certification Form

c - 2025_owner operator certification form_Signed.pdf - 05/05/2025 03:56 PM

Comment

NONE PROVIDED

61.a. Has the Owner/Operator Certification Form from Appendix J been signed by the owner/operator, or a representative of the owner/operator in accordance with Part VII.J of GP-0-25-001 and uploaded to the eNOI?

Yes

Additional Project Information

62. Enter any additional pertinent project information in the text box below.

NONE PROVIDED

Attachments

Date	Attachment Name	Context	User
1/13/2026 10:47 AM	Letter of Authorization.pdf	Generated Document	Anakin Major
1/13/2026 8:59 AM	f - 2025_SWPPP Preparer Certification Form_Signed.pdf	Attachment	Anakin Major
5/5/2025 3:56 PM	c - 2025_owner operator certification form_Signed.pdf	Attachment	Morgan Zwierlein
5/5/2025 3:56 PM	j - 2025_MS4 SWPPP Acceptance Form_Signed.pdf	Attachment	Morgan Zwierlein

Status History

	User	Processing Status
2/14/2025 2:43:26 PM	Morgan Zwierlein	Draft
1/13/2026 10:47:09 AM	Anakin Major	Submitted
1/13/2026 10:47:12 AM	Anakin Major	Deemed Complete

Audit

Event	Event Description	Event By	Event Date
Letter of Authorization	The Letter of Authorization document has been generated and is available for download.	Anakin Major	1/13/2026 10:47 AM

Processing Steps

Step Name	Assigned To/Completed By	Date Completed
Form Submitted	Anakin Major	1/13/2026 10:47:09 AM
Issue SPDES Permit ID	Daniel von Schilgen	

eNOT Owner or Operator Certification

for construction activities seeking termination from the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(The completed form must be attached to the eNOT, which must be submitted to NYSDEC electronically in accordance with CGP Part V.A.5.)

I. Project Owner/Operator Information

a. Owner/Operator Name:

b. Contact Person:

c. Street Address:

d. City/State/Zip:

II. Project Site Information

a. Project/Site Name:

b. Street Address:

c. City/State/Zip:

d. CGP SPDES Permit ID:

III. Certification Statement

I certify that I have met the requirements of CGP Part V.A.1., 2., 3., and 4. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

a. Printed name of the Owner or Operator:

b. Title/Position:

c. Signature:

d. Date:

eNOT Qualified Inspector Certification – SMPs

for construction activities seeking termination from the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(The completed form must be attached to the eNOT, which must be submitted to NYSDEC electronically in accordance with CGP Part V.A.5.)

I. Project Owner/Operator Information

a. Owner/Operator Name:

b. Contact Person:

c. Street Address:

d. City/State/Zip:

II. Project Site Information

a. Project/Site Name:

b. Street Address:

c. City/State/Zip:

d. CGP SPDES Permit ID:

III. Certification Statement

I hereby certify that all the requirements in CGP Part V.A.1.a.iv. or CGP Part V.A.1.b.iv. have been achieved. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

a. Printed name of the Qualified Inspector:

b. Title/Position:

c. Signature:

d. Date:

eNOT Qualified Inspector Certification – Final Stabilization

for construction activities seeking termination from the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(The completed form must be attached to the eNOT, which must be submitted to NYSDEC electronically in accordance with CGP Part V.A.5.)

I. Project Owner/Operator Information

a. Owner/Operator Name:

b. Contact Person:

c. Street Address:

d. City/State/Zip:

II. Project Site Information

a. Project/Site Name:

b. Street Address:

c. City/State/Zip:

d. CGP SPDES Permit ID:

III. Certification Statement

I hereby certify that all the requirements in CGP Part V.A.1.a.i., ii., and iii. or CGP Part V.A.1.b.i., ii., and iii. have been achieved. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

a. Printed name of the Qualified Inspector:

b. Title/Position:

c. Signature:

d. Date:

APPENDIX F

Cultural Resource Information

New York State
Parks, Recreation and
Historic Preservation

KATHY HOCHUL
Governor

RANDY SIMONS
Commissioner *Pro Tempore*

May 10, 2024

Morgan Zwierlein
Delta Engineers, Architects, Suveyors, and Landscape Architect's
860 Hooper Road
Endwell, NY 13760

Re: DEC
187 Clinton Street Development
24PR03224

Dear Morgan Zwierlein:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project.

We note that the 187 Clinton Street Development is adjacent to 171 Clinton Street and 170 feet from the Ansco Company Paper Plant which are listed in the State and National Registers of Historic Places. We have reviewed the project description submitted to our office on April 12, 2024. Based on that review, it is the OPRHP's opinion that the mixed-use apartment complex project, as described, will have No Adverse Impact on historic and archaeological resources.

If you have any questions, you can e-mail me at the contact information below.

Sincerely,

Mariana Staines
Historic Site Restoration Coordinator
mariana.montesstaines@parks.ny.gov

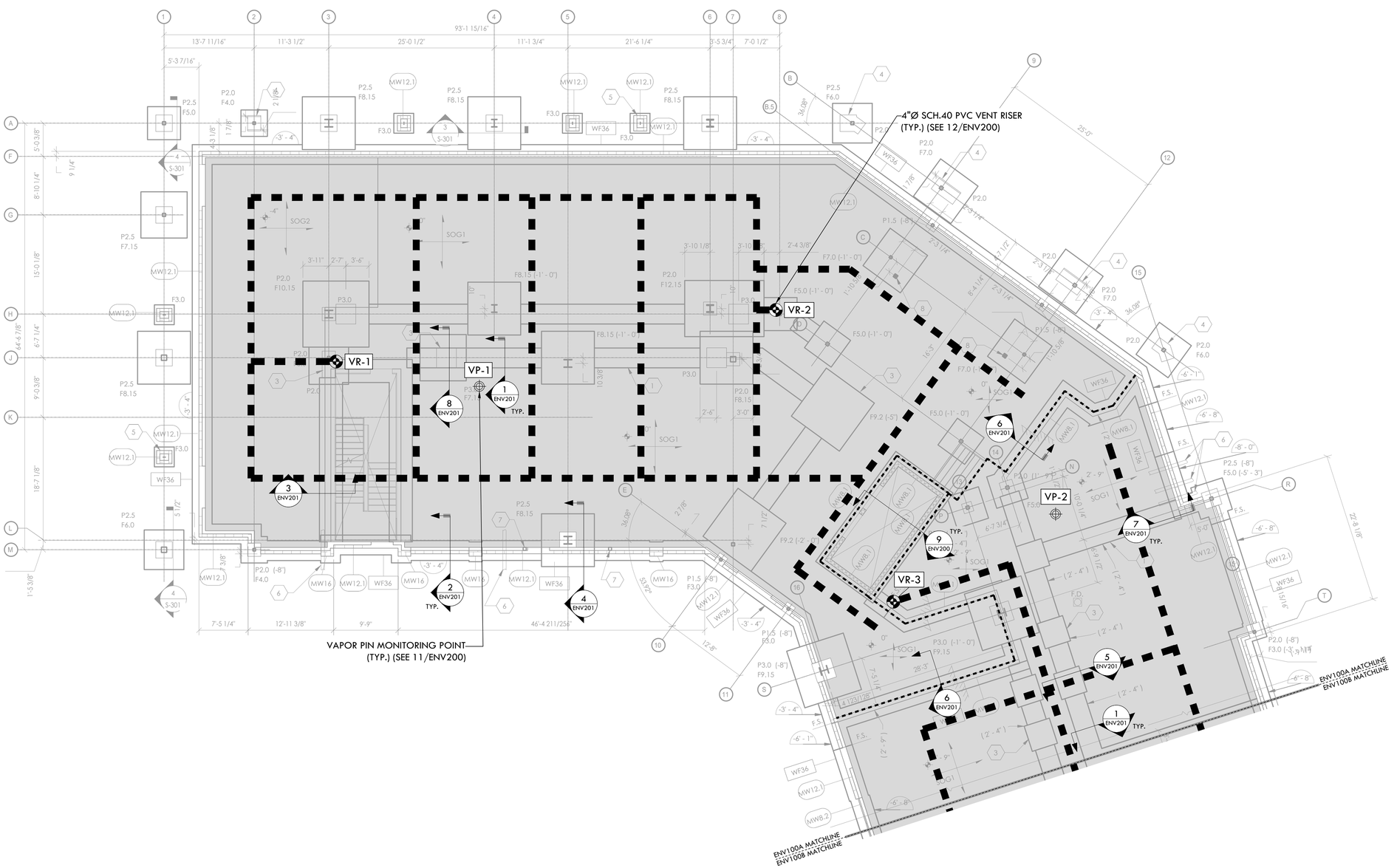
APPENDIX H – SSDS Design Drawings

NORTH ARROW:

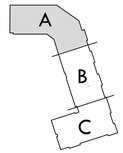
N

SCALE:

0' 2' 4' 8' 16'



1 FOUNDATION PLAN - PART A
REF: S-101 1/8" = 1'-0"



LEGEND:

- HORIZONTAL EXTENT OF VAPOR BARRIER
- VERTICAL EXTENT OF VAPOR BARRIER
- GEOVENT VENTING SYSTEM
- VP-X — VAPOR PIN MONITORING POINT
- VR-X — 4"Ø SCH. 40 PVC VENT RISER

NOTES:

1. DRAWING NOT TO BE USED FOR ARCHITECTURAL, STRUCTURAL, OR ANY PURPOSE OTHER THAN VAPOR INTRUSION MITIGATION SYSTEM.
2. MONITORING POINTS AND VENT RISERS ARE NOT TO SCALE AND ARE EXAGGERATED FOR CLARITY.
3. VERIFY FINAL MONITORING POINT AND VENT RISER LOCATIONS IN THE FIELD WITH ARCHITECT/OWNER.
4. OFFSET OF RISERS SHALL BE MINIMIZED IF NECESSARY, HORIZONTAL OFFSET PIPING SHALL BE SLOPED 1% TOWARDS LOW POINT.

FINAL BID SET

EAI INC
ENVIRONMENTAL MANAGEMENT SERVICES
SPECIALTY CONTRACTING

50 PRESCOTT STREET
JERSEY CITY, NJ 07304

TEL: (201) 395-0010

No.	Date	Description
4	05/01/2026	FINAL BID SET
3	04/02/2026	REVISION
2	03/06/2026	REVISION
1	01/23/2026	DRAFT - NOT FOR CONSTRUCTION

Scale:	Date:
1/8" = 1'-0"	01/23/2026

Designer:	Drawn by:	Checked by:
KH	KH	ZT

Project:
VANGUARD VILLAGE

Address:
BINGHAMTON, NY 13905

Drawing Title:
VAPOR INTRUSION MITIGATION SYSTEM
FOUNDATION PLAN - PART A

Drawing Title: ENV100A

Sheets in Drawing Set:
01 of 10

NORTH ARROW:

N

SCALE:

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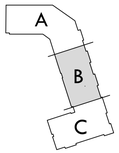

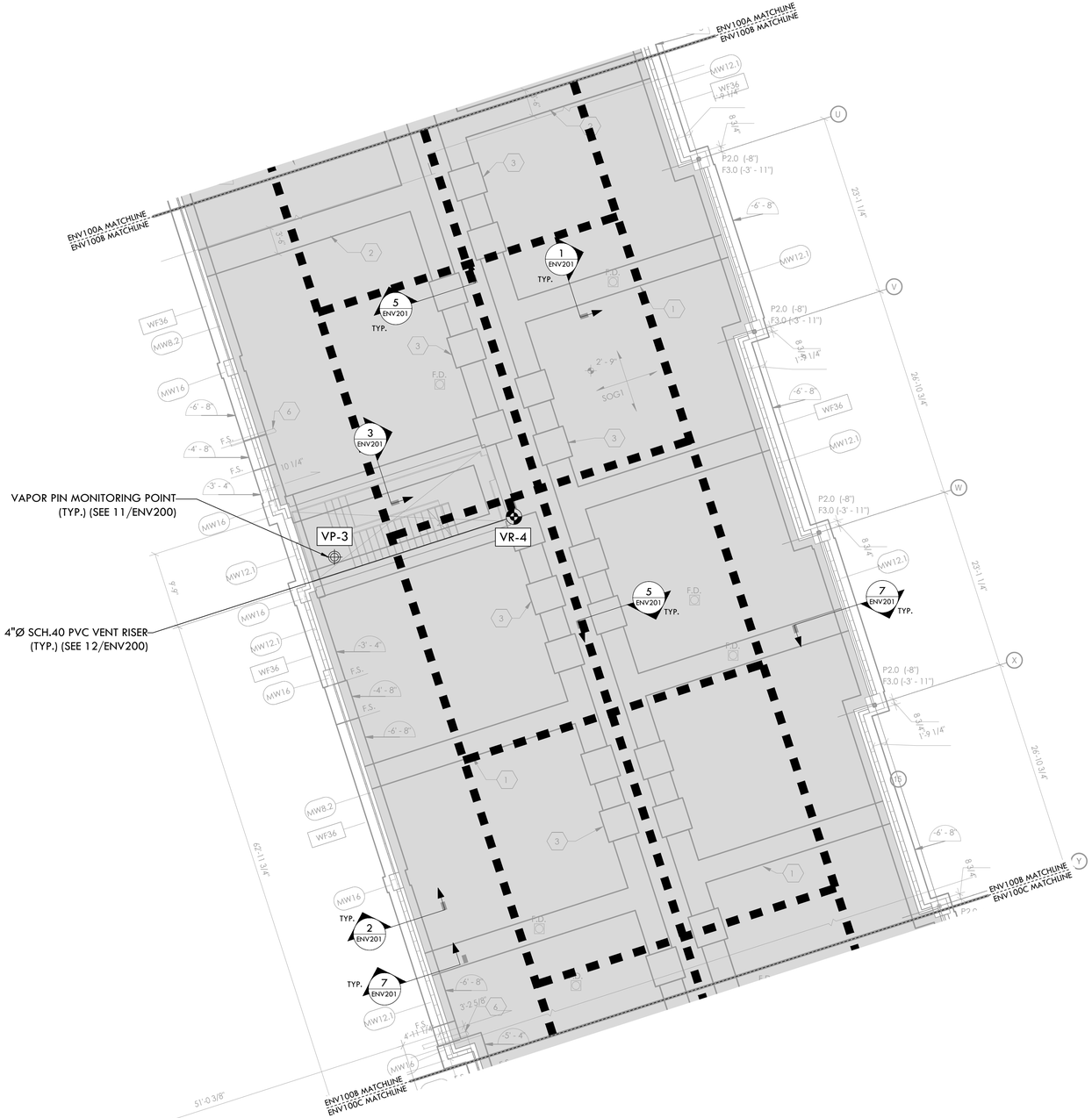

1 FOUNDATION PLAN - PART B

REF: S-101 1/8" = 1'-0"

LEGEND:

- HORIZONTAL EXTENT OF VAPOR BARRIER
- VERTICAL EXTENT OF VAPOR BARRIER
- GEOVENT VENTING SYSTEM
- VP-X — VAPOR PIN MONITORING POINT
- VR-X — 4"Ø SCH. 40 PVC VENT RISER

NOTES:

1. DRAWING NOT TO BE USED FOR ARCHITECTURAL, STRUCTURAL, OR ANY PURPOSE OTHER THAN VAPOR INTRUSION MITIGATION SYSTEM.
2. MONITORING POINTS AND VENT RISERS ARE NOT TO SCALE AND ARE EXAGGERATED FOR CLARITY.
3. VERIFY FINAL MONITORING POINT AND VENT RISER LOCATIONS IN THE FIELD WITH ARCHITECT/OWNER.
4. OFFSET OF RISERS SHALL BE MINIMIZED IF NECESSARY, HORIZONTAL OFFSET PIPING SHALL BE SLOPED 1% TOWARDS LOW POINT.

FINAL BID SET

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ENVIRONMENTAL MANAGEMENT SERVICES
SPECIALTY CONTRACTING

50 PRESCOTT STREET
JERSEY CITY, NJ 07304

TEL: (201) 395-0010

No.	Date	Description
4	05/01/2026	FINAL BID SET
3	04/02/2026	REVISION
2	03/06/2026	REVISION
1	01/23/2026	DRAFT - NOT FOR CONSTRUCTION

Scale:	Date:	
1/8" = 1'-0"	01/23/2026	
Designer: KH	Drawn by: KH	Checked by: ZT

Project:
VANGUARD VILLAGE

Address:
BINGHAMTON, NY 13905

Drawing Title:
VAPOR INTRUSION MITIGATION SYSTEM
FOUNDATION PLAN - PART B

Drawing Title: ENV100B

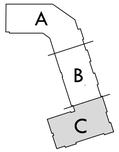
Sheets in Drawing Set:
02 of 10

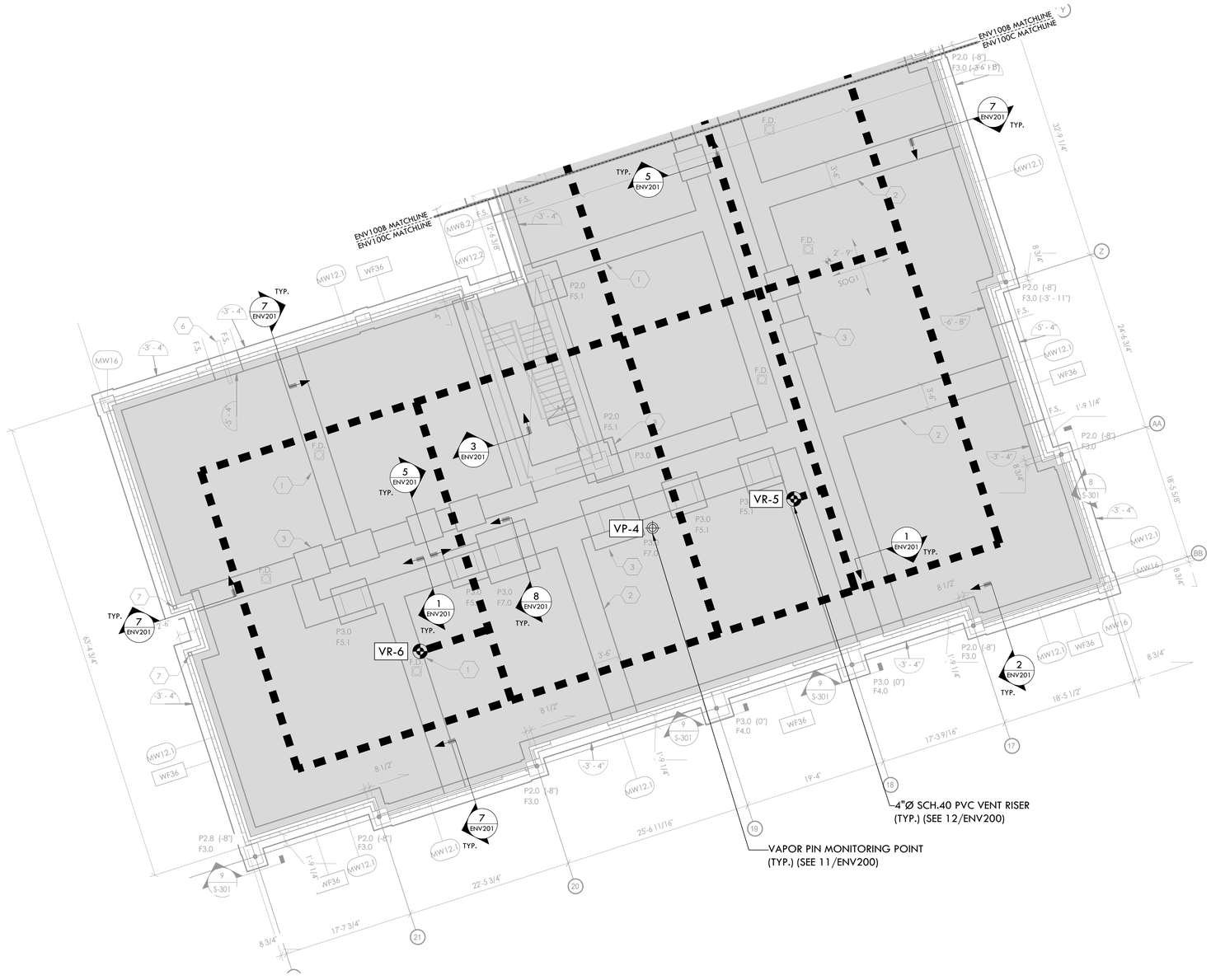
NORTH ARROW:

N

SCALE:

0' 2' 4' 8' 16'





1 FOUNDATION PLAN - PART C

REF: S-101 1/8" = 1'-0"

LEGEND:

- HORIZONTAL EXTENT OF VAPOR BARRIER
- VERTICAL EXTENT OF VAPOR BARRIER
- GEOVENT VENTING SYSTEM
- VP-X — VAPOR PIN MONITORING POINT
- VR-X — 4"Ø SCH. 40 PVC VENT RISER

NOTES:

1. DRAWING NOT TO BE USED FOR ARCHITECTURAL, STRUCTURAL, OR ANY PURPOSE OTHER THAN VAPOR INTRUSION MITIGATION SYSTEM.
2. MONITORING POINTS AND VENT RISERS ARE NOT TO SCALE AND ARE EXAGGERATED FOR CLARITY.
3. VERIFY FINAL MONITORING POINT AND VENT RISER LOCATIONS IN THE FIELD WITH ARCHITECT/OWNER.
4. OFFSET OF RISERS SHALL BE MINIMIZED IF NECESSARY, HORIZONTAL OFFSET PIPING SHALL BE SLOPED 1% TOWARDS LOW POINT.

FINAL BID SET

EAI INC
ENVIRONMENTAL MANAGEMENT SERVICES
SPECIALTY CONTRACTING

50 PRESCOTT STREET
JERSEY CITY, NJ 07304

TEL: (201) 395-0010

No.	Date	Description
4	05/01/2026	FINAL BID SET
3	04/02/2026	REVISION
2	03/06/2026	REVISION
1	01/23/2026	DRAFT - NOT FOR CONSTRUCTION

Scale:	Date:
1/8" = 1'-0"	01/23/2026

Designer:	Drawn by:	Checked by:
KH	KH	ZT

Project:
VANGUARD VILLAGE

Address:
BINGHAMTON, NY 13905

Drawing Title:
VAPOR INTRUSION MITIGATION SYSTEM
FOUNDATION PLAN - PART C

Drawing Title: ENV100C

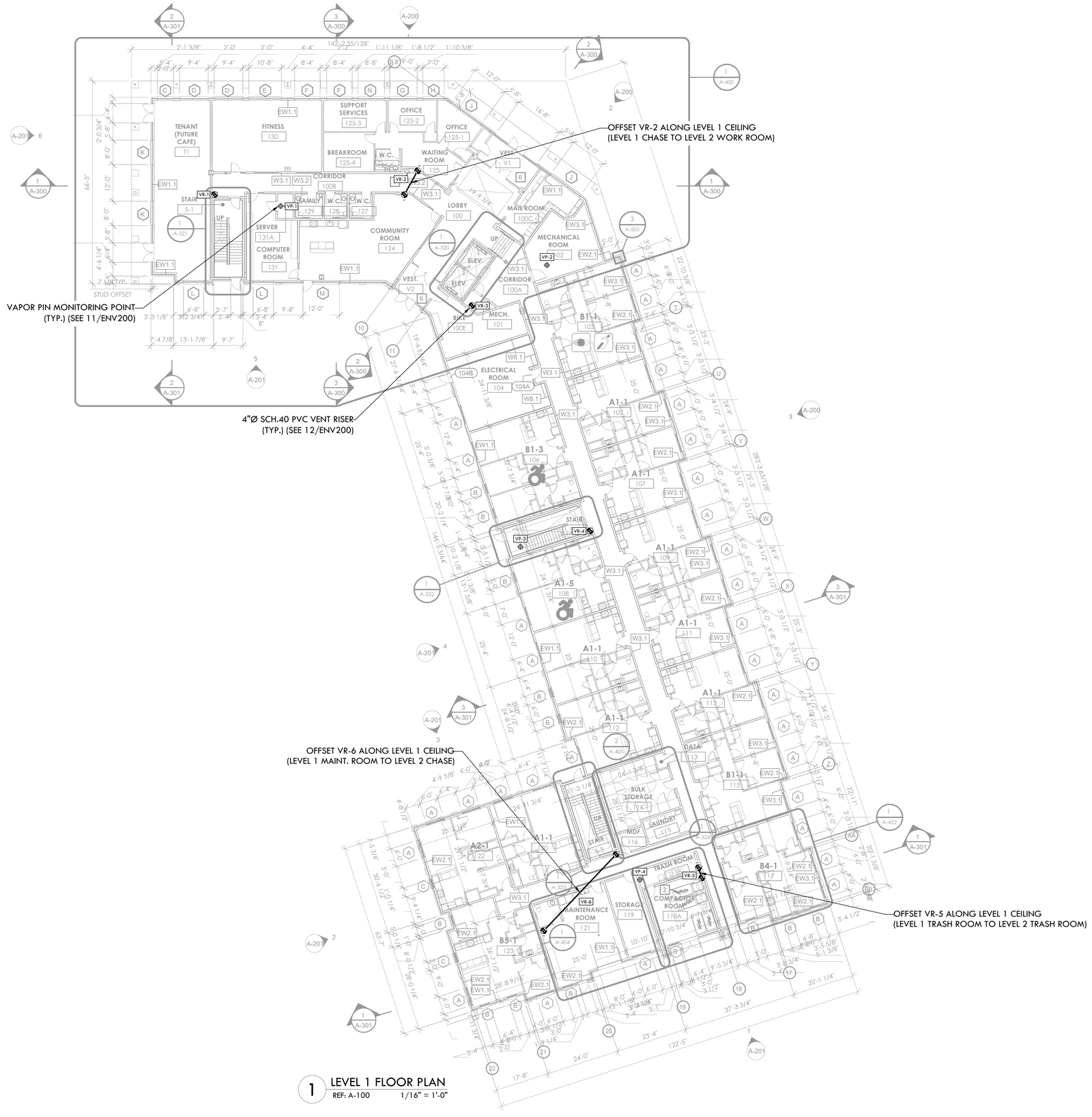
Sheets in Drawing Set:
03 of 10

NORTH ARROW:

N

SCALE:

0' 2' 4' 8' 16'



1 LEVEL 1 FLOOR PLAN
REF: A-100 1/16" = 1'-0"

LEGEND:

- 4"Ø SCH. 40 PVC TRANSITION PIPE
- VP-X — VAPOR PIN MONITORING POINT
- VR-X — 4"Ø SCH. 40 PVC VENT RISER

NOTES:

1. DRAWING NOT TO BE USED FOR ARCHITECTURAL, STRUCTURAL, OR ANY PURPOSE OTHER THAN VAPOR INTRUSION MITIGATION SYSTEM.
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FINAL BID SET

EAI INC
ENVIRONMENTAL MANAGEMENT SERVICES
SPECIALTY CONTRACTING

50 PRESCOTT STREET
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No.	Date	Description
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2	03/06/2026	REVISION
1	01/23/2026	DRAFT - NOT FOR CONSTRUCTION

Scale:	Date:
1/16" = 1'-0"	01/23/2026

Designer:	Drawn by:	Checked by:
KH	KH	ZT

Project:
VANGUARD VILLAGE

Address:
BINGHAMTON, NY 13905

Drawing Title:
VAPOR INTRUSION MITIGATION SYSTEM
LEVEL 1 FLOOR PLAN

Drawing Title: ENV101

Sheets In Drawing Set:
04 of 10

NORTH ARROW:

N

SCALE:

0' 2' 4' 8' 16'



1 LEVEL 2 FLOOR PLAN
REF: A-101 1/16" = 1'-0"

LEGEND:

4"Ø SCH. 40 PVC TRANSITION PIPE

VR-X 4"Ø SCH. 40 PVC VENT RISER

NOTES:

1. DRAWING NOT TO BE USED FOR ARCHITECTURAL, STRUCTURAL, OR ANY PURPOSE OTHER THAN VAPOR INTRUSION MITIGATION SYSTEM.
2. VENT RISERS ARE NOT TO SCALE AND ARE EXAGGERATED FOR CLARITY.
3. VERIFY FINAL VENT RISER LOCATIONS IN THE FIELD WITH ARCHITECT/OWNER.
4. OFFSET OF RISERS SHALL BE MINIMIZED IF NECESSARY, HORIZONTAL OFFSET PIPING SHALL BE SLOPED 1% TOWARDS LOW POINT.

FINAL BID SET

EAI INC
ENVIRONMENTAL MANAGEMENT SERVICES
SPECIALTY CONTRACTING

50 PRESCOTT STREET
JERSEY CITY, NJ 07304

TEL: (201) 395-0010

No.	Date	Description
4	05/01/2026	FINAL BID SET
3	04/02/2026	REVISION
2	03/06/2026	REVISION
1	01/23/2026	DRAFT - NOT FOR CONSTRUCTION

Scale:	Date:
1/16" = 1'-0"	01/23/2026

Designer:	Drawn by:	Checked by:
KH	KH	ZT

Project:
VANGUARD VILLAGE

Address:
BINGHAMTON, NY 13905

Drawing Title:
VAPOR INTRUSION MITIGATION SYSTEM
LEVEL 2 FLOOR PLAN

Drawing Title: ENV102

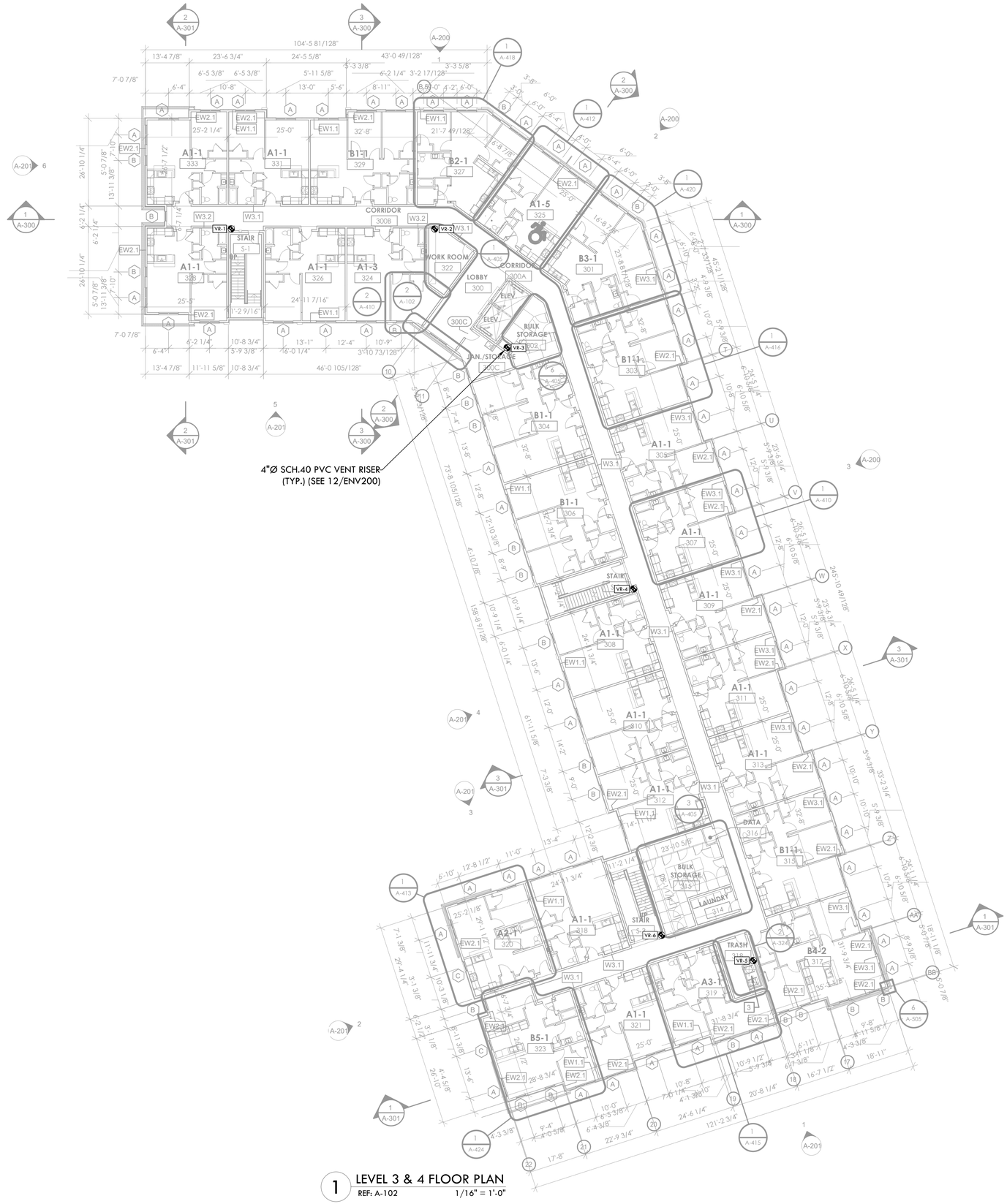
Sheets in Drawing Set:
05 of 10

NORTH ARROW:

N

SCALE:

0' 2' 4' 8' 16'



1 LEVEL 3 & 4 FLOOR PLAN
REF: A-102 1/16" = 1'-0"

LEGEND:

VR-X 4"Ø SCH. 40 PVC VENT RISER

NOTES:

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FINAL BID SET

EAI INC
ENVIRONMENTAL MANAGEMENT SERVICES
SPECIALTY CONTRACTING

50 PRESCOTT STREET
JERSEY CITY, NJ 07304

TEL: (201) 395-0010

No.	Date	Description
4	05/01/2026	FINAL BID SET
3	04/02/2026	REVISION
2	03/06/2026	REVISION
1	01/23/2026	DRAFT - NOT FOR CONSTRUCTION

Scale:	Date:	
1/16" = 1'-0"	01/23/2026	
Designer: KH	Drawn by: KH	Checked by: ZT

Project:
VANGUARD VILLAGE

Address:
BINGHAMTON, NY 13905

Drawing Title:
VAPOR INTRUSION MITIGATION SYSTEM
LEVEL 3 & 4 FLOOR PLAN

Drawing Title: ENV103

Sheets in Drawing Set:
06 of 10

NORTH ARROW:

N

SCALE:

0' 2' 4' 8' 16'



1 LEVEL 5 FLOOR PLAN
REF: A-103 1/16" = 1'-0"

LEGEND:

VR-X 4"Ø SCH. 40 PVC VENT RISER

NOTES:

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4. OFFSET OF RISERS SHALL BE MINIMIZED IF NECESSARY, HORIZONTAL OFFSET PIPING SHALL BE SLOPED 1% TOWARDS LOW POINT.

FINAL BID SET

EAI INC
ENVIRONMENTAL MANAGEMENT SERVICES
SPECIALTY CONTRACTING

50 PRESCOTT STREET
JERSEY CITY, NJ 07304

TEL: (201) 395-0010

No.	Date	Description
4	05/01/2026	FINAL BID SET
3	04/02/2026	REVISION
2	03/06/2026	REVISION
1	01/23/2026	DRAFT - NOT FOR CONSTRUCTION

Scale:	Date:	
1/16" = 1'-0"	01/23/2026	
Designer: KH	Drawn by: KH	Checked by: ZT

Project:
VANGUARD VILLAGE

Address:
BINGHAMTON, NY 13905

Drawing Title:
VAPOR INTRUSION MITIGATION SYSTEM
LEVEL 5 FLOOR PLAN

Drawing Title: ENV104

Sheets in Drawing Set:
07 of 10

NORTH ARROW:

N

SCALE:

0' 2' 4' 8' 16'



1 ROOF PLAN

REF: A-110 1/16" = 1'-0"

LEGEND:

VR-X 4"Ø SCH. 40 PVC VENT RISER

10' EXHAUST RADIUS

NOTES:

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4. OFFSET OF RISERS SHALL BE MINIMIZED IF NECESSARY, HORIZONTAL OFFSET PIPING SHALL BE SLOPED 1% TOWARDS LOW POINT.

FINAL BID SET

EAI INC
ENVIRONMENTAL MANAGEMENT SERVICES
SPECIALTY CONTRACTING

50 PRESCOTT STREET
JERSEY CITY, NJ 07304

TEL: (201) 395-0010

No.	Date	Description
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2	03/06/2026	REVISION
1	01/23/2026	DRAFT - NOT FOR CONSTRUCTION

Scale:	Date:	
1/16" = 1'-0"	01/23/2026	
Designer: KH	Drawn by: KH	Checked by: ZT

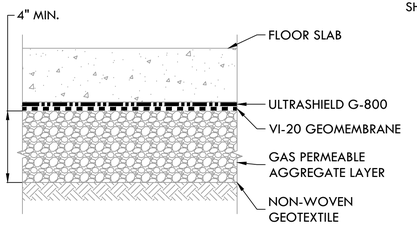
Project:
VANGUARD VILLAGE

Address:
BINGHAMTON, NY 13905

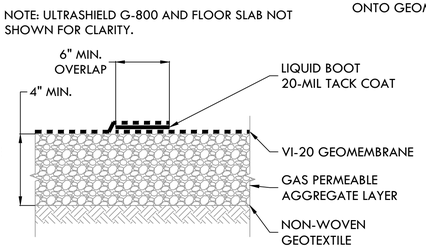
Drawing Title:
VAPOR INTRUSION MITIGATION SYSTEM
ROOF PLAN

Drawing Title: ENV105

Sheets in Drawing Set:
08 of 10



1 TYPICAL VAPOR BARRIER SECTION
N.T.S.



2 TYPICAL VAPOR BARRIER OVERLAP SECTION
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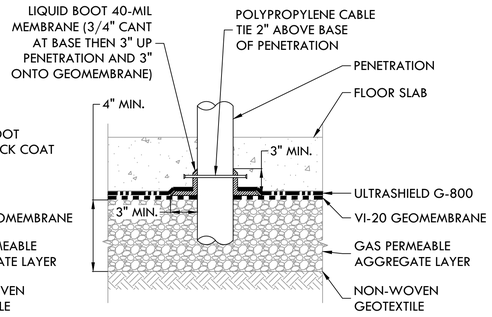

3 TYPICAL VAPOR BARRIER PENETRATION DETAIL
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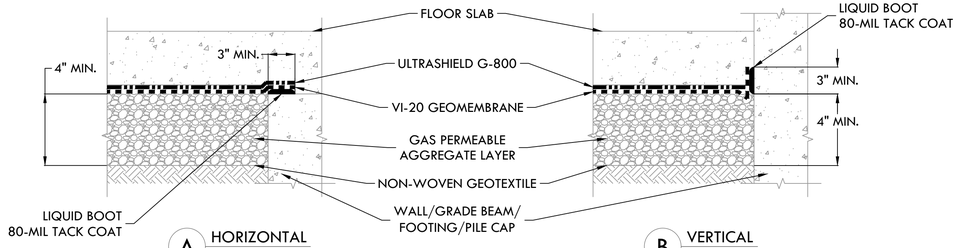
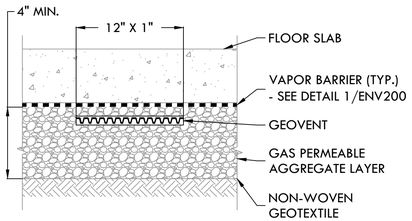


A HORIZONTAL
N.T.S.

B VERTICAL
N.T.S.

4 TYPICAL VAPOR BARRIER TERMINATION DETAILS
N.T.S.



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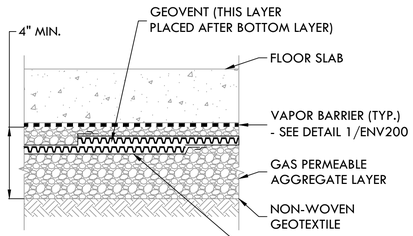

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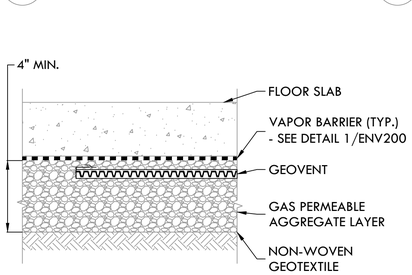

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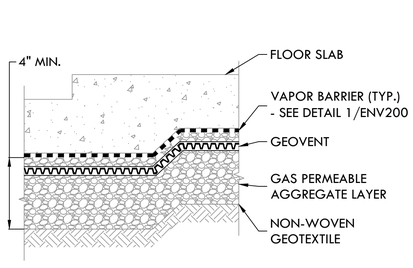

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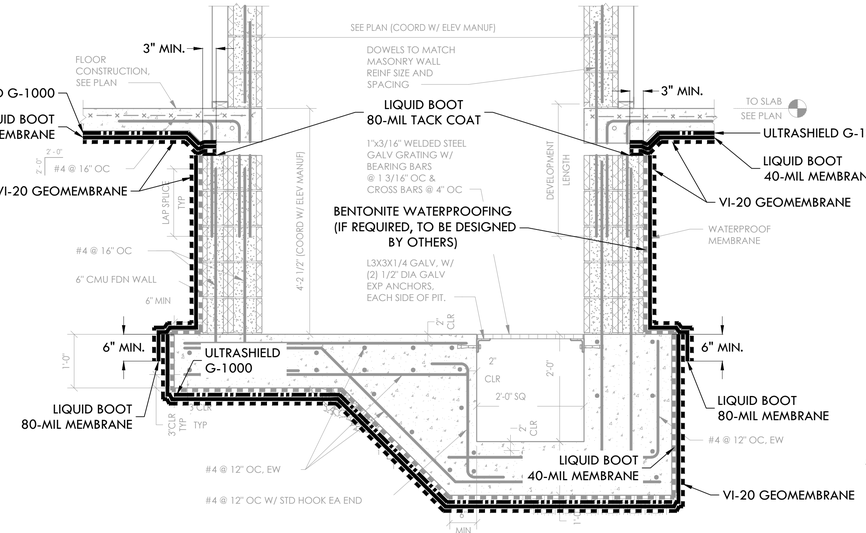

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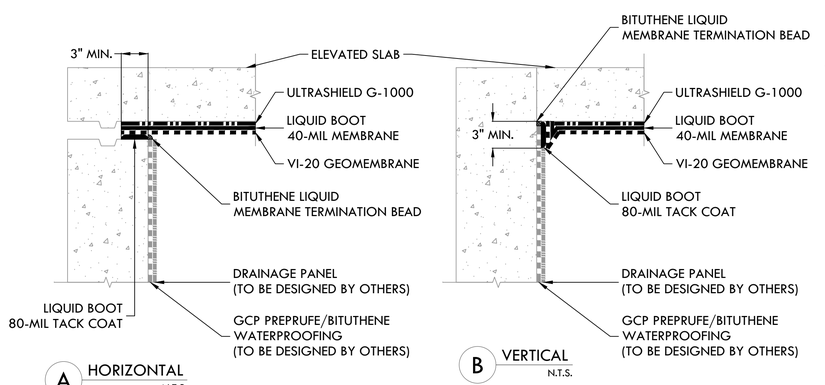
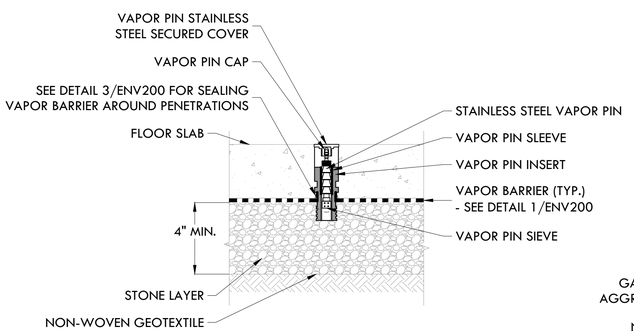


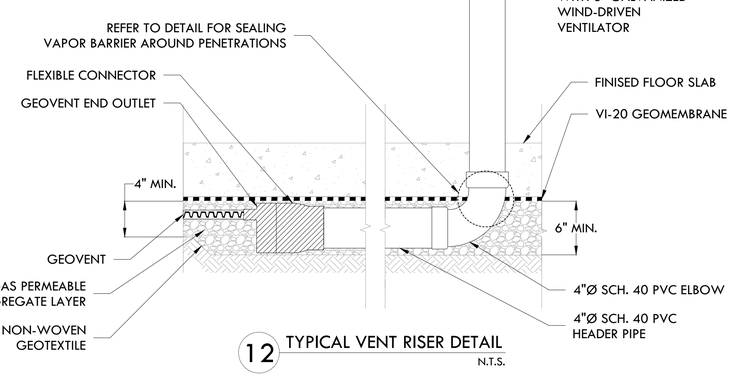
A HORIZONTAL
N.T.S.

B VERTICAL
N.T.S.

10 TYPICAL GCP WATERPROOFING TO VAPOR BARRIER TRANSITION DETAILS
N.T.S.



11 TYPICAL VAPOR PIN MONITORING POINT DETAIL
N.T.S.



12 TYPICAL VENT RISER DETAIL
N.T.S.

NOTES:

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2. DETAILS ARE NOT TO SCALE AND ARE EXAGGERATED FOR CLARITY.
3. VERIFY FINAL MONITORING POINT AND VENT RISER LOCATIONS IN THE FIELD WITH ARCHITECT/OWNER.
4. OFFSET OF RISERS SHALL BE MINIMIZED. IF NECESSARY, HORIZONTAL OFFSET PIPING SHALL BE SLOPED 1% TOWARDS LOW POINT.
5. VENT RISER TERMINATION TO BE LOCATED A MINIMUM OF 10' FROM ALL AIR INTAKE SOURCES, OPERABLE DOORS/WINDOWS, AND OTHER BUILDING OPENINGS, INCLUDING THOSE OF ADJOINING PROPERTIES.
6. GC TO PROVIDE 3/4" CONDUIT FROM ELECTRICAL PANEL WITHIN 5' OF VENT RISER ROOF PENETRATION FOR FUTURE BLOWER INSTALLATION, IF REQUIRED.
7. GAS PERMEABLE AGGREGATE LAYER TO BE A MINIMUM 4" LAYER OF 3/4" CLEAN CRUSHED STONE, #57 STONE, OR EQUIVALENT.

FINAL BID SET

EAI INC
ENVIRONMENTAL MANAGEMENT SERVICES
SPECIALTY CONTRACTING

50 PRESCOTT STREET
JERSEY CITY, NJ 07304

TEL: (201) 395-0010

No.	Date	Description
4	05/01/2026	FINAL BID SET
3	04/02/2026	REVISION
2	03/06/2026	REVISION
1	01/23/2026	DRAFT - NOT FOR CONSTRUCTION

Scale:	Date:	
N.T.S.	01/23/2026	
Designer: KH	Drawn by: KH	Checked by: ZT

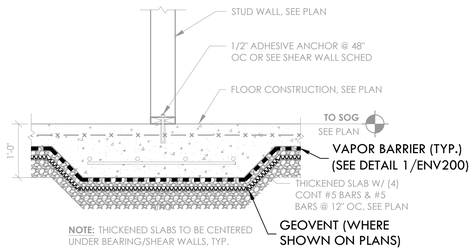
Project:
VANGUARD VILLAGE

Address:
BINGHAMTON, NY 13905

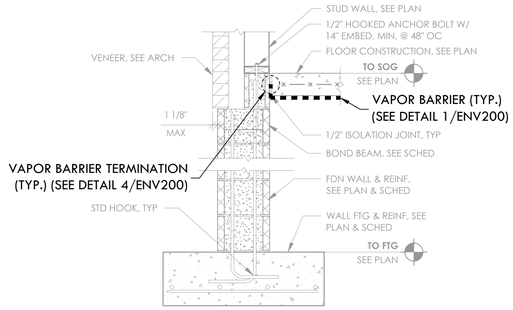
Drawing Title:
VAPOR INTRUSION MITIGATION SYSTEM
TYPICAL DETAILS

Drawing Title: ENV200

Sheets in Drawing Set:
09 of 10



1 FOUNDATION SECTION
REF: 1/S-301 N.T.S.



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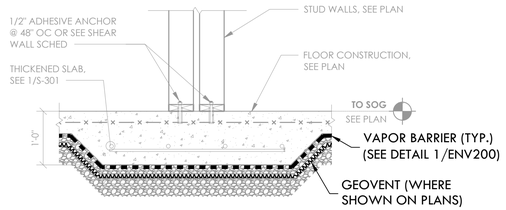

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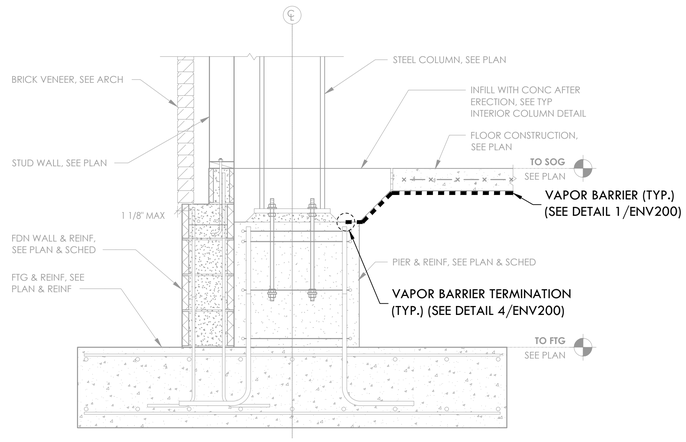

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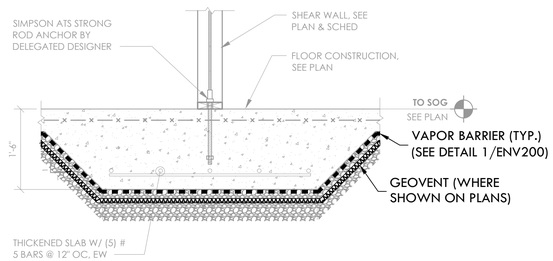

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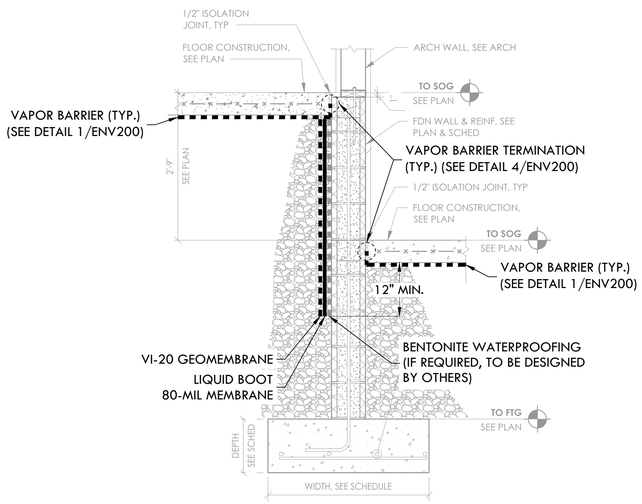

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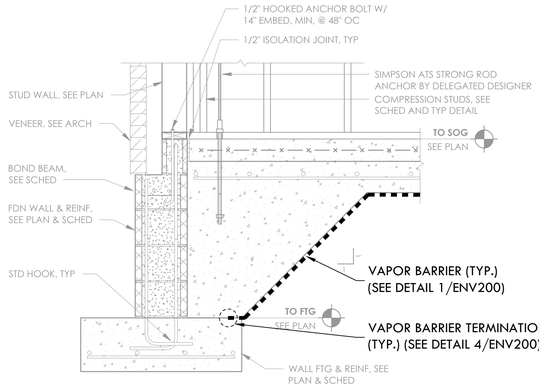

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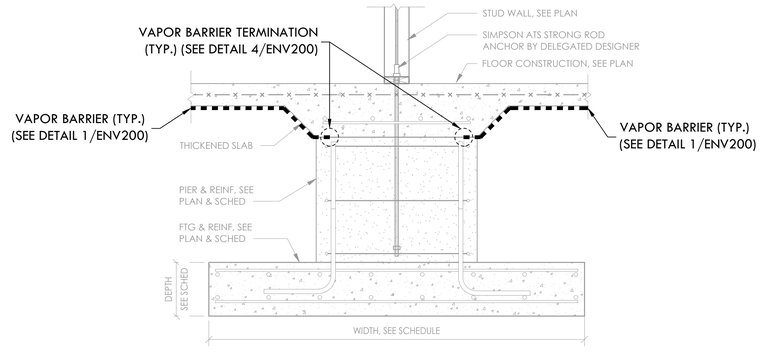

8 FOUNDATION SECTION
REF: 12/S-301 N.T.S.

NOTES:

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2. DETAILS ARE NOT TO SCALE AND ARE EXAGGERATED FOR CLARITY.
3. GAS PERMEABLE AGGREGATE LAYER TO BE A MINIMUM 4" LAYER OF 3/4" CLEAN CRUSHED STONE, #57 STONE, OR EQUIVALENT.

FINAL BID SET

EAI INC
ENVIRONMENTAL MANAGEMENT SERVICES
SPECIALTY CONTRACTING

50 PRESCOTT STREET
JERSEY CITY, NJ 07304

TEL: (201) 395-0010

No.	Date	Description
4	05/01/2026	FINAL BID SET
3	04/02/2026	REVISION
2	03/06/2026	REVISION
1	01/23/2026	DRAFT - NOT FOR CONSTRUCTION

Scale:	Date:	
N.T.S.	01/23/2026	
Designer: KH	Drawn by: KH	Checked by: ZT

Project:
VANGUARD VILLAGE

Address:
BINGHAMTON, NY 13905

Drawing Title:
VAPOR INTRUSION MITIGATION SYSTEM
SITE-SPECIFIC DETAILS

Drawing Title: ENV201

Sheets in Drawing Set:
10 of 10

APPENDIX I – Green and Sustainable Remediation

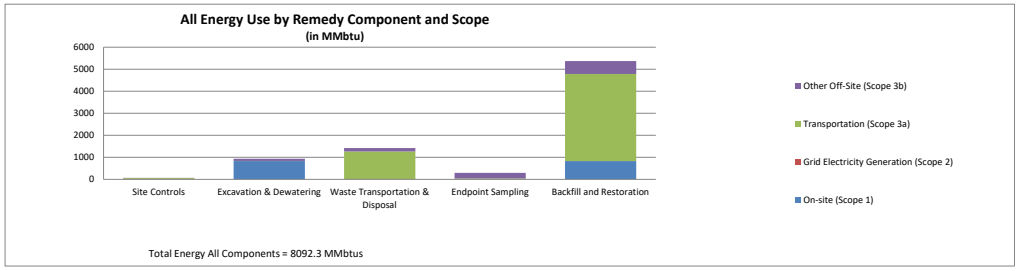
Environmental Footprint Summary

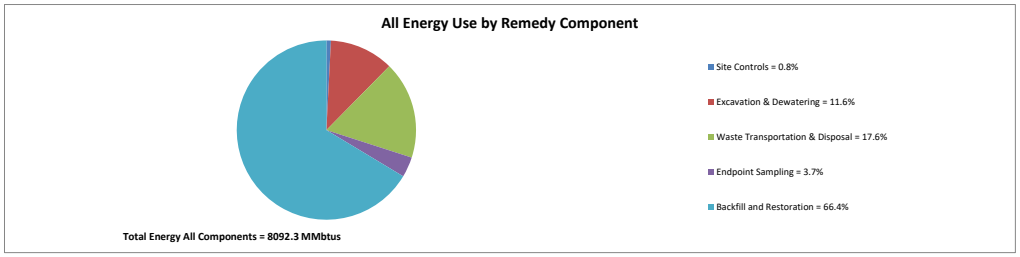
Core Element	Metric		Unit of Measure	Footprint					
				Site Controls	Excavation & Dewatering	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Total
Materials & Waste	M&W-1	Refined materials used on-site	Tons	45.5	0.0	0.0	0.0	0.0	45.5
	M&W-2	% of refined materials from recycled or reused material	%	0.0%					0.0%
	M&W-3	Unrefined materials used on-site	Tons	60.000	0.000	0.000	0.000	43,018.980	43,079.0
	M&W-4	% of unrefined materials from recycled or reused material	%	100.0%				100.0%	100.0%
	M&W-5	On-site hazardous waste disposed of off-site	Tons	0.0	0.0	0.0	0.0	0.0	0.0
	M&W-6	On-site non-hazardous waste disposed of off-site	Tons	0.0	0.0	43,019.3	0.0	0.0	43,019.3
	M&W-7	Recycled or reused waste	Tons	0.0	0.0	1.0	0.0	0.0	1.0
	M&W-8	% of total potential waste recycled or reused	%			0.0%			0.0%
Water (used on-site)	W-1	Public water use	MG	0.1	0.0	0.0	0.0	0.0	0.1
	W-2	Groundwater use	MG	0.0	0.0	0.0	0.0	0.0	0.0
	W-3	Surface water use	MG	0.0	0.0	0.0	0.0	0.0	0.0
	W-4	Reclaimed water use	MG	0.0	0.0	0.0	0.0	0.0	0.0
	W-5	Storm water use	MG	0.0	0.0	0.0	0.0	0.0	0.0
	W-6	User-defined water resource #1	MG	0.0	0.0	0.0	0.0	0.0	0.0
	W-7	User-defined water resource #2	MG	0.0	0.0	0.0	0.0	0.0	0.0
	W-8	Wastewater generated	MG	0.0	0.0	0.0	0.0	0.0	0.0
Energy	E-1	Total energy used (on-site and off-site)	MMBtu	65.8	935.8	1,423.3	296.0	5,371.4	8,092.3
	E-2	Energy voluntarily derived from renewable resources							
	E-2A	On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	0.0	0.0	0.0	0.0	0.0	0.0
	E-2B	Voluntary purchase of renewable electricity	MWh	0.0	0.0	0.0	0.0	0.0	0.0
	E-3	Voluntary purchase of RECs	MWh	0.0	0.0	0.0	0.0	0.0	0.0
	E-4	On-site grid electricity use	MWh	0.000	0.000	0.000	0.000	0.000	0.0
Air	A-1	On-site NOx, SOx, and PM emissions	Pounds	0.0	658.8	0.0	0.0	658.8	1,317.6
	A-2	On-site HAP emissions	Pounds	0.0	0.2	0.0	0.0	0.2	0.5
	A-3	Total NOx, SOx, and PM emissions	Pounds	82.6	739.8	1,750.0	2,138.9	6,193.3	10,904.6
	A-3A	Total NOx emissions	Pounds	73.8	637.6	1,597.6	590.2	5,616.3	8,515.5
	A-3B	Total SOx emissions	Pounds	5.3	38.1	105.8	1,345.6	367.9	1,862.7
	A-3C	Total PM emissions	Pounds	3.5	64.1	46.5	203.1	209.1	526.3
	A-4	Total HAP emissions	Pounds	0.5	6.8	10.1	148.8	38.3	204.5
	A-5	Total greenhouse gas emissions	Tons CO2e*	5.5	75.8	116.4	18.4	438.6	654.7
Land & Ecosystems	Redeveloping vacant land for residential use, potential habitat disruption								

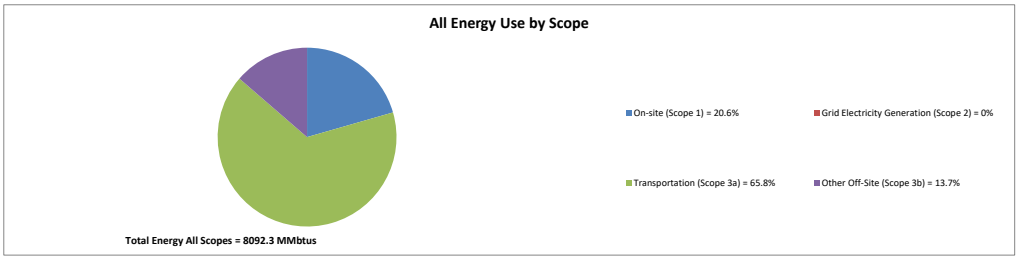
** Total greenhouse gases emissions (in CO2e) include consideration of CO2, CH4, and N2O (Nitrous oxide) emissions.*
"MMBtu" = millions of Btus
"MG" = millions of gallons
"CO2e" = carbon dioxide equivalents of global warming potential
"MWh" = megawatt hours (i.e., thousands of kilowatt-hours or millions of Watt-hours)
"Tons" = short tons (2,000 pounds)

The above metrics are consistent with EPA's Methodology for Understanding and Reducing a Project's Environmental Footprint (EPA 542-R-12-002), February 2012

Notes:







Total Energy
MMbtus

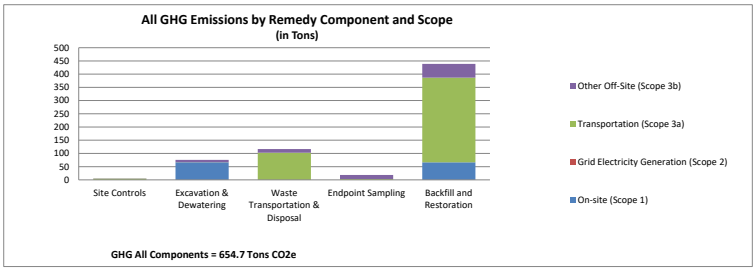
	Site Controls	Excavation & Dewatering	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Total
On-site (Scope 1)	0.0	831.5	0.0	0.0	831.5	1,663.1
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	57.9	2.3	1,268.2	41.7	3,954.6	5,324.7
Other Off-Site (Scope 3b)	7.9	102.0	155.1	254.3	585.3	1,104.6
Total	65.8	935.8	1,423.3	296.0	5,371.4	8,092.3

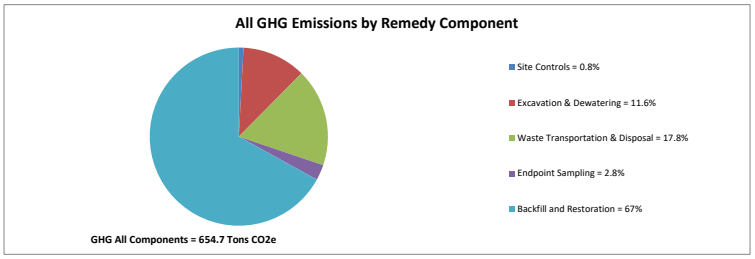
Site Controls = 0.8%
Excavation & Dewatering = 11.6%
Waste Transportation & Disposal = 17.6%
Endpoint Sampling = 3.7%
Backfill and Restoration = 66.4%

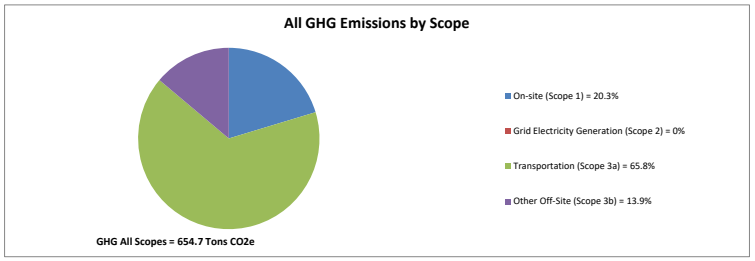
Total Energy All Components = 8092.3 MMbtus
Total Energy All Scopes = 8092.3 MMbtus

On-site (Scope 1) = 20.6%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 65.8%
Other Off-Site (Scope 3b) = 13.7%

Total Fuel Footprints		Site Controls	Excavation & Dewatering	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Total
Diesel (gal)	Transportation	416.665	16.6	9124	0	28450	38007.3
	On-site equipment	0	5982.197802	0	0	5982.197802	11964.4
Gasoline (gal)	Transportation	0	0	0	336	0	336
	On-site equipment	0	0	0	0	0	0







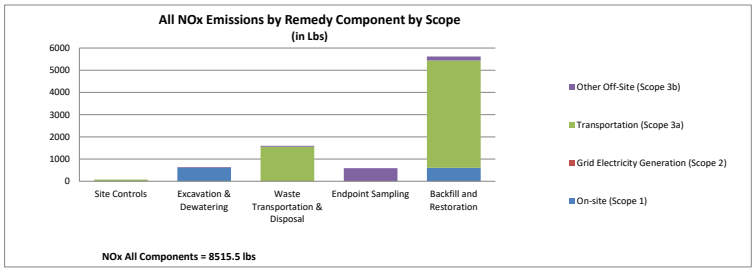
GHG
Tons CO2e

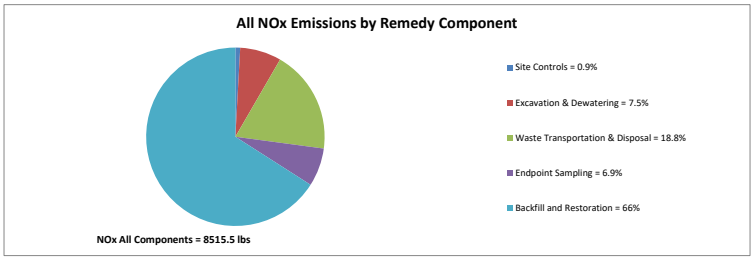
	Site Controls	Excavation & Dewatering	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Total
On-site (Scope 1)	0.0	66.5	0.0	0.0	66.5	133.0
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	4.7	0.2	102.6	3.3	320.1	430.9
Other Off-Site (Scope 3b)	0.8	9.1	13.8	15.1	52.0	90.8
Total	5.5	75.8	116.4	18.4	438.6	654.7

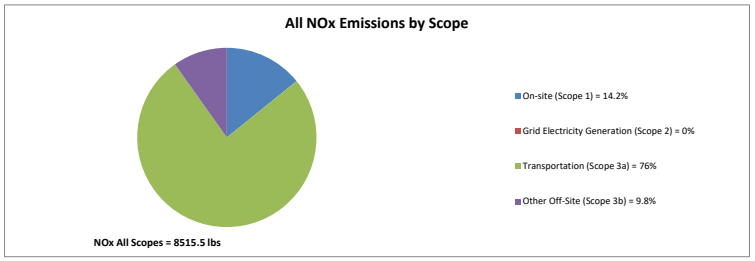
Site Controls = 0.8%
Excavation & Dewatering = 11.6%
Waste Transportation & Disposal = 17.8%
Endpoint Sampling = 2.8%
Backfill and Restoration = 67%
0 = 0%

GHG All Components = 654.7 Tons CO2e
GHG All Scopes = 654.7 Tons CO2e

On-site (Scope 1) = 20.3%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 65.8%
Other Off-Site (Scope 3b) = 13.9%







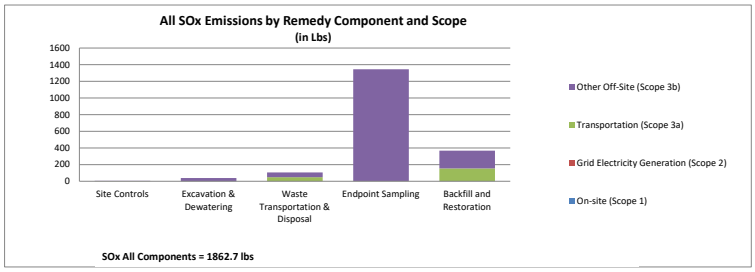
NOx
lbs

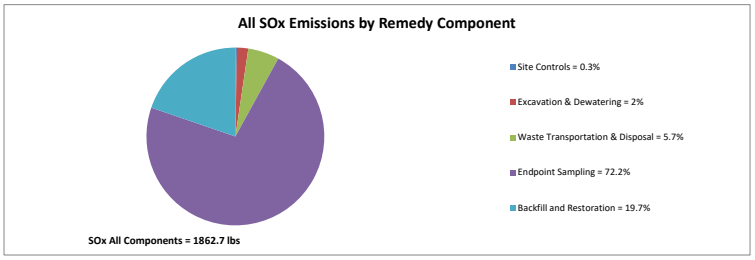
	Site Controls	Excavation & Dewatering	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Total
On-site (Scope 1)	0.0	604.2	0.0	0.0	604.2	1,208.4
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	70.8	2.8	1,551.1	9.1	4,836.5	6,470.3
Other Off-Site (Scope 3b)	3.0	30.6	46.5	581.1	175.6	836.8
Total	73.8	637.6	1,597.6	590.2	5,616.3	8,515.5

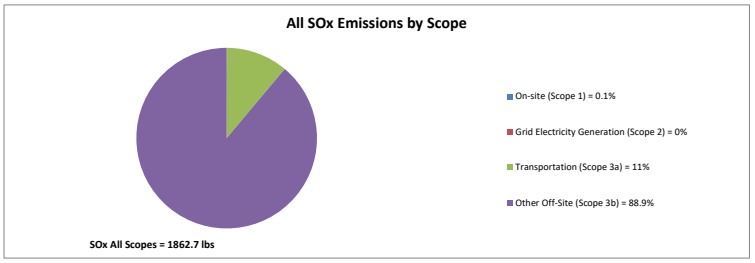
Site Controls = 0.9%
Excavation & Dewatering = 7.5%
Waste Transportation & Disposal = 18.8%
Endpoint Sampling = 6.9%
Backfill and Restoration = 66%
0 = 0%

NOx All Components = 8515.5 lbs
NOx All Scopes = 8515.5 lbs

On-site (Scope 1) = 14.2%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 76%
Other Off-Site (Scope 3b) = 9.8%







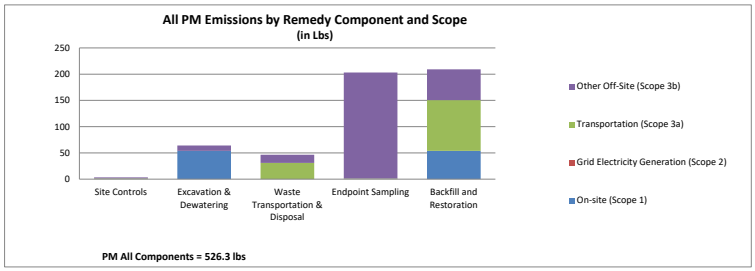
SOx
lbs

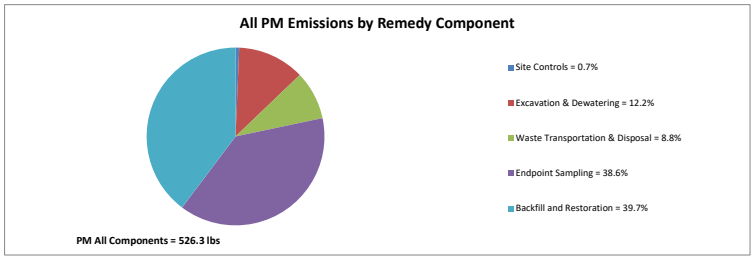
	Site Controls	Excavation & Dewatering	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Total
On-site (Scope 1)	0.0	0.8	0.0	0.0	0.8	1.6
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	2.2	0.1	49.3	0.1	153.6	205.4
Other Off-Site (Scope 3b)	3.1	37.2	56.6	1,345.5	213.5	1,655.8
Total	5.3	38.1	105.8	1,345.6	367.9	1,862.7

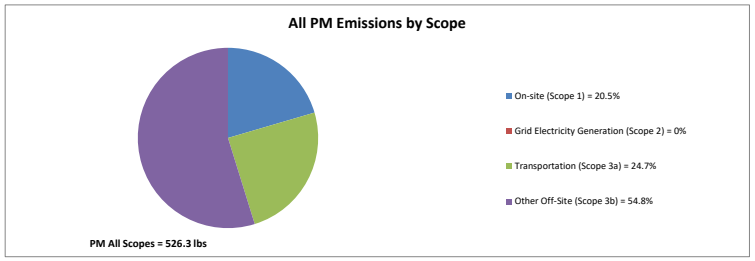
Site Controls = 0.3%
Excavation & Dewatering = 2%
Waste Transportation & Disposal = 5.7%
Endpoint Sampling = 72.2%
Backfill and Restoration = 19.7%
0 = 0%

SOx All Components = 1862.7 lbs
SOx All Scopes = 1862.7 lbs

On-site (Scope 1) = 0.1%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 11%
Other Off-Site (Scope 3b) = 88.9%







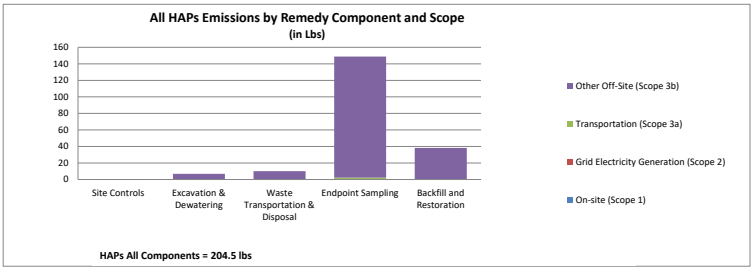
PM
lbs

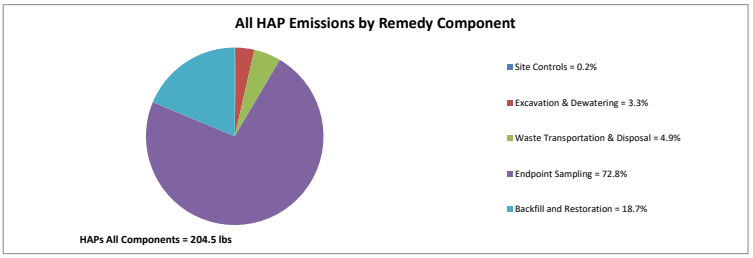
	Site Controls	Excavation & Dewatering	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Total
On-site (Scope 1)	0.0	53.8	0.0	0.0	53.8	107.7
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	1.4	0.1	31.0	1.0	96.7	130.2
Other Off-Site (Scope 3b)	2.1	10.2	15.5	202.0	58.5	288.4
Total	3.5	64.1	46.5	203.1	209.1	526.3

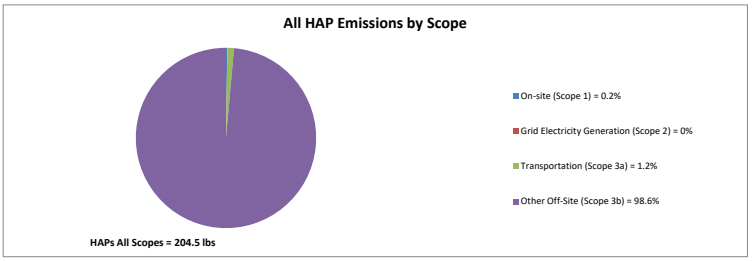
Site Controls = 0.7%
Excavation & Dewatering = 12.2%
Waste Transportation & Disposal = 8.8%
Endpoint Sampling = 38.6%
Backfill and Restoration = 39.7%
0 = 0%

PM All Components = 526.3 lbs
PM All Scopes = 526.3 lbs

On-site (Scope 1) = 20.5%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 24.7%
Other Off-Site (Scope 3b) = 54.8%







HAPs
lbs

	Site Controls	Excavation & Dewatering	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Total
On-site (Scope 1)	0.0	0.2	0.0	0.0	0.2	0.5
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	0.0	0.0	0.0	2.3	0.1	2.4
Other Off-Site (Scope 3b)	0.5	6.6	10.0	146.6	37.9	201.5
Total	0.5	6.8	10.1	148.8	38.3	204.5

Site Controls = 0.2%
Excavation & Dewatering = 3.3%
Waste Transportation & Disposal = 4.9%
Endpoint Sampling = 72.8%
Backfill and Restoration = 18.7%
0 = 0%

HAPs All Components = 204.5 lbs
HAPs All Scopes = 204.5 lbs

On-site (Scope 1) = 0.2%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 1.2%
Other Off-Site (Scope 3b) = 98.6%

Site Controls - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Grid Electricity Generation (Scope 2)	**0.000**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**58**	**9,375**	**71**	**2**	**1**	**74**	**0**
Other Off-Site (Scope 3b)	**8**	**1,688**	**3**	**3**	**2**	**8**	**0**
Remedy Totals	**66**	**11,063**	**74**	**5**	**4**	**83**	**0**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 1 SEFA_calculations.xlsx

Excavation & Dewatering - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**832**	**133,044**	**604**	**1**	**54**	**659**	**0**
Grid Electricity Generation (Scope 2)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**2**	**374**	**3**	**0**	**0**	**3**	**0**
Other Off-Site (Scope 3b)	**102**	**18,116**	**31**	**37**	**10**	**78**	**7**
Remedy Totals	**936**	**151,534**	**638**	**38**	**64**	**740**	**7**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 1 SEFA_calculations.xlsx

Waste Transportation & Disposal - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Grid Electricity Generation (Scope 2)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**1,268**	**205,290**	**1,551**	**49**	**31**	**1,631**	**0**
Other Off-Site (Scope 3b)	**155**	**27,554**	**47**	**57**	**16**	**119**	**10**
Remedy Totals	**1,423**	**232,844**	**1,598**	**106**	**47**	**1,750**	**10**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 1 SEFA_calculations.xlsx

Endpoint Sampling - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Grid Electricity Generation (Scope 2)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**42**	**6,643**	**9**	**0**	**1**	**10**	**2**
Other Off-Site (Scope 3b)	**254**	**30,197**	**581**	**1,345**	**202**	**2,129**	**147**
Remedy Totals	**296**	**36,840**	**590**	**1,346**	**203**	**2,139**	**149**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 1 SEFA_calculations.xlsx

Backfill and Restoration - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**832**	**133,044**	**604**	**1**	**54**	**659**	**0**
Grid Electricity Generation (Scope 2)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**3,955**	**640,125**	**4,837**	**154**	**97**	**5,087**	**0**
Other Off-Site (Scope 3b)	**585**	**103,985**	**176**	**213**	**59**	**448**	**38**
Remedy Totals	**5,371**	**877,154**	**5,616**	**368**	**209**	**6,193**	**38**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 1 SEFA_calculations.xlsx

All - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**1,663**	**266,088**	**1,208**	**2**	**108**	**1,318**	**0**
Grid Electricity Generation (Scope 2)	**0.000**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**5,325**	**861,806**	**6,470**	**205**	**130**	**6,806**	**2**
Other Off-Site (Scope 3b)	**1,105**	**181,542**	**837**	**1,656**	**288**	**2,781**	**202**
Remedy Totals	**8,092**	**1,309,436**	**8,516**	**1,863**	**526**	**10,905**	**204**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 1 SEFA_calculations.xlsx

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Site Controls	Exc. & DW	Waste T&D	EPS	B&R	Input Template (7)	Input Template (6)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
On-Site																						
On-site Renewable Energy																						
Renewable electricity generated on-site	MWh	0	0	0	0	0										0	0	0	0	0	0	0
Landfill gas combusted on-site for energy use	ccf CH_4	0	0	0	0	0										0	0	0	0	0	0	0
On-site biodiesel use	gal	0	0	0	0	0										0	0	0	0	0	0	0
On-site biodiesel use - Other	gal	0	0	0	0	0										0	0	0	0	0	0	0
User-defined on-site renewable energy use #1	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0										0	0	0	0	0	0	0
On-Site Conventional Energy																						
Grid electricity	MWh	0	0	0	0	0										0	0	0	0	0	0	0
On-site diesel use - Other	Gal	0	0	0	0	0										0	0	0	0	0	0	0
On-site diesel use <75 hp	Gal	0	0	0	0	0										0	0	0	0	0	0	0
On-site diesel use 75<hp<750	Gal	0	5982.1978	0	0	5982.1978										0	5982.1978	0	0	5982.1978	0	11964.396
On-site diesel use >750 hp	Gal	0	0	0	0	0										0	0	0	0	0	0	0
On-site gasoline use - Other	Gal	0	0	0	0	0										0	0	0	0	0	0	0
On-site gasoline use <25 hp	Gal	0	0	0	0	0										0	0	0	0	0	0	0
On-site gasoline use >25 hp	Gal	0	0	0	0	0										0	0	0	0	0	0	0
On-site natural gas use	ccf	0	0	0	0	0										0	0	0	0	0	0	0
On-site compressed natural gas use - Other	ccf	0	0	0	0	0										0	0	0	0	0	0	0
On-site compressed natural gas use	ccf	0	0	0	0	0										0	0	0	0	0	0	0
On-site liquified petroleum gas use - Other	gal	0	0	0	0	0										0	0	0	0	0	0	0
On-site liquified petroleum gas use	gal	0	0	0	0	0										0	0	0	0	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0										0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0										0	0	0	0	0	0	0
Other On-site Emissions																						
On-site HAP process emissions	Lbs	0	0	0	0	0										0	0	0	0	0	0	0
On-site GHG emissions	Lbs CO2e	0	0	0	0	0										0	0	0	0	0	0	0
On-site carbon storage	Lbs CO2e	0	0	0	0	0										0	0	0	0	0	0	0
GHG avoided by flaring on-site landfill methane	ccf CH4	0	0	0	0	0										0	0	0	0	0	0	0
Other on-site NOx emissions or reductions	Lbs	0	0	0	0	0										0	0	0	0	0	0	0
Other on-site SOx emissions or reductions	Lbs	0	0	0	0	0										0	0	0	0	0	0	0
Other on-site PM emissions or reductions	Lbs	0	0	0	0	0										0	0	0	0	0	0	0
Electricity Generation																						
Grid electricity	MWh	0	0	0	0	0										0	0	0	0	0	0	0
Voluntary purchase of renewable electricity	MWh	0	0	0	0	0										0	0	0	0	0	0	0
Voluntary purchase of RECs	MWh	0	0	0	0	0										0	0	0	0	0	0	0
Transportation																						
Transportation Fuel Use Breakdown																						
Biodiesel use - Personnel Transport	gal	0	0	0	0	0										0	0	0	0	0	0	0
Biodiesel use - Personnel Transport - User Defined	gal	0	0	0	0	0										0	0	0	0	0	0	0
Biodiesel use - Equipment Transport	gal	0	0	0	0	0										0	0	0	0	0	0	0
Biodiesel use - Equipment Transport - User Defined	gal	0	0	0	0	0										0	0	0	0	0	0	0
Biodiesel use - Material Transport	gal	0	0	0	0	0										0	0	0	0	0	0	0
Biodiesel use - Material Transport - User Defined	gal	0	0	0	0	0										0	0	0	0	0	0	0
Biodiesel use - Waste Transport	gal	0	0	0	0	0										0	0	0	0	0	0	0
Biodiesel use - Waste Transport - User Defined	gal	0	0	0	0	0										0	0	0	0	0	0	0
Diesel use - Personnel Transport - other vehicles	gal	0	0	0	0	0										0	0	0	0	0	0	0
Diesel use - Personnel Transport - car	gal	0	0	0	0	0										0	0	0	0	0	0	0
Diesel use - Personnel Transport - passenger truck	gal	0	0	0	0	0										0	0	0	0	0	0	0
Diesel use - Personnel Transport - User Defined	gal	0	0	0	0	0										0	0	0	0	0	0	0
Diesel use - Equipment Transport	gal	0	16.6	0	0	0										0	16.6	0	0	0	0	16.6
Diesel use - Equipment Transport - User Defined	gal	0	0	0	0	0										0	0	0	0	0	0	0
Diesel use - Material Transport	gal	416.665	0	0	0	28450										416.665	0	0	0	28450	0	28866.665
Diesel use - Material Transport - User Defined	gal	0	0	0	0	0										0	0	0	0	0	0	0
Diesel use - Waste Transport	gal	0	0	9124	0	0										0	0	9124	0	0	0	9124
Diesel use - Waste Transport - User Defined	gal	0	0	0	0	0										0	0	0	0	0	0	0
Gasoline use - Personnel Transport - other vehicles	gal	0	0	0	0	0										0	0	0	0	0	0	0
Gasoline use - Personnel Transport - car	gal	0	0	0	336	0										0	0	0	336	0	0	336
Gasoline use - Personnel Transport - passenger truck	gal	0	0	0	0	0										0	0	0	0	0	0	0
Gasoline use - Personnel Transport - User Defined	gal	0	0	0	0	0										0	0	0	0	0	0	0
Gasoline use - Equipment Transport	gal	0	0	0	0	0										0	0	0	0	0	0	0
Gasoline use - Equipment Transport - User Defined	gal	0	0	0	0	0										0	0	0	0	0	0	0
Natural Gas use - Personnel Transport	ccf	0	0	0	0	0										0	0	0	0	0	0	0
Natural Gas use - Personnel Transport - User Defined	ccf	0	0	0	0	0										0	0	0	0	0	0	0
Natural Gas use - Equipment Transport	ccf	0	0	0	0	0										0	0	0	0	0	0	0

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Site Controls	Exc. & DW	Waste T&D	EPS	B&R	Input Template (7)	Input Template (6)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Conventional Energy:																						
Transportation diesel use	gal	416.665	16.6	9124	0	28450										416.665	16.6	9124	0	28450	0	38007.265
Transportation gasoline use	gal	0	0	0	336	0										0	0	0	336	0	0	336
Transportation natural gas use	ccf	0	0	0	0	0										0	0	0	0	0	0	0
User-defined conventional energy transportation #1	TBD	10	10	10	10	10										10	10	10	10	10	0	50
User-defined conventional energy transportation #2	TBD	0	0	0	0	0										0	0	0	0	0	0	0
Renewable Energy:																						
Transportation biodiesel use	gal	0	0	0	0	0										0	0	0	0	0	0	0
User-defined renewable energy transportation #1	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined renewable energy transportation #2	TBD	0	0	0	0	0										0	0	0	0	0	0	0
Off-Site																						
Construction Materials																						
Aluminum, Rolled Sheet	lb	0	0	0	0	0										0	0	0	0	0	0	0
Asphalt, mastic	lb	0	0	0	0	0										0	0	0	0	0	0	0
Asphalt, paving-grade	lb	0	0	0	0	0										0	0	0	0	0	0	0
Ethanol, Corn, 95%	lb	0	0	0	0	0										0	0	0	0	0	0	0
Ethanol, Corn, 99.7%	lb	0	0	0	0	0										0	0	0	0	0	0	0
Ethanol, Petroleum, 99.7%	lb	0	0	0	0	0										0	0	0	0	0	0	0
Gravel/Sand Mix, 65% Gravel	lb	0	0	0	0	0										0	0	0	0	0	0	0
Gravel/sand/clay	lb	0	0	0	0	0										0	0	0	0	0	0	0
HDPE	lb	0	0	0	0	0										0	0	0	0	0	0	0
Photovoltaic system (installed)	W	0	0	0	0	0										0	0	0	0	0	0	0
PVC	lb	0	0	0	0	0										0	0	0	0	0	0	0
Portland cement, US average	lb	0	0	0	0	0																
Ready-mixed concrete, 20 MPa	ft3	0	0	0	0	0										0	0	0	0	0	0	0
Round Gravel	lb	0	0	0	0	0										0	0	0	0	0	0	0
Sand	lb	0	0	0	0	0										0	0	0	0	0	0	0
Stainless Steel	lb	0	0	0	0	0										0	0	0	0	0	0	0
Steel	lb	0	0	0	0	0										0	0	0	0	0	0	0
Other refined construction materials	lb	0	0	0	0	0										0	0	0	0	0	0	0
Other unrefined construction materials	lb	0	0	0	0	0										0	0	0	0	0	0	0
Treatment Materials & Chemicals																						
Cheese Whey	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Emulsified vegetable oil	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Granular activated carbon, primary	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Granular activated carbon, regenerated	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Iron (II) Sulfate	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Lime, Hydrated, Packed	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Molasses	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Phosphoric Acid, 70% in H2O	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Potassium Permanganate	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Sodium Hydroxide, 50% in H2O	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Other Treatment Chemicals & Materials	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Material Type																						
Total Virgin Refined Materials	tons	45.475	0	0	0	0										45.475	0	0	0	0	0	45.475
Total Recycled Refined Materials	tons	0	0	0	0	0										0	0	0	0	0	0	0
Total Reused Refined Materials	tons	0	0	0	0	0										0	0	0	0	0	0	0
Total Refined Material	tons	45.475	0	0	0	0										45.475	0	0	0	0	0	45.475
Total Virgin Unrefined Materials	tons	0	0	0	0	0										0	0	0	0	0	0	0
Total Recycled Unrefined Materials	tons	60	0	0	0	43018.98										60	0	0	0	43018.98	0	43078.98
Total Reused Unrefined Materials	tons	0	0	0	0	0										0	0	0	0	0	0	0
Total Unrefined Material	tons	60	0	0	0	43018.98										60	0	0	0	43018.98	0	43078.98
Fuel Processing																						
Biodiesel produced	gal	0	0	0	0	0										0	0	0	0	0	0	0
Diesel produced	gal	416.665	5998.7978	9124	0	34432.198										416.665	5998.7978	9124	0	34432.198	0	49971.661
Gasoline produced	gal	0	0	0	336	0										0	0	0	336	0	0	336
Compressed natural gas produced	ccf	0	0	0	0	0										0	0	0	0	0	0	0
Liquified petroleum gas produced	gal	0	0	0	0	0										0	0	0	0	0	0	0
Natural gas produced	ccf	0	0	0	0	0										0	0	0	0	0	0	0
Water Use																						
Public Water Supply	gal x 1000	86	0	0	0	0										86	0	0	0	0	0	86
Extracted Groundwater	gal x 1000	0	0	0	0	0										0	0	0	0	0	0	0
Surface Water	gal x 1000	0	0	0	0	0										0	0	0	0	0	0	0
Reclaimed Water	gal x 1000	0	0	0	0	0										0	0	0	0	0	0	0
Collected/Diverted Storm Water	gal x 1000	0	0	0	0	0										0	0	0	0	0	0	0
User-defined water resource #1	gal x 1000	0	0	0	0	0										0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0										0	0	0	0	0	0	0

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Site Controls	Exc. & DW	Waste T&D	EPS	B&R	Input Template (7)	Input Template (6)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Waste/Recycle Handling																						
Hazardous waste incineration	lbs	0	0	0	0	0										0	0	0	0	0	0	0
Off-site waste water treatment (POTW)	gal x 1000	0	0	0	0	0										0	0	0	0	0	0	0
Off-site non-hazardous waste landfill	tons	0	0	0	0	0										0	0	0	0	0	0	0
Off-site hazardous waste landfill	tons	0	0	0	0	0										0	0	0	0	0	0	0
Recycled/Reused On-Site	tons	0	0	0	0	0										0	0	0	0	0	0	0
Recycled/Reused Off-Site	tons	0	0	0	0	0										0	0	0	0	0	0	0
Solid Waste Totals																						
Total Non-Hazardous Waste	tons	0	0	43019.267	0	0										0	0	43019.267	0	0	0	43019.267
Total Hazardous Waste	tons	0	0	0	0	0										0	0	0	0	0	0	0
Total Recycled/Reused	tons	0	0	1	0	0										0	0	1	0	0	0	1
Total Waste (all types)	tons	0	0	43020.267	0	0										0	0	43020.267	0	0	0	43020.267
Lab Services																						
Off-site Laboratory Analysis - Other	sample	0	0	0	1570	0										0	0	0	1570	0	0	1570
Off-site Laboratory Analysis - Metals	sample	0	0	0	314	0										0	0	0	314	0	0	314
Off-site Laboratory Analysis - Mercury	sample	0	0	0	314	0										0	0	0	314	0	0	314
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0	0	0	0										0	0	0	0	0	0	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0	0	0	0										0	0	0	0	0	0	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0	0	0	0										0	0	0	0	0	0	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0	0	0	0										0	0	0	0	0	0	0
Off-site Laboratory Analysis - Sulfate	sample	0	0	0	0	0										0	0	0	0	0	0	0
Off-site Laboratory Analysis - PCBs	sample	0	0	0	314	0										0	0	0	314	0	0	314
Off-site Laboratory Analysis - VOCs	sample	0	0	0	314	0										0	0	0	314	0	0	314
Off-site Laboratory Analysis - SVOCs	sample	0	0	0	314	0										0	0	0	314	0	0	314
Resource Extraction for Electricity																						
Coal extraction and processing	MWh	0	0	0	0	0										0	0	0	0	0	0	0
Natural gas extraction and processing	MWh	0	0	0	0	0										0	0	0	0	0	0	0
Nuclear fuel extraction and processing	MWh	0	0	0	0	0										0	0	0	0	0	0	0
Oil extraction and processing	MWh	0	0	0	0	0										0	0	0	0	0	0	0
Other fuel extraction and processing	MWh	0	0	0	0	0										0	0	0	0	0	0	0
Electricity Transmission																						
Transmission and distribution losses	MWh	0	0	0	0	0										0	0	0	0	0	0	0

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Site Controls	Exc. & DW	Waste T&D	EPS	B&R	Input Template (7)	Input Template (6)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Other																						
orange mesh fencing	ft	2300	0	0	0	0										2300	0	0	0	0	0	2300
absorbent composite socks	ft	2300	0	0	0	0										2300	0	0	0	0	0	2300
6-mil 40' x 100' polyurethane sheeting	rolls	10	0	0	0	0										10	0	0	0	0	0	10
aggregate 2" stone	ton	60	0	0	0	0										60	0	0	0	0	0	60
filter cloth	lb	60	0	0	0	0										60	0	0	0	0	0	60
20-mil vapor barrier	sqft	0	0	0	0	0										0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0										0	0	0	0	0	0	0
Clean Fill	CY	0	0	0	0	30727.843										0	0	0	0	30727.843	0	30727.843
Recycled Stone	CY	0	0	0	0	0										0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined Waste Destinations																						
User-defined recycled/reused on-site #1	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0										0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	0	0	1	0	0										0	0	1	0	0	0	1
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	0	0	0	0										0	0	0	0	0	0	0
Broome County Landfill	Tons	0	0	43019	0	0										0	0	43019	0	0	0	43019
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0	0	200	0	0										0	0	200	0	0	0	200
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0										0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0										0	0	0	0	0	0	0

Input Worksheet for Site Controls

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	**Component 1**	**Site Controls**

General Scope

Crew mobilization and the establishment and maintenance of SESC measures, Storm Water Pollution Control, Dust Control, etc. for the duration of the remediation remedy implementation. Estimated Project duration is **86 days**. Note: 1. All "Personnel Transportation" for the duration of the work has been captured in this Component as the same personnel will be onsite for each Component (2-5). 2. Remediation equipment mobilization is outlined in Component 2.

Example Items Eliminated through Screening Process

Other Notes and References

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Gallagher Bassett Technical Services PM	20	307			6140				Remedial Oversight and Site Visits
Contractor (6 empl.)	516	20			10320				
Environmental Oversight Field Technician (1 empl.)	86	20			1720				Daily Oversight
Tank Removal Company	1	11			11				
NYSDEC Project Manager	10	22			220				

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Site Controls

Remedy Component that this Input worksheet is part of:	Component 1	Site Controls

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
						Estimated Total Electricity Usage Based on Above	0	
						Renewable Electricity Generated On-Site*		
						Total Electricity Usage Based on Personnel Transportation	0	
						Total Grid Electricity Used	0	

**** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).***

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
			Totals	0	0	0	

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
			Total	0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
orange mesh fencing	ft	2300	29.9	Refined	Virgin	Yes	500				500	Truck (mpg)	Diesel	6		83.333	
			0									Truck (mpg)	Diesel	6			
absorbent composite socks	ft	2300	14.95	Refined	Virgin	Yes	500				500	Truck (mpg)	Diesel	6		83.333	erosion control
			0									Truck (mpg)	Diesel	6			
6-mil 40' x 100' polyurethane sheeting	rolls	10	0.595	Refined	Virgin	Yes	500				500	Truck (mpg)	Diesel	6		83.333	used for soil stockpiles & USTs
			0									Truck (mpg)	Diesel	6			
aggregate 2" stone	ton	60	60	Unrefined	Recycled	Yes	500				500	Truck (mpg)	Diesel	6		83.333	construction entrance pad
			0									Truck (mpg)	Diesel	6			
filter cloth	lb	60	0.03	Refined	Virgin	Yes	500				500	Truck (mpg)	Diesel	6		83.333	construction entrance pad (based on Mirari 100x
			0									Truck (mpg)	Diesel	6			
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														

**** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.***

***** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Site Controls

Remedy Component that this Input worksheet is part of:	Component 1	Site Controls

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											

** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.*

*** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.*

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
Public Water	gal x 1000	86	358.62			tire washing, dust supression	
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.*

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for Site Controls

Remedy Component that this Input worksheet is part of:	Component 1	Site Controls

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		Units	Quantity	Notes
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Totals	0	

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

Input Worksheet for Exc. & DW

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	Component 2	Excavation & Dewatering

General Scope

Excavation and drilling of soils located at the site, loading into tri-axle trucks for off-site disposal, removal of underground storage tanks, and dewatering when required. Estimated Project duration is **86 days (assume 43 days of excavation and disposal)**. Note: 1. All "Personnel Transportation" for the duration of the work has been captured in Component 1 as the same personnel will be on-site for each Component (2-5).

Example Items Eliminated through Screening Process

Other Notes and References

Assume Removal of all soils exceeding UU SCOs

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Gallagher Bassett Technical Services PM									
Contractor (6 empl.)									
Environmental Oversight Field Technician (1 empl.)									
Tank Removal Company									
NYSDEC Project Manager									

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes
Excavator - medium (175 HP)	165	75%	Diesel between 75 and 750 hp	6.799450549	344	2339.010989	27.83	1	50	50	Truck (mpg)	Diesel	6		8.3	PC238 Excavator Specs (example)
Excavator - large (250 HP)	257	75%	Diesel between 75 and 750 hp	10.59065934	344	3643.186813	40.2735	1	50	50	Truck (mpg)	Diesel	6		8.3	PC360 Excavator Specs (example)

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Exc. & DW

Remedy Component that this Input worksheet is part of:	Component 2	Excavation & Dewatering

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
					Estimated Total Electricity Usage Based on Above	0	
					Renewable Electricity Generated On-Site*		
					Total Electricity Usage Based on Personnel Transportation	0	
					Total Grid Electricity Used	0	

** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).*

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
		Totals	0	0	0	

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
			Total	0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
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			0														
			0														
			0														
			0														
			0														
			0														

** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.*

*** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.*

**** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.*

Input Worksheet for Exc. & DW

Remedy Component that this Input worksheet is part of:	Component 2	Excavation & Dewatering

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											

** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.*

*** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.*

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.*

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for Exc. & DW

Remedy Component that this Input worksheet is part of:	Component 2	Excavation & Dewatering

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		Units	Quantity	Notes
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Totals	**0**	

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

Input Worksheet for Waste T&D

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	**Component 3**	**Waste Transportation & Disposal**

General Scope

Transportation and disposal of contaminated soil at approved permitted off-site disposal facilities, for the duration of the remediation remedy implementation. Note: 1. All "Personnel Transportation" for the duration of the work has been captured in Component 1 as the same personnel will be on-site for each Component (2-5). Equipment is summarized in Component 2.

Example Items Eliminated through Screening Process

Other Notes and References

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Gallagher Bassett Technical Services PM									
Contractor (6 empl.)									
Environmental Oversight Field Technician (1 empl.)									
Tank Removal Company									
NYSDEC Project Manager									

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Waste T&D

Remedy Component that this Input worksheet is part of:	Component 3	Waste Transportation & Disposal

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
Estimated Total Electricity Usage Based on Above						0	
Renewable Electricity Generated On-Site*							
Total Electricity Usage Based on Personnel Transportation						0	
Total Grid Electricity Used						0	

**** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).***

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
Totals			0	0	0	

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
Total				0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														

**** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.***

***** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Waste T&D

Remedy Component that this Input worksheet is part of:	Component 3	Waste Transportation & Disposal

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
			0		16	1,707	No	27312	Truck (mpg)	Diesel	6		4552.0	
Broome County Landfill	Tons	43,019	43019	25	16	1,707	No	27312	Truck (mpg)	Diesel	6		4552.0	
			0		30	1	No	30	Truck (mpg)	Diesel	6		5.0	
Scrap Metal Disposal Facility	Tons	1	1	50	30	1	No	30	Truck (mpg)	Diesel	6		5.0	Recycled scrap metal - cleaned tank shell
			0		30	1	No	30	Truck (mpg)	Diesel	6		5.0	
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	200	0.26736112	25	30	1	No	30	Truck (mpg)	Diesel	6		5.0	Non-RCRA Non-DOT Used Oil/Oil Water Mixture
			0											
			0											
			0											
			0											
			0											
			0											

**** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.***

***** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

**** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.***

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for Waste T&D

Remedy Component that this Input worksheet is part of:	Component 3	Waste Transportation & Disposal

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		**Units**	**Quantity**	**Notes**
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Totals	**0**	

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

Input Worksheet for EPS

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	Component 4	Endpoint Sampling

General Scope

Collection of endpoint samples at the base (and walls if required) of excavations to document analytical levels of remaining material/confirm that the proposed remediation Track has been met.

Example Items Eliminated through Screening Process

Other Notes and References

One endpoint sample for every 900 square feet + wall samples at deeper excavations + 5 tank endpoints (off-site tank on border of Lot 30 will be excavated during development)
QAPP samples not included in calculations

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Gallagher Bassett Technical Services									See component 1
Lab Courier - Phoenix Environmental (Albany, NY)	16	268	Car	Gasoline	4288	25		171.5	To and from site
Lab Courier - Phoenix Environmental (Manchester, CT)	16	257	Car	Gasoline	4112	25		164.5	To and from Albany office

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for EPS

Remedy Component that this Input worksheet is part of:	Component 4	Endpoint Sampling

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
Estimated Total Electricity Usage Based on Above						0	
Renewable Electricity Generated On-Site*							
Total Electricity Usage Based on Personnel Transportation						0	
Total Grid Electricity Used						0	

**** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).***

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
Totals			0	0	0	

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
Total				0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														

**** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.***

***** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for EPS

Remedy Component that this Input worksheet is part of:	Component 4	Endpoint Sampling

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											

** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.*

*** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.*

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.*

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for EPS

Remedy Component that this Input worksheet is part of:	Component 4	Endpoint Sampling

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		**Units**	**Quantity**	**Notes**
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Off-site Laboratory Analysis - VOCs	314	
Off-site Laboratory Analysis - SVOCs	314	
Off-site Laboratory Analysis - Metals	314	
Off-site Laboratory Analysis - Mercury	314	
Off-site Laboratory Analysis - PCBs	314	
Off-site Laboratory Analysis - Other	314	
Off-site Laboratory Analysis - Other	314	
Off-site Laboratory Analysis - Other	314	
Off-site Laboratory Analysis - Other	314	
Off-site Laboratory Analysis - Other	314	
Totals	**3140**	

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

Input Worksheet for B&R

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	**Component 5**	**Backfill and Restoration**

General Scope

Importation of clean fill and backfill, grading and compaction to grade, for the duration of the remedy. Note: 1. All "Personnel Transportation" for the duration of the work has been captured in Component 1 as the same personnel will be on-site for each Component (2-5). Estimated project duration of **86 days (assume 43 days of backfill and restoration)**. 2. Equipment is summarized in Component 2.

Example Items Eliminated through Screening Process

Other Notes and References

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Gallagher Bassett Technical Services PM									
Contractor (6 empl.)									
Environmental Oversight Field Technician (1 empl.)									
Tank Removal Company									
NYSDEC Project Manager									

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes
Excavator - medium (175 HP)	165	75%	Diesel between 75 and 750 hp	6.799450549	344	2339.010989										PC238 Excavator Specs (example) - see Exc. for equipment transport
Excavator - large (250 HP)	257	75%	Diesel between 75 and 750 hp	10.59065934	344	3643.186813										PC360 Excavator Specs (example) - see Exc. for equipment transport

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for B&R

Remedy Component that this Input worksheet is part of:	Component 5	Backfill and Restoration

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
Estimated Total Electricity Usage Based on Above						0	
Renewable Electricity Generated On-Site*							
Total Electricity Usage Based on Personnel Transportation						0	
Total Grid Electricity Used						0	

**** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).***

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
Totals			0	0	0	

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
Total				0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
Clean Fill	CY	30727.843	43018.98015	Unrefined	Recycled	Yes	500	50	1,707	No	85350	Truck (mpg)	Diesel	6		14225.000	
			0					50	1,707	No	85350	Truck (mpg)	Diesel	6		14225.000	
			0														
			0														
			0														
			0														
			0														
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			0														
			0														
			0														

**** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.***

***** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for B&R

Remedy Component that this Input worksheet is part of:	Component 5	Backfill and Restoration

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											

**** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.***

***** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

**** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.***

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for B&R

Remedy Component that this Input worksheet is part of:	Component 5	Backfill and Restoration

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		Units	Quantity	Notes
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Totals	0	

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

For use of this worksheet, please see instructions at the end of the worksheet

User Defined Activity, Material, or Service	Unit	Tons per Unit*	User Defined Conversion Factors — Parameters Used, Extracted, Emitted, or Generated: Energy (MMBtu/unit)	GHG (lbs CO2e/unit)	NOx (lbs NOx/unit)	SOx (lbs SOx/unit)	PM (lbs PM/unit)	HAPs (lbs HAPs/unit)	Ref.	Use this row only for:
User-defined emissions for biodiesel on-site equipment	gal									**User-defined emissions for biodiesel on-site equipment**
User-defined emissions for diesel on-site equipment	gal									**User-defined emissions for diesel on-site equipment**
User-defined emissions for gasoline on-site equipment	gal									**User-defined emissions for gasoline on-site equipment**
User-defined emissions for compressed natural gas on-site equ	ccf									**User-defined emissions for compressed natural gas on-site**
User-defined emissions for liquified petroleum gas on-site equ	gal									**User-defined emissions for liquified petroleum gas on-site**
User-defined emissions for natural gas on-site equipment	ccf									**User-defined emissions for natural gas on-site equipment**
User-defined emissions for biodiesel transportation	gal									**User-defined emissions for biodiesel transportation**
User-defined emissions for diesel transportation	gal									**User-defined emissions for diesel transportation**
User-defined emissions for gasoline transportation	gal									**User-defined emissions for gasoline transportation**
User-defined emissions for natural gas transportation	ccf									**User-defined emissions for natural gas transportation**

Note: Entering user-defined emission conversion factors in Rows 7 - 16 will override default conversion factors for all emissions calculations of the same fuel/use throughout the SEFA workbooks.

orange mesh fencing	ft	0.013								**User-defined material #1**
absorbent composite socks	ft	0.0065								**User-defined material #2**
6-mil 40' x 100' polyurethane sheeting	rolls	0.0595								**User-defined material #3**
aggregate 2" stone	ton	1								**User-defined material #4**
filter cloth	lb	0.0005								**User-defined material #5**
20-mil vapor barrier	sqft	0.000138								**User-defined material #6**
4" Perforated SDR 35 Radon Vent Pipe	ft	1.014								**User-defined material #7**
Clean Fill	CY	1.4								**User-defined material #8**
Recycled Stone	CY	1.4								**User-defined material #9**
User-defined material #10	TBD	TBD								**User-defined material #10**
User-defined material #11	TBD	TBD								**User-defined material #11**
User-defined material #12	TBD	TBD								**User-defined material #12**
User-defined material #13	TBD	TBD								**User-defined material #13**
User-defined material #14	TBD	TBD								**User-defined material #14**
User-defined material #15	TBD	TBD								**User-defined material #15**
User-defined material #16	TBD	TBD								**User-defined material #16**
User-defined material #17	TBD	TBD								**User-defined material #17**
User-defined material #18	TBD	TBD								**User-defined material #18**
User-defined material #19	TBD	TBD								**User-defined material #19**
User-defined material #20	TBD	TBD								**User-defined material #20**

Item or Service Used	Unit	Tons per Unit*	Energy (MMBtu/unit)	GHG (lbs CO2e/unit)	NOx (lbs NOx/unit)	SOx (lbs SOx/unit)	PM (lbs PM/unit)	HAPs (lbs HAPs/unit)	Ref.	Use this row only for:
User-defined recycled/reused on-site #1	TBD	TBD								User-defined recycled/reused on-site #1
User-defined recycled/reused on-site #2	TBD	TBD								User-defined recycled/reused on-site #2
User-defined recycled/reused on-site #3	TBD	TBD								User-defined recycled/reused on-site #3
Scrap Metal Disposal Facility	Tons	1								User-defined recycled/reused off-site #1
User-defined recycled/reused off-site #2	TBD	TBD								User-defined recycled/reused off-site #2
User-defined recycled/reused off-site #3	TBD	TBD								User-defined recycled/reused off-site #3
Broome County Landfill	Tons	1								User-defined non-hazardous waste destination #1
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0.00134								User-defined non-hazardous waste destination #2
User-defined non-hazardous waste destination #3	TBD	TBD								User-defined non-hazardous waste destination #3
User-defined hazardous waste destination #1	TBD	TBD								User-defined hazardous waste destination #1
User-defined hazardous waste destination #2	TBD	TBD								User-defined hazardous waste destination #2
User-defined hazardous waste destination #3	TBD	TBD								User-defined hazardous waste destination #3

Item or Service Used	Unit	Tons per Unit*	Energy (MMBtu/unit)	GHG (lbs CO2e/unit)	NOx (lbs/unit)	SOx (lbs/unit)	PM (lbs/unit)	HAPs (lbs/unit)	Ref.	Use this row only for:
User-defined on-site conventional energy use #1	TBD									User-defined on-site conventional energy use #1
User-defined on-site conventional energy use #2	TBD									User-defined on-site conventional energy use #2
User-defined conventional energy transportation #1	TBD									User-defined conventional energy transportation #1
User-defined conventional energy transportation #2	TBD									User-defined conventional energy transportation #2
User-defined on-site renewable energy use #1	TBD									User-defined on-site renewable energy use #1
User-defined on-site renewable energy use #2	TBD									User-defined on-site renewable energy use #2
User-defined renewable energy transportation #1	TBD									User-defined renewable energy transportation #1
User-defined renewable energy transportation #2	TBD									User-defined renewable energy transportation #2
User-defined water resource #1	gal x 1000									User-defined water resource #1
User-defined water resource #2	gal x 1000									User-defined water resource #2

** "Tons per unit" refers to how many tons there are per unit of the material (e.g., 1 pound is 1/2000 of a ton or 0.0005 tons per unit)*

"MMBtu" = millions of Btus

Fuel Usage Rate							
User Defined Vehicles in Mode of Personnel Transportation	B20	Biodiesel	Diesel	Electricity	Gasoline	Natural Gas	Ref.
	mpg or pmpg	mpg or pmpg	mpg or pmpg	mpkWh	mpg	mpccf	
User Defined Vehicle #1							User Defined Vehicle #1
User Defined Vehicle #2							User Defined Vehicle #2
User Defined Vehicle #3							User Defined Vehicle #3
User Defined Vehicle #4							User Defined Vehicle #4
User Defined Vehicle #5							User Defined Vehicle #5

"mpg" = miles per gallon; "pmpg" = passenger miles per gallon; "mpkWh" = miles per kilowatt hour; "mpccf" = miles per 100 cubic feet"

Fuel Usage Rate					
User Defined Vehicles in Mode of Transportation for Equipment, Materials, and Waste	B20	Biodiesel	Diesel	Ref.	
	mpg or gptm	mpg or gptm	mpg or gptm		
User Defined Vehicle #1					User Defined Vehicle #1
User Defined Vehicle #2					User Defined Vehicle #2
User Defined Vehicle #3					User Defined Vehicle #3
User Defined Vehicle #4					User Defined Vehicle #4

Site Controls - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**0.00**		**0**		**0**		**0**		**0**		**0**

Site Controls - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

Site Controls - Transportation Footprint (Scope 3a)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Conventional Energy														
Transportation diesel use	gal	416.665	0.139	57.916435	22.5	9374.9625	0.17	70.83305	0.0054	2.249991	0.0034	1.416661	0.0000052	0.0021667
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**58**		**9,375**		**71**		**2**		**1**		**0**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**58**		**9375**		**71**		**2**		**1**		**0**

Site Controls - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
Notes:														

Site Controls - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	416.665	0.017	7.083305	3.02	1258.3283	0.0051	2.1249915	0.0062	2.583323	0.0017	0.7083305	0.0011	0.4583315
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**7.083305**		**1258.3283**		**2.1249915**		**2.583323**		**0.7083305**		**0.4583315**
Notes:														
Public water	gal x 1000	86	0.0092	0.7912	5	430	0.0097	0.8342	0.0059	0.5074	0.016	1.376	0.000015	0.00129
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Site Controls - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	0	0.058071	0	6.8534384	0	0.131402	0	0.3038758	0	0.0455698	0	0.0330165	0
Off-site Laboratory Analysis - Metals	sample	0	0.212	0	27.4693	0	0.6423	0	1.5072	0	0.2264	0	0.1643	0
Off-site Laboratory Analysis - Mercury	sample	0	0.0731715	0	9.325458	0	0.2127439	0	0.4982396	0	0.0747359	0	0.0542332	0
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	0	0.0512769	0	5.224902	0	0.0833339	0	0.1904774	0	0.0284393	0	0.0212083	0
Off-site Laboratory Analysis - VOCs	sample	0	0.0762045	0	9.016814	0	0.104498	0	0.2270738	0	0.0339508	0	0.0235892	0
Off-site Laboratory Analysis - SVOCs	sample	0	0.0715602	0	7.870422	0	0.1459445	0	0.3373038	0	0.0504853	0	0.0372577	0
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Notes:														

Site Controls - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	2300	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	2300	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	10	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	60	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	60	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	0	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/u		lbs CO2e/u		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**7.874505**		**1688.3283**		**2.9591915**		**3.090723**		**2.0843305**		**0.4596215**

Site Controls - Intermediate Totals

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Total Gasoline Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	416.665	0.139	57.916435	22.5	9374.9625	0.17	70.83305	0.0054	2.249991	0.0034	1.416661	0.0000052	0.0021667
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	416.665	0.017	7.083305	3.02	1258.3283	0.0051	2.1249915	0.0062	2.583323	0.0017	0.7083305	0.0011	0.4583315
Total Diesel Footprint		**416.665**		**64.99974**		**10633.291**		**72.958042**		**4.833314**		**2.1249915**		**0.4604982**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Excavation & Dewatering - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	5982.1978	0.139	831.52549	22.24	133044.08	0.101	604.20198	0.00013	0.7776857	0.009	53.83978	0.00004	0.2392879
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**832**		**133,044**		**604**		**1**		**54**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**831.53**		**133,044**		**604**		**1**		**54**		**0**

Excavation & Dewatering - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	352	0	1.504	0	1.46966	0	0.07546	0	0.0454035	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

Excavation & Dewatering - Transportation Footprint (Scope 3a)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Conventional Energy														
Transportation diesel use	gal	16.6	0.139	2.3074	22.5	373.5	0.17	2.822	0.0054	0.08964	0.0034	0.05644	0.0000052	8.632E-05
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**2**		**374**		**3**		**0**		**0**		**0**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**2**		**374**		**3**		**0**		**0**		**0**

Excavation & Dewatering - Off-Site Footprint (Scope 3b)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0

Notes:

Excavation & Dewatering - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	5998.7978	0.017	101.97956	3.02	18116.369	0.0051	30.593869	0.0062	37.192546	0.0017	10.197956	0.0011	6.5986776
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**101.97956**		**18116.369**		**30.593869**		**37.192546**		**10.197956**		**6.5986776**
Notes:														
Public water	gal x 1000	0	0.0092	0	5	0	0.0097	0	0.0059	0	0.016	0	0.000015	0
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Excavation & Dewatering - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	0	0.058071	0	6.8534384	0	0.131402	0	0.3038758	0	0.0455698	0	0.0330165	0
Off-site Laboratory Analysis - Metals	sample	0	0.212	0	27.4693	0	0.6423	0	1.5072	0	0.2264	0	0.1643	0
Off-site Laboratory Analysis - Mercury	sample	0	0.0731715	0	9.325458	0	0.2127439	0	0.4982396	0	0.0747359	0	0.0542332	0
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	0	0.0512769	0	5.224902	0	0.0833339	0	0.1904774	0	0.0284393	0	0.0212083	0
Off-site Laboratory Analysis - VOCs	sample	0	0.0762045	0	9.016814	0	0.104498	0	0.2270738	0	0.0339508	0	0.0235892	0
Off-site Laboratory Analysis - SVOCs	sample	0	0.0715602	0	7.870422	0	0.1459445	0	0.3373038	0	0.0504853	0	0.0372577	0
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	35.2	0	0.1504	0	0.146966	0	0.007546	0	0.0045403	0
Notes:														

Excavation & Dewatering - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	0	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	0	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	0	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	0	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/u		lbs CO2e/u		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**101.97956**		**18116.369**		**30.593869**		**37.192546**		**10.197956**		**6.5986776**

Excavation & Dewatering - Intermediate Totals

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Total Gasoline Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	5982.1978	0.139	831.52549	22.24	133044.08	0.101	604.20198	0.00013	0.7776857	0.009	53.83978	0.00004	0.2392879
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	16.6	0.139	2.3074	22.5	373.5	0.17	2.822	0.0054	0.08964	0.0034	0.05644	0.0000052	8.632E-05
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	5998.7978	0.017	101.97956	3.02	18116.369	0.0051	30.593869	0.0062	37.192546	0.0017	10.197956	0.0011	6.5986776
Total Diesel Footprint		**5998.7978**		**935.81246**		**151533.95**		**637.61785**		**38.059872**		**64.094176**		**6.8380518**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Waste Transportation & Disposal - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	1	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**0.00**		**0**		**0**		**0**		**0**		**0**

Waste Transportation & Disposal - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	352	0	1.504	0	1.46966	0	0.07546	0	0.0454035	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												

Notes:

Waste Transportation & Disposal - Transportation Footprint (Scope 3a)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	**Units**	**Usage**	**Conv. Factor**	**MMBtus**	**Conv. Factor**	**lbs CO2e**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**
Conventional Energy														
Transportation diesel use	gal	9124	0.139	1268.236	22.5	205290	0.17	1551.08	0.0054	49.2696	0.0034	31.0216	0.0000052	0.0474448
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**1,268**		**205,290**		**1,551**		**49**		**31**		**0**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**1268**		**205290**		**1551**		**49**		**31**		**0**

Waste Transportation & Disposal - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
Notes:														

Waste Transportation & Disposal - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	9124	0.017	155.108	3.02	27554.48	0.0051	46.5324	0.0062	56.5688	0.0017	15.5108	0.0011	10.0364
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**155.108**		**27554.48**		**46.5324**		**56.5688**		**15.5108**		**10.0364**
Notes:														
Public water	gal x 1000	0	0.0092	0	5	0	0.0097	0	0.0059	0	0.016	0	0.000015	0
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Waste Transportation & Disposal - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	0	0.058071	0	6.8534384	0	0.131402	0	0.3038758	0	0.0455698	0	0.0330165	0
Off-site Laboratory Analysis - Metals	sample	0	0.212	0	27.4693	0	0.6423	0	1.5072	0	0.2264	0	0.1643	0
Off-site Laboratory Analysis - Mercury	sample	0	0.0731715	0	9.325458	0	0.2127439	0	0.4982396	0	0.0747359	0	0.0542332	0
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	0	0.0512769	0	5.224902	0	0.0833339	0	0.1904774	0	0.0284393	0	0.0212083	0
Off-site Laboratory Analysis - VOCs	sample	0	0.0762045	0	9.016814	0	0.104498	0	0.2270738	0	0.0339508	0	0.0235892	0
Off-site Laboratory Analysis - SVOCs	sample	0	0.0715602	0	7.870422	0	0.1459445	0	0.3373038	0	0.0504853	0	0.0372577	0
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	35.2	0	0.1504	0	0.146966	0	0.007546	0	0.0045403	0
Notes:														

Waste Transportation & Disposal - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	0	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	0	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	0	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	0	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	1	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/t		lbs CO2e/t		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	43019	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	200	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**155.108**		**27554.48**		**46.5324**		**56.5688**		**15.5108**		**10.0364**

Waste Transportation & Disposal - Intermediate Totals

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Total Gasoline Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	9124	0.139	1268.236	22.5	205290	0.17	1551.08	0.0054	49.2696	0.0034	31.0216	0.0000052	0.0474448
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	9124	0.017	155.108	3.02	27554.48	0.0051	46.5324	0.0062	56.5688	0.0017	15.5108	0.0011	10.0364
Total Diesel Footprint		**9124**		**1423.344**		**232844.48**		**1597.6124**		**105.8384**		**46.5324**		**10.083845**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Endpoint Sampling - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**0.00**		**0**		**0**		**0**		**0**		**0**

Endpoint Sampling - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	352	0	1.504	0	1.46966	0	0.07546	0	0.0454035	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

Endpoint Sampling - Transportation Footprint (Scope 3a)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	**Units**	**Usage**	**Conv. Factor**	**MMBtus**	**Conv. Factor**	**lbs CO2e**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**
Conventional Energy														
Transportation diesel use	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	336	0.124	41.664	19.77	6642.72	0.027	9.072	0.00036	0.12096	0.003	1.008	0.0067	2.2512
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**42**		**6,643**		**9**		**0**		**1**		**2**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**42**		**6643**		**9**		**0**		**1**		**2**

Endpoint Sampling - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
Notes:														

Endpoint Sampling - Off-Site Footprint (Scope 3b)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	0	0.017	0	3.02	0	0.0051	0	0.0062	0	0.0017	0	0.0011	0
Gasoline produced	gal	336	0.033	11.088	2.8	940.8	0.0046	1.5456	0.005	1.68	0.0015	0.504	0.001	0.336
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**11.088**		**940.8**		**1.5456**		**1.68**		**0.504**		**0.336**
Notes:														
Public water	gal x 1000	0	0.0092	0	5	0	0.0097	0	0.0059	0	0.016	0	0.000015	0
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Endpoint Sampling - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	1570	0.058071	91.171516	6.8534384	10759.898	0.131402	206.30107	0.3038758	477.08495	0.0455698	71.544624	0.0330165	51.83595
Off-site Laboratory Analysis - Metals	sample	314	0.212	66.568	27.4693	8625.3602	0.6423	201.6822	1.5072	473.2608	0.2264	71.0896	0.1643	51.5902
Off-site Laboratory Analysis - Mercury	sample	314	0.0731715	22.975842	9.325458	2928.1938	0.2127439	66.801585	0.4982396	156.44723	0.0747359	23.467085	0.0542332	17.029212
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	314	0.0512769	16.100947	5.224902	1640.6192	0.0833339	26.166838	0.1904774	59.809916	0.0284393	8.9299528	0.0212083	6.6593911
Off-site Laboratory Analysis - VOCs	sample	314	0.0762045	23.928209	9.016814	2831.2796	0.104498	32.812385	0.2270738	71.301173	0.0339508	10.660564	0.0235892	7.4070151
Off-site Laboratory Analysis - SVOCs	sample	314	0.0715602	22.469898	7.870422	2471.3125	0.1459445	45.826579	0.3373038	105.91339	0.0504853	15.852397	0.0372577	11.69893
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	35.2	0	0.1504	0	0.146966	0	0.007546	0	0.0045403	0
Notes:														

Endpoint Sampling - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	0	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	0	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	0	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	0	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/u		lbs CO2e/u		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**254.30241**		**30197.464**		**581.13626**		**1345.4975**		**202.04822**		**146.5567**

Endpoint Sampling - Intermediate Totals

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	336	0.124	41.664	19.77	6642.72	0.027	9.072	0.00036	0.12096	0.003	1.008	0.0067	2.2512
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	336	0.033	11.088	2.8	940.8	0.0046	1.5456	0.005	1.68	0.0015	0.504	0.001	0.336
Total Gasoline Footprint		**336**		**52.752**		**7583.52**		**10.6176**		**1.80096**		**1.512**		**2.5872**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	0	0.017	0	3.02	0	0.0051	0	0.0062	0	0.0017	0	0.0011	0
Total Diesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Backfill and Restoration - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	5982.1978	0.139	831.52549	22.24	133044.08	0.101	604.20198	0.00013	0.7776857	0.009	53.83978	0.00004	0.2392879
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**832**		**133,044**		**604**		**1**		**54**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**831.53**		**133,044**		**604**		**1**		**54**		**0**

Backfill and Restoration - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	352	0	1.504	0	1.46966	0	0.07546	0	0.0454035	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												

Notes:

Backfill and Restoration - Transportation Footprint (Scope 3a)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	**Units**	**Usage**	**Conv. Factor**	**MMBtus**	**Conv. Factor**	**lbs CO2e**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**
Conventional Energy														
Transportation diesel use	gal	28450	0.139	3954.55	22.5	640125	0.17	4836.5	0.0054	153.63	0.0034	96.73	0.0000052	0.14794
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**3,955**		**640,125**		**4,837**		**154**		**97**		**0**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**3955**		**640125**		**4837**		**154**		**97**		**0**

Backfill and Restoration - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
Notes:														

Backfill and Restoration - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	34432.198	0.017	585.34736	3.02	103985.24	0.0051	175.60421	0.0062	213.47963	0.0017	58.534736	0.0011	37.875418
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**585.34736**		**103985.24**		**175.60421**		**213.47963**		**58.534736**		**37.875418**
Notes:														
Public water	gal x 1000	0	0.0092	0	5	0	0.0097	0	0.0059	0	0.016	0	0.000015	0
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Backfill and Restoration - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	0	0.058071	0	6.8534384	0	0.131402	0	0.3038758	0	0.0455698	0	0.0330165	0
Off-site Laboratory Analysis - Metals	sample	0	0.212	0	27.4693	0	0.6423	0	1.5072	0	0.2264	0	0.1643	0
Off-site Laboratory Analysis - Mercury	sample	0	0.0731715	0	9.325458	0	0.2127439	0	0.4982396	0	0.0747359	0	0.0542332	0
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	0	0.0512769	0	5.224902	0	0.0833339	0	0.1904774	0	0.0284393	0	0.0212083	0
Off-site Laboratory Analysis - VOCs	sample	0	0.0762045	0	9.016814	0	0.104498	0	0.2270738	0	0.0339508	0	0.0235892	0
Off-site Laboratory Analysis - SVOCs	sample	0	0.0715602	0	7.870422	0	0.1459445	0	0.3373038	0	0.0504853	0	0.0372577	0
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	35.2	0	0.1504	0	0.146966	0	0.007546	0	0.0045403	0
Notes:														

Backfill and Restoration - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	0	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	0	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	0	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	0	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	30727.843	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/u		lbs CO2e/u		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**585.34736**		**103985.24**		**175.60421**		**213.47963**		**58.534736**		**37.875418**

Backfill and Restoration - Intermediate Totals

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Total Gasoline Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	5982.1978	0.139	831.52549	22.24	133044.08	0.101	604.20198	0.00013	0.7776857	0.009	53.83978	0.00004	0.2392879
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	28450	0.139	3954.55	22.5	640125	0.17	4836.5	0.0054	153.63	0.0034	96.73	0.0000052	0.14794
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	34432.198	0.017	585.34736	3.02	103985.24	0.0051	175.60421	0.0062	213.47963	0.0017	58.534736	0.0011	37.875418
Total Diesel Footprint		**34432.198**		**5371.4229**		**877154.32**		**5616.3062**		**367.88731**		**209.10452**		**38.262645**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

All Components - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	11964.396	0.139	1663.051	22.24	266088.16	0.101	1208.404	0.00013	1.5553714	0.009	107.67956	0.00004	0.4785758
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**1,663**		**266,088**		**1,208**		**2**		**108**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	1	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**1,663.05**		**266,088**		**1,208**		**2**		**108**		**0**

All Components - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	N/A*	0	N/A*	0	N/A*	0	N/A*	0	N/A*	0
**** Conversion factors are not applied to grid electricity in the "All Components" tab since multiple fuel mixes may be used. The value for each cell shaded yellow in Row 51 is the sum of values from Components 1 - 6.***														
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

All Components - Transportation Footprint (Scope 3a)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	**Units**	**Usage**	**Conv. Factor**	**MMBtus**	**Conv. Factor**	**lbs CO2e**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**
Conventional Energy														
Transportation diesel use	gal	38007.265	0.139	5283.0098	22.5	855163.46	0.17	6461.2351	0.0054	205.23923	0.0034	129.2247	0.0000052	0.1976378
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	336	0.124	41.664	19.77	6642.72	0.027	9.072	0.00036	0.12096	0.003	1.008	0.0067	2.2512
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	50	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**5,325**		**861,806**		**6,470**		**205**		**130**		**2**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**5325**		**861806**		**6470**		**205**		**130**		**2**

All Components - Off-Site Footprint (Scope 3b)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0

Notes:

All Components - Off-Site Footprint (Scope 3b)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	49971.661	0.017	849.51823	3.02	150914.42	0.0051	254.85547	0.0062	309.8243	0.0017	84.951823	0.0011	54.968827
Gasoline produced	gal	336	0.033	11.088	2.8	940.8	0.0046	1.5456	0.005	1.68	0.0015	0.504	0.001	0.336
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**860.60623**		**151855.22**		**256.40107**		**311.5043**		**85.455823**		**55.304827**
Notes:														
Public water	gal x 1000	86	0.0092	0.7912	5	430	0.0097	0.8342	0.0059	0.5074	0.016	1.376	0.000015	0.00129
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

All Components - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	1570	0.058071	91.171516	6.8534384	10759.898	0.131402	206.30107	0.3038758	477.08495	0.0455698	71.544624	0.0330165	51.83595
Off-site Laboratory Analysis - Metals	sample	314	0.212	66.568	27.4693	8625.3602	0.6423	201.6822	1.5072	473.2608	0.2264	71.0896	0.1643	51.5902
Off-site Laboratory Analysis - Mercury	sample	314	0.0731715	22.975842	9.325458	2928.1938	0.2127439	66.801585	0.4982396	156.44723	0.0747359	23.467085	0.0542332	17.029212
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	314	0.0512769	16.100947	5.224902	1640.6192	0.0833339	26.166838	0.1904774	59.809916	0.0284393	8.9299528	0.0212083	6.6593911
Off-site Laboratory Analysis - VOCs	sample	314	0.0762045	23.928209	9.016814	2831.2796	0.104498	32.812385	0.2270738	71.301173	0.0339508	10.660564	0.0235892	7.4070151
Off-site Laboratory Analysis - SVOCs	sample	314	0.0715602	22.469898	7.870422	2471.3125	0.1459445	45.826579	0.3373038	105.91339	0.0504853	15.852397	0.0372577	11.69893
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0										
Notes:														

All Components - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	**Units**	**Usage**	**Factor**	**MMBtus**	**Factor**	**lbs CO2e**	**Factor**	**lbs**	**Factor**	**lbs**	**Factor**	**lbs**	**Factor**	**lbs**
User-defined Materials														
orange mesh fencing	ft	2300	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	2300	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	10	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	60	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	60	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	0	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	30727.843	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	1	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/t		lbs CO2e/t		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	43019	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	200	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**1104.6118**		**181541.88**		**836.82593**		**1655.8292**		**288.37605**		**201.52682**

All Components - Intermediate Totals

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	336	0.124	41.664	19.77	6642.72	0.027	9.072	0.00036	0.12096	0.003	1.008	0.0067	2.2512
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	336	0.033	11.088	2.8	940.8	0.0046	1.5456	0.005	1.68	0.0015	0.504	0.001	0.336
Total Gasoline Footprint		**336**		**52.752**		**7583.52**		**10.6176**		**1.80096**		**1.512**		**2.5872**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	11964.396	0.139	1663.051	22.24	266088.16	0.101	1208.404	0.00013	1.5553714	0.009	107.67956	0.00004	0.4785758
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	38007.265	0.139	5283.0098	22.5	855163.46	0.17	6461.2351	0.0054	205.23923	0.0034	129.2247	0.0000052	0.1976378
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	49971.661	0.017	849.51823	3.02	150914.42	0.0051	254.85547	0.0062	309.8243	0.0017	84.951823	0.0011	54.968827
Total Diesel Footprint		**49971.661**		**7795.5791**		**1272166**		**7924.4945**		**516.6189**		**321.85608**		**55.64504**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019

		Default Conversion Factors						
		Parameters Used, Extracted, Emitted, or Generated						
		Energy	GHG*	NOx	SOx	PM	HAPs	REFERENCE #
Item or Activity		Used	Emitted	Emitted	Emitted	Emitted	Emitted	(Corresponds to list of references below)
	Unit	MMBtu	lbs CO2e	lbs	lbs	lbs	lbs	
Fuel Combustion								
Biodiesel use	gal	0.127	22.3	0.20	0	0.00099	NP	1
Diesel use	gal	0.139	22.5	0.17	0.0054	0.0034	5.2E-06	2
Diesel use - equipment <75 hp	gal	0.139	22.21	0.1565	0.000145	0.0145	4.0E-05	3
Diesel use - equipment >75 hp and <750 hp	gal	0.139	22.24	0.101	0.00013	0.009	4.0E-05	3
Diesel use - equipment >750 hp	gal	0.139	22.24	0.149	0.00013	0.006	4.0E-05	3
Diesel use - passenger car	gal	0.139	22.57	0.015	0.0002	0.003	2.5E-03	3
Diesel use - passenger truck	gal	0.139	22.545	0.0585	0.0002	0.007	2.6E-03	3
Diesel use - transport with combination truck	gal	0.139	22.53	0.122	0.0002	0.011	2.1E-03	3
Diesel use - transport with freight train	gal	0.139	25.26	0.307	0.00634	0.009	4.4E-03	3
Diesel use - transport with single unit truck	gal	0.139	22.52	0.088	0.0002	0.012	2.0E-03	3
Gasoline use	gal	0.124	19.6	0.11	0.0045	0.00054	3.9E-05	4
Gasoline use - equipment <25 hp	gal	0.124	17.48	0.037	0.00025	0.165	8.0E-05	3
Gasoline use - equipment >25 hp	gal	0.124	19.93	0.032	0.00029	0.002	9.0E-05	3
Gasoline use - passenger car	gal	0.124	19.77	0.027	0.00036	0.003	6.7E-03	3
Gasoline use - passenger truck	gal	0.124	19.79	0.035	0.00036	0.003	6.6E-03	3
Liquified petroleum gas use	gal	NP	12.69	0.021	0.00013	0.001	0.0E+00	3
Natural gas use	ccf	0.103	13.1	0.01	0.0000063	0.00076	8.4E-06	5
Natural gas use - compressed	ccf	NP	1957.835	16.0325	0.023045	0.2775	0.0E+00	3
Landfill gas use	ccf CH4	0.103	13.1	0.01	0.0000063	0.00076	8.4E-06	5
Construction Materials								
Aluminum, Rolled Sheet	lb	0.0633	9.15	0.0148	0.0283	0.0088	0.00102	3
Asphalt, mastic	lb	0.0412	0.85	0.0027	0.00798	0.0008	0.00107	3
Asphalt, paving-grade	lb	0.5000	8.58	0.0299	0.0969	0.0091	0.0133	3
Ethanol, Corn, 95%	lb	0.0318	-0.0199	0.00425	0.00303	0.000469	8.46E-05	3
Ethanol, Corn, 99.7%	lb	0.0324	0.0591	0.00431	0.0031	0.000472	8.70E-05	3
Ethanol, Petroleum, 99.7%	lb	0.0205	1.25	0.00199	0.00214	0.000277	5.89E-05	3
Gravel/Sand Mix, 65% Gravel	lb	2.48E-05	0.0024	0.00002	4.52E-06	0.000003	3.08E-07	3
Gravel/sand/clay	lb	0.000028	0.0034	0.000017	0.000015	0.0000020	2.1E-10	6
HDPE	lb	3.32E-02	1.9400	0.003250	0.00409	0.000439	6.4E-05	7
Photovoltaic system (installed)	W	0.034	4.5	0.015	0.032	0.00063	2.9E-06	8
PVC	lb	0.0262	2.02	0.004	0.00274	0.000372	3.8E-04	3
Portland cement, US average	lb	0.0139	1.34	0.00654	0.0104	0.00378	9.7E-04	3
Ready-mixed concrete, 20 MPa	ft^3	0.217	19.5	0.0975	0.154	0.057	0.0141	3
Round Gravel	lb	0.0000248	0.0024	0.000018	4.52E-06	2.61E-06	3.1E-07	3
Sand	lb	0.0000248	0.0024	0.000018	4.52E-06	2.61E-06	3.1E-07	3
Stainless Steel	lb	0.012	3.4	0.0075	0.012	0.0044	1.4E-04	9
Steel	lb	0.0044	1.1	0.0014	0.0017	0.00056	6.7E-05	10
Other refined construction materials	lb	0.019	2.1150	0.0040	0.0051	0.0014	1.6E-04	11
Other unrefined construction materials	lb	0.000028	0.00335	0.000017	0.000015	0.000002	2.05E-10	12
Treatment Materials & Chemicals								
Cheese Whey	lb	0.0025	0.031	0.000062	0.000033	0.000002	NP	13
Emulsified vegetable oil	lb	0.0077	3.44	0.0066	0.0019	0.000033	NP	14
Granular activated carbon, primary	lb	0.0356	4.82	0.0793	0.128	0.000987	0.000657	3
Granular activated carbon, regenerated	lb	0.00873	1.7	0.00733	0.0129	0.000886	0.000671	3
Hydrogen Peroxide, 50% in H2O	lb	0.00979	1.19	0.00142	0.0024	0.000308	6.29E-05	3
Iron (II) Sulfate	lb	0.00147	0.167	0.000316	0.000589	0.000103	2.30E-05	3
Lime, Hydrated, Packed	lb	0.00206	0.762	0.000513	0.000358	0.00013	6.57E-06	3
Molasses	lb	0.0044	0.48	0.0011	0.00024	0.0000041	NP	15
Phosphoric Acid, 70% in H2O	lb	0.0067	0.882	0.00282	0.0294	0.00171	0.000163	3
Potassium Permanganate	lb	0.00981	1.16	0.00234	0.0032	0.000422	0.000122	3
Sodium Hydroxide, 50% in H2O	lb	0.00977	1.09	0.00194	0.00352	0.000403	0.000129	3
Other Treatment Chemicals & Materials*	lb	0.015	1.7	0.003	0.0065	0.00061	1.6E-05	16
Fuel Processing								
Biodiesel Produced	gal	0.029	-16.8	0.018	0.033	0.00082	NP	1
Diesel Produced	gal	0.017	3.02	0.0051	0.0062	0.0017	1.1E-03	17
Gasoline Produced	gal	0.033	2.8	0.0046	0.005	0.0015	1.0E-03	18
Liquefied Petroleum Gas	gal	0.088	1.47	0.0016	0.0024	0.0007	3.0E-04	3
Natural Gas - Compressed Produced	ccf	19.983	343.92	0.4732	2.1651	0.1846	2.9E-01	3
Natural Gas Produced	ccf	0.0052	2.2	0.0037	0.0046	0.000072	6.1E-06	19
Public water	gal x 1000	0.0092	5	0.0097	0.0059	0.016	1.50E-05	20
Off-Site Services								
Hazardous Waste Incineration	lb	0.00609	2.43	0.0016	0.00167	0.000209	0.000087	3
Off-site waste water treatment (POTW)	gal x 1000	0.015	4.4	0.016	0.015	NP	NP	21
Off-site non-hazardous waste landfill	ton	0.16	25	0.14	0.075	0.4	1.40E-03	22
Off-site hazardous waste landfill	ton	0.18	27.5	0.154	0.0825	0.44	1.54E-03	23
Off-site Laboratory Analysis - Other	sample	0.0581	6.8534	0.1314	0.3039	0.0456	0.0330	24
Off-site Laboratory Analysis - Metals	sample	0.2120	27.5	0.6423	1.5072	0.2264	1.64E-01	3
Off-site Laboratory Analysis - Mercury	sample	0.0732	9.3	0.2127	0.4982	0.0747	5.42E-02	3
Off-site Laboratory Analysis - Inorganic Anions	sample	0.0074	0.6	0.0068	0.0148	0.0022	1.55E-03	3

Off-site Laboratory Analysis - Alkalinity	sample	0.0174	1.3	0.0070	0.0132	0.0019	1.28E-03	3
Off-site Laboratory Analysis - Perchlorate	sample	0.0239	1.9	0.0080	0.0142	0.0021	1.29E-03	3
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0.0336	4.3	0.0955	0.2227	0.0335	2.43E-02	3
Off-site Laboratory Analysis - Sulfate	sample	0.0141	1.5	0.0080	0.0136	0.0020	1.20E-03	3
Off-site Laboratory Analysis - PCBs	sample	0.0513	5.2	0.0833	0.1905	0.0284	2.12E-02	3
Off-site Laboratory Analysis - VOCs	sample	0.0762	9.0	0.1045	0.2271	0.0340	2.36E-02	3
Off-site Laboratory Analysis - SVOCs	sample	0.0716	7.9	0.1459	0.3373	0.0505	3.73E-02	3
Resource Extraction for Electricity								
Coal extraction and processing	MWh	3.1	180	0.77	0.15	0.018	NP	25
Natural gas extraction and processing	MWh	1.6	270	0.18	13	0.0071	NP	26
Nuclear fuel extraction and processing	MWh	0.16	25	0.15	0.5	0.0015	NP	27
Oil extraction and processing	MWh	2.3	270	1.7	0.069	0.042	NP	28
Grid renewable electricity	MWh	NP	NP	NP	NP	NP	NP	

**** Footprint conversion factors for greenhouse gases (CO2e) include consideration of CO2, CH4, and N2O (Nitrous oxide) emissions.***

REFERENCES:

Default Conversion Factors are from EPA's Methodology for Understanding and Reducing a Project's Environmental Footprint, February 2012

1. Life Cycle Inventory of Biodiesel and Petroleum Diesel for Use in an Urban Bus, NREL/SR-580-24089 UC Category 1503, U.S. Department of Agriculture and U.S. Department of Energy, May 1998. The CO2e emissions for "biodiesel produced" are negative because of the uptake of CO2 in the crops used to produce the fuels. This CO2 is emitted during fuel combustion and is reflected in the CO2e emissions for "biodiesel use".

2. Multiple sources

a. Energy and CO2e emissions from Direct Emissions from Mobile Combustion Sources, EPA430-K-08-004, U.S. EPA, May 2008.

b. NOx, SOx, PM, and HAPs from NREL: SS_Transport, single unit truck, diesel powered.xls

3. Randall, P., Meyer, D., Ingwersen, W., Vineyard, D., Bergmann, M., Unger, S., and Gonzalez, M., 2016. Life Cycle Inventory (LCI) Data- Treatment Chemicals, Construction Materials, Transportation, On-site Equipment, and Other Processes for Use in Spreadsheets for Environmental Footprint Analysis (SEFA): Revised Addition. U.S. Environmental Protection Agency, Office of Research and Development, Cincinnati, OH. EPA/600/R-16/176a.

4. Multiple sources

a. Energy and CO2e emissions from Direct Emissions from Mobile Combustion Sources, EPA430-K-08-004, U.S. EPA, May 2008.

b. NOx, SOx, PM, and HAPs from NREL: SS_Transport, single unit truck, gasoline powered.xls

5. Multiple sources and simplifying assumption that emissions of natural gas reasonably represent combustion of methane component of landfill gas

a. Energy and CO2e emissions for compressed natural gas in heavy vehicles from Direct Emissions from Mobile Combustion Sources, EPA430-K-08-004, U.S. EPA, May 2008.

b. NOx, SOx, PM, and HAPs from NREL: SS_Natural gas, combusted in industrial boiler.xls

6. EUROPA – Gravel 2/32

7. EUROPA – Polyethylene high density granulate (PE-HD)

8. Life-Cycle Assessment of the 33 kW Photovoltaic System on the Dana Building at the University of Michigan Thin Film Laminates, Multi-Crystalline Modules, and Balance of System Components Sergio Pacca, Deepak Sivaraman and Gregory A. Keoleian Center for Sustainable Systems, University of Michigan Report No. CSS05-09, June 1, 2006

9. EUROPA – Stainless steel

10. EUROPA – Average of Steel hot rolled section, Steel hot rolled coil, Steel rebar

11. Averages of conversion factors for cement, HDPE, PVC, stainless steel, and steel

12. Same as conversion factors for gravel/sand/clay

13. Offset values for cheese whey obtained from the module for yellow cheese from Nielsen PH, Nielsen AM, Weidema BP, Dalgaard R and Halberg N (2003). LCA food data base. www.lcafood.dk, Andersen M and Jensen JD (2003). Marginale producenter af udvalgte basislevnedsmidler (in Danish) Udkast d. 5. februar 2003.

14. Values for rapeseed oil from Nielsen PH, Nielsen AM, Weidema BP, Dalgaard R and Halberg N (2003). LCA food data base. www.lcafood.dk. Landbrugets rådgivningscenter (2000). Tal fra Fodermiddeltabellen, Raport nr. 91. In Danish. Weidema BP (1999). System expansions to handle co-products of renewable materials. Presentation Summaries of the 7th LCA Scenarios Symposium SETAC-Europe, 1999. Pp. 45-48. pdf. Weidema B (2003). Market information in life cycle assessments. Technical report, Danish Environmental Protection Agency (Environmental Project no. 863).

15. Offset values for molasses obtained from the module for sugar from Nielsen PH, Nielsen AM, Weidema BP, Dalgaard R and Halberg N (2003). LCA food data base. www.lcafood.dk, Sugar Production based on Danisco Sugar Author: Per H. Nielsen July 2003

16. Intended for any common treatment chemical in pure form including chemical oxidants and regenerated granular activated carbon. For chemical solutions, use only the mass of the chemical portion of the solution. Conversion factor is based on average value of conversion factors for the following seven common treatment chemicals as reported by Ecoinvent v2.1 from the Ecoinvent Centre for Life-Cycle Inventories, http://www.ecoinvent.ch/

- Hydrochloric Acid (30 percent) – normalized to pure hydrochloric acid by dividing by database results by 0.3.

- Sodium hydroxide (50 percent) – normalized to pure sodium hydroxide by dividing database results by 0.5.

- Ferric chloride (iron III chloride)

- Potassium permanganate

- Sodium persulfate

- Chlorine gas

- Hydrogen peroxide (50 percent) – normalized to pure hydrogen peroxide by dividing database result by 0.5.

This averaging approach adds an additional layer of uncertainty to the conversion factors provided. For example, the range for energy is approximately 0.007 MMBtu to 0.025 MMBtu. The average (0.015 MMBtu) may overestimate the energy use value for some of the chemicals below by more than 100 percent and underestimate the energy us value for other chemicals by 40 percent. Additionally, some common treatment chemicals (e.g., sulfuric acid and ferrous sulfate) have energy footprints that are substantially outside the presented range and would not be accurately represented by these values. If an additional level of accuracy is preferred, readers of this methodology are encouraged to seek and document well referenced conversion factors as part of footprint analysis submittals.

17. EUROPA – diesel at refinery

18. EUROPA – gasoline at refinery

19. EUROPA – natural gas at consumer

20. EUROPA - Drinking water from surface water and drinking water from groundwater

21. Calculated based on Life-Cycle Energy and Emissions for Municipal Water and Wastewater Services: Case-Studies of Treatment Plants in US Malavika Tripathi, Center for Sustainable Systems, University of Michigan Report No. CSS07-06, April 17, 2007

22. EUROPA – Inert waste disposal

23. Values from EUROPA inert waste disposal plus an arbitrary additional 10 percent to account additional practices required of a hazardous waste disposal facility

24. The default conversion factors for "Laboratory Analysis – Other" are averages of the default conversion factors for the 10 other laboratory analyses that are provided.

25. NREL – life cycle of electricity from bituminous coal minus the emissions from combusting coal

26. NREL – life cycle of electricity from natural gas minus the emissions from combusting natural gas

27. NREL – life cycle of electricity from nuclear

28. NREL – life cycle of electricity from residual oil minus the emissions from combusting residua oil

NREL = National Renewable Energy Laboratory, Life Cycle Inventory, provided by the National Renewable Energy Laboratory and operated by Alliance for Sustainable Energy, LLC under contract to the U.S. Department of Energy. www.nrel.gov/lci

EUROPA = European Reference Life Cycle Database (ELCD core database), version II compiled under contract on behalf of the European Commission - DG Joint Research Centre - Institute for Environment and Sustainability with technical and scientific support by JRC-IES from early 2008 to early 2009. (http://lca.jrc.ec.europa.eu/lcainfohub/datasetArea.vm)

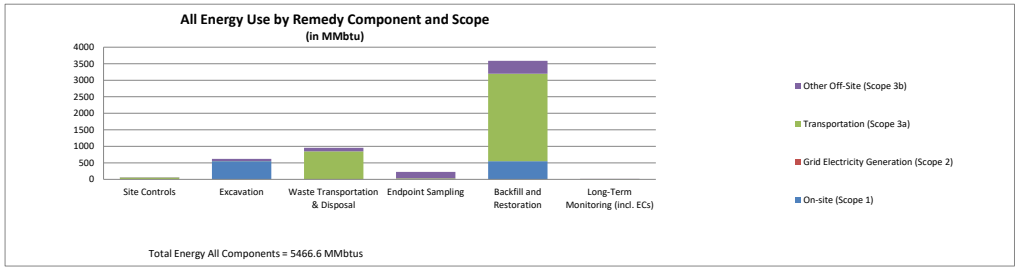
Environmental Footprint Summary

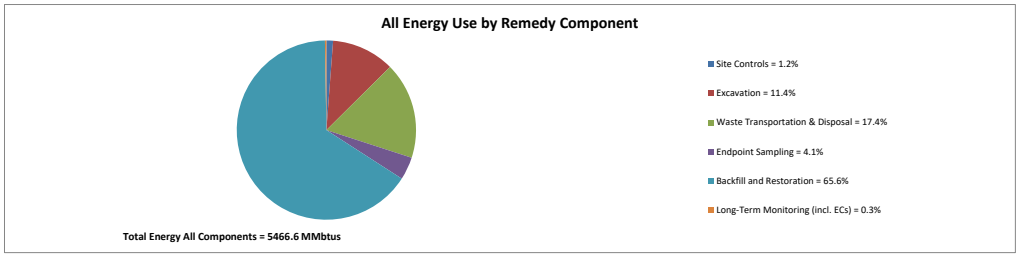
Core Element	Metric		Unit of Measure	Footprint						
				Site Controls	Excavation	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Long-Term Monitoring (incl. ECs)	Total
Materials & Waste	M&W-1	Refined materials used on-site	Tons	45.2	0.0	0.0	0.0	0.0	3.6	48.8
	M&W-2	% of refined materials from recycled or reused material	%	0.0%					0.0%	0.0%
	M&W-3	Unrefined materials used on-site	Tons	60.000	0.000	0.000	0.000	28,788.208	5.888	28,854.1
	M&W-4	% of unrefined materials from recycled or reused material	%	100.0%				100.0%	0.0%	100.0%
	M&W-5	On-site hazardous waste disposed of off-site	Tons	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	M&W-6	On-site non-hazardous waste disposed of off-site	Tons	0.0	0.0	28,788.5	0.0	0.0	0.0	28,788.5
	M&W-7	Recycled or reused waste	Tons	0.0	0.0	1.0	0.0	0.0	0.0	1.0
	M&W-8	% of total potential waste recycled or reused	%			0.0%				0.0%
Water (used on-site)	W-1	Public water use	MG	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	W-2	Groundwater use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-3	Surface water use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-4	Reclaimed water use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-5	Storm water use	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-6	User-defined water resource #1	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-7	User-defined water resource #2	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	W-8	Wastewater generated	MG	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Energy	E-1	Total energy used (on-site and off-site)	MMBtu	65.5	621.1	953.3	224.7	3,587.7	14.3	5,466.6
	E-2	Energy voluntarily derived from renewable resources								
	E-2A	On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	E-2B	Voluntary purchase of renewable electricity	MWh	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	E-3	Voluntary purchase of RECs	MWh	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	E-4	On-site grid electricity use	MWh	0.000	0.000	0.000	0.000	0.000	0.000	0.0
Air	A-1	On-site NOx, SOx, and PM emissions	Pounds	0.0	436.7	0.0	0.0	436.7	0.0	873.3
	A-2	On-site HAP emissions	Pounds	0.0	0.2	0.0	0.0	0.2	0.0	0.3
	A-3	Total NOx, SOx, and PM emissions	Pounds	81.7	491.4	1,172.0	1,627.8	4,138.8	13.2	7,524.9
	A-3A	Total NOx emissions	Pounds	73.5	423.6	1,070.0	449.1	3,753.4	7.7	5,777.3
	A-3B	Total SOx emissions	Pounds	5.2	25.3	70.9	1,024.2	245.9	4.5	1,375.9
	A-3C	Total PM emissions	Pounds	3.0	42.5	31.2	154.5	139.5	1.0	371.7
	A-4	Total HAP emissions	Pounds	0.5	4.5	6.8	113.2	25.6	0.9	151.4
	A-5	Total greenhouse gas emissions	Tons CO2e*	5.5	50.3	78.0	14.0	292.9	1.0	441.7
Land & Ecosystems	Redeveloping vacant land for residential use, potential habitat disruption									

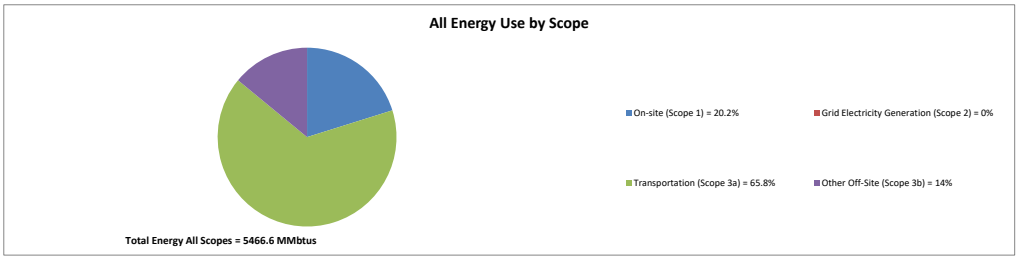
** Total greenhouse gases emissions (in CO2e) include consideration of CO2, CH4, and N2O (Nitrous oxide) emissions.*
"MMBtu" = millions of Btus
"MG" = millions of gallons
"CO2e" = carbon dioxide equivalents of global warming potential
"MWh" = megawatt hours (i.e., thousands of kilowatt-hours or millions of Watt-hours)
"Tons" = short tons (2,000 pounds)

The above metrics are consistent with EPA's Methodology for Understanding and Reducing a Project's Environmental Footprint (EPA 542-R-12-002), February 2012

Notes:







Total Energy
MMbtus

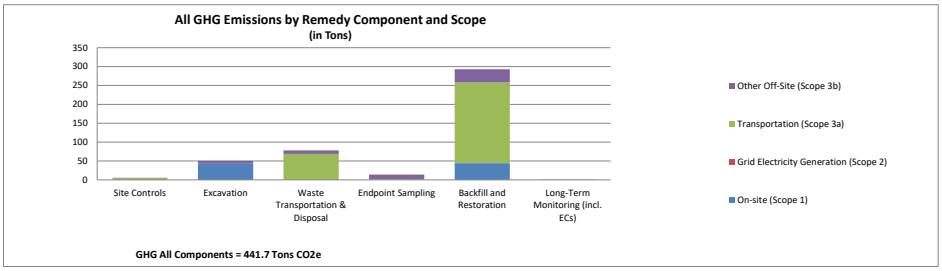
	Site Controls	Excavation	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Long-Term Monitoring (incl. ECs)	Total
On-site (Scope 1)	0.0	551.1	0.0	0.0	551.1	0.0	1,102.3
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	57.9	2.3	849.4	31.2	2,645.6	10.6	3,597.1
Other Off-Site (Scope 3b)	7.6	67.7	103.9	193.4	391.0	3.7	767.2
Total	65.5	621.1	953.3	224.7	3,587.7	14.3	5,466.6

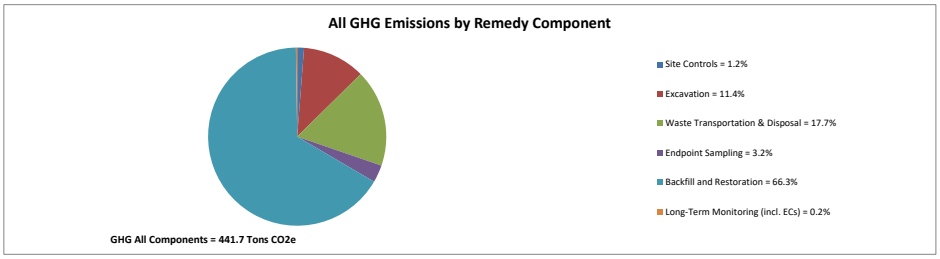
Site Controls = 1.2%
Excavation = 11.4%
Waste Transportation & Disposal = 17.4%
Endpoint Sampling = 4.1%
Backfill and Restoration = 65.6%
Long-Term Monitoring (incl. ECs) = 0.3%

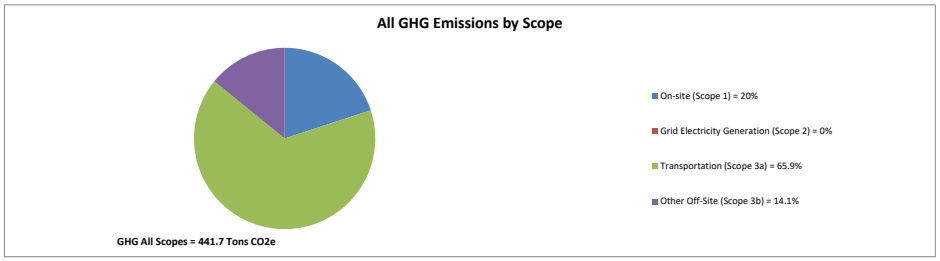
Total Energy All Components = 5466.6 MMbtus
Total Energy All Scopes = 5466.6 MMbtus

On-site (Scope 1) = 20.2%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 65.8%
Other Off-Site (Scope 3b) = 14%

Total Fuel Footprints		Site Controls	Excavation	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Long-Term Monitoring (incl. ECs)	Total
Diesel (gal)	Transportation	416.665	16.6	6110.6	0	19033.334	23.332	25600.5
	On-site equipment	0	3964.945055	0	0	3964.945055	0	7929.89
Gasoline (gal)	Transportation	0	0	0	252	0	59.7	311.7
	On-site equipment	0	0	0	0	0	0	0







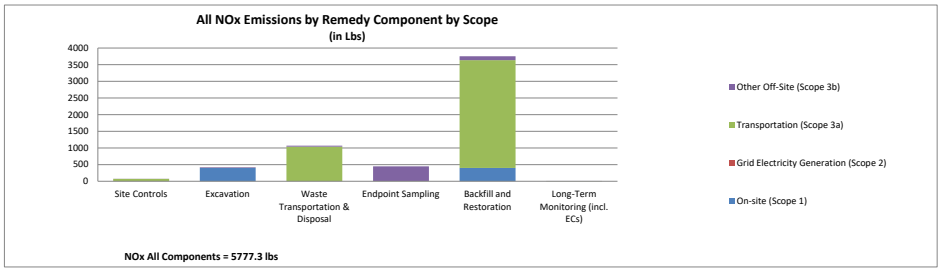
GHG
Tons CO2e

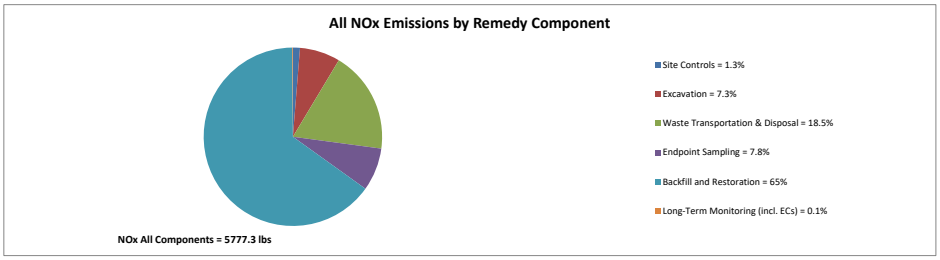
	Site Controls	Excavation	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Long-Term Monitoring (incl. ECs)	Total
On-site (Scope 1)	0.0	44.1	0.0	0.0	44.1	0.0	88.2
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	4.7	0.2	68.7	2.5	214.1	0.9	291.1
Other Off-Site (Scope 3b)	0.8	6.0	9.2	11.5	34.7	0.2	62.4
Total	5.5	50.3	78.0	14.0	292.9	1.0	441.7

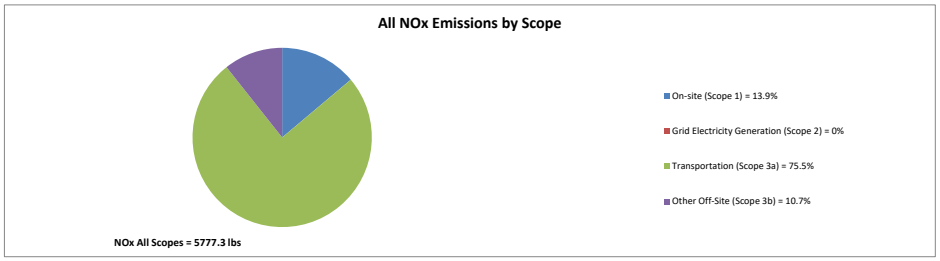
Site Controls = 1.2%
Excavation = 11.4%
Waste Transportation & Disposal = 17.7%
Endpoint Sampling = 3.2%
Backfill and Restoration = 66.3%
Long-Term Monitoring (incl. ECs) = 0.2%

GHG All Components = 441.7 Tons CO2e
GHG All Scopes = 441.7 Tons CO2e

On-site (Scope 1) = 20%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 65.9%
Other Off-Site (Scope 3b) = 14.1%







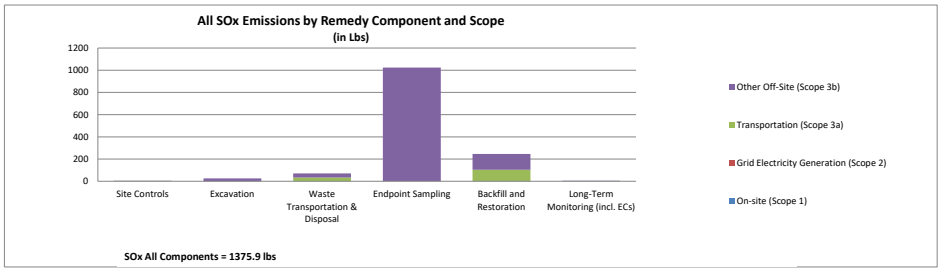
NOx lbs

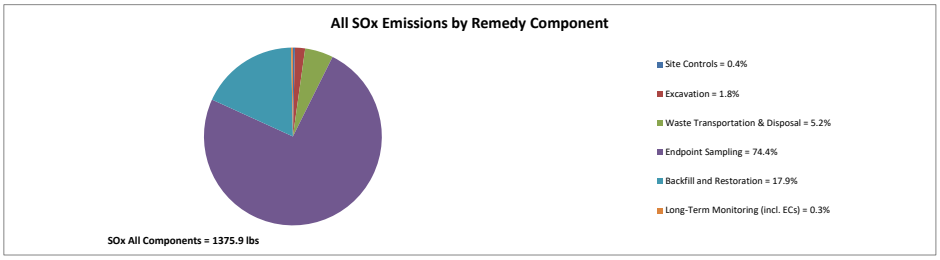
	Site Controls	Excavation	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Long-Term Monitoring (incl. ECs)	Total
On-site (Scope 1)	0.0	400.5	0.0	0.0	400.5	0.0	800.9
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	70.8	2.8	1,038.8	6.8	3,235.7	5.6	4,360.5
Other Off-Site (Scope 3b)	2.7	20.3	31.2	442.3	117.3	2.2	615.9
Total	73.5	423.6	1,070.0	449.1	3,753.4	7.7	5,777.3

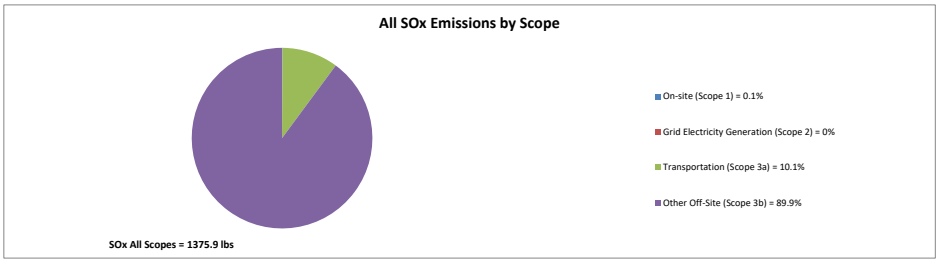
Site Controls = 1.3%
Excavation = 7.3%
Waste Transportation & Disposal = 18.5%
Endpoint Sampling = 7.8%
Backfill and Restoration = 65%
Long-Term Monitoring (incl. ECs) = 0.1%

NOx All Components = 5777.3 lbs
NOx All Scopes = 5777.3 lbs

On-site (Scope 1) = 13.9%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 75.5%
Other Off-Site (Scope 3b) = 10.7%







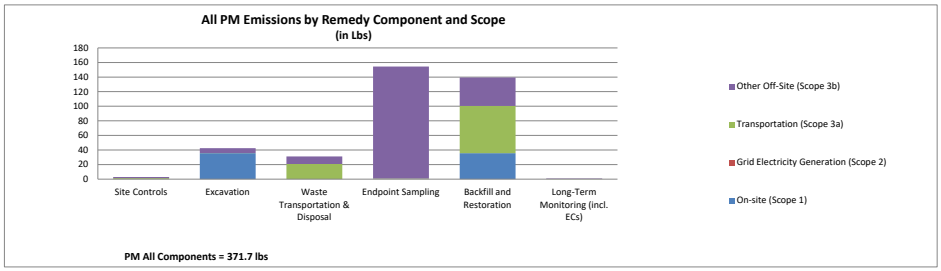
SOx lbs

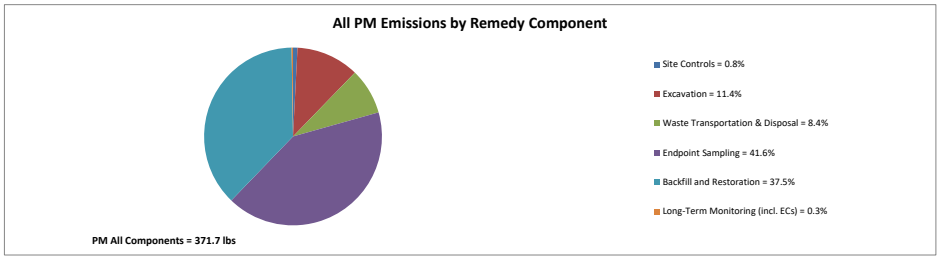
	Site Controls	Excavation	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Long-Term Monitoring (incl. ECs)	Total
On-site (Scope 1)	0.0	0.5	0.0	0.0	0.5	0.0	1.0
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	2.2	0.1	33.0	0.1	102.8	0.1	138.4
Other Off-Site (Scope 3b)	2.9	24.7	37.9	1,024.1	142.6	4.3	1,236.5
Total	5.2	25.3	70.9	1,024.2	245.9	4.5	1,375.9

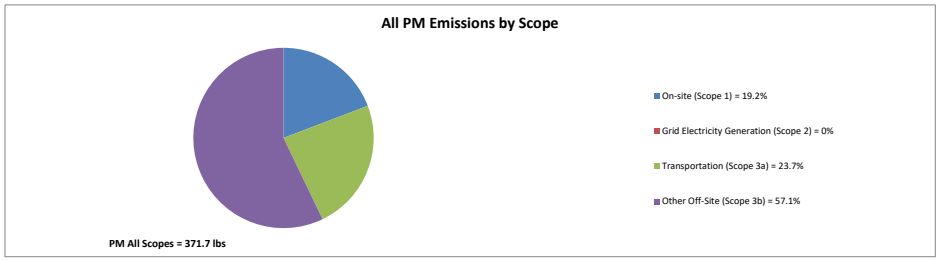
Site Controls = 0.4%
Excavation = 1.8%
Waste Transportation & Disposal = 5.2%
Endpoint Sampling = 74.4%
Backfill and Restoration = 17.9%
Long-Term Monitoring (incl. ECs) = 0.3%

SOx All Components = 1375.9 lbs
SOx All Scopes = 1375.9 lbs

On-site (Scope 1) = 0.1%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 10.1%
Other Off-Site (Scope 3b) = 89.9%





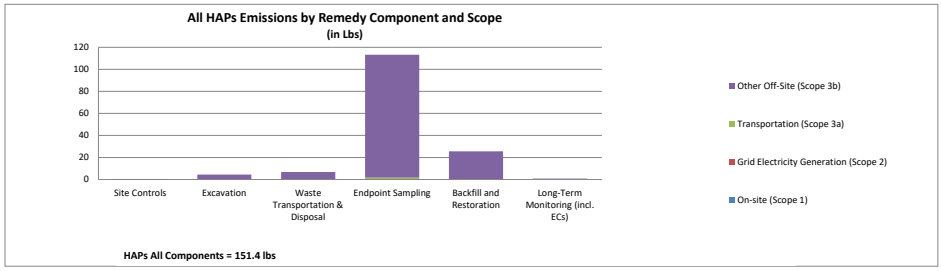


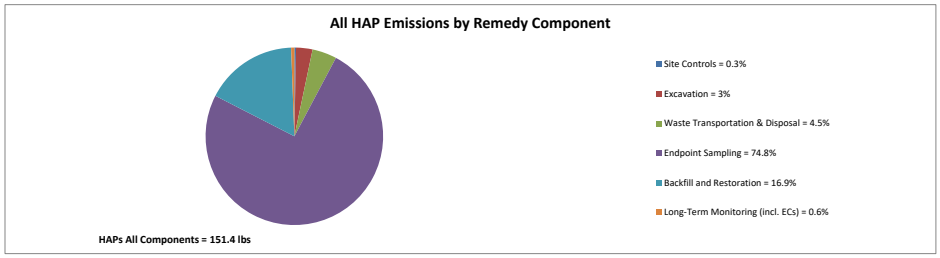
PM lbs	Site Controls	Excavation	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Long-Term Monitoring (incl. ECs)	Total
On-site (Scope 1)	0.0	35.7	0.0	0.0	35.7	0.0	71.4
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	1.4	0.1	20.8	0.8	64.7	0.3	88.0
Other Off-Site (Scope 3b)	1.6	6.8	10.4	153.8	39.1	0.7	212.3
Total	3.0	42.5	31.2	154.5	139.5	1.0	371.7

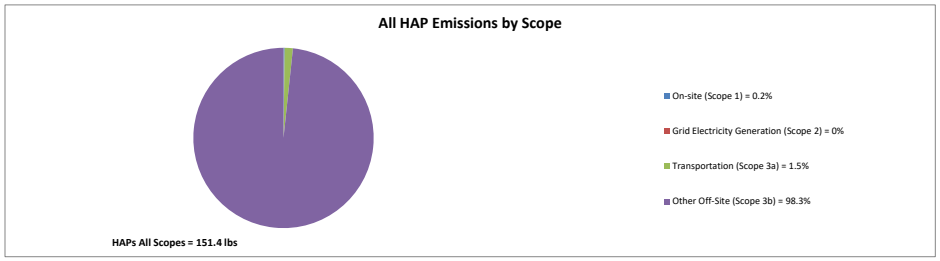
Site Controls = 0.8%
Excavation = 11.4%
Waste Transportation & Disposal = 8.4%
Endpoint Sampling = 41.6%
Backfill and Restoration = 37.5%
Long-Term Monitoring (incl. ECs) = 0.3%

On-site (Scope 1) = 19.2%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 23.7%
Other Off-Site (Scope 3b) = 57.1%

PM All Components = 371.7 lbs
PM All Scopes = 371.7 lbs







HAPs
lbs

	Site Controls	Excavation	Waste Transportation & Disposal	Endpoint Sampling	Backfill and Restoration	Long-Term Monitoring (incl. ECs)	Total
On-site (Scope 1)	0.0	0.2	0.0	0.0	0.2	0.0	0.3
Grid Electricity Generation (Scope 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transportation (Scope 3a)	0.0	0.0	0.0	1.7	0.1	0.4	2.2
Other Off-Site (Scope 3b)	0.5	4.4	6.7	111.5	25.3	0.5	148.9
Total	0.5	4.5	6.8	113.2	25.6	0.9	151.4

Site Controls = 0.3%
Excavation = 3%
Waste Transportation & Disposal = 4.5%
Endpoint Sampling = 74.8%
Backfill and Restoration = 16.9%
Long-Term Monitoring (incl. ECs) = 0.6%

HAPs All Components = 151.4 lbs
HAPs All Scopes = 151.4 lbs

On-site (Scope 1) = 0.2%
Grid Electricity Generation (Scope 2) = 0%
Transportation (Scope 3a) = 1.5%
Other Off-Site (Scope 3b) = 98.3%

Site Controls - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Grid Electricity Generation (Scope 2)	**0.000**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**58**	**9,375**	**71**	**2**	**1**	**74**	**0**
Other Off-Site (Scope 3b)	**8**	**1,538**	**3**	**3**	**2**	**7**	**0**
Remedy Totals	**66**	**10,913**	**74**	**5**	**3**	**82**	**0**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 2 SEFA_calculations.xlsx

Excavation - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**551**	**88,180**	**400**	**1**	**36**	**437**	**0**
Grid Electricity Generation (Scope 2)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**2**	**374**	**3**	**0**	**0**	**3**	**0**
Other Off-Site (Scope 3b)	**68**	**12,024**	**20**	**25**	**7**	**52**	**4**
Remedy Totals	**621**	**100,578**	**424**	**25**	**43**	**491**	**5**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 2 SEFA_calculations.xlsx

Waste Transportation & Disposal - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Grid Electricity Generation (Scope 2)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**849**	**137,489**	**1,039**	**33**	**21**	**1,093**	**0**
Other Off-Site (Scope 3b)	**104**	**18,454**	**31**	**38**	**10**	**79**	**7**
Remedy Totals	**953**	**155,943**	**1,070**	**71**	**31**	**1,172**	**7**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 2 SEFA_calculations.xlsx

Endpoint Sampling - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Grid Electricity Generation (Scope 2)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**31**	**4,982**	**7**	**0**	**1**	**8**	**2**
Other Off-Site (Scope 3b)	**193**	**22,974**	**442**	**1,024**	**154**	**1,620**	**112**
Remedy Totals	**225**	**27,956**	**449**	**1,024**	**155**	**1,628**	**113**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 2 SEFA_calculations.xlsx

Backfill and Restoration - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**551**	**88,180**	**400**	**1**	**36**	**437**	**0**
Grid Electricity Generation (Scope 2)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**2,646**	**428,250**	**3,236**	**103**	**65**	**3,403**	**0**
Other Off-Site (Scope 3b)	**391**	**69,455**	**117**	**143**	**39**	**299**	**25**
Remedy Totals	**3,588**	**585,885**	**3,753**	**246**	**139**	**4,139**	**26**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 2 SEFA_calculations.xlsx

Long-Term Monitoring (incl. ECs) - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Grid Electricity Generation (Scope 2)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**11**	**1,705**	**6**	**0**	**0**	**6**	**0**
Other Off-Site (Scope 3b)	**4**	**391**	**2**	**4**	**1**	**7**	**0**
Remedy Totals	**14**	**2,096**	**8**	**4**	**1**	**13**	**1**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 2 SEFA_calculations.xlsx

All - Energy & Air Compiled Results

Category	Total Energy	GHG	NOx	SOx	PM	NOx + SOx + PM	HAPs
	MMbtus	lbs CO2e	lbs	lbs	lbs	lbs	lbs
On-site (Scope 1)	**1,102**	**176,361**	**801**	**1**	**71**	**873**	**0**
Grid Electricity Generation (Scope 2)	**0.000**	**0**	**0**	**0**	**0**	**0**	**0**
Transportation (Scope 3a)	**3,597**	**582,174**	**4,361**	**138**	**88**	**4,587**	**2**
Other Off-Site (Scope 3b)	**767**	**124,837**	**616**	**1,236**	**212**	**2,065**	**149**
Remedy Totals	**5,467**	**883,372**	**5,777**	**1,376**	**372**	**7,525**	**151**

Values that are forwarded to the "Summary" tab are indicated in orange.

Voluntary Renewable Energy Use	Unit	Quantity	
On-site renewable energy generation or use	MMBtu	**0**	
On-site biodiesel use	MMBtu	**0**	
Biodiesel and other renewable resource use for transportation	MMBtu	**0**	
On-site renewable energy generation or use + on-site biodiesel use + biodiesel and other renewable resource use for transportation	MMBtu	**0**	*(This value is the sum of the three rows above)*
Voluntary purchase of renewable electricity	MWh	**0**	
Voluntary purchase of RECs	MWh	**0**	

This worksheet is not intended for user input. Values on this worksheet are obtained from the following file:
C704063_RAWP Alt 2 SEFA_calculations.xlsx

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019
Vanguard Village I+II (C704063) - Remedial Action Work Plan - Alternative 2 (Tracks 2 and 4)

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Site Controls	Excavation	Waste T&D	EPS	B&R	LTM (incl. ECs)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
On-Site																						
On-site Renewable Energy																						
Renewable electricity generated on-site	MWh	0	0	0	0	0	0									0	0	0	0	0	0	0
Landfill gas combusted on-site for energy use	ccf CH_4	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site biodiesel use	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site biodiesel use - Other	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined on-site renewable energy use #1	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
On-Site Conventional Energy																						
Grid electricity	MWh	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site diesel use - Other	Gal	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site diesel use <75 hp	Gal	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site diesel use 75<hp<750	Gal	0	3964.9451	0	0	3964.9451	0									0	3964.9451	0	0	3964.9451	0	7929.8901
On-site diesel use >750 hp	Gal	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site gasoline use - Other	Gal	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site gasoline use <25 hp	Gal	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site gasoline use >25 hp	Gal	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site natural gas use	ccf	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site compressed natural gas use - Other	ccf	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site compressed natural gas use	ccf	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site liquified petroleum gas use - Other	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site liquified petroleum gas use	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
Other On-site Emissions																						
On-site HAP process emissions	Lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site GHG emissions	Lbs CO2e	0	0	0	0	0	0									0	0	0	0	0	0	0
On-site carbon storage	Lbs CO2e	0	0	0	0	0	0									0	0	0	0	0	0	0
GHG avoided by flaring on-site landfill methane	ccf CH4	0	0	0	0	0	0									0	0	0	0	0	0	0
Other on-site NOx emissions or reductions	Lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Other on-site SOx emissions or reductions	Lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Other on-site PM emissions or reductions	Lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Electricity Generation																						
Grid electricity	MWh	0	0	0	0	0	0									0	0	0	0	0	0	0
Voluntary purchase of renewable electricity	MWh	0	0	0	0	0	0									0	0	0	0	0	0	0
Voluntary purchase of RECs	MWh	0	0	0	0	0	0									0	0	0	0	0	0	0
Transportation																						
Transportation Fuel Use Breakdown																						
Biodiesel use - Personnel Transport	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Biodiesel use - Personnel Transport - User Defined	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Biodiesel use - Equipment Transport	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Biodiesel use - Equipment Transport - User Defined	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Biodiesel use - Material Transport	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Biodiesel use - Material Transport - User Defined	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Biodiesel use - Waste Transport	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Biodiesel use - Waste Transport - User Defined	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Diesel use - Personnel Transport - other vehicles	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Diesel use - Personnel Transport - car	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Diesel use - Personnel Transport - passenger truck	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Diesel use - Personnel Transport - User Defined	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Diesel use - Equipment Transport	gal	0	16.6	0	0	0	0									0	16.6	0	0	0	0	16.6
Diesel use - Equipment Transport - User Defined	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Diesel use - Material Transport	gal	416.665	0	0	0	19033.334	23.332									416.665	0	0	0	19033.334	23.332	19473.331
Diesel use - Material Transport - User Defined	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Diesel use - Waste Transport	gal	0	0	6110.6	0	0	0									0	0	6110.6	0	0	0	6110.6
Diesel use - Waste Transport - User Defined	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Gasoline use - Personnel Transport - other vehicles	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Gasoline use - Personnel Transport - car	gal	0	0	0	252	0	59.7									0	0	0	252	0	59.7	311.7
Gasoline use - Personnel Transport - passenger truck	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Gasoline use - Personnel Transport - User Defined	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Gasoline use - Equipment Transport	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Gasoline use - Equipment Transport - User Defined	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Natural Gas use - Personnel Transport	ccf	0	0	0	0	0	0									0	0	0	0	0	0	0
Natural Gas use - Personnel Transport - User Defined	ccf	0	0	0	0	0	0									0	0	0	0	0	0	0
Natural Gas use - Equipment Transport	ccf	0	0	0	0	0	0									0	0	0	0	0	0	0

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Site Controls	Excavation	Waste T&D	EPS	B&R	LTM (incl. ECs)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Conventional Energy:																						
Transportation diesel use	gal	416.665	16.6	6110.6	0	19033.334	23.332									416.665	16.6	6110.6	0	19033.334	23.332	25600.531
Transportation gasoline use	gal	0	0	0	252	0	59.7									0	0	0	252	0	59.7	311.7
Transportation natural gas use	ccf	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined conventional energy transportation #1	TBD	10	10	10	10	10	10									10	10	10	10	10	10	60
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
Renewable Energy:																						
Transportation biodiesel use	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined renewable energy transportation #1	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined renewable energy transportation #2	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
Off-Site																						
Construction Materials																						
Aluminum, Rolled Sheet	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Asphalt, mastic	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Asphalt, paving-grade	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Ethanol, Corn, 95%	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Ethanol, Corn, 99.7%	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Ethanol, Petroleum, 99.7%	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Gravel/Sand Mix, 65% Gravel	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Gravel/sand/clay	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
HDPE	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Photovoltaic system (installed)	W	0	0	0	0	0	0									0	0	0	0	0	0	0
PVC	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Portland cement, US average	lb	0	0	0	0	0	11775															
Ready-mixed concrete, 20 MPa	ft3	0	0	0	0	0	0									0	0	0	0	0	0	0
Round Gravel	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Sand	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Stainless Steel	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Steel	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Other refined construction materials	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Other unrefined construction materials	lb	0	0	0	0	0	0									0	0	0	0	0	0	0
Treatment Materials & Chemicals																						
Cheese Whey	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Emulsified vegetable oil	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Granular activated carbon, primary	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Granular activated carbon, regenerated	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Iron (II) Sulfate	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Lime, Hydrated, Packed	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Molasses	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Phosphoric Acid, 70% in H2O	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Potassium Permanganate	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Sodium Hydroxide, 50% in H2O	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Other Treatment Chemicals & Materials	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Material Type																						
Total Virgin Refined Materials	tons	45.237	0	0	0	0	3.588									45.237	0	0	0	0	3.588	48.825
Total Recycled Refined Materials	tons	0	0	0	0	0	0									0	0	0	0	0	0	0
Total Reused Refined Materials	tons	0	0	0	0	0	0									0	0	0	0	0	0	0
Total Refined Material	tons	45.237	0	0	0	0	3.588									45.237	0	0	0	0	3.588	48.825
Total Virgin Unrefined Materials	tons	0	0	0	0	0	5.8875									0	0	0	0	0	5.8875	5.8875
Total Recycled Unrefined Materials	tons	60	0	0	0	28788.208	0									60	0	0	0	28788.208	0	28848.208
Total Reused Unrefined Materials	tons	0	0	0	0	0	0									0	0	0	0	0	0	0
Total Unrefined Material	tons	60	0	0	0	28788.208	5.8875									60	0	0	0	28788.208	5.8875	28854.096
Fuel Processing																						
Biodiesel produced	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Diesel produced	gal	416.665	3981.5451	6110.6	0	22998.279	23.332									416.665	3981.5451	6110.6	0	22998.279	23.332	33530.421
Gasoline produced	gal	0	0	0	252	0	59.7									0	0	0	252	0	59.7	311.7
Compressed natural gas produced	ccf	0	0	0	0	0	0									0	0	0	0	0	0	0
Liquified petroleum gas produced	gal	0	0	0	0	0	0									0	0	0	0	0	0	0
Natural gas produced	ccf	0	0	0	0	0	0									0	0	0	0	0	0	0
Water Use																						
Public Water Supply	gal x 1000	56	0	0	0	0	0									56	0	0	0	0	0	56
Extracted Groundwater	gal x 1000	0	0	0	0	0	0									0	0	0	0	0	0	0
Surface Water	gal x 1000	0	0	0	0	0	0									0	0	0	0	0	0	0
Reclaimed Water	gal x 1000	0	0	0	0	0	0									0	0	0	0	0	0	0
Collected/Diverted Storm Water	gal x 1000	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined water resource #1	gal x 1000	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0									0	0	0	0	0	0	0

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
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Item		Site Controls	Excavation	Waste T&D	EPS	B&R	LTM (incl. ECs)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Waste/Recycle Handling																						
Hazardous waste incineration	lbs	0	0	0	0	0	0									0	0	0	0	0	0	0
Off-site waste water treatment (POTW)	gal x 1000	0	0	0	0	0	0									0	0	0	0	0	0	0
Off-site non-hazardous waste landfill	tons	0	0	0	0	0	0									0	0	0	0	0	0	0
Off-site hazardous waste landfill	tons	0	0	0	0	0	0									0	0	0	0	0	0	0
Recycled/Reused On-Site	tons	0	0	0	0	0	0									0	0	0	0	0	0	0
Recycled/Reused Off-Site	tons	0	0	0	0	0	0									0	0	0	0	0	0	0
Solid Waste Totals																						
Total Non-Hazardous Waste	tons	0	0	28788.476	0	0	0									0	0	28788.476	0	0	0	28788.476
Total Hazardous Waste	tons	0	0	0	0	0	0									0	0	0	0	0	0	0
Total Recycled/Reused	tons	0	0	1	0	0	0									0	0	1	0	0	0	1
Total Waste (all types)	tons	0	0	28789.476	0	0	0									0	0	28789.476	0	0	0	28789.476
Lab Services																						
Off-site Laboratory Analysis - Other	sample	0	0	0	1195	0	0									0	0	0	1195	0	0	1195
Off-site Laboratory Analysis - Metals	sample	0	0	0	239	0	0									0	0	0	239	0	0	239
Off-site Laboratory Analysis - Mercury	sample	0	0	0	239	0	0									0	0	0	239	0	0	239
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0	0	0	0	0									0	0	0	0	0	0	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0	0	0	0	0									0	0	0	0	0	0	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0	0	0	0	0									0	0	0	0	0	0	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0	0	0	0	0									0	0	0	0	0	0	0
Off-site Laboratory Analysis - Sulfate	sample	0	0	0	0	0	0									0	0	0	0	0	0	0
Off-site Laboratory Analysis - PCBs	sample	0	0	0	239	0	0									0	0	0	239	0	0	239
Off-site Laboratory Analysis - VOCs	sample	0	0	0	239	0	17									0	0	0	239	0	17	256
Off-site Laboratory Analysis - SVOCs	sample	0	0	0	239	0	0									0	0	0	239	0	0	239
Resource Extraction for Electricity																						
Coal extraction and processing	MWh	0	0	0	0	0	0									0	0	0	0	0	0	0
Natural gas extraction and processing	MWh	0	0	0	0	0	0									0	0	0	0	0	0	0
Nuclear fuel extraction and processing	MWh	0	0	0	0	0	0									0	0	0	0	0	0	0
Oil extraction and processing	MWh	0	0	0	0	0	0									0	0	0	0	0	0	0
Other fuel extraction and processing	MWh	0	0	0	0	0	0									0	0	0	0	0	0	0
Electricity Transmission																						
Transmission and distribution losses	MWh	0	0	0	0	0	0									0	0	0	0	0	0	0

Input Summary

Remedy Component Number →		1	2	3	4	5	6									Remedy Component Subtotals						
		Column headings in Row 6 must match the name of "Input" tabs in this workbook for Columns C - P in this table to be populated ("0" in Row 4 means "Input" tab is turned Off and will not be grouped to a Remedy Component (Columns Q - V) or used in subsequent calculations)																				
Item		Site Controls	Excavation	Waste T&D	EPS	B&R	LTM (incl. ECs)	Input Template (7)	Input Template (8)	Input Template (9)	Input Template (10)	Input Template (11)	Input Template (12)	Input Template (13)	Input Template (14)	1	2	3	4	5	6	Total
Other																						
orange mesh fencing	ft	2300	0	0	0	0	0									2300	0	0	0	0	0	2300
absorbent composite socks	ft	2300	0	0	0	0	0									2300	0	0	0	0	0	2300
6-mil 40' x 100' polyurethane sheeting	rolls	6	0	0	0	0	0									6	0	0	0	0	0	6
aggregate 2" stone	ton	60	0	0	0	0	0									60	0	0	0	0	0	60
filter cloth	lb	60	0	0	0	0	0									60	0	0	0	0	0	60
20-mil vapor barrier	sqft	0	0	0	0	0	26000									0	0	0	0	0	26000	26000
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0									0	0	0	0	0	0	0
Clean Fill	CY	0	0	0	0	20563.006	0									0	0	0	0	20563.006	0	20563.006
Recycled Stone	CY	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined Waste Destinations																						
User-defined recycled/reused on-site #1	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	0	0	1	0	0	0									0	0	1	0	0	0	1
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
Broome County Landfill	Tons	0	0	28788.208	0	0	0									0	0	28788.208	0	0	0	28788.208
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0	0	200	0	0	0									0	0	200	0	0	0	200
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0									0	0	0	0	0	0	0

Input Worksheet for Site Controls

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	**Component 1**	**Site Controls**

General Scope

Crew mobilization and the establishment and maintenance of SESC measures, Storm Water Pollution Control, Dust Control, etc. for the duration of the remediation remedy implementation. Estimated Project duration is **56 days**. Note: 1. All "Personnel Transportation" for the duration of the work has been captured in this Component as the same personnel will be onsite for each Component (2-6). 2. Remediation equipment mobilization is outlined in Component 2.

Example Items Eliminated through Screening Process

Other Notes and References

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Gallagher Bassett Technical Services PM	12	307			3684				Remedial Oversight and Site Visits
Contractor (6 empl.)	336	20			6720				
Environmental Oversight Field Technician (1 empl.)	56	20			1120				Daily Oversight
Tank Removal Company	1	11			11				
NYSDEC Project Manager	6	22			132				

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Site Controls

Remedy Component that this Input worksheet is part of:	Component 1	Site Controls

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
						Estimated Total Electricity Usage Based on Above	0	
						Renewable Electricity Generated On-Site*		
						Total Electricity Usage Based on Personnel Transportation	0	
						Total Grid Electricity Used	0	

**** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).***

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
			Totals	0	0	0	

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
			Total	0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
orange mesh fencing	ft	2300	29.9	Refined	Virgin	Yes	500				500	Truck (mpg)	Diesel	6		83.333	
			0									Truck (mpg)	Diesel	6			
absorbent composite socks	ft	2300	14.95	Refined	Virgin	Yes	500				500	Truck (mpg)	Diesel	6		83.333	erosion control
			0									Truck (mpg)	Diesel	6			
6-mil 40' x 100' polyurethane sheeting	rolls	6	0.357	Refined	Virgin	Yes	500				500	Truck (mpg)	Diesel	6		83.333	used for soil stockpiles & USTs
			0									Truck (mpg)	Diesel	6			
aggregate 2" stone	ton	60	60	Unrefined	Recycled	Yes	500				500	Truck (mpg)	Diesel	6		83.333	construction entrance pad
			0									Truck (mpg)	Diesel	6			
filter cloth	lb	60	0.03	Refined	Virgin	Yes	500				500	Truck (mpg)	Diesel	6		83.333	construction entrance pad (based on Mirari 100x
			0									Truck (mpg)	Diesel	6			
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														

**** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.***

***** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Site Controls

Remedy Component that this Input worksheet is part of:	Component 1	Site Controls

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											

** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.*

*** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.*

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
Public Water	gal x 1000	56	233.52			tire washing, dust supression	
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.*

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for Site Controls

Remedy Component that this Input worksheet is part of:	Component 1	Site Controls

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		Units	Quantity	Notes
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Totals	0	

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

Input Worksheet for Excavation

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	**Component 2**	**Excavation**

General Scope

Excavation and drilling soils located at the site, loading into tri-axle trucks for off-site disposal, removal of underground storage tanks, and dewatering when required. Estimated Project duration is **56 days (assume 28 days of excavation and disposal)**. Note: 1. All "Personnel Transportation" for the duration of the work has been captured in Component 1 as the same personnel will be on-site for each Component (2-6).

Example Items Eliminated through Screening Process

Dewatering will not be required in Track 2/4. Groundwater will not be encountered during remedial excavations.

Other Notes and References

Track 2/4 - Removal of all soils exceeding RRU SCOs in the Track 2 area (Phase II) and the upper 2 feet of soils in the Track 4 area (Phase I)
Assume 40 trucks per day

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Gallagher Bassett Technical Services PM									
Contractor (6 empl.)									
Environmental Oversight Field Technician (1 empl.)									
Tank Removal Company									
NYSDEC Project Manager									

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes
Excavator - medium (175 HP)	165	75%	Diesel between 75 and 750 hp	6.799450549	228	1550.274725	27.83	1	50	50	Truck (mpg)	Diesel	6		8.3	PC238 Excavator Specs (example)
Excavator - large (250 HP)	257	75%	Diesel between 75 and 750 hp	10.59065934	228	2414.67033	40.2735	1	50	50	Truck (mpg)	Diesel	6		8.3	PC360 Excavator Specs (example)

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Excavation

Remedy Component that this Input worksheet is part of:	Component 2	Excavation

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
					Estimated Total Electricity Usage Based on Above	0	
					Renewable Electricity Generated On-Site*		
					Total Electricity Usage Based on Personnel Transportation	0	
					Total Grid Electricity Used	0	

** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).*

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
		Totals	0	0	0	

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
			Total	0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														

** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.*

*** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.*

**** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.*

Input Worksheet for Excavation

Remedy Component that this Input worksheet is part of:	Component 2	Excavation

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											

** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.*

*** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.*

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.*

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for Excavation

Remedy Component that this Input worksheet is part of:	Component 2	Excavation

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		Units	Quantity	Notes
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Totals	**0**	

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

Input Worksheet for Waste T&D

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	**Component 3**	**Waste Transportation & Disposal**

General Scope

Transportation and disposal of contaminated soil at approved permitted off-site disposal facilities, for the duration of the remediation remedy implementation. Note: 1. All "Personnel Transportation" for the duration of the work has been captured in Component 1 as the same personnel will be on-site for each Component (2-6). Equipment transport is summarized in Component 2.

Example Items Eliminated through Screening Process

Other Notes and References

Assume waste characterization results pass TCLP analysis and soil is classified as non-hazardous

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Gallagher Bassett Technical Services PM									
Contractor (6 empl.)									
Environmental Oversight Field Technician (1 empl.)									
Tank Removal Company									
NYSDEC Project Manager									

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Waste T&D

Remedy Component that this Input worksheet is part of:	Component 3	Waste Transportation & Disposal

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
Estimated Total Electricity Usage Based on Above						0	
Renewable Electricity Generated On-Site*							
Total Electricity Usage Based on Personnel Transportation						0	
Total Grid Electricity Used						0	

**** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).***

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
Totals			0	0	0	

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
Total				0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
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			0														
			0														
			0														
			0														
			0														

**** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.***

***** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for Waste T&D

Remedy Component that this Input worksheet is part of:	Component 3	Waste Transportation & Disposal

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
			0		16	1,142	No	18272	Truck (mpg)	Diesel	6		3045.3	
Broome County Landfill	Tons	28,788	28788.2083	25	16	1,142	No	18272	Truck (mpg)	Diesel	6		3045.3	assuming 18 CY per truck
			0		30	1	No	30	Truck (mpg)	Diesel	6		5.0	
Scrap Metal Disposal Facility	Tons	1	1	50	30	1	No	30	Truck (mpg)	Diesel	6		5.0	Recycled scrap metal - cleaned tank shell
			0		30	1	No	30	Truck (mpg)	Diesel	6		5.0	
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	200	0.26736112	25	30	1	No	30	Truck (mpg)	Diesel	6		5.0	Non-RCRA Non-DOT Used Oil/Oil Water Mixture
			0											
			0											
			0											
			0											
			0											
			0											

**** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.***

***** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

**** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.***

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for Waste T&D

Remedy Component that this Input worksheet is part of:	Component 3	Waste Transportation & Disposal

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		**Units**	**Quantity**	**Notes**
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Totals	**0**	

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

Input Worksheet for EPS

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	Component 4	Endpoint Sampling

General Scope

Collection of endpoint samples at the base (and walls if required) of excavations to document analytical levels of remaining material/confirm that the proposed remediation Track has been met.

Example Items Eliminated through Screening Process

Other Notes and References

One endpoint sample for every 900 square feet + 4 wall samples at 6' and 7' hotspot excavations + 5 tank endpoints (off-site tank on border of Lot 30 will be excavated during development)
QAPP samples not included in calculations
Assume 20 samples max per day

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Gallagher Bassett Technical Services									See component 1
Lab Courier - Phoenix Environmental (Albany, NY)	12	268	Car	Gasoline	3216	25		128.6	To and from site
Lab Courier - Phoenix Environmental (Manchester, CT)	12	257	Car	Gasoline	3084	25		123.4	To and from Albany office

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for EPS

Remedy Component that this Input worksheet is part of:	Component 4	Endpoint Sampling

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
						Estimated Total Electricity Usage Based on Above	0	
						Renewable Electricity Generated On-Site*		
						Total Electricity Usage Based on Personnel Transportation	0	
						Total Grid Electricity Used	0	

**** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).***

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
			Totals	0	0	0	

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
			Total	0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
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			0														
			0														
			0														
			0														
			0														
			0														

**** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.***

***** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for EPS

Remedy Component that this Input worksheet is part of:	Component 4	Endpoint Sampling

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											

** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.*

*** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.*

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.*

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for EPS

Remedy Component that this Input worksheet is part of:	Component 4	Endpoint Sampling

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		**Units**	**Quantity**	**Notes**
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Off-site Laboratory Analysis - VOCs	239	
Off-site Laboratory Analysis - SVOCs	239	
Off-site Laboratory Analysis - Metals	239	
Off-site Laboratory Analysis - Mercury	239	
Off-site Laboratory Analysis - PCBs	239	
Off-site Laboratory Analysis - Other	239	
Off-site Laboratory Analysis - Other	239	
Off-site Laboratory Analysis - Other	239	
Off-site Laboratory Analysis - Other	239	
Off-site Laboratory Analysis - Other	239	
Totals	**2390**	

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

Input Worksheet for B&R

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	Component 5	Backfill and Restoration

General Scope

Importation of clean fill and backfill, grading and compaction to grade, for the duration of the remedy. Note: 1. All "Personnel Transportation" for the duration of the work has been captured in Component 1 as the same personnel will be on-site for each Component (2-6). Estimated project duration of **56 days (assume 28 days of backfill and restoration)**. 2. Equipment transport is summarized in Component 2.

Example Items Eliminated through Screening Process

Other Notes and References

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Gallagher Bassett Technical Services PM									
Contractor (6 empl.)									
Environmental Oversight Field Technician (1 empl.)									
Tank Removal Company									
NYSDEC Project Manager									

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes
Excavator - medium (175 HP)	165	75%	Diesel between 75 and 750 hp	6.799450549	228	1550.274725										PC238 Excavator Specs (example) - see Exc. for equipment transport
Excavator - large (250 HP)	257	75%	Diesel between 75 and 750 hp	10.59065934	228	2414.67033										PC360 Excavator Specs (example) - see Exc. for equipment transport

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for B&R

Remedy Component that this Input worksheet is part of:	Component 5	Backfill and Restoration

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
Estimated Total Electricity Usage Based on Above						0	
Renewable Electricity Generated On-Site*							
Total Electricity Usage Based on Personnel Transportation						0	
Total Grid Electricity Used						0	

**** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).***

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
Totals			0	0	0	

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
Total				0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
Clean Fill	CY	20563.0059	28788.2083	Unrefined	Recycled	Yes	500	50	1,142	No	57100	Truck (mpg)	Diesel	6		9516.667	
			0					50	1,142	No	57100	Truck (mpg)	Diesel	6		9516.667	
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
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			0														
			0														
			0														
			0														
			0														

**** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.***

***** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for B&R

Remedy Component that this Input worksheet is part of:	Component 5	Backfill and Restoration

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											

** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.*

*** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.*

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.*

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for B&R

Remedy Component that this Input worksheet is part of:	Component 5	Backfill and Restoration

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		Units	Quantity	Notes
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Totals	0	

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

Input Worksheet for LTM (incl. ECs)

Please specify which Remedy Component this Input worksheet is part of: (Select "Off" to exclude this Input worksheet from calculations and results)	**Component 6**	**Long-Term Monitoring (incl. ECs)**

General Scope

Installation and long-term monitoring of engineering controls. Note: 1. All "Personnel Transportation" for the duration of the work has been captured in Component 1 as the same personnel will be on-site for each Component (2-6). 2. Equipment transport is summarized in Component 2.

Example Items Eliminated through Screening Process

Other Notes and References

Track 2/4 -> temporary SSDS that will be converted to passive pending SVI Study results
Assume 4 sub-slab monitoring points per building -> 8 sub-slab monitoring point samples, 8 co-located indoor air samples, and one outdoor air sample to be analyzed for TO-15

Personnel Transportation

Participant	Number of Roundtrips to Site	Roundtrip Distance to Site (miles)	Mode of Transportation*	Transport Fuel Type*	Total Distance Transported (miles)	Default Fuel Usage Rate**	Fuel Usage Rate Override**	Fuel Used for Personnel Transport**	Activity or Notes
Gallagher Bassett Technical Services PM									Installation
Contractor (6 empl.)									Installation
Environmental Oversight Field Technician (1 empl.)									Installation
Tank Removal Company									Installation
NYSDEC Project Manager									Installation
Professional Engineer	2	330	Car	Gasoline	660	25		26.4	EC inspections
Gallagher Bassett Technical Services Field Tech	2	307	Car	Gasoline	614	25		24.6	Long-term Monitoring, SVI Study/PRR Inspection
Lab Courier - Phoenix Environmental (Manchester, CT)	1	217	Car	Gasoline	217	25		8.7	Pick-up of SVI samples from Poughkeepsie office

**** See the "Detailed Notes and Explanations" tab for explanation of transport and fuel options.***

***** for biodiesel, B20, diesel, and gasoline, units are gallons for Fuel Used and miles/gallon for Fuel Usage Rate; for natural gas, units are hundreds of cubic feet (ccf) for Fuel Used and ccf/miles for Fuel Usage Rate; for electricity, units are miles/kWh for Fuel Usage Rate and the kWh (Fuel Used) are added to total grid electricity used (cell G69).***

On-Site Equipment Use and Transportation

Equipment Type*	HP*	Load Factor (%)*	Equipment Fuel Type**	Equipment Fuel Usage Rate	Equipment Hours Operated	Fuel Used for On-site Equipment	Equipment weight (tons)	Number of Equipment Roundtrips to Site	Roundtrip Distance to Site (miles)	Total Distance Transported (miles)	Mode of Transportation	Transport Fuel Type***	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Equipment Transport (gallons)	Activity or Notes

**** HP and Load Factor must be entered by user in Columns C and D. Please see the "Detailed Notes and Explanations" tab for further explanation.***

***** For biodiesel, B20, diesel, gasoline, and liquified petroleum gas, units are gallons for Fuel Used for On-site Equipment and gallons/hr for Equipment Fuel Usage Rate; for compressed natural gas units are ccf (hundreds of cubic feet) for Fuel Used for On-site Equipment and ccf/hr for Equipment Fuel Usage Rate.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation and other aspects of data entry in Columns M, N, and P. Units are gallons for Fuel Used for Equipment Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for LTM (incl. ECs)

Remedy Component that this Input worksheet is part of:	Component 6	Long-Term Monitoring (incl. ECs)

On-Site Electricity Use

Equipment Type	HP	Load Factor (%)	Efficiency (%)	Electrical Rating (kW)	Hours Used	Energy Used (kWh)	Notes
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with HP, Efficiency, and Hours>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known kW rating>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
<Equip. with known total Energy Used>							
Estimated Total Electricity Usage Based on Above						0	
Renewable Electricity Generated On-Site*							
Total Electricity Usage Based on Personnel Transportation						0	
Total Grid Electricity Used						0	

**** Electricity generated on-site from renewable resources, for which the facility retains the rights to the renewable energy (i.e., does not sell renewable energy certificates associated with the renewable energy generation).***

On-Site Natural Gas Use

Equipment Type	Power Rating (Btu/hr)	Efficiency (%)	Hours Used	Energy Required (Btu)	Natural Gas Used (ccf)	Notes
					0	
				0		
Totals			0	0	0	

Landfill Gas Combusted On-Site for Energy Use

Equipment Type	Landfill Gas (ccf)	% Methane by volume	Used for electricity?	Landfill Gas Methane Used (ccf)	Notes
				0	
				0	
				0	
Total				0	

Please see the "Detailed Notes and Explanations" tab for instructions on using the two tables above ("On-site Natural Gas Use" and "Landfill Gas Combusted On-Site for Energy Use"). In the two tables above, ccf = hundreds of cubic feet.

Materials Use and Transportation

Material Type*	Unit	Quantity	Tons	Is the Material Refined or Unrefined?**	Material Source: Virgin, Recycled, or Reused?**	Calculate Item Footprint?**	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation***	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Materials Transport (gallons)	Notes and Description of Materials
20-mil vapor barrier	sqft	26,000	3.588	Refined	Virgin	Yes	500	50	1	No	50	Truck (mpg)	Diesel	6		8.333	Vapor barrier - cover system in Track 4 area
			0					50	1	No	50	Truck (mpg)	Diesel	6		8.333	
Portland cement, US average	lb	11,775	5.8875	Unrefined	Virgin	Yes	25	20	1	No	20	Truck (mpg)	Diesel	6		3.333	Building slab - cover system in Track 4 area
			0					20	1	No	20	Truck (mpg)	Diesel	6		3.333	
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														
			0														

**** Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined Materials" in the dropdown menu.***

***** Selections must be made in Columns F - H in order for the footprint calculations to be performed. Please see the "Detailed Notes and Explanations" tab for further information.***

****** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns L, N, O, and Q. Units are gallons for Fuel Used for Materials Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.***

Input Worksheet for LTM (incl. ECs)

Remedy Component that this Input worksheet is part of:	Component 6	Long-Term Monitoring (incl. ECs)

Waste Disposal and Transportation

Waste Destination*	Unit	Quantity	Tons	Default One-way Distance to Site (miles)	One-way Distance to Site Override (miles)	Number of One-way Trips to Site	Include Return Trip in Calculations?	Total Distance Transported (miles)	Mode of Transportation **	Transport Fuel Type	Default Transport Fuel Usage Rate (gptm or mpg)	Transport Fuel Usage Rate Override (gptm or mpg)	Fuel Used for Waste Transport (gallons)	Notes and Description of Waste
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											
			0											

** No footprint is calculated for the Recycled/Reused On-Site and Off-Site selections. Please see the "Detailed Notes and Explanations" tab for instructions on specifying "User-Defined" selections in the dropdown menu.*

*** Please see the "Detailed Notes and Explanations" tab for instructions on selecting mode of transportation, accounting for empty return trips, and other aspects of data entry in Columns I, K, L, and N. Units are gallons for Fuel Used for Waste Transport and miles/gallon (mpg) or gallons per ton-mile (gptm) for Transport Fuel Usage Rate.*

Type of Water Used

Source of Water Used*	Unit	Quantity	Tons	Source Location/Aquifer (optional)	Quality of Water Used (optional)	Water Uses (optional)	Fate of Used Water (optional)
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				
			0				

** Only the "Public Water" selection has an associated footprint. No footprint is calculated for the other water source selections.*

Note: Information entered in Columns F - V (Source/Quality/Use/Fate) is not compiled or reported by SEFA.

Input Worksheet for LTM (incl. ECs)

Remedy Component that this Input worksheet is part of:	Component 6	Long-Term Monitoring (incl. ECs)

Other Energy Use and Air Emissions

Item		Units	Quantity	Notes
On-Site				
User-defined on-site conventional energy use #1	*User-Defined	TBD		
User-defined on-site conventional energy use #2	*User-Defined	TBD		
On-site HAP process emissions**		lbs		
On-site GHG emissions**		lbs CO2e		
On-site carbon storage**		lbs CO2e		
Landfill gas flared on-site		ccf CH4		
Other on-site NOx emissions or reductions**		lbs		
Other on-site SOx emissions or reductions**		lbs		
Other on-site PM emissions or reductions**		lbs		
Transportation		**Units**	**Quantity**	**Notes**
User-defined conventional energy transportation #1	*User-Defined	TBD	10	
User-defined conventional energy transportation #2	*User-Defined	TBD		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Enter a positive number for emissions and a negative number for reductions, avoidances, or storage***
See the "Detailed Notes and Explanations" tab for use of this table.

Off-Site Laboratory Analysis

Parameter and Notes	Number of Samples	Comments
Off-site Laboratory Analysis - VOCs	17	
Totals	**17**	

Other Voluntary Renewable Energy Use

Item		Units	Quantity	Notes
User-defined on-site renewable energy use #1	*User-Defined	TBD		
User-defined on-site renewable energy use #2	*User-Defined	TBD		
User-defined renewable energy transportation #1	*User-Defined	TBD		
User-defined renewable energy transportation #2	*User-Defined	TBD		
Voluntary purchase of renewable electricity**		MWh		
Voluntary purchase of RECs**		MWh		

**** Enter units and conversion factors on "User Defined Factors" tab***
***** Complete information on provider in the table to the right. No footprint reductions are associated with the voluntary purchases.***
See the "Detailed Notes and Explanations" tab for use of this table

Description of purchased renewable electricity (green pricing product or green marketing product)	Provider:	
	Type of product:	
	Type of renewable energy source:	
	Date of renewable system installation:	
Description of purchased RECs	Provider:	
	Type of renewable energy source:	
	Date of renewable system installation:	
	Location of renewable system installation:	

For use of this worksheet, please see instructions at the end of the worksheet

User Defined Activity, Material, or Service	Unit	Tons per Unit*	User Defined Conversion Factors — Parameters Used, Extracted, Emitted, or Generated: Energy (MMBtu/unit)	GHG (lbs CO2e/unit)	NOx (lbs NOx/unit)	SOx (lbs SOx/unit)	PM (lbs PM/unit)	HAPs (lbs HAPs/unit)	Ref.	Use this row only for:
User-defined emissions for biodiesel on-site equipment	gal									User-defined emissions for biodiesel on-site equipment
User-defined emissions for diesel on-site equipment	gal									User-defined emissions for diesel on-site equipment
User-defined emissions for gasoline on-site equipment	gal									User-defined emissions for gasoline on-site equipment
User-defined emissions for compressed natural gas on-site equ	ccf									User-defined emissions for compressed natural gas on-site e
User-defined emissions for liquified petroleum gas on-site equ	gal									User-defined emissions for liquified petroleum gas on-site eq
User-defined emissions for natural gas on-site equipment	ccf									User-defined emissions for natural gas on-site equipment
User-defined emissions for biodiesel transportation	gal									User-defined emissions for biodiesel transportation
User-defined emissions for diesel transportation	gal									User-defined emissions for diesel transportation
User-defined emissions for gasoline transportation	gal									User-defined emissions for gasoline transportation
User-defined emissions for natural gas transportation	ccf									User-defined emissions for natural gas transportation

Note: Entering user-defined emission conversion factors in Rows 7 - 16 will override default conversion factors for all emissions calculations of the same fuel/use throughout the SEFA workbooks.

orange mesh fencing	ft	0.013								User-defined material #1
absorbent composite socks	ft	0.0065								User-defined material #2
6-mil 40' x 100' polyurethane sheeting	rolls	0.0595								User-defined material #3
aggregate 2" stone	ton	1								User-defined material #4
filter cloth	lb	0.0005								User-defined material #5
20-mil vapor barrier	sqft	0.000138								User-defined material #6
4" Perforated SDR 35 Radon Vent Pipe	ft	1.014								User-defined material #7
Clean Fill	CY	1.4								User-defined material #8
Recycled Stone	CY	1.4								User-defined material #9
User-defined material #10	TBD	TBD								User-defined material #10
User-defined material #11	TBD	TBD								User-defined material #11
User-defined material #12	TBD	TBD								User-defined material #12
User-defined material #13	TBD	TBD								User-defined material #13
User-defined material #14	TBD	TBD								User-defined material #14
User-defined material #15	TBD	TBD								User-defined material #15
User-defined material #16	TBD	TBD								User-defined material #16
User-defined material #17	TBD	TBD								User-defined material #17
User-defined material #18	TBD	TBD								User-defined material #18
User-defined material #19	TBD	TBD								User-defined material #19
User-defined material #20	TBD	TBD								User-defined material #20

Item or Service Used	Unit	Tons per Unit*	Energy (MMBtu/unit)	GHG (lbs CO2e/unit)	NOx (lbs NOx/unit)	SOx (lbs SOx/unit)	PM (lbs PM/unit)	HAPs (lbs HAPs/unit)	Ref.	Use this row only for:
User-defined recycled/reused on-site #1	TBD	TBD								User-defined recycled/reused on-site #1
User-defined recycled/reused on-site #2	TBD	TBD								User-defined recycled/reused on-site #2
User-defined recycled/reused on-site #3	TBD	TBD								User-defined recycled/reused on-site #3
Scrap Metal Disposal Facility	Tons	1								User-defined recycled/reused off-site #1
User-defined recycled/reused off-site #2	TBD	TBD								User-defined recycled/reused off-site #2
User-defined recycled/reused off-site #3	TBD	TBD								User-defined recycled/reused off-site #3
Broome County Landfill	Tons	1								User-defined non-hazardous waste destination #1
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0.00134								User-defined non-hazardous waste destination #2
User-defined non-hazardous waste destination #3	TBD	TBD								User-defined non-hazardous waste destination #3
User-defined hazardous waste destination #1	TBD	TBD								User-defined hazardous waste destination #1
User-defined hazardous waste destination #2	TBD	TBD								User-defined hazardous waste destination #2
User-defined hazardous waste destination #3	TBD	TBD								User-defined hazardous waste destination #3

Item or Service Used	Unit	Tons per Unit*	Energy (MMBtu/unit)	GHG (lbs CO2e/unit)	NOx (lbs/unit)	SOx (lbs/unit)	PM (lbs/unit)	HAPs (lbs/unit)	Ref.	Use this row only for:
User-defined on-site conventional energy use #1	TBD									User-defined on-site conventional energy use #1
User-defined on-site conventional energy use #2	TBD									User-defined on-site conventional energy use #2
User-defined conventional energy transportation #1	TBD									User-defined conventional energy transportation #1
User-defined conventional energy transportation #2	TBD									User-defined conventional energy transportation #2
User-defined on-site renewable energy use #1	TBD									User-defined on-site renewable energy use #1
User-defined on-site renewable energy use #2	TBD									User-defined on-site renewable energy use #2
User-defined renewable energy transportation #1	TBD									User-defined renewable energy transportation #1
User-defined renewable energy transportation #2	TBD									User-defined renewable energy transportation #2
User-defined water resource #1	gal x 1000									User-defined water resource #1
User-defined water resource #2	gal x 1000									User-defined water resource #2

** "Tons per unit" refers to how many tons there are per unit of the material (e.g., 1 pound is 1/2000 of a ton or 0.0005 tons per unit)*

"MMBtu" = millions of Btus

Fuel Usage Rate								
User Defined Vehicles in Mode of Personnel Transportation	B20 mpg or pmpg	Biodiesel mpg or pmpg	Diesel mpg or pmpg	Electricity mpkWh	Gasoline mpg	Natural Gas mpccf	Ref.	
User Defined Vehicle #1								User Defined Vehicle #1
User Defined Vehicle #2								User Defined Vehicle #2
User Defined Vehicle #3								User Defined Vehicle #3
User Defined Vehicle #4								User Defined Vehicle #4
User Defined Vehicle #5								User Defined Vehicle #5

"mpg" = miles per gallon; "pmpg" = passenger miles per gallon; "mpkWh" = miles per kilowatt hour; "mpccf" = miles per 100 cubic feet"

Fuel Usage Rate					
User Defined Vehicles in Mode of Transportation for Equipment, Materials, and Waste	B20 mpg or gptm	Biodiesel mpg or gptm	Diesel mpg or gptm	Ref.	
User Defined Vehicle #1					User Defined Vehicle #1
User Defined Vehicle #2					User Defined Vehicle #2
User Defined Vehicle #3					User Defined Vehicle #3
User Defined Vehicle #4					User Defined Vehicle #4
User Defined Vehicle #5					User Defined Vehicle #5

Site Controls - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**0.00**		**0**		**0**		**0**		**0**		**0**

Site Controls - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

Site Controls - Transportation Footprint (Scope 3a)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	**Units**	**Usage**	**Conv. Factor**	**MMBtus**	**Conv. Factor**	**lbs CO2e**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**
Conventional Energy														
Transportation diesel use	gal	416.665	0.139	57.916435	22.5	9374.9625	0.17	70.83305	0.0054	2.249991	0.0034	1.416661	0.0000052	0.0021667
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**58**		**9,375**		**71**		**2**		**1**		**0**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**58**		**9375**		**71**		**2**		**1**		**0**

Site Controls - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
Notes:														

Site Controls - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	416.665	0.017	7.083305	3.02	1258.3283	0.0051	2.1249915	0.0062	2.583323	0.0017	0.7083305	0.0011	0.4583315
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**7.083305**		**1258.3283**		**2.1249915**		**2.583323**		**0.7083305**		**0.4583315**
Notes:														
Public water	gal x 1000	56	0.0092	0.5152	5	280	0.0097	0.5432	0.0059	0.3304	0.016	0.896	0.000015	0.00084
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Site Controls - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	0	0.058071	0	6.8534384	0	0.131402	0	0.3038758	0	0.0455698	0	0.0330165	0
Off-site Laboratory Analysis - Metals	sample	0	0.212	0	27.4693	0	0.6423	0	1.5072	0	0.2264	0	0.1643	0
Off-site Laboratory Analysis - Mercury	sample	0	0.0731715	0	9.325458	0	0.2127439	0	0.4982396	0	0.0747359	0	0.0542332	0
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	0	0.0512769	0	5.224902	0	0.0833339	0	0.1904774	0	0.0284393	0	0.0212083	0
Off-site Laboratory Analysis - VOCs	sample	0	0.0762045	0	9.016814	0	0.104498	0	0.2270738	0	0.0339508	0	0.0235892	0
Off-site Laboratory Analysis - SVOCs	sample	0	0.0715602	0	7.870422	0	0.1459445	0	0.3373038	0	0.0504853	0	0.0372577	0
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Notes:														

Site Controls - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	2300	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	2300	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	6	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	60	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	60	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	0	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/u		lbs CO2e/u		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**7.598505**		**1538.3283**		**2.6681915**		**2.913723**		**1.6043305**		**0.4591715**

Site Controls - Intermediate Totals

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Total Gasoline Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	416.665	0.139	57.916435	22.5	9374.9625	0.17	70.83305	0.0054	2.249991	0.0034	1.416661	0.0000052	0.0021667
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	416.665	0.017	7.083305	3.02	1258.3283	0.0051	2.1249915	0.0062	2.583323	0.0017	0.7083305	0.0011	0.4583315
Total Diesel Footprint		**416.665**		**64.99974**		**10633.291**		**72.958042**		**4.833314**		**2.1249915**		**0.4604982**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Excavation - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	3964.9451	0.139	551.12736	22.24	88180.378	0.101	400.45945	0.00013	0.5154429	0.009	35.684505	0.00004	0.1585978
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**551**		**88,180**		**400**		**1**		**36**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**551.13**		**88,180**		**400**		**1**		**36**		**0**

Excavation - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	352	0	1.504	0	1.46966	0	0.07546	0	0.0454035	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

Excavation - Transportation Footprint (Scope 3a)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	**Units**	**Usage**	**Conv. Factor**	**MMBtus**	**Conv. Factor**	**lbs CO2e**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**
Conventional Energy														
Transportation diesel use	gal	16.6	0.139	2.3074	22.5	373.5	0.17	2.822	0.0054	0.08964	0.0034	0.05644	0.0000052	8.632E-05
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**2**		**374**		**3**		**0**		**0**		**0**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**2**		**374**		**3**		**0**		**0**		**0**

Excavation - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
Notes:														

Excavation - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	3981.5451	0.017	67.686266	3.02	12024.266	0.0051	20.30588	0.0062	24.685579	0.0017	6.7686266	0.0011	4.3796996
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**67.686266**		**12024.266**		**20.30588**		**24.685579**		**6.7686266**		**4.3796996**
Notes:														
Public water	gal x 1000	0	0.0092	0	5	0	0.0097	0	0.0059	0	0.016	0	0.000015	0
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Excavation - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	0	0.058071	0	6.8534384	0	0.131402	0	0.3038758	0	0.0455698	0	0.0330165	0
Off-site Laboratory Analysis - Metals	sample	0	0.212	0	27.4693	0	0.6423	0	1.5072	0	0.2264	0	0.1643	0
Off-site Laboratory Analysis - Mercury	sample	0	0.0731715	0	9.325458	0	0.2127439	0	0.4982396	0	0.0747359	0	0.0542332	0
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	0	0.0512769	0	5.224902	0	0.0833339	0	0.1904774	0	0.0284393	0	0.0212083	0
Off-site Laboratory Analysis - VOCs	sample	0	0.0762045	0	9.016814	0	0.104498	0	0.2270738	0	0.0339508	0	0.0235892	0
Off-site Laboratory Analysis - SVOCs	sample	0	0.0715602	0	7.870422	0	0.1459445	0	0.3373038	0	0.0504853	0	0.0372577	0
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	35.2	0	0.1504	0	0.146966	0	0.007546	0	0.0045403	0
Notes:														

Excavation - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	0	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	0	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	0	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	0	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/t		lbs CO2e/t		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**67.686266**		**12024.266**		**20.30588**		**24.685579**		**6.7686266**		**4.3796996**

Excavation - Intermediate Totals

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Total Gasoline Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	3964.9451	0.139	551.12736	22.24	88180.378	0.101	400.45945	0.00013	0.5154429	0.009	35.684505	0.00004	0.1585978
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	16.6	0.139	2.3074	22.5	373.5	0.17	2.822	0.0054	0.08964	0.0034	0.05644	0.0000052	8.632E-05
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	3981.5451	0.017	67.686266	3.02	12024.266	0.0051	20.30588	0.0062	24.685579	0.0017	6.7686266	0.0011	4.3796996
Total Diesel Footprint		**3981.5451**		**621.12103**		**100578.14**		**423.58733**		**25.290662**		**42.509572**		**4.5383837**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Waste Transportation & Disposal - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	1	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**0.00**		**0**		**0**		**0**		**0**		**0**

Waste Transportation & Disposal - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	352	0	1.504	0	1.46966	0	0.07546	0	0.0454035	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

Waste Transportation & Disposal - Transportation Footprint (Scope 3a)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	**Units**	**Usage**	**Conv. Factor**	**MMBtus**	**Conv. Factor**	**lbs CO2e**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**
Conventional Energy														
Transportation diesel use	gal	6110.6	0.139	849.3734	22.5	137488.5	0.17	1038.802	0.0054	32.99724	0.0034	20.77604	0.0000052	0.0317751
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**849**		**137,489**		**1,039**		**33**		**21**		**0**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**849**		**137489**		**1039**		**33**		**21**		**0**

Waste Transportation & Disposal - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
Notes:														

Waste Transportation & Disposal - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	6110.6	0.017	103.8802	3.02	18454.012	0.0051	31.16406	0.0062	37.88572	0.0017	10.38802	0.0011	6.72166
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**103.8802**		**18454.012**		**31.16406**		**37.88572**		**10.38802**		**6.72166**
Notes:														
Public water	gal x 1000	0	0.0092	0	5	0	0.0097	0	0.0059	0	0.016	0	0.000015	0
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Waste Transportation & Disposal - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	0	0.058071	0	6.8534384	0	0.131402	0	0.3038758	0	0.0455698	0	0.0330165	0
Off-site Laboratory Analysis - Metals	sample	0	0.212	0	27.4693	0	0.6423	0	1.5072	0	0.2264	0	0.1643	0
Off-site Laboratory Analysis - Mercury	sample	0	0.0731715	0	9.325458	0	0.2127439	0	0.4982396	0	0.0747359	0	0.0542332	0
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	0	0.0512769	0	5.224902	0	0.0833339	0	0.1904774	0	0.0284393	0	0.0212083	0
Off-site Laboratory Analysis - VOCs	sample	0	0.0762045	0	9.016814	0	0.104498	0	0.2270738	0	0.0339508	0	0.0235892	0
Off-site Laboratory Analysis - SVOCs	sample	0	0.0715602	0	7.870422	0	0.1459445	0	0.3373038	0	0.0504853	0	0.0372577	0
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	35.2	0	0.1504	0	0.146966	0	0.007546	0	0.0045403	0
Notes:														

Waste Transportation & Disposal - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	0	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	0	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	0	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	0	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	1	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/u		(lbs CO2e/u		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	28788.208	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	200	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**103.8802**		**18454.012**		**31.16406**		**37.88572**		**10.38802**		**6.72166**

Waste Transportation & Disposal - Intermediate Totals

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Total Gasoline Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	6110.6	0.139	849.3734	22.5	137488.5	0.17	1038.802	0.0054	32.99724	0.0034	20.77604	0.0000052	0.0317751
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	6110.6	0.017	103.8802	3.02	18454.012	0.0051	31.16406	0.0062	37.88572	0.0017	10.38802	0.0011	6.72166
Total Diesel Footprint		**6110.6**		**953.2536**		**155942.51**		**1069.9661**		**70.88296**		**31.16406**		**6.7534351**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Endpoint Sampling - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**0.00**		**0**		**0**		**0**		**0**		**0**

Endpoint Sampling - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	352	0	1.504	0	1.46966	0	0.07546	0	0.0454035	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

Endpoint Sampling - Transportation Footprint (Scope 3a)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	**Units**	**Usage**	**Conv. Factor**	**MMBtus**	**Conv. Factor**	**lbs CO2e**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**
Conventional Energy														
Transportation diesel use	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	252	0.124	31.248	19.77	4982.04	0.027	6.804	0.00036	0.09072	0.003	0.756	0.0067	1.6884
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**31**		**4,982**		**7**		**0**		**1**		**2**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**31**		**4982**		**7**		**0**		**1**		**2**

Endpoint Sampling - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
Notes:														

Endpoint Sampling - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	0	0.017	0	3.02	0	0.0051	0	0.0062	0	0.0017	0	0.0011	0
Gasoline produced	gal	252	0.033	8.316	2.8	705.6	0.0046	1.1592	0.005	1.26	0.0015	0.378	0.001	0.252
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**8.316**		**705.6**		**1.1592**		**1.26**		**0.378**		**0.252**
Notes:														
Public water	gal x 1000	0	0.0092	0	5	0	0.0097	0	0.0059	0	0.016	0	0.000015	0
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Endpoint Sampling - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	1195	0.058071	69.39488	6.8534384	8189.8589	0.131402	157.02534	0.3038758	363.13154	0.0455698	54.45594	0.0330165	39.454752
Off-site Laboratory Analysis - Metals	sample	239	0.212	50.668	27.4693	6565.1627	0.6423	153.5097	1.5072	360.2208	0.2264	54.1096	0.1643	39.2677
Off-site Laboratory Analysis - Mercury	sample	239	0.0731715	17.487982	9.325458	2228.7845	0.2127439	50.845792	0.4982396	119.07926	0.0747359	17.86189	0.0542332	12.961725
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	239	0.0512769	12.255179	5.224902	1248.7516	0.0833339	19.916797	0.1904774	45.524108	0.0284393	6.7970023	0.0212083	5.0687722
Off-site Laboratory Analysis - VOCs	sample	239	0.0762045	18.212872	9.016814	2155.0185	0.104498	24.975032	0.2270738	54.270638	0.0339508	8.1142508	0.0235892	5.6378236
Off-site Laboratory Analysis - SVOCs	sample	239	0.0715602	17.102884	7.870422	1881.0309	0.1459445	34.88074	0.3373038	80.615608	0.0504853	12.065996	0.0372577	8.9045999
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	35.2	0	0.1504	0	0.146966	0	0.007546	0	0.0045403	0
Notes:														

Endpoint Sampling - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	0	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	0	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	0	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	0	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/u		(lbs CO2e/u		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**193.4378**		**22974.207**		**442.3126**		**1024.102**		**153.78268**		**111.54737**

Endpoint Sampling - Intermediate Totals

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	252	0.124	31.248	19.77	4982.04	0.027	6.804	0.00036	0.09072	0.003	0.756	0.0067	1.6884
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	252	0.033	8.316	2.8	705.6	0.0046	1.1592	0.005	1.26	0.0015	0.378	0.001	0.252
Total Gasoline Footprint		**252**		**39.564**		**5687.64**		**7.9632**		**1.35072**		**1.134**		**1.9404**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	0	0.017	0	3.02	0	0.0051	0	0.0062	0	0.0017	0	0.0011	0
Total Diesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Backfill and Restoration - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	3964.9451	0.139	551.12736	22.24	88180.378	0.101	400.45945	0.00013	0.5154429	0.009	35.684505	0.00004	0.1585978
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**551**		**88,180**		**400**		**1**		**36**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**551.13**		**88,180**		**400**		**1**		**36**		**0**

Backfill and Restoration - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	352	0	1.504	0	1.46966	0	0.07546	0	0.0454035	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

Backfill and Restoration - Transportation Footprint (Scope 3a)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	**Units**	**Usage**	**Conv. Factor**	**MMBtus**	**Conv. Factor**	**lbs CO2e**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**
Conventional Energy														
Transportation diesel use	gal	19033.334	0.139	2645.6334	22.5	428250.02	0.17	3235.6668	0.0054	102.78	0.0034	64.713336	0.0000052	0.0989733
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**2,646**		**428,250**		**3,236**		**103**		**65**		**0**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**2646**		**428250**		**3236**		**103**		**65**		**0**

Backfill and Restoration - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
Notes:														

Backfill and Restoration - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	22998.279	0.017	390.97074	3.02	69454.803	0.0051	117.29122	0.0062	142.58933	0.0017	39.097074	0.0011	25.298107
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**390.97074**		**69454.803**		**117.29122**		**142.58933**		**39.097074**		**25.298107**
Notes:														
Public water	gal x 1000	0	0.0092	0	5	0	0.0097	0	0.0059	0	0.016	0	0.000015	0
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Backfill and Restoration - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	0	0.058071	0	6.8534384	0	0.131402	0	0.3038758	0	0.0455698	0	0.0330165	0
Off-site Laboratory Analysis - Metals	sample	0	0.212	0	27.4693	0	0.6423	0	1.5072	0	0.2264	0	0.1643	0
Off-site Laboratory Analysis - Mercury	sample	0	0.0731715	0	9.325458	0	0.2127439	0	0.4982396	0	0.0747359	0	0.0542332	0
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	0	0.0512769	0	5.224902	0	0.0833339	0	0.1904774	0	0.0284393	0	0.0212083	0
Off-site Laboratory Analysis - VOCs	sample	0	0.0762045	0	9.016814	0	0.104498	0	0.2270738	0	0.0339508	0	0.0235892	0
Off-site Laboratory Analysis - SVOCs	sample	0	0.0715602	0	7.870422	0	0.1459445	0	0.3373038	0	0.0504853	0	0.0372577	0
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	35.2	0	0.1504	0	0.146966	0	0.007546	0	0.0045403	0
Notes:														

Backfill and Restoration - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	0	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	0	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	0	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	0	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	20563.006	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/t		lbs CO2e/t		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**390.97074**		**69454.803**		**117.29122**		**142.58933**		**39.097074**		**25.298107**

Backfill and Restoration - Intermediate Totals

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	0	0.124	0	19.77	0	0.027	0	0.00036	0	0.003	0	0.0067	0
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	0	0.033	0	2.8	0	0.0046	0	0.005	0	0.0015	0	0.001	0
Total Gasoline Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	3964.9451	0.139	551.12736	22.24	88180.378	0.101	400.45945	0.00013	0.5154429	0.009	35.684505	0.00004	0.1585978
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	19033.334	0.139	2645.6334	22.5	428250.02	0.17	3235.6668	0.0054	102.78	0.0034	64.713336	0.0000052	0.0989733
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	22998.279	0.017	390.97074	3.02	69454.803	0.0051	117.29122	0.0062	142.58933	0.0017	39.097074	0.0011	25.298107
Total Diesel Footprint		**22998.279**		**3587.7315**		**585885.2**		**3753.4175**		**245.88478**		**139.49492**		**25.555678**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Long-Term Monitoring (incl. ECs) - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**0.00**		**0**		**0**		**0**		**0**		**0**

Long-Term Monitoring (incl. ECs) - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	352	0	1.504	0	1.46966	0	0.07546	0	0.0454035	0
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

Long-Term Monitoring (incl. ECs) - Transportation Footprint (Scope 3a)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	**Units**	**Usage**	**Conv. Factor**	**MMBtus**	**Conv. Factor**	**lbs CO2e**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**	**Conv. Factor**	**lbs**
Conventional Energy														
Transportation diesel use	gal	23.332	0.139	3.243148	22.5	524.97	0.17	3.96644	0.0054	0.1259928	0.0034	0.0793288	0.0000052	0.0001213
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	59.7	0.124	7.4028	19.77	1180.269	0.027	1.6119	0.00036	0.021492	0.003	0.1791	0.0067	0.39999
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	10	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**11**		**1,705**		**6**		**0**		**0**		**0**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**11**		**1705**		**6**		**0**		**0**		**0**

Long-Term Monitoring (incl. ECs) - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
Notes:														

Long-Term Monitoring (incl. ECs) - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	23.332	0.017	0.396644	3.02	70.46264	0.0051	0.1189932	0.0062	0.1446584	0.0017	0.0396644	0.0011	0.0256652
Gasoline produced	gal	59.7	0.033	1.9701	2.8	167.16	0.0046	0.27462	0.005	0.2985	0.0015	0.08955	0.001	0.0597
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**2.366744**		**237.62264**		**0.3936132**		**0.4431584**		**0.1292144**		**0.0853652**
Notes:														
Public water	gal x 1000	0	0.0092	0	5	0	0.0097	0	0.0059	0	0.016	0	0.000015	0
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

Long-Term Monitoring (incl. ECs) - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	0	0.058071	0	6.8534384	0	0.131402	0	0.3038758	0	0.0455698	0	0.0330165	0
Off-site Laboratory Analysis - Metals	sample	0	0.212	0	27.4693	0	0.6423	0	1.5072	0	0.2264	0	0.1643	0
Off-site Laboratory Analysis - Mercury	sample	0	0.0731715	0	9.325458	0	0.2127439	0	0.4982396	0	0.0747359	0	0.0542332	0
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	0	0.0512769	0	5.224902	0	0.0833339	0	0.1904774	0	0.0284393	0	0.0212083	0
Off-site Laboratory Analysis - VOCs	sample	17	0.0762045	1.2954763	9.016814	153.28584	0.104498	1.7764667	0.2270738	3.8602546	0.0339508	0.5771643	0.0235892	0.4010167
Off-site Laboratory Analysis - SVOCs	sample	0	0.0715602	0	7.870422	0	0.1459445	0	0.3373038	0	0.0504853	0	0.0372577	0
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	35.2	0	0.1504	0	0.146966	0	0.007546	0	0.0045403	0
Notes:														

Long-Term Monitoring (incl. ECs) - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	0	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	0	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	0	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	26000	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/u		lbs CO2e/u		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**3.6622203**		**390.90848**		**2.1700799**		**4.303413**		**0.7063787**		**0.4863819**

Long-Term Monitoring (incl. ECs) - Intermediate Totals

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	59.7	0.124	7.4028	19.77	1180.269	0.027	1.6119	0.00036	0.021492	0.003	0.1791	0.0067	0.39999
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	59.7	0.033	1.9701	2.8	167.16	0.0046	0.27462	0.005	0.2985	0.0015	0.08955	0.001	0.0597
Total Gasoline Footprint		**59.7**		**9.3729**		**1347.429**		**1.88652**		**0.319992**		**0.26865**		**0.45969**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	0	0.139	0	22.24	0	0.101	0	0.00013	0	0.009	0	0.00004	0
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	23.332	0.139	3.243148	22.5	524.97	0.17	3.96644	0.0054	0.1259928	0.0034	0.0793288	0.0000052	0.0001213
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	23.332	0.017	0.396644	3.02	70.46264	0.0051	0.1189932	0.0062	0.1446584	0.0017	0.0396644	0.0011	0.0256652
Total Diesel Footprint		**23.332**		**3.639792**		**595.43264**		**4.0854332**		**0.2706512**		**0.1189932**		**0.0257865**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

All Components - On-Site Footprint (Scope 1)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
On-Site														
On-site Renewable Energy														
Renewable electricity generated on-site	MWh	0	3.413	0										
Landfill gas combusted on-site for energy use	ccf CH4	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined on-site renewable energy use #1	gal	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined on-site renewable energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
On-site Conventional Energy														
On-site grid electricity	MWh	0	3.413	0										
On-site diesel use - Other	Gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	Gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	Gal	7929.8901	0.139	1102.2547	22.24	176360.76	0.101	800.9189	0.00013	1.0308857	0.009	71.369011	0.00004	0.3171956
On-site diesel use >750 hp	Gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
On-site gasoline use - Other	Gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	Gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	Gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
On-site compressed natural gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed natural gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site liquified petroleum gas use - Other	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	gal	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Other forms of on-site conventional energy use #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Other forms of on-site conventional energy use #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
On-site Conventional Energy Subtotals				**1,102**		**176,361**		**801**		**1**		**71**		**0**
Notes:														
Other On-site Emissions														
On-site HAP process emissions	lbs	0											1	0
On-site GHG emissions	lbs CO2e	0			1	0								
On-site carbon storage	lbs CO2e	0			1	0								
GHG avoided by flaring on-site landfill methane	Lbs	0			-262	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Other on-site NOx emissions or reductions	lbs	0					1	0						
Other on-site SOx emissions or reductions	lbs	0							1	0				
Other on-site PM emissions or reductions	lbs	0									1	0		
User-defined recycled/reused on-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused on-site #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrap Metal Disposal Facility	Tons	1	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
On-site Totals				**1,102.25**		**176,361**		**801**		**1**		**71**		**0**

All Components - Electricity Generation Footprint (Scope 2)

Contributors to Footprints	Units	Usage	Energy		GHG		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Electricity Generation														
Grid electricity	MWh	0	6.929	0	N/A*	0	N/A*	0	N/A*	0	N/A*	0	N/A*	0
**** Conversion factors are not applied to grid electricity in the "All Components" tab since multiple fuel mixes may be used. The value for each cell shaded yellow in Row 51 is the sum of values from Components 1 - 6.***														
Voluntary purchase of renewable electricity	MWh	0												
Voluntary purchase of RECs	MWh	0												
Notes:														

All Components - Transportation Footprint (Scope 3a)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Conventional Energy														
Transportation diesel use	gal	25600.531	0.139	3558.4738	22.5	576011.95	0.17	4352.0903	0.0054	138.24287	0.0034	87.041805	0.0000052	0.1331228
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	311.7	0.124	38.6508	19.77	6162.309	0.027	8.4159	0.00036	0.112212	0.003	0.9351	0.0067	2.08839
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
User-defined conventional energy transportation #1	TBD	60	0	0	0	0	0	0	0	0	0	0	0	0
User-defined conventional energy transportation #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Conventional Energy Subtotals				**3,597**		**582,174**		**4,361**		**138**		**88**		**2**
Notes:														
Renewable Energy														
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
User-defined renewable energy transportation #1	TBD	0	Biodiesel		0	0	0	0	0	0	0	0	Ref.	
User-defined renewable energy transportation #2	TBD	0	mpg or pmp		0	0	0	0	0	0	0	0	0	0
Renewable Energy Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Transportation Totals				**3597**		**582174**		**4361**		**138**		**88**		**2**

All Components - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Construction Materials														
Aluminum, Rolled Sheet	lb	0	0.0633	0	9.15	0	0.0148	0	0.0283	0	0.0088	0	0.00102	0
Asphalt, mastic	lb	0	0.0412	0	0.85	0	0.00271	0	0.00798	0	0.000766	0	0.00107	0
Asphalt, paving-grade	lb	0	0.5	0	8.58	0	0.0299	0	0.0969	0	0.0091	0	0.0133	0
Ethanol, Corn, 95%	lb	0	0.0318	0	-0.0199	0	0.00425	0	0.00303	0	0.000469	0	0.0000846	0
Ethanol, Corn, 99.7%	lb	0	0.0324	0	0.0591	0	0.00431	0	0.0031	0	0.000472	0	0.000087	0
Ethanol, Petroleum, 99.7%	lb	0	0.0205	0	1.25	0	0.00199	0	0.00214	0	0.000277	0	0.0000589	0
Gravel/Sand Mix, 65% Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Gravel/sand/clay	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
HDPE	lb	0	0.0332	0	1.94	0	0.00325	0	0.00409	0	0.000439	0	0.0000641	0
Photovoltaic system (installed)	W	0	0.0336	0	4.47	0	0.015	0	0.032	0	0.00063	0	0.0000029	0
PVC	lb	0	0.0262	0	2.02	0	0.004	0	0.00274	0	0.000372	0	0.000375	0
Portland cement, US average	lb	0	0.0139	0	1.34	0	0.00654	0	0.0104	0	0.00378	0	0.00097	0
Ready-mixed concrete, 20 MPa	ft3	0	0.217	0	19.5	0	0.0975	0	0.154	0	0.057	0	0.0141	0
Round Gravel	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Sand	lb	0	0.0000248	0	0.0024	0	0.000018	0	4.52E-06	0	2.61E-06	0	3.08E-07	0
Stainless Steel	lb	0	0.0116	0	3.4	0	0.0075	0	0.012	0	0.0044	0	0.000144	0
Steel	lb	0	0.0044	0	1.1	0	0.0014	0	0.0017	0	0.00056	0	0.000067	0
Other refined construction materials	lb	0	0.01885	0	2.115	0	0.0040375	0	0.0051325	0	0.0014428	0	0.0001625	0
Other unrefined construction materials	lb	0	0.000028	0	0.00335	0	0.0000165	0	0.000015	0	0.000002	0	2.05E-10	0
Notes:														

All Components - Off-Site Footprint (Scope 3b)

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Treatment Materials & Chemicals														
Cheese Whey	lbs	0	0.0025	0	0.031	0	0.000062	0	0.000033	0	0.000002	0	NP	
Emulsified vegetable oil	lbs	0	0.0077	0	3.44	0	0.0066	0	0.0019	0	0.000033	0	NP	
Granular activated carbon, primary	lbs	0	0.0356	0	4.82	0	0.0793	0	0.128	0	0.000987	0	0.000657	0
Granular activated carbon, regenerated	lbs	0	0.00873	0	1.7	0	0.00733	0	0.0129	0	0.000886	0	0.000671	0
Hydrogen Peroxide, 50% in H2O	lbs	0	0.00979	0	1.19	0	0.00142	0	0.0024	0	0.000308	0	0.0000629	0
Iron (II) Sulfate	lbs	0	0.00147	0	0.167	0	0.000316	0	0.000589	0	0.000103	0	0.000023	0
Lime, Hydrated, Packed	lbs	0	0.00206	0	0.762	0	0.000513	0	0.000358	0	0.00013	0	6.57E-06	0
Molasses	lbs	0	0.0044	0	0.48	0	0.0011	0	0.00024	0	0.0000041	0	NP	
Phosphoric Acid, 70% in H2O	lbs	0	0.0067	0	0.882	0	0.00282	0	0.0294	0	0.00171	0	0.000163	0
Potassium Permanganate	lbs	0	0.00981	0	1.16	0	0.00234	0	0.0032	0	0.000422	0	0.000122	0
Sodium Hydroxide, 50% in H2O	lbs	0	0.00977	0	1.09	0	0.00194	0	0.00352	0	0.000403	0	0.000129	0
Other Treatment Chemicals & Materials	lbs	0	0.015	0	1.67	0	0.003	0	0.0065	0	0.00061	0	0.000016	0
Notes:														
Fuel Processing														
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Diesel produced	gal	33530.421	0.017	570.01716	3.02	101261.87	0.0051	171.00515	0.0062	207.88861	0.0017	57.001716	0.0011	36.883463
Gasoline produced	gal	311.7	0.033	10.2861	2.8	872.76	0.0046	1.43382	0.005	1.5585	0.0015	0.46755	0.001	0.3117
Liquefied Petroleum Gas Produced	gal	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Natural Gas - Compressed Produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Natural Gas Produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Fuel Processing Subtotals				**580.30326**		**102134.63**		**172.43897**		**209.44711**		**57.469266**		**37.195163**
Notes:														
Public water	gal x 1000	56	0.0092	0.5152	5	280	0.0097	0.5432	0.0059	0.3304	0.016	0.896	0.000015	0.00084
User-defined water resource #1	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined water resource #2	gal x 1000	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														

All Components - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
Category	Units	Usage	Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Off-Site Services														
Hazardous waste incineration	lb	0	0.00609	0	2.43	0	0.0016	0	0.00167	0	0.000209	0	0.000087	0
Off-site waste water treatment (POTW)	gal x 1000	0	0.015	0	4.4	0	0.016	0	0.015	0	NP		NP	
Off-site non-hazardous waste landfill	ton	0	0.16	0	25	0	0.14	0	0.075	0	0.4	0	0.0014	0
Off-site hazardous waste landfill	ton	0	0.18	0	27.5	0	0.154	0	0.0825	0	0.44	0	0.00154	0
Off-site Laboratory Analysis - Other	sample	1195	0.058071	69.39488	6.8534384	8189.8589	0.131402	157.02534	0.3038758	363.13154	0.0455698	54.45594	0.0330165	39.454752
Off-site Laboratory Analysis - Metals	sample	239	0.212	50.668	27.4693	6565.1627	0.6423	153.5097	1.5072	360.2208	0.2264	54.1096	0.1643	39.2677
Off-site Laboratory Analysis - Mercury	sample	239	0.0731715	17.487982	9.325458	2228.7845	0.2127439	50.845792	0.4982396	119.07926	0.0747359	17.86189	0.0542332	12.961725
Off-site Laboratory Analysis - Inorganic Anions	sample	0	0.0074025	0	0.6459478	0	0.0067681	0	0.0147929	0	0.0022024	0	0.0015542	0
Off-site Laboratory Analysis - Alkalinity	sample	0	0.0174398	0	1.3381922	0	0.0070106	0	0.0132496	0	0.00194	0	0.0012831	0
Off-site Laboratory Analysis - Perchlorate	sample	0	0.023885	0	1.8717054	0	0.0079807	0	0.0141535	0	0.0020547	0	0.0012875	0
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0	0.0336475	0	4.29897	0	0.0954592	0	0.2226646	0	0.0335099	0	0.0242506	0
Off-site Laboratory Analysis - Sulfate	sample	0	0.0141225	0	1.4726728	0	0.0079807	0	0.0136024	0	0.0019797	0	0.0012015	0
Off-site Laboratory Analysis - PCBs	sample	239	0.0512769	12.255179	5.224902	1248.7516	0.0833339	19.916797	0.1904774	45.524108	0.0284393	6.7970023	0.0212083	5.0687722
Off-site Laboratory Analysis - VOCs	sample	256	0.0762045	19.508349	9.016814	2308.3044	0.104498	26.751498	0.2270738	58.130893	0.0339508	8.691415	0.0235892	6.0388403
Off-site Laboratory Analysis - SVOCs	sample	239	0.0715602	17.102884	7.870422	1881.0309	0.1459445	34.88074	0.3373038	80.615608	0.0504853	12.065996	0.0372577	8.9045999
Notes:														
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0	0	0	0	0	0	0	0	0	0	0	0
Resource Extraction Subtotals				**0**		**0**		**0**		**0**		**0**		**0**
Notes:														
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0										
Notes:														

All Components - Off-Site Footprint (Scope 3b)

			Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv.		Conv.		Conv.		Conv.		Conv.		Conv.	
Category	Units	Usage	Factor	MMBtus	Factor	lbs CO2e	Factor	lbs	Factor	lbs	Factor	lbs	Factor	lbs
User-defined Materials														
orange mesh fencing	ft	2300	0	0	0	0	0	0	0	0	0	0	0	0
absorbent composite socks	ft	2300	0	0	0	0	0	0	0	0	0	0	0	0
6-mil 40' x 100' polyurethane sheeting	rolls	6	0	0	0	0	0	0	0	0	0	0	0	0
aggregate 2" stone	ton	60	0	0	0	0	0	0	0	0	0	0	0	0
filter cloth	lb	60	0	0	0	0	0	0	0	0	0	0	0	0
20-mil vapor barrier	sqft	26000	0	0	0	0	0	0	0	0	0	0	0	0
4" Perforated SDR 35 Radon Vent Pipe	ft	0	0	0	0	0	0	0	0	0	0	0	0	0
Clean Fill	CY	20563.006	0	0	0	0	0	0	0	0	0	0	0	0
Recycled Stone	CY	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #10	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #11	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #12	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #13	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #14	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #15	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #16	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #17	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #18	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #19	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined material #20	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
User-defined Waste Destinations														
Scrap Metal Disposal Facility	Tons	1	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined recycled/reused off-site #3	TBD	0	y(MMBtu/t		lbs CO2e/t		Ox(lbs/unit		Ox(lbs/unit)		M(lbs/unit)		APs(lbs/unit	
Broome County Landfill	Tons	28788.208	0	0	0	0	0	0	0	0	0	0	0	0
Non-RCRA Used Oil/Oil Water Mixture Disposal Facility	Gal	200	0	0	0	0	0	0	0	0	0	0	0	0
User-defined non-hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #1	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #2	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
User-defined hazardous waste destination #3	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0
Notes:														
Off-site Totals				**767.23573**		**124836.52**		**615.91203**		**1236.4797**		**212.34711**		**148.89239**

All Components - Intermediate Totals

Category	Units	Usage	Energy		Greenhouse Gas		NOx		SOx		PM		HAPs	
			Conv. Factor	MMBtus	Conv. Factor	lbs CO2e	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs	Conv. Factor	lbs
Total Grid Electricity Footprint														
On-site grid electricity	MWh	0	3.413	0										
Electricity Generation														
Grid electricity	MWh	0	6.929	0	1124.3	0	2.2421	0	4.6078874	0	0.057518	0	0.2102371	0
Resource Extraction for Electricity														
Coal extraction and processing	MWh	0	3.1	0	180.0	0	0.8	0	0.2	0	0.0	0	NP	
Natural gas extraction and processing	MWh	0	1.6	0	270.0	0	0.2	0	13.0	0	0.0	0	NP	
Nuclear fuel extraction and processing	MWh	0	0.2	0	25.0	0	0.2	0	0.5	0	0.0	0	NP	
Oil extraction and processing	MWh	0	2.3	0	270.0	0	1.7	0	0.1	0	0.0	0	NP	
Other fuel extraction and processing	MWh	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Electricity Transmission														
Transmission and distribution losses	MWh	0	1.0342	0	112.43	0	0.22421	0	0.4607887	0	0.0057518	0	0.0210237	0
Total Grid Electricity Footprint				**0**		**0**		**0**		**0**		**0**		**0**
Total Fuel Footprints														
Total Gasoline Footprint														
On-site gasoline use - Other	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
On-site gasoline use <25 hp	gal	0	0.124	0	17.48	0	0.037	0	0.00025	0	0.165	0	0.00008	0
On-site gasoline use >25 hp	gal	0	0.124	0	19.93	0	0.032	0	0.00029	0	0.002	0	0.00009	0
Transportation gasoline use	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Transportation gasoline use - car	gal	311.7	0.124	38.6508	19.77	6162.309	0.027	8.4159	0.00036	0.112212	0.003	0.9351	0.0067	2.08839
Transportation gasoline use - passenger truck	gal	0	0.124	0	19.79	0	0.035	0	0.00036	0	0.003	0	0.00661	0
Transportation gasoline use - User Defined	gal	0	0.124	0	19.6	0	0.11	0	0.0045	0	0.00054	0	0.000039	0
Gasoline produced	gal	311.7	0.033	10.2861	2.8	872.76	0.0046	1.43382	0.005	1.5585	0.0015	0.46755	0.001	0.3117
Total Gasoline Footprint		**311.7**		**48.9369**		**7035.069**		**9.84972**		**1.670712**		**1.40265**		**2.40009**
Total Diesel Footprint														
On-site diesel use - Other	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
On-site diesel use <75 hp	gal	0	0.139	0	22.21	0	0.1565	0	0.000145	0	0.0145	0	0.00004	0
On-site diesel use 75<hp<750	gal	7929.8901	0.139	1102.2547	22.24	176360.76	0.101	800.9189	0.00013	1.0308857	0.009	71.369011	0.00004	0.3171956
On-site diesel use >750 hp	gal	0	0.139	0	22.24	0	0.149	0	0.00013	0	0.006	0	0.00004	0
Transportation diesel use	gal	25600.531	0.139	3558.4738	22.5	576011.95	0.17	4352.0903	0.0054	138.24287	0.0034	87.041805	0.0000052	0.1331228
Transportation diesel use - car	gal	0	0.139	0	22.57	0	0.015	0	0.0002	0	0.003	0	0.00252	0
Transportation diesel use - passenger truck	gal	0	0.139	0	22.545	0	0.0585	0	0.0002	0	0.007	0	0.002605	0
Transportation diesel use - User Defined	gal	0	0.139	0	22.5	0	0.17	0	0.0054	0	0.0034	0	0.0000052	0
Diesel produced	gal	33530.421	0.017	570.01716	3.02	101261.87	0.0051	171.00515	0.0062	207.88861	0.0017	57.001716	0.0011	36.883463
Total Diesel Footprint		**33530.421**		**5230.7457**		**853634.58**		**5324.0143**		**347.16236**		**215.41253**		**37.333782**
Total Biodiesel Footprint														
On-site biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
On-site biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Transportation biodiesel use - User Defined	gal	0	0.127	0	22.3	0	0.2	0	0	0	0.00099	0	NP	
Biodiesel produced	gal	0	0.029	0	-16.8	0	0.018	0	0.033	0	0.00082	0	NP	
Total Biodiesel Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Natural Gas Footprint														
On-site natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Transportation natural gas use - User Defined	ccf	0	0.103	0	13.1	0	0.01	0	0.0000063	0	0.00076	0	0.0000084	0
Natural gas produced	ccf	0	0.0052	0	2.2	0	0.0037	0	0.0046	0	0.000072	0	0.0000061	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Liquified Petroleum Gas Footprint														
On-site liquified petroleum gas use - Other	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
On-site liquified petroleum gas use	ccf	0	NP		12.69	0	0.021	0	0.00013	0	0.001	0	0	0
Liquified petroleum gas produced	ccf	0	0.088	0	1.47	0	0.0016	0	0.0024	0	0.0007	0	0.0003	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**
Total Compressed Gas Footprint														
On-site compressed gas use - Other	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
On-site compressed gas use	ccf	0	NP		1957.835	0	16.0325	0	0.023045	0	0.2775	0	0	0
Compressed gas produced	ccf	0	19.983	0	343.92	0	0.4732	0	2.1651	0	0.1846	0	0.2895	0
Total Natural Gas Footprint		**0**		**0**		**0**		**0**		**0**		**0**		**0**

Notes:

Spreadsheets for Environmental Footprint Analysis (SEFA) Version 3.0, November 2019

		Default Conversion Factors						
		Parameters Used, Extracted, Emitted, or Generated						
		Energy	GHG*	NOx	SOx	PM	HAPs	REFERENCE #
Item or Activity		Used	Emitted	Emitted	Emitted	Emitted	Emitted	(Corresponds to list of references below)
	Unit	MMBtu	lbs CO2e	lbs	lbs	lbs	lbs	
Fuel Combustion								
Biodiesel use	gal	0.127	22.3	0.20	0	0.00099	NP	1
Diesel use	gal	0.139	22.5	0.17	0.0054	0.0034	5.2E-06	2
Diesel use - equipment <75 hp	gal	0.139	22.21	0.1565	0.000145	0.0145	4.0E-05	3
Diesel use - equipment >75 hp and <750 hp	gal	0.139	22.24	0.101	0.00013	0.009	4.0E-05	3
Diesel use - equipment >750 hp	gal	0.139	22.24	0.149	0.00013	0.006	4.0E-05	3
Diesel use - passenger car	gal	0.139	22.57	0.015	0.0002	0.003	2.5E-03	3
Diesel use - passenger truck	gal	0.139	22.545	0.0585	0.0002	0.007	2.6E-03	3
Diesel use - transport with combination truck	gal	0.139	22.53	0.122	0.0002	0.011	2.1E-03	3
Diesel use - transport with freight train	gal	0.139	25.26	0.307	0.00634	0.009	4.4E-03	3
Diesel use - transport with single unit truck	gal	0.139	22.52	0.088	0.0002	0.012	2.0E-03	3
Gasoline use	gal	0.124	19.6	0.11	0.0045	0.00054	3.9E-05	4
Gasoline use - equipment <25 hp	gal	0.124	17.48	0.037	0.00025	0.165	8.0E-05	3
Gasoline use - equipment >25 hp	gal	0.124	19.93	0.032	0.00029	0.002	9.0E-05	3
Gasoline use - passenger car	gal	0.124	19.77	0.027	0.00036	0.003	6.7E-03	3
Gasoline use - passenger truck	gal	0.124	19.79	0.035	0.00036	0.003	6.6E-03	3
Liquified petroleum gas use	gal	NP	12.69	0.021	0.00013	0.001	0.0E+00	3
Natural gas use	ccf	0.103	13.1	0.01	0.0000063	0.00076	8.4E-06	5
Natural gas use - compressed	ccf	NP	1957.835	16.0325	0.023045	0.2775	0.0E+00	3
Landfill gas use	ccf CH4	0.103	13.1	0.01	0.0000063	0.00076	8.4E-06	5
Construction Materials								
Aluminum, Rolled Sheet	lb	0.0633	9.15	0.0148	0.0283	0.0088	0.00102	3
Asphalt, mastic	lb	0.0412	0.85	0.0027	0.00798	0.0008	0.00107	3
Asphalt, paving-grade	lb	0.5000	8.58	0.0299	0.0969	0.0091	0.0133	3
Ethanol, Corn, 95%	lb	0.0318	-0.0199	0.00425	0.00303	0.000469	8.46E-05	3
Ethanol, Corn, 99.7%	lb	0.0324	0.0591	0.00431	0.0031	0.000472	8.70E-05	3
Ethanol, Petroleum, 99.7%	lb	0.0205	1.25	0.00199	0.00214	0.000277	5.89E-05	3
Gravel/Sand Mix, 65% Gravel	lb	2.48E-05	0.0024	0.00002	4.52E-06	0.000003	3.08E-07	3
Gravel/sand/clay	lb	0.000028	0.0034	0.000017	0.000015	0.0000020	2.1E-10	6
HDPE	lb	3.32E-02	1.9400	0.003250	0.00409	0.000439	6.4E-05	7
Photovoltaic system (installed)	W	0.034	4.5	0.015	0.032	0.00063	2.9E-06	8
PVC	lb	0.0262	2.02	0.004	0.00274	0.000372	3.8E-04	3
Portland cement, US average	lb	0.0139	1.34	0.00654	0.0104	0.00378	9.7E-04	3
Ready-mixed concrete, 20 MPa	ft^3	0.217	19.5	0.0975	0.154	0.057	0.0141	3
Round Gravel	lb	0.0000248	0.0024	0.000018	4.52E-06	2.61E-06	3.1E-07	3
Sand	lb	0.0000248	0.0024	0.000018	4.52E-06	2.61E-06	3.1E-07	3
Stainless Steel	lb	0.012	3.4	0.0075	0.012	0.0044	1.4E-04	9
Steel	lb	0.0044	1.1	0.0014	0.0017	0.00056	6.7E-05	10
Other refined construction materials	lb	0.019	2.1150	0.0040	0.0051	0.0014	1.6E-04	11
Other unrefined construction materials	lb	0.000028	0.00335	0.000017	0.000015	0.000002	2.05E-10	12
Treatment Materials & Chemicals								
Cheese Whey	lb	0.0025	0.031	0.000062	0.000033	0.000002	NP	13
Emulsified vegetable oil	lb	0.0077	3.44	0.0066	0.0019	0.000033	NP	14
Granular activated carbon, primary	lb	0.0356	4.82	0.0793	0.128	0.000987	0.000657	3
Granular activated carbon, regenerated	lb	0.00873	1.7	0.00733	0.0129	0.000886	0.000671	3
Hydrogen Peroxide, 50% in H2O	lb	0.00979	1.19	0.00142	0.0024	0.000308	6.29E-05	3
Iron (II) Sulfate	lb	0.00147	0.167	0.000316	0.000589	0.000103	2.30E-05	3
Lime, Hydrated, Packed	lb	0.00206	0.762	0.000513	0.000358	0.00013	6.57E-06	3
Molasses	lb	0.0044	0.48	0.0011	0.00024	0.0000041	NP	15
Phosphoric Acid, 70% in H2O	lb	0.0067	0.882	0.00282	0.0294	0.00171	0.000163	3
Potassium Permanganate	lb	0.00981	1.16	0.00234	0.0032	0.000422	0.000122	3
Sodium Hydroxide, 50% in H2O	lb	0.00977	1.09	0.00194	0.00352	0.000403	0.000129	3
Other Treatment Chemicals & Materials*	lb	0.015	1.7	0.003	0.0065	0.00061	1.6E-05	16
Fuel Processing								
Biodiesel Produced	gal	0.029	-16.8	0.018	0.033	0.00082	NP	1
Diesel Produced	gal	0.017	3.02	0.0051	0.0062	0.0017	1.1E-03	17
Gasoline Produced	gal	0.033	2.8	0.0046	0.005	0.0015	1.0E-03	18
Liquefied Petroleum Gas	gal	0.088	1.47	0.0016	0.0024	0.0007	3.0E-04	3
Natural Gas - Compressed Produced	ccf	19.983	343.92	0.4732	2.1651	0.1846	2.9E-01	3
Natural Gas Produced	ccf	0.0052	2.2	0.0037	0.0046	0.000072	6.1E-06	19
Public water	gal x 1000	0.0092	5	0.0097	0.0059	0.016	1.50E-05	20
Off-Site Services								
Hazardous Waste Incineration	lb	0.00609	2.43	0.0016	0.00167	0.000209	0.000087	3
Off-site waste water treatment (POTW)	gal x 1000	0.015	4.4	0.016	0.015	NP	NP	21
Off-site non-hazardous waste landfill	ton	0.16	25	0.14	0.075	0.4	1.40E-03	22
Off-site hazardous waste landfill	ton	0.18	27.5	0.154	0.0825	0.44	1.54E-03	23
Off-site Laboratory Analysis - Other	sample	0.0581	6.8534	0.1314	0.3039	0.0456	0.0330	24
Off-site Laboratory Analysis - Metals	sample	0.2120	27.5	0.6423	1.5072	0.2264	1.64E-01	3
Off-site Laboratory Analysis - Mercury	sample	0.0732	9.3	0.2127	0.4982	0.0747	5.42E-02	3
Off-site Laboratory Analysis - Inorganic Anions	sample	0.0074	0.6	0.0068	0.0148	0.0022	1.55E-03	3

Off-site Laboratory Analysis - Alkalinity	sample	0.0174	1.3	0.0070	0.0132	0.0019	1.28E-03	3
Off-site Laboratory Analysis - Perchlorate	sample	0.0239	1.9	0.0080	0.0142	0.0021	1.29E-03	3
Off-site Laboratory Analysis - Nitrogen/Nitrate	sample	0.0336	4.3	0.0955	0.2227	0.0335	2.43E-02	3
Off-site Laboratory Analysis - Sulfate	sample	0.0141	1.5	0.0080	0.0136	0.0020	1.20E-03	3
Off-site Laboratory Analysis - PCBs	sample	0.0513	5.2	0.0833	0.1905	0.0284	2.12E-02	3
Off-site Laboratory Analysis - VOCs	sample	0.0762	9.0	0.1045	0.2271	0.0340	2.36E-02	3
Off-site Laboratory Analysis - SVOCs	sample	0.0716	7.9	0.1459	0.3373	0.0505	3.73E-02	3
Resource Extraction for Electricity								
Coal extraction and processing	MWh	3.1	180	0.77	0.15	0.018	NP	25
Natural gas extraction and processing	MWh	1.6	270	0.18	13	0.0071	NP	26
Nuclear fuel extraction and processing	MWh	0.16	25	0.15	0.5	0.0015	NP	27
Oil extraction and processing	MWh	2.3	270	1.7	0.069	0.042	NP	28
Grid renewable electricity	MWh	NP	NP	NP	NP	NP	NP	

**** Footprint conversion factors for greenhouse gases (CO2e) include consideration of CO2, CH4, and N2O (Nitrous oxide) emissions.***

REFERENCES:

Default Conversion Factors are from EPA's Methodology for Understanding and Reducing a Project's Environmental Footprint, February 2012

1. Life Cycle Inventory of Biodiesel and Petroleum Diesel for Use in an Urban Bus, NREL/SR-580-24089 UC Category 1503, U.S. Department of Agriculture and U.S. Department of Energy, May 1998. The CO2e emissions for "biodiesel produced" are negative because of the uptake of CO2 in the crops used to produce the fuels. This CO2 is emitted during fuel combustion and is reflected in the CO2e emissions for "biodiesel use".

2. Multiple sources

a. Energy and CO2e emissions from Direct Emissions from Mobile Combustion Sources, EPA430-K-08-004, U.S. EPA, May 2008.

b. NOx, SOx, PM, and HAPs from NREL: SS_Transport, single unit truck, diesel powered.xls

3. Randall, P., Meyer, D., Ingwersen, W., Vineyard, D., Bergmann, M., Unger, S., and Gonzalez, M., 2016. Life Cycle Inventory (LCI) Data- Treatment Chemicals, Construction Materials, Transportation, On-site Equipment, and Other Processes for Use in Spreadsheets for Environmental Footprint Analysis (SEFA): Revised Addition. U.S. Environmental Protection Agency, Office of Research and Development, Cincinnati, OH. EPA/600/R-16/176a.

4. Multiple sources

a. Energy and CO2e emissions from Direct Emissions from Mobile Combustion Sources, EPA430-K-08-004, U.S. EPA, May 2008.

b. NOx, SOx, PM, and HAPs from NREL: SS_Transport, single unit truck, gasoline powered.xls

5. Multiple sources and simplifying assumption that emissions of natural gas reasonably represent combustion of methane component of landfill gas

a. Energy and CO2e emissions for compressed natural gas in heavy vehicles from Direct Emissions from Mobile Combustion Sources, EPA430-K-08-004, U.S. EPA, May 2008.

b. NOx, SOx, PM, and HAPs from NREL: SS_Natural gas, combusted in industrial boiler.xls

6. EUROPA – Gravel 2/32

7. EUROPA – Polyethylene high density granulate (PE-HD)

8. Life-Cycle Assessment of the 33 kW Photovoltaic System on the Dana Building at the University of Michigan Thin Film Laminates, Multi-Crystalline Modules, and Balance of System Components Sergio Pacca, Deepak Sivaraman and Gregory A. Keoleian Center for Sustainable Systems, University of Michigan Report No. CSS05-09, June 1, 2006

9. EUROPA – Stainless steel

10. EUROPA – Average of Steel hot rolled section, Steel hot rolled coil, Steel rebar

11. Averages of conversion factors for cement, HDPE, PVC, stainless steel, and steel

12. Same as conversion factors for gravel/sand/clay

13. Offset values for cheese whey obtained from the module for yellow cheese from Nielsen PH, Nielsen AM, Weidema BP, Dalgaard R and Halberg N (2003). LCA food data base. www.lcafood.dk, Andersen M and Jensen JD (2003). Marginale producenter af udvalgte basislevnedsmidler (in Danish) Udkast d. 5. februar 2003.

14. Values for rapeseed oil from Nielsen PH, Nielsen AM, Weidema BP, Dalgaard R and Halberg N (2003). LCA food data base. www.lcafood.dk. Landbrugets rådgivningscenter (2000). Tal fra Fodermiddeltabellen, Raport nr. 91. In Danish. Weidema BP (1999). System expansions to handle co-products of renewable materials. Presentation Summaries of the 7th LCA Scenarios Symposium SETAC-Europe, 1999. Pp. 45-48. pdf. Weidema B (2003). Market information in life cycle assessments. Technical report, Danish Environmental Protection Agency (Environmental Project no. 863).

15. Offset values for molasses obtained from the module for sugar from Nielsen PH, Nielsen AM, Weidema BP, Dalgaard R and Halberg N (2003). LCA food data base. www.lcafood.dk, Sugar Production based on Danisco Sugar Author: Per H. Nielsen July 2003

16. Intended for any common treatment chemical in pure form including chemical oxidants and regenerated granular activated carbon. For chemical solutions, use only the mass of the chemical portion of the solution. Conversion factor is based on average value of conversion factors for the following seven common treatment chemicals as reported by Ecoinvent v2.1 from the Ecoinvent Centre for Life-Cycle Inventories, http://www.ecoinvent.ch/

- Hydrochloric Acid (30 percent) – normalized to pure hydrochloric acid by dividing by database results by 0.3.

- Sodium hydroxide (50 percent) – normalized to pure sodium hydroxide by dividing database results by 0.5.

- Ferric chloride (iron III chloride)

- Potassium permanganate

- Sodium persulfate

- Chlorine gas

- Hydrogen peroxide (50 percent) – normalized to pure hydrogen peroxide by dividing database result by 0.5.

This averaging approach adds an additional layer of uncertainty to the conversion factors provided. For example, the range for energy is approximately 0.007 MMBtu to 0.025 MMBtu. The average (0.015 MMBtu) may overestimate the energy use value for some of the chemicals below by more than 100 percent and underestimate the energy us value for other chemicals by 40 percent. Additionally, some common treatment chemicals (e.g., sulfuric acid and ferrous sulfate) have energy footprints that are substantially outside the presented range and would not be accurately represented by these values. If an additional level of accuracy is preferred, readers of this methodology are encouraged to seek and document well referenced conversion factors as part of footprint analysis submittals.

17. EUROPA – diesel at refinery

18. EUROPA – gasoline at refinery

19. EUROPA – natural gas at consumer

20. EUROPA - Drinking water from surface water and drinking water from groundwater

21. Calculated based on Life-Cycle Energy and Emissions for Municipal Water and Wastewater Services: Case-Studies of Treatment Plants in US Malavika Tripathi, Center for Sustainable Systems, University of Michigan Report No. CSS07-06, April 17, 2007

22. EUROPA – Inert waste disposal

23. Values from EUROPA inert waste disposal plus an arbitrary additional 10 percent to account additional practices required of a hazardous waste disposal facility

24. The default conversion factors for "Laboratory Analysis – Other" are averages of the default conversion factors for the 10 other laboratory analyses that are provided.

25. NREL – life cycle of electricity from bituminous coal minus the emissions from combusting coal

26. NREL – life cycle of electricity from natural gas minus the emissions from combusting natural gas

27. NREL – life cycle of electricity from nuclear

28. NREL – life cycle of electricity from residual oil minus the emissions from combusting residua oil

NREL = National Renewable Energy Laboratory, Life Cycle Inventory, provided by the National Renewable Energy Laboratory and operated by Alliance for Sustainable Energy, LLC under contract to the U.S. Department of Energy. www.nrel.gov/lci

EUROPA = European Reference Life Cycle Database (ELCD core database), version II compiled under contract on behalf of the European Commission - DG Joint Research Centre - Institute for Environment and Sustainability with technical and scientific support by JRC-IES from early 2008 to early 2009. (http://lca.jrc.ec.europa.eu/lcainfohub/datasetArea.vm)