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Niagara Mohawk Power Corporation d/b/a National Grid

DK-21 Storage Yard Pre-Design Investigation Report

Dewey/Kensington Service Center

Buffalo, New York

September 2024

DK-21 STORAGE YARD PRE-DESIGN INVESTIGATION REPORT

Dewey/Kensington Service Center

September 2024

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Contents

Tables

Figures

Attachments

Acronyms and Abbreviations

Arcadis	Arcadis of New York, Inc.
bgs	below ground surface
CAMP	Community Air Monitoring Plan
CAP	Corrective Action Plan
CFR	Code of Federal Regulations
cpm	counts per minute
DCR	Declaration of Covenants and Restrictions
DER	Division of Environmental Remediation
DK-21	Dewey/Kensington Building 21 (Warehouse Building)
DMM	Division of Materials Management
DUSR	Data Usability Summary Report
Eurofins	Eurofins/TestAmerica Laboratories
GPS	Global Positioning System
GZA	GZA GeoEnvironmental of New York
HASP	Health and Safety Plan
Hewitt-Robins	Hewitt-Robins, Inc.
IDW	investigation derived waste
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCB	polychlorinated biphenyl
PDI	Pre-Design Investigation
ppm	parts per million
PRR	Periodic Review Report
RCRA	Resource Conservation and Recovery Act
Richards and Boynton	Richards and Boynton Company
SDG	sample delivery group
SIP	Self-Implementing PCB Cleanup and Disposal Plan
SMP	Site Management Plan
Stewart	Stewart Motor Car Company
storage yard	the DK-21 storage yard area

St. Mary's	St. Mary's Benevolent Society/Providence Retreat
SWMU	Solid Waste Management Unit
TOGS	NYSDEC Division of Water Technical and Operational Guidance Series
TSCA	Toxic Substances Control Act
TSDF	Treatment, Storage and Disposal Facility
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

1 Introduction

This Pre-Design Investigation (PDI) Report summarizes the results of investigation activities that were implemented to complete the delineation of polychlorinated biphenyl- (PCB)-containing soil in a storage yard area located northeast of the warehouse building (Building DK-21) at the Niagara Mohawk Power Corporation d/b/a National Grid (National Grid) Dewey/Kensington Service Center in Buffalo, New York. Based on the presence of slag identified in previous soil borings completed within the DK-21 storage yard area, the PDI also included a gamma walkover survey (GWS) that was conducted in accordance with 6NYCRR Part 380-6.1. The primary purpose of the GWS was to evaluate whether elevated levels of radioactivity are present in the storage yard area, which may indicate the existence of technologically-enhanced naturally-occurring radioactive materials (TENORM) in the soils.

The DK-21 storage yard area (storage yard) was not originally identified as a Solid Waste Management Unit (SWMU) in the 6NYCRR Part 373 Hazardous Waste Management Permit for a former Hazardous Waste Treatment, Storage and Disposal Facility (TSDF). Following the initial identification of PCBs in the storage yard area (as summarized below), National Grid submitted a June 24, 2021 letter to the New York State Department of Environmental Conservation (NYSDEC) which provided written notification regarding the discovery of a newly-identified SWMU at the facility pursuant to Paragraph XV of an existing Resource Conservation and Recovery Act (RCRA) Corrective Action Order on Consent between National Grid and the NYSDEC (Index No. R9-4407-96-09). In the June 24, 2021 letter, National Grid committed to preparing a SWMU Assessment Plan and implementing investigation efforts to evaluate the horizontal and vertical extent of PCB-containing soil in the DK-21 storage yard area. SWMU Assessment activities were completed during February 2022 and December 2022, as summarized in the *DK-21 Storage Yard SWMU Assessment Report* (Arcadis, October 2023). In the *SWMU Assessment Report*, National Grid proposed to complete a PDI to further refine the extent of the excavation areas and collect data to support the direct loadout of excavated soil for offsite transport and disposal.

Relevant background information is presented below, followed by a discussion of previous investigation activities implemented at the facility and the purpose and organization of this report.

1.1 Background Information

The Dewey/Kensington Service Center is located between Dewey and Kensington Avenues in Buffalo, New York. A site location map is presented as Figure 1. A city of Buffalo Atlas (tax map) from 1891 indicates that the current service center property was an undeveloped area located in the eastern portion of the St. Mary's Benevolent Society/Providence Retreat (St. Mary's) property. By the early 1900's, the property had been subdivided into two separate parcels, including a northern parcel located at 95 Dewey Avenue (Parcel 89.16-1-2) and a southern parcel located at 144 Kensington Avenue (Parcel 89.16-1-6). A facility layout plan is presented as Figure 2.

1.1.1 95 Dewey Avenue Parcel

The 95 Dewey Avenue Parcel is approximately 8.97 acres in size. Based upon available site history, the earliest recorded use of the parcel included several residential homes and a petroleum filling station that were located in the northeast corner of the parcel by the early 1900s. The Stewart Motor Car Company (Stewart) developed the remaining portion of the parcel beginning around 1912 and eventually displaced the homes and filling station. Stewart used the parcel for automobile and truck manufacturing from approximately 1912 to 1939, operating from

three main buildings that continue to be used by National Grid (current buildings DK-1 through DK-3). Stewart ceased production in 1939 and later that year, the property and buildings were purchased by Buffalo Electric Corporation (predecessor to National Grid). National Grid and predecessor utility companies have continuously operated the parcel as a utility service center since 1939, with the three main buildings currently used as crew headquarters, office space, storage areas, and workshops.

1.1.2 144 Kensington Avenue Parcel

The 144 Kensington Avenue Parcel is approximately 12.23 acres in size. The parcel was initially developed as a warehousing facility by Cyphers Incubator Company in the early 1910's. Richards and Boynton Company (Richardson and Boynton), a manufacturer for home heating boilers acquired the parcel shortly after initial development. A Sanborn Fire Insurance Map from 1934 indicates that the current buildings located on the parcel were largely complete, with the following operations indicated:

- Machining/grinding and shipping (current Buildings DK-13, DK-15, and DK-17).
- Core Room and clay/pattern (current building DK-19).
- Foundry (current building DK-21).

Richardson and Boynton filed for bankruptcy in 1939, and Hewitt-Robins, Inc. (Hewitt-Robins) acquired the property and buildings in the mid-1940's. Hewitt-Robins used the parcel for manufacturing of latex and foam rubber products. Niagara Mohawk Power Corporation (predecessor to National Grid) purchased the parcel and buildings from Hewitt-Robins in 1975. Factory areas purchased from Hewitt-Robins (buildings DK-13, DK-15, DK-16, DK-17, DK-19, and DK-21) reportedly had dirt floors when the buildings were purchased by National Grid. Following purchase, National Grid modified the buildings to add concrete floors, partitions and office space, hydraulic lifts, etc. National Grid continues to use the buildings located on the southern parcel as offices, vehicle maintenance garage, workshops, and storage/warehouse areas.

1.1.3 Previous RCRA Corrective Action Activities

National Grid historically stored and handled PCB-containing electrical equipment and generated PCB-containing used oil at both the northern and southern property parcels. In 1982, National Grid submitted a Hazardous Waste TSDF Permit for a tank storage operation located in building DK-14. The permit submittal resulted in the Dewey/Kensington Service Center being designated as an interim-status TSDF. NYSDEC review of the permit application resulted in public hearings during 1989 where several community groups expressed opposition to approval of the permit. Pursuant to a decision by a New York Administrative Law Judge, the NYSDEC ultimately issued a Part 373 Hazardous Waste Management Permit (Part 373 Permit No. 9-1402-00397/00001-0) in late 1990 which allowed National Grid to continue to operate the TSDF for a period of 18 months. The TSDF was closed in December 1992 in accordance with a NYSDEC-approved Closure Plan and National Grid has continued to operate as a large quantity less-than 90-day hazardous waste generator since that time. The Hazardous Waste Permit identified existing SWMUs at the facility (mostly solid waste and petroleum storage related areas).

During 1989, National Grid collected soil samples in response to an oil spill at Building DK-4 located along the west side of the northern property parcel. Initial soil samples identified the presence of PCBs, and subsequent characterization efforts delineated PCBs at concentrations up to 230 parts per million (ppm) on National Grid's property. PCBs were also identified on the adjacent St. Mary's School athletic field immediately west of the northern parcel. Subsequent response measures were implemented which achieved the removal of PCBs

exceeding 1 ppm on the St. Mary's athletic field, and removal of PCBs exceeding 10 ppm on National Grid's property. Following completion of the soil excavation activities (concurrent with the permit review efforts summarized above), the NYSDEC listed the service center property as a New York State Listed Inactive Hazardous Waste Site (Site Code 915144) with a Site Classification Code of 5 (indicating no further action required). On October 3, 2011, National Grid received official notification that the site was deleted from the New York State Registry of Inactive Hazardous Waste Disposal Sites.

In September 1992, excavation activities at the facility in the vicinity of Building DK-13 (primarily utilized as a vehicle maintenance garage) revealed petroleum-impacted gravel and a broken vent line connected to an underground waste oil storage tank. The waste oil tank was subsequently removed, and four groundwater monitoring wells (ESI-1, ESI-2, ESI-3, and ESI-4) were installed in the vicinity of the former tank in order to supplement an existing monitoring well (MW-1), and in order to facilitate periodic groundwater monitoring in this area. During 1994, National Grid conducted soil and groundwater investigation activities which identified the presence of several volatile organic compounds (VOCs) and PCBs in groundwater at concentrations above NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 – Ambient Water Quality Standards and Guidance Values (NYSDEC, 1998, amended 2000). The groundwater exceedances associated with the former DK-13 waste oil storage tank were designated as SWMU #7.

In November 1997, National Grid entered into an Order on Consent with NYSDEC in order to guide future site monitoring and to establish a framework for implementing additional site investigation or remediation. As mandated in the Consent Order, semi-annual (spring and fall) groundwater monitoring events were conducted for monitoring wells located in the western portion of the Kensington Avenue parcel. The monitoring frequency and list of wells sampled during each groundwater monitoring event has been modified through time by NYSDEC. Currently, groundwater monitoring is conducted during one annual event, and site inspections are conducted semi-annually.

1.2 Previous DK-21 Storage Yard Investigation Results

The DK-21 storage yard area is utilized for outdoor storage of electrical equipment and supplies prior to being deployed to support National Grid's electric distribution operations throughout Western New York. Equipment sored in the area includes pole-top and pad-mounted transformers of various sizes, a variety of spools of electrical conductor wire, electrical conduit, and other miscellaneous supplies. The entire storage yard is fenced from the remainder of the National Grid facility, and access to the area is restricted for inventory control purposes. The primary routine access of the storage yard area is by designated warehouse employees using lift trucks to stage and move equipment and other stored supplies.

As discussed in the June 24, 2021 notification letter, National Grid is planning to implement a paving project (the DK-21 Pavement Improvement Project) which will include the replacement of deteriorated pavement/concrete and subbase material in order to support the installation of new pavement in the storage yard area located northeast of Building DK-21 (shown on Figure 2). The planned work will also include the replacement of four catch basins in the area. In order to characterize soil proposed for removal within the pavement project area, GZA GeoEnvironmental of New York (GZA) completed 13 soil borings to depths of up to 8 feet below ground surface (bgs). PCB analytical results for samples collected from the GZA soil borings are shown on the Figure 3. PCBs were detected at 7 of the 13 borings at concentrations ranging from 5.69 ppm to 741 ppm. Based upon the analytical results, National Grid submitted the June 24, 2021 letter to the NYSDEC which designated the DK-21 storage yard area as a newly-identified SWMU.

SWMU assessment activities were completed in February 2022 and December 2022, as summarized in the SWMU Assessment Report, to evaluate the horizontal and vertical extent of PCBs in the DK-21 storage yard area. In February and December 2022, Arcadis of New York, Inc. (Arcadis) completed 23 soil borings to depths of up to 11.3 feet bgs and eight soil borings to depths of up to 7.5 feet bgs, respectively. PCB analytical results for samples collected from the SWMU assessment activities are shown on the Figure 4. PCBs were detected in 30 of the 31 soil boring locations in the DK-21 storage yard at estimated concentrations ranging from 0.073 ppm to 50,000 ppm. Based upon the analytical results, National Grid proposed a PDI Investigation approach in the October 2023 *SWMU Assessment Report* to refine the extent of proposed remedial activities and address PCBs in soil in the DK-21 storage yard area.

The DK-21 pavement project has been delayed while National Grid continues to implement efforts to further characterize and address the horizontal and vertical extent PCB-containing soil in the DK-21 storage yard area.

1.3 Report Organization

This PDI Report is organized as presented in the Table below.

Section	Purpose
Section 1 – Introduction	Provides background information and outlines the purpose of the *SWMU Assessment Report.*
Section 2 – Pre-Design Soil Investigation	Summarizes field activities and soil results from the PDI.
Section 3 – Gamma Walkover Survey	Summarizes gamma walkover survey field activities and results from the PDI.
Section 4 – Corrective Action Approach	Describes the proposed corrective action approach for the DK-21 Storage Yard.
Section 5 – References	Provides a list of references utilized to prepare this PDI Report.

2 Pre-Design Soil Investigation

This section presents a summary of PDI soil investigation activities that were implemented to refine the extent of proposed excavation areas and collect data to support the direct loadout of excavated soil for offsite transport and disposal. A summary of the soil investigation activities and results is presented below.

2.1 Soil Boring Activities

A total of ten soil borings (borings B-32 through B-41) to further delineate the extent of PCBs and two waste characterization soil borings (borings WC-1 and WC-2) were completed during January 2024 at the locations shown on Figure 4. Prior to mobilizing to the facility, Arcadis prepared a project-specific Health and Safety Plan (HASP) for the PDI field activities. The PDI activities were conducted using the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP) which is included as Appendix 1A to the NYSDEC Division of Environmental Remediation *Technical Guidance for Site Investigation and Remediation* (DER-10, May 2010). CAMP monitoring included measurement of ambient volatile organic compound (VOC) and particulate levels in the area immediately downwind of the work area. CAMP monitoring data collected during the SWMU assessment field activities is presented in Attachment A. VOC and particulate readings were below monitoring action limits with the exception of one particulate measurement at approximately 4:30 pm on January 18, 2024. The particulate levels (measured at one-minute intervals) immediately dropped below the action limit on the next reading and no corrective action was required.

Prior to completing the PDI soil borings, Arcadis conducted a pre-mobilization field visit to identify proposed soil boring locations using Global Positioning System (GPS) methods and completed a geophysical survey to mark out utilities in the vicinity of proposed soil borings using ground penetrating radar and electroconductivity surveying methods. Concurrent with the geophysical survey, Arcadis also completed additional utility location efforts, including notifying Dig-Safely New York, visually observing aboveground and surface features at the site, and reviewing existing National Grid utility drawings.

Following completion of the geophysical survey, Arcadis completed 12 soil borings to refusal using direct-push sampling methods. Prior to completing each soil boring, Arcadis saw cut the asphalt/pavement and removed subgrade material (which extended to depths of up to 0.8 feet below grade). Arcadis conducted utility clearance activities at each boring location to a depth of at least 4 feet below ground surface (bgs) using soft dig excavation methods (compressed air). Subsequently, a soil boring was completed using a direct-push drill rig to advance 4-foot long macrocore samplers to the depth of refusal/ bedrock at depths ranging from 4.0 to 7.5 feet bgs. Soil boring logs for borings B-32 through B-41 and waste characterization borings WC-1 and WC-2 are included in Attachment B.

The soft dig cuttings from soil borings B-32 through B-41 were segregated into sample intervals, representing material from the first soil encountered below asphalt/pavement subbase material to a depth of approximately 0.5-feet, and from 0.5 to 2-feet, and 2 to 4-feet. The recovered soil cores at each location were also segregated into 2-foot sampling intervals. The soil samples recovered from each 2-foot sampling interval (for both the soft dig cuttings and the recovered soil cores) were visually characterized. Observations relative to the soil type (e.g., gravel, coarse sand, fine sand, etc.) and grain size characteristics (e.g., size, sorting, and texture) were noted. Other observations, including sedimentary structures, organic matter, and moisture were also documented. The soft dig soil cuttings and the recovered soil cores were also be screened for volatile organic compounds using a photoionization detector (PID).

The samples recovered from each sampling interval at boring locations B-32 through B-41 were containerized in clean laboratory-supplied glassware and submitted to Eurofins/TestAmerica Laboratories (Eurofins) in Amherst, New York. The recovered soil samples for the shallow interval (material from the first soil encountered beneath asphalt/pavement subgrade material to a depth of 0.5 feet) and at least one additional soil interval from each boring (selected based on the judgement of Arcadis' onsite geologist) were analyzed for PCBs using United States Environmental Protection Agency (USEPA) Method 8082. Additional samples from the borings were selected for laboratory analysis for PCBs based upon elevated PID readings and/or visual evidence of potential impacts (e.g., staining or sheens). Samples that were not designated for PCB analysis were archived for potential latter analysis based upon the analytical results for the initial samples.

Soft dig cuttings and soil recovered from direct-push sampling at the waste characterization soil borings was composited to form a single sample from each boring for laboratory analysis for waste characterization parameters, including toxicity characteristic leaching procedure (TCLP) metals, TCLP volatile organic compounds (VOCs), TCLP semi-volatile organic compounds (SVOCs), reactivity, corrosivity, and ignitability.

Soil cuttings, disposable sampling equipment, and used personal protective equipment generated during the field sampling activities were containerized in a 55-gallon drum. The drum was labeled appropriately and staged onsite for subsequent waste profiling, transportation, and offsite disposal by National Grid's waste disposal Contractor. Disposal documentation for the investigation derived waste (IDW) generated by the sampling activities is included in Attachment C.

2.2 Soil Boring Results

Analytical results for the laboratory analysis of PDI soil samples for PCBs are presented in Table 1 and shown on Figure 4. Analytical results for samples that were analyzed for PCBs were reported using NYSDEC Analytical Services Protocol Category B data deliverables. The Category B deliverables were reviewed by an Arcadis data validator and a Data Usability Summary Report (DUSR) was prepared for each sample delivery group (SDG). DUSRs are included in Attachment D. Analytical results for the composite waste characterization samples are presented in Attachment E.

2.2.1 Soil Characterization

Overburden soil across the yard storage area extends to depths ranging from 4.0 to 11.3 feet bgs. The shallowest soil is encountered in the northwest portion of the storage yard and the deepest soil is encountered to the southeast along the railroad right-of-way. Soil encountered immediately beneath the pavement subbase material generally consists of a dark grey sand with varying amounts of silt and subangular gravel. Increasing amounts of clay are present in deeper soils encountered above bedrock. Varying amounts of fill materials were encountered at several of the boring locations, including red brick, small pieces of concrete, wood, slag, and glass.

2.2.2 Analytical Results

PCBs were detected at each of the ten soil boring locations completed as part of PDI activities at estimated concentrations ranging from 0.170 ppm to 680 ppm. The overall distribution of PCB results from the initial sampling conducted by GZA, the SWMU assessment sampling conducted by Arcadis, and the PDI sampling conducted by Arcadis is shown on Figure 5.

Based on the current and future use of the storage yard as a limited-occupancy restricted-access area, the extent of PCBs within the storage yard has been adequately delineated. The PCB sampling results indicate that elevated PCB concentrations (concentrations exceeding 100 ppm) are present in the northern portion of the DK-21 storage yard (including borings DK-21-7, B-02, B-24, B-28, B-36, B-39, and B-41) and in the vicinity of boring B-10 along the eastern edge of the storage yard. The data indicates that elevated PCBs in the northern portion of the storage yard extend to depths of up to 7 feet (at boring location B-2) and that the elevated PCB concentrations in the vicinity of soil boring B-10 only extend to a depth of approximately 2 feet. The PDI sampling activities provide a basis for confirming the extent of elevated PCBs to be addressed by future corrective measures. The proposed extent of excavation efforts that would be implemented to achieve a soil cleanup objective of 100 ppm is shown on Figure 5. Excavation in the northern portion of the storage yard would consist of removing soil across an approximately 4,525-square foot area to a depth of 7 feet (approximately 1,170 cubic yards). Excavation efforts in the vicinity of soil boring SB-10 would consist of removing soil within an approximately 945-square foot area to a depth of 2 feet (approximately 70 cubic yards).

3 Gamma Walkover Survey

3.1 Introduction and Background

Several facilities in Western New York produced a gravel-like waste by-product that contained elevated levels of uranium and thorium. This waste by-product, commonly referred to as “slag”, was utilized as fill and sub-base material for parking lots at several locations in and near Niagara Falls. Slag was identified beginning at depths of between 18 and 24 inches bgs in several direct push boreholes that were advanced in the DK-21 storage yard area during SWMU assessment work at the site that was conducted in 2022. At the request of the NYSDEC, the PDI activities proposed in the *SWMU Assessment Report* included a gamma walkover survey (GWS) to evaluate whether elevated levels of radioactivity are present in the storage yard area, which may indicate the existence of TENORM in the soils. The GWS was conducted in accordance with the NYSDEC Division of Materials Management guidance document entitled *Management of Soils Contaminated with Technologically Enhanced Naturally Occurring Radioactive Materials* (DMM-5, October 2023).

3.2 Gamma Walkover Survey Field Activities

A GWS of the DK-21 storage yard area was completed on February 21, 2024. Gamma measurements were collected using a Ludlum Model 44-10 NaI(TI) sodium iodide scintillator coupled to a Model 3000 ratemeter. The ratemeter was paired via Bluetooth to a differential global positioning system (GPS) tracking device and a tablet computer that records gamma measurements and displays their locations on a map in real time using vendor software (SitePad). This equipment enables the GWS technician to maximize the data coverage area and identify potential areas of elevated radioactivity (above background) in the field to flag for further investigation.

The gamma walkover survey was performed by holding the scintillator approximately 6 inches above the ground surface as the survey technician mover across the area with a forward motion that did not exceed 1.5 feet/second. There were numerous transformer pallets in the storage yard area that prevented achieving 100% area coverage, however the scintillator has a detection radius of approximately 6 feet when held at 6 inches above the ground surface, providing indirect coverage to the inaccessible portions of the storage yard.

Background reference areas are utilized in radiological site investigations to derive a site-specific radiological background threshold. This approach accounts for localized variations that can be influenced by changes in geology and ground surface morphology, including the presence of artificial structures, which can influence radiological measurements. The Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM, 2000) provides guidance on the selection of appropriate background reference areas, specifying that such areas should “have no reasonable potential for residual contamination”, “have no radiological impact from site operations”, and “have similar physical, chemical, geological, radiological, and biological characteristics as the survey unit being evaluated.” An appropriate background reference area for sites in urban areas can include paved areas that are analogous to the area being surveyed.

A radiological background area was established in a staff parking lot on the north side of Dewey Avenue, directly north of the 95 Dewey Avenue Parcel. This area is materially analogous to the DK-21 storage yard area, comprising an asphalt parking lot on a parcel of land that previously supported residential homes. The ground surface is consistent with the adjacent topography, suggesting that only minimal regrading occurred for constructing the parking lot and that extensive fill material was likely not utilized. A walkover survey of the

background reference area was performed following the same specifications as the walkover survey in the DK-21 storage yard. Ten 1-minute static counts were collected in an equally-spaced distribution and averaged to derive a background threshold counts per minute (cpm) for the site. Results for the DK-21 storage yard and background area are discussed below.

3.3 Gamma Walkover Survey Results

The results of the gamma walkover survey for the background area and the DK-21 storage yard are presented on Figures 6 and 7, respectively. Gamma measurements across the surveyed portion of the DK-21 storage yard area ranged from approximately 3,500 to 5,000 cpm.

A walkover gamma survey was performed across an appropriate background area (approximately 685 square meters) to establish that homogenous radiological conditions are present, ranging from approximately 4,500 and 5,500 cpm. Ten 1-minute static measurements were collected and ranged from 4,914 to 5,378 cpm, yielding a site-specific radiological background of 5,160 cpm. A standard one and a half times (1.5x) background threshold was derived (7,740 cpm) to highlight areas requiring additional investigation.

Figure 8 presents the gamma measurements from the walkover survey in the DK-21 storage yard area compared to the 1.5x background threshold. Two gamma measurements in the storage yard area exceeded the 1.5x background threshold in an area located near boxes staged along the exterior of the building. Several of these storage boxes contained ceramic insulators that were emitting around 8,000 to 10,000 cpm when the gamma scintillator was held above the boxes. Ceramic insulators are manufactured with clay which often has elevated levels of natural uranium and thorium. The boxes containing ceramic insulators appear to account for the elevated gamma measurements and no further evaluation is recommended based on the results.

The GWS is primarily effective in detecting elevated radiological measurements in soil located at depths of less than 2 feet from grade. 1 foot of soil shielding is sufficient to attenuate approximately 80% of gamma emissions and 2 feet of soil is sufficient to attenuate over 95% of gamma emissions from underlying material (Shiager, 1974).

Detecting radiological emitting slag buried at a depth of 18 to 24 inches from the surface and distinguishing it from NORM closer to the surface would be challenging, even if the scintillator were placed directly over the buried slag. While the observations from the gamma walkover survey are inconclusive to the nature of material buried at the target depth of 18 to 24 inches, the survey results demonstrate that current site conditions are protective of human health from gamma emissions for workers at the surface.

Slag was not identified in the proposed soil excavation area along the eastern edge of the storage yard area (soil boring SB-10). For the soil excavation area in the northern portion of the storage yard area, slag was identified in soil borings B-02 (2 to 7 feet bgs), B-38 (1.5 for 5.2 feet bgs), B-40 (1.5 to 4.8 feet bgs), B-41 (1.5 to 4.2 feet bgs), and WC-1 (2 to 5 feet bgs). Slag was also identified in soil borings that are not located within the proposed excavation areas, including soil borings B-7, B-11, B-17, B-27, and B-31. Real time radiological screening will conducted as the soil is excavated. If elevated screening levels are identified, the excavated soil will be temporarily stored onsite and samples of slag will be collected for laboratory analysis to confirm appropriate disposal requirements. Screening and sampling of the excavated soil will be conducted in accordance with DMM-5. A TENORM Management Plan will be prepared if screening and or sampling indicates that the excavated soil contains levels of TENORM exceeding the 1.5x background threshold established for the GWS.

4 Corrective Action Approach

The PDI soil sampling activities have confirmed the limits of soil in the DK-21 storage yard area that contains PCBs at concentrations exceeding the proposed 100 ppm soil cleanup objective. As outlined in the *SWMU Assessment Report*, National Grid's corrective action approach for the DK-21 storage yard area includes:

- Preparing a Corrective Action Plan (CAP) and Self-Implementing PCB Cleanup and Disposal Plan (SIP) for review and approval by the NYSDEC and USEPA, respectively. National Grid Anticipates that preparation and submittal of the CAP will take approximately 10 to 12 weeks to complete following approval of this Pre-Design Report. The CAP will include a detailed schedule for implementation of the corrective measures for the DK-21 Storage Yard area.
- Excavation and offsite disposal of soil containing PCBs at concentrations exceeding 100 ppm. Soil containing PCBs at concentrations of less than 100 ppm will remain in place and will be capped by the asphalt and concrete pavement across the storage yard area. The 100 ppm PCB remediation goal is based upon the applicable USEPA soil cleanup objectives for soil located below a cap in a low-occupancy area, as outlined in Title 40 of the Code of Federal Regulations (40 CFR) Part 761.61(a). The conceptual extent of proposed excavation activities is shown on Figure 5. An estimated 1,170 cubic yards of soil is proposed to be removed from the northern portion of the DK-21 storage yard and an estimated 70 cubic yards is proposed to be removed from the eastern edge of the DK-21 storage yard (in the vicinity of soil boring SB-10). All excavated soil will be managed as a Toxic Substances Control Act (TSCA)-regulated PCB waste/New York State hazardous waste (waste code B007). If any obviously impacted soil or subsurface materials are encountered during excavation activities (based on visible staining, strong odors, or elevated PID headspace screening results), then soil excavation efforts will continue until all impacted soil/materials are removed, where practicable.
- Filing a deed notice that will identify the location and extent of remaining PCB soil impacts and will restrict the storage yard area to low-occupancy future use. National Grid anticipates that the deed notice for the storage yard area will be implemented as a modification to the existing Declaration of Covenants and Restrictions (DCR) for the Kensington Avenue parcel recorded in the Erie County Clerk's office on January 30, 2013.
- Preparing a Site Management Plan (SMP) that will include procedures and safety measures that will be used for any future intrusive subsurface work in the storage yard area and establish a yearly inspection schedule for the asphalt/concrete pavement that forms the soil cap. National Grid anticipates that the yearly inspection for the cap in the storage yard area will be included as part of the Periodic Review Report (PRR) that is currently being prepared on an annual basis.

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Tables

Table 1
Summary of Soil Sample Analytical Results

National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-1 1.2 - 1.7 02/16/22 B-1 (1.2-1.7)	B-1 1.7 - 3.7 02/16/22 B-1 (1.7-3.7)	B-2 1.3 - 1.8 02/15/22 B-2 (1.3-1.8)	B-2 1.8 - 3.8 02/15/22 B-2 (1.8-3.8)	B-2 3.8 - 5.87 02/15/22 B-2 (3.8-5.87)	B-2 5.8 - 7 02/15/22 B-2 (5.8-7.0)	B-3 0.4 - 1.9 02/10/22 B-3 (1.4-1.9)	B-3 3.9 - 5.9 02/10/22 B-3 (3.9-5.9)
PCBs (ppm)										
PCB-1016	- -	mg/kg	0.20 U	0.20 U	2.3 U	2.8 U	0.53 U	5,100 UJ	0.27 U	0.21 U
PCB-1221	- -	mg/kg	0.20 U	0.20 U	2.3 U	2.8 U	0.53 U	5,100 UJ	0.27 U	0.21 U
PCB-1232	- -	mg/kg	0.20 U	0.20 U	2.3 U	2.8 U	0.53 U	5,100 UJ	0.27 U	0.21 U
PCB-1242	- -	mg/kg	0.20 U	0.20 U	2.3 U	2.8 U	0.53 U	**50,000 J**	0.27 U	**0.13 J**
PCB-1248	- -	mg/kg	**4.7**	**0.24**	**35 J**	**15**	1.6	5,100 UJ	**9.0**	0.21 U
PCB-1254	- -	mg/kg	0.20 U	0.20 U	2.3 U	2.8 U	0.53 U	5,100 UJ	0.27 U	0.21 U
PCB-1260	- -	mg/kg	0.20 U	0.20 U	2.3 U	2.8 U	0.53 U	5,100 UJ	0.27 U	0.21 U
Total PCBs	1	mg/kg	**4.7**	**0.24**	**35 J**	**15**	**1.6**	**50,000 J**	**9.0**	**0.13 J**

Table 1
Summary of Soil Sample Analytical Results

National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-4 1 - 1.5 02/10/22 B-4 (1.0-1.5)	B-4 1.5 - 3.5 02/10/22 B-4 (1.5-3.5)	B-4 3.5 - 5.5 02/10/22 B-4 (3.5-5.5)	B-5 0.7 - 1.2 02/08/22 B-5 (0.7-1.2)	B-5 3.2 - 5.2 02/08/22 B-5 (3.2-5.2)	B-6 1 - 1.5 02/16/22 B-6 (1.0-1.5)	B-6 1.5 - 3.5 02/16/22 B-6 (1.5-3.5)	B-7 1.2 - 1.7 02/15/22 B-7 (1.2-1.7)
PCBs (ppm)										
PCB-1016	- -	mg/kg	1.1 UJ	NA	0.25 U	11 UJ	0.27 U	0.24 U	0.28 U	0.24 U
PCB-1221	- -	mg/kg	1.1 UJ	NA	0.25 U	11 UJ	0.27 U	0.24 U	0.28 U	0.24 U
PCB-1232	- -	mg/kg	1.1 UJ	NA	0.25 U	11 UJ	0.27 U	0.24 U	0.28 U	0.24 U
PCB-1242	- -	mg/kg	**14 J**	NA	**0.66**	**62 J**	0.27 U	**0.34**	**0.28 J**	0.24 U
PCB-1248	- -	mg/kg	1.1 UJ	NA	0.25 U	11 UJ	0.27 U	0.24 U	0.28 U	**6.4**
PCB-1254	- -	mg/kg	1.1 UJ	NA	0.25 U	11 UJ	0.27 U	0.24 U	0.28 U	0.24 U
PCB-1260	- -	mg/kg	1.1 UJ	NA	0.25 U	11 UJ	0.27 U	0.24 U	0.28 U	0.24 U
Total PCBs	1	mg/kg	**14 J**	NA	**0.66**	62 J	0.27 U	**0.34**	**0.28 J**	**6.4**

Table 1
Summary of Soil Sample Analytical Results

National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-7 1.7 - 3.7 02/15/22 B-7 (1.7-3.7)	B-7 3.7 - 5.1 02/15/22 B-7 (3.7-5.1)	B-8 1.5 - 2 02/14/22 B-8 (1.5-2.0)	B-8 2 - 4 02/14/22 B-8 (2.0-4.0)	B-9 1 - 1.5 02/10/22 B-9 (1.0-1.5)	B-9 3.5 - 5.5 02/10/22 B-9 (3.5-5.5)	B-10 1.1 - 1.6 02/08/22 B-10 (1.1-1.6)	B-10 3.6 - 5.6 02/08/22 B-10 (3.6-5.6)
PCBs (ppm)										
PCB-1016	- -	mg/kg	NA	0.22 U	2.6 U	0.30 UJ	1.2 UJ	0.23 U	14 UJ [13 UJ]	0.29 U
PCB-1221	- -	mg/kg	NA	0.22 U	2.6 U	0.30 UJ	1.2 UJ	0.23 U	14 UJ [13 UJ]	0.29 U
PCB-1232	- -	mg/kg	NA	0.22 U	2.6 U	0.30 UJ	1.2 UJ	0.23 U	14 UJ [13 UJ]	0.29 U
PCB-1242	- -	mg/kg	NA	0.22 U	**41**	**3.3 J**	**14 J**	**0.15 J**	**110J [110J]**	**0.35 J**
PCB-1248	- -	mg/kg	NA	0.22 U	2.6 U	0.30 UJ	1.2 UJ	0.23 U	14 UJ [13 UJ]	0.29 U
PCB-1254	- -	mg/kg	NA	0.22 U	2.6 U	0.30 UJ	1.2 UJ	0.23 U	14 UJ [13 UJ]	0.29 U
PCB-1260	- -	mg/kg	NA	0.22 U	2.6 U	0.30 UJ	1.2 UJ	**0.29**	14 UJ [13 UJ]	0.29 U
Total PCBs	1	mg/kg	NA	0.22 U	**41**	**3.3 J**	**14 J**	**0.44 J**	**110J [110J]**	**0.35 J**

Table 1
Summary of Soil Sample Analytical Results

National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-11 1.2 - 1.7 02/16/22 B-11 (1.2-1.7)	B-11 3.7 - 5.7 02/16/22 B-11 (3.7-5.7)	B-12 1.3 - 1.8 02/15/22 B-12 (1.3-1.8)	B-12 3.8 - 5.8 02/15/22 B-12 (3.8-5.8)	B-13 1.1 - 1.6 02/10/22 B-13 (1.1-1.6)	B-13 3.6 - 5.6 02/10/22 B-13 (3.6-5.6)	B-14 1.3 - 1.8 02/09/22 B-14 (1.3-1.8)
PCBs (ppm)									
PCB-1016	- -	mg/kg	0.23 U [0.21 U]	0.23 U	2.7 U	0.26 U	2.4 UJ	0.24 U	1.3 UJ
PCB-1221	- -	mg/kg	0.23 U [0.21 U]	0.23 U	2.7 U	0.26 U	2.4 UJ	0.24 U	1.3 UJ
PCB-1232	- -	mg/kg	0.23 U [0.21 U]	0.23 U	2.7 U	0.26 U	2.4 UJ	0.24 U	1.3 UJ
PCB-1242	- -	mg/kg	**0.41 [0.21 U]**	**0.50**	2.7 U	0.26 U	**1.9 J**	**0.24**	1.3 UJ
PCB-1248	- -	mg/kg	0.23 U [0.21 U]	0.23 U	**25 J**	0.26 U	2.4 UJ	0.24 U	**13 J**
PCB-1254	- -	mg/kg	0.23 U [0.21 U]	0.23 U	2.7 U	0.26 U	2.4 UJ	0.24 U	1.3 UJ
PCB-1260	- -	mg/kg	0.23 U [0.21 U]	0.23 U	2.7 U	0.26 U	**34J**	**0.16 J**	1.3 UJ
Total PCBs	1	mg/kg	**0.41 [ND]**	**0.50**	**25 J**	0.26 U	**36 J**	**0.40 J**	**13 J**

Table 1
Summary of Soil Sample Analytical Results

National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-14 3.8 - 5.8 02/09/22 B-14 (3.8-5.8)	B-15 1 - 1.5 02/08/22 B-15 (1.0-1.5)	B-15 5.5 - 7.5 02/08/22 B-15 (5.5-7.5)	B-16 1.2 - 1.7 02/16/22 B-16 (1.2-1.7)	B-16 1.7 - 3.7 02/16/22 B-16 (1.7-3.7)	B-16 3.7 - 5.7 02/16/22 B-16 (3.7-5.7)	B-17 1.3 - 1.8 02/15/22 B-17 (1.3-1.8)
PCBs (ppm)									
PCB-1016	- -	mg/kg	2.8 UJ	1.4 U	2.5 U	0.22 U	NA	0.32 U	0.27 U
PCB-1221	- -	mg/kg	2.8 UJ	1.4 U	2.5 U	0.22 U	NA	0.32 U	0.27 U
PCB-1232	- -	mg/kg	2.8 UJ	1.4 U	2.5 U	0.22 U	NA	0.32 U	0.27 U
PCB-1242	- -	mg/kg	**29 J**	1.4 U	**36**	**1.5**	NA	**8.5**	0.27 U
PCB-1248	- -	mg/kg	2.8 UJ	**19 J**	2.5 U	0.22 U	NA	0.32 U	0.27 U
PCB-1254	- -	mg/kg	2.8 UJ	1.4 U	2.5 U	0.22 U	NA	0.32 U	0.27 U
PCB-1260	- -	mg/kg	2.8 UJ	1.4 U	2.5 U	0.22 U	NA	0.32 U	0.27 U
Total PCBs	1	mg/kg	**29 J**	**19 J**	**36**	**1.5**	NA	**8.5**	0.27 U

Table 1
Summary of Soil Sample Analytical Results

National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-17 3.8 - 5.8 02/15/22 B-17 (3.8-5.8)	B-18 1.2 - 1.7 02/09/22 B-18 (1.2-1.7)	B-18 1.7 - 3.7 02/09/22 B-18 (1.7-3.7)	B-18 3.7 - 5.7 02/09/22 B-18 (3.7-5.7)	B-19 1.3 - 1.8 02/09/22 B-19 (1.3-1.8)	B-19 3.8 - 5.8 02/09/22 B-19 (3.8-5.8)	B-20 1.9 - 2.4 02/08/22 B-20 (1.9-2.4)
PCBs (ppm)									
PCB-1016	- -	mg/kg	NA	0.25 U	0.22 U	0.26 U	5.2 U	0.24 U	0.21 U
PCB-1221	- -	mg/kg	NA	0.25 U	0.22 U	0.26 U	5.2 U	0.24 U	0.21 U
PCB-1232	- -	mg/kg	NA	0.25 U	0.22 U	0.26 U	5.2 U	0.24 U	0.21 U
PCB-1242	- -	mg/kg	NA	0.25 U	0.22 U	0.26 U	5.2 U	**0.80**	0.21 U
PCB-1248	- -	mg/kg	NA	**4.0**	0.22 U	0.26 U	**83 J**	0.24 U	0.21 U
PCB-1254	- -	mg/kg	NA	0.25 U	**0.51**	0.26 U	5.2 U	0.24 U	0.21 U
PCB-1260	- -	mg/kg	NA	0.25 U	0.22 U	0.26 U	5.2 U	0.24 U	**0.17 J**
Total PCBs	1	mg/kg	NA	**4.0**	**0.51**	0.26 U	**83 J**	**0.80**	**0.17 J**

Table 1
Summary of Soil Sample Analytical Results

National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-20 4.4 - 6.4 02/08/22 B-20 (4.4-6.4)	B-21 1.2 - 1.7 02/14/22 B-21 (1.2-1.7)	B-21 3.7 - 5.7 02/14/22 B-21 (3.7-5.7)	B-22 0.8 - 1.3 02/14/22 B-22 (0.8-1.3)	B-22 3.3 - 5.3 02/14/22 B-22 (3.3-5.3)	B-22 5.3 - 7.3 02/14/22 B-22 (5.3-7.3)	B-23 0.8 - 1.3 02/08/22 B-23 (0.8-1.3)
PCBs (ppm)									
PCB-1016	- -	mg/kg	0.26 U	0.21 UJ [0.27 UJ]	0.26 UJ	2.1 U	NA	0.23 UJ	1.4 U
PCB-1221	- -	mg/kg	0.26 U	0.21 UJ [0.27 UJ]	0.26 UJ	2.1 U	NA	0.23 UJ	1.4 U
PCB-1232	- -	mg/kg	0.26 U	0.21 UJ [0.27 UJ]	0.26 UJ	2.1 U	NA	0.23 UJ	1.4 U
PCB-1242	- -	mg/kg	**0.22 J**	0.21 UJ [0.27 UJ]	0.26 UJ	2.1 U	NA	0.23 UJ	1.4 U
PCB-1248	- -	mg/kg	0.26 U	0.21 UJ [**0.90J**]	0.26 UJ	2.1 U	NA	0.23 UJ	1.4 U
PCB-1254	- -	mg/kg	0.26 U	**0.58J [0.27 UJ]**	0.26 UJ	2.1 U	NA	0.23 UJ	1.4 U
PCB-1260	- -	mg/kg	0.26 U	0.21 UJ [**0.43J**]	0.26 UJ	**25**	NA	0.23 UJ	**12**
Total PCBs	1	mg/kg	**0.22 J**	**0.58J [1.3J]**	0.26 UJ	**25**	NA	0.23 UJ	**12**

Table 1
Summary of Soil Sample Analytical Results

National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-23 5.3 - 7.3 02/08/22 B-23 (5.3-7.3)	B-24 1.2 - 1.7 12/21/22 B-24 (1.2-1.7)	B-24 3.2 - 5.0 12/21/22 B-24 (3.2-5.0)	B-25 1.0 - 1.5 21/21/22 B-25 (1.0-1.5)	B-25 3.0 - 4.2 12/21/22 B-25 (3.0-4.2)	B-26 1.0 - 1.5 12/20/22 B-26 (1.0-1.5)	B-26 3.0 - 4.2 12/20/22 B-26 (3.0-4.2)	B-27 0.75 - 1.25 12/19/22 B-27 (0.75-1.25)
PCBs (ppm)										
PCB-1016	- -	mg/kg	0.30 U	56 U	21 UJ [28 UJ]	1.8 U	0.23 U	0.30 U	0.27 U [0.23 U]	2.7 U
PCB-1221	- -	mg/kg	0.30 U	56 U	21 UJ [28 UJ]	1.8 U	0.23 U	0.30 U	0.27 U [0.23 U]	2.7 U
PCB-1232	- -	mg/kg	0.30 U	56 U	21 UJ [28 UJ]	1.8 U	0.23 U	0.30 U	0.27 U [0.23 U]	2.7 U
PCB-1242	- -	mg/kg	0.30 U	**1,600**	**600 J [300 J]**	**19**	0.23 U	**3.0**	**0.31** [0.023 U]	**27**
PCB-1248	- -	mg/kg	0.30 U	56 U	21 UJ [28 UJ]	1.8 U	0.23 U	0.30 U	0.27 U [0.23 U]	2.7 U
PCB-1254	- -	mg/kg	0.30 U	56 U	21 UJ [28 UJ]	1.8 U	0.23 U	0.30 U	0.27 U [0.23 U]	2.7 U
PCB-1260	- -	mg/kg	0.30 U	56 U	21 UJ [28 UJ]	**2.3**	0.23 U	0.30 U	0.27 U [0.23 U]	**2.4 J**
Total PCBs	1	mg/kg	0.30 U	**1,600**	**600 J [300 J]**	**21.3**	0.23 U	**3.0**	**0.31 [0.073 J]**	**29.4 J**

Table 1
Summary of Soil Sample Analytical Results

National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-27 2.75 - 4.75 12/19/22 B-27 (2.75-4.75)	B-28 1.0 - 1.5 12/20/22 B-28 (1.0-1.5)	B-28 3.0 - 5.0 12/20/22 B-28 (3.0-5.0)	B-28 5.0 - 5.9 12/20/22 B-28 (5.0-5.9)	B-29 0.7 - 1.2 12/20/22 B-29 (0.7-1.2)	B-29 4.7 - 5.9 12/20/22 B-29 (4.7-5.9)	B-30 1.0 - 1.5 12/20/22 B-30 (1.0-1.5)	B-30 5.0 - 7.0 12/20/22 B-23 (5.0-7.0)
PCBs (ppm)										
PCB-1016	- -	mg/kg	0.23 U	22 UJ	0.23 U	21 UJ	5.9 U	0.21 U	5.6 UJ	0.24 U
PCB-1221	- -	mg/kg	0.23 U	22 UJ	0.23 U	21 UJ	5.9 U	0.21 U	5.6 UJ	0.24 U
PCB-1232	- -	mg/kg	0.23 U	22 UJ	0.23 U	21 UJ	5.9 U	0.21 U	5.6 UJ	0.24 U
PCB-1242	- -	mg/kg	0.23 U	**290 J**	**4.6**	**570 J**	**74**	0.21 U	**72 J**	0.24 U
PCB-1248	- -	mg/kg	0.23 U	22 UJ	0.23 U	21 UJ	5.9 U	0.21 U	5.6 UJ	0.24 U
PCB-1254	- -	mg/kg	0.23 U	22 UJ	0.23 U	21 UJ	5.9 U	0.21 U	5.6 UJ	0.24 U
PCB-1260	- -	mg/kg	0.23 U	22 UJ	0.23 U	21 UJ	5.9 U	0.21 U	5.6 UJ	0.24 U
Total PCBs	1	mg/kg	0.23 U	**290 J**	**4.6**	**570 J**	**74**	0.21 U	**72 J**	0.24 U

Table 1
Summary of Soil Sample Analytical Results

National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-31 1.0 - 1.5 12/20/22 B-31 (1.0-1.5)	B-31 5.0 - 7.0 12/20/22 B-31 (5.0-7.0)	B-32 0.9-1.4 1/18/2024 B-32 (0.9-1.4)	B-32 4.9-6.5 1/18/2024 B-32 (4.9-6.5)	B-33 0.9-1.4 1/17/2024 B-33 (0.9-1.4)	B-33 6.9-7.5 1/17/2024 B-33 (6.9-7.5)	B-34 1.4-1.9 1/19/2024 B-34 (1.4-1.9)	B-34 5.4-6 1/19/2024 B-34 (5.4-6)
PCBs (ppm)										
PCB-1016	- -	mg/kg	0.25 U	0.26 U	1.10 U	0.250 U	1.10 U	0.260 U	0.270 U	1.10 U
PCB-1221	- -	mg/kg	0.25 U	0.30 U	1.10 U	0.250 U	1.10 U	0.260 U	0.270 U	1.10 U
PCB-1232	- -	mg/kg	0.25 U	0.30 U	1.10 U	0.250 U	1.10 U	0.260 U	0.270 U	1.10 U
PCB-1242	- -	mg/kg	**18**	0.26 U	**12.0**	0.250 U	**13.0**	0.260 U	**7.50**	**10.0**
PCB-1248	- -	mg/kg	0.25 U	0.30 U	1.10 U	0.250 U	1.10 U	0.260 U	0.270 U	1.10 U
PCB-1254	- -	mg/kg	0.25 U	0.30 U	1.10 U	0.250 U	1.10 U	0.260 U	0.270 U	1.10 U
PCB-1260	- -	mg/kg	**1.4 J**	0.30 U	1.10 U	0.250 U	1.10 U	0.260 U	0.270 U	1.10 U
Total PCBs	1	mg/kg	**19.4 J**	0.26 U	**12.0**	ND	**13.0**	ND	**7.50**	**10.0**

Table 1
Summary of Soil Sample Analytical Results

National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-35 1-1.5 1/22/2024 B-35 (1-1.5)	B-35 3-4 1/22/2024 B-35 (3-4)	B-36 1.9-2.4 1/18/2024 B-36 (1.9-2.4)	B-36 3.9-5 1/18/2024 B-36 (3.9-5)	B-37 1.2-1.7 1/18/2024 B-37 (1.2-1.7)	B-37 3.2-5.2 1/18/2024 B-37 (3.2-5.2)	B-38 1.4-1.9 1/18/2024 B-38 (1.4-1.9)	B-38 3.4-5.4 1/18/2024 B-38 (3.4-5.4)
PCBs (ppm)										
PCB-1016	- -	mg/kg	1.20 U	5.90 U	4.80 U	0.270 U	0.250 U	0.220 U	0.270 U	0.280 U
PCB-1221	- -	mg/kg	1.20 U	5.90 U	4.80 U	0.270 U	0.250 U	0.220 U	0.270 U	0.280 U
PCB-1232	- -	mg/kg	1.20 U	5.90 U	4.80 U	0.270 U	0.250 U	0.220 U	0.270 U	0.280 U
PCB-1242	- -	mg/kg	1.20 U	**57.0**	**110**	0.270 U	**0.630**	0.220 U	**1.50**	0.280 U
PCB-1248	- -	mg/kg	**14.0**	5.90 U	4.80 U	0.270 U	0.250 U	0.220 U	0.270 U	0.280 U
PCB-1254	- -	mg/kg	1.20 U	**3.00 J**	4.80 U	0.270 U	0.250 U	0.220 U	0.270 U	**0.190 J**
PCB-1260	- -	mg/kg	**15.0**	5.90 U	4.80 U	0.270 U	**0.150 J**	0.220 U	**0.450**	0.280 U
Total PCBs	1	mg/kg	**29.0**	**60.0 J**	**110**	ND	**0.780 J**	ND	**1.95**	**0.190 J**

Table 1
Summary of Soil Sample Analytical Results

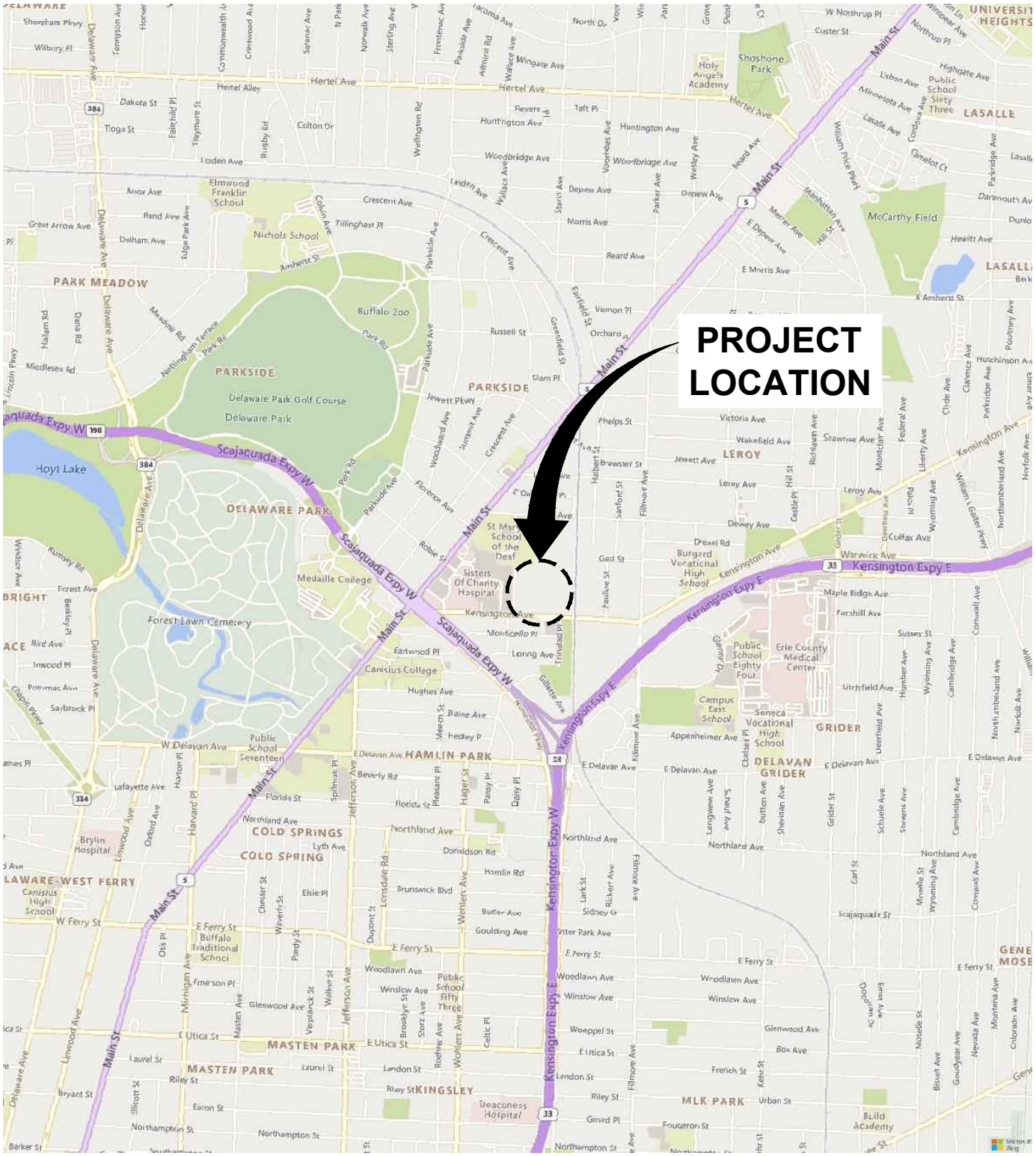
National Grid
Dewey/Kensington Avenue Service Center
Buffalo, New York

Location ID: Sample Depth(Feet): Date Collected: Sample Name:	DER10 Commercial Use SCO	Units	B-39 1.2-1.7 1/18/2024 B-39 (1.2-1.7)	B-39 5.2-5.6 1/18/2024 B-39 (5.2-5.6)	B-40 1.2-1.7 1/22/2024 B-40 (1.2-1.7)	B-40 3.2-4.8 1/22/2024 B-40 (3.2-4.8)	B-41 1.3-1.8 1/22/2024 B-41 (1.3-1.8)	B-41 3.3-4.2 1/22/2024 B-41 (3.3-4.2)
PCBs (ppm)								
PCB-1016	- -	mg/kg	5.30 U	0.270 U	2.50 U	0.270 U	2.20 U	47.0 UJ
PCB-1221	- -	mg/kg	5.30 U	0.270 U	2.50 U	0.270 U	2.20 U	47.0 UJ
PCB-1232	- -	mg/kg	5.30 U	0.270 U	2.50 U	0.270 U	2.20 U	47.0 UJ
PCB-1242	- -	mg/kg	**120**	**0.170 J**	2.50 U	0.270 U	2.20 U	47.0 UJ
PCB-1248	- -	mg/kg	5.30 U	0.270 U	**40.0**	**1.60**	**18.0**	**680 J**
PCB-1254	- -	mg/kg	5.30 U	0.270 U	2.50 U	0.270 U	2.20 U	47.0 UJ
PCB-1260	- -	mg/kg	5.30 U	0.270 U	2.50 U	0.270 U	2.20 U	47.0 UJ
Total PCBs	1	mg/kg	**120**	**0.170 J**	**40.0**	**1.60**	**18.0**	**680 J**

Table
Summary of Soil Sample Analytical Results

Notes:	
1.	Bold vaule means compound was detected in sample
2	Shaded value means the detected concentration exceeds the referenced NYSDEC soil cleanup criteria
3.	J = Estimated Value
2.	ND = Not Detected
3.	ppm = part per million

Figures



NATIONAL GRID DEWEY/KENSINGTON SERVICE CENTER
CITY OF BUFFALO, ERIE COUNTY, NEW YORK

PRE-DESIGN INVESTIGATION REPORT

SITE LOCATION MAP

ARCADIS

FIGURE 1

C:\Users\bdeclercq\ACCDocs\Arcadis\AUS-NATIONAL GRID-KENSINGTON AVE-BUFFALO New York\Project Files\2023\01-In Progress\01-DWG\SWMU_Fig 1_Site Location Map.dwg SAVED: 3/24/2023 8:27 AM BY: DECLERCQ, BRIAN

XREFS: IMAGES:

0 140' 280'

GRAPHIC SCALE

NATIONAL GRID DEWEY/KENSINGTON SERVICE CENTER
CITY OF BUFFALO, ERIE COUNTY, NEW YORK
SWMU ASSESSMENT REPORT

FACILITY LAYOUT PLAN

ARCADIS

FIGURE
2

C:\Users\bdeclercq\DC\ACCDocs\Arcadis ACC US\AUS-99999999-NATL GRID_KENSINGTON AVE_BUFFALO_NY\Project Files\10_WIP\10T_ARC_ENV\2024\01-DWG\SWMU_Fig 2_Facility Layout Plan.dwg SAVED: 8/21/2024 10:01 AM BY: DECLERCQ, BRIAN

XREFS: IMAGES:
SWMU-Title Arcadis Logo.png

DK-21-2	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
1.2–2	ND

DK-21-6	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
1.1–2	5.69

DK-21-7	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
1.4–2	741

DK-21-13	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
1.5–2	96.3

TP-4 (DK6-WC-2)	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
0.5–6.8	7.47

DK-21-1	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
0.5–2	ND

DK-21-3	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
0.8–2	6.61

DK-21-5	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
1.2–8	ND

DK-21-4	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
0.8–8	ND

DK-21-9	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
1.1–8	ND

DK-21-10	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
1.2–2	ND

DK-21-12	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
1.9–8	6.43

DK-21-8	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
1.3–2	18.8

DK-21-11	
SAMPLE DEPTH INTERVAL (ft)	TOTAL PCBs (ppm)
0.8–2	45.7

DK-21-1, DK-21-2, DK-21-3, DK-21-4, DK-21-5, DK-21-6, DK-21-7, DK-21-8, DK-21-9, DK-21-10, DK-21-11, DK-21-12, DK-21-13, TP-4 (DK6-WC-2)

B-01, B-02, B-03, B-04, B-05, B-06, B-07, B-08, B-09, B-10, B-11, B-12, B-13, B-14, B-15, B-16, B-17, B-18, B-19, B-20, B-21, B-22, B-23, B-24, B-25, B-26, B-27, B-28, B-29, B-30, B-31

BLDG. #20

BLDG. #21

LEGEND:

- EXISTING SOIL SAMPLING LOCATION
- EXISTING TEST PIT
- NG KENSINGTON BORING LOCATION

NOTES:

1. SOIL PROBE LOCATIONS ARE APPROXIMATE.
2. IMAGERY OBTAINED FROM © 2023 MICROSOFT CORPORATION © 2023 MAXAR © CNES (2023) DISTRIBUTION AIRBUS DS © 2023 TOM TOM.
2, ND = NOT DETECTED.
4. ppm = PARTS PER MILLION.
5. EXISTING SOIL SAMPLES DK-21-1 THROUGH DK-21-13 COLLECTED IN MARCH 2021 BY GZA GEOENVIRONMENTAL SERVICES OF N.Y.
6. EXISTING SOIL SAMPLE DK-6 TEST PIT (TP-4) COLLECTED IN OCTOBER 2020 BY GZA GEOENVIRONMENTAL SERVICES OF N.Y.

0 30' 60'

GRAPHIC SCALE

NATIONAL GRID DEWEY/KENSINGTON SERVICE CENTER
CITY OF BUFFALO, ERIE COUNTY, NEW YORK
PRE-DESIGNINVESTIGATION REPORT

PREVIOUS SOIL ANALYTICAL DATA

ARCADIS

FIGURE 3

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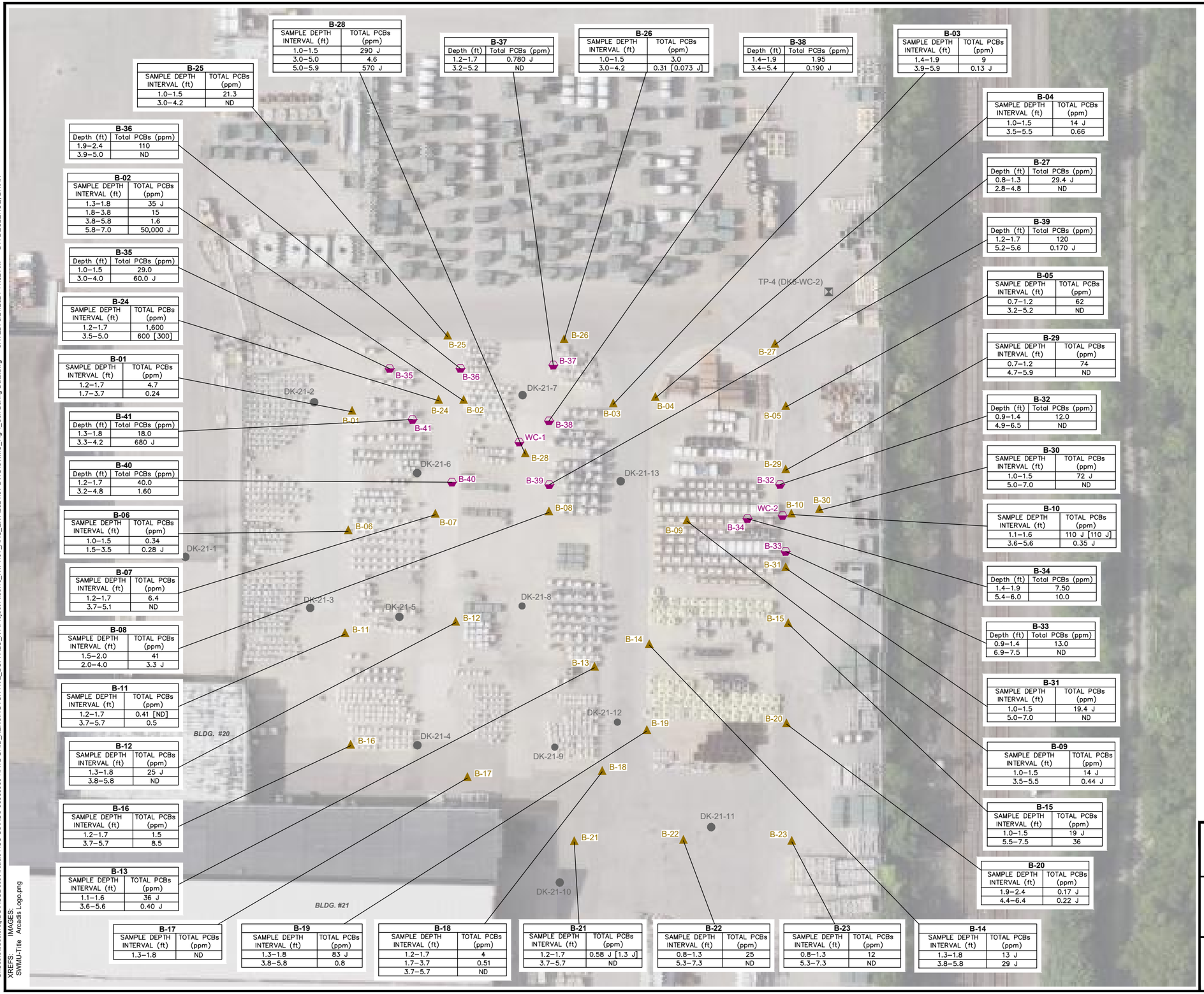

LEGEND:

- EXISTING SOIL SAMPLING LOCATION
- EXISTING TEST PIT
- NG KENSINGTON BORING LOCATION
- PDI SOIL BORING

NOTES:

1. IMAGERY OBTAINED FROM © 2023 MICROSOFT CORPORATION © 2023 MAXAR © CNES (2023) DISTRIBUTION AIRBUS DS © 2023 TOM TOM.
2. PROPOSED SOIL BORING LOCATIONS ARE APPROXIMATE AND MAY BE ADJUSTED IN THE FIELD BASED ON FIELD CONDITIONS.
3. ND = NOT DETECTED.
4. ppm = PARTS PER MILLION.
5. J = INDICATES AN ESTIMATED VALUE.
6. BRACKETED VALUES INDICATE BLIND DUPLICATE SAMPLE RESULTS.

0 40' 80'

GRAPHIC SCALE

NATIONAL GRID DEWEY/KENSINGTON SERVICE CENTER
CITY OF BUFFALO, ERIE COUNTY, NEW YORK
SWMU ASSESSMENT REPORT

SOIL BORING DATA

ARCADIS

FIGURE
4

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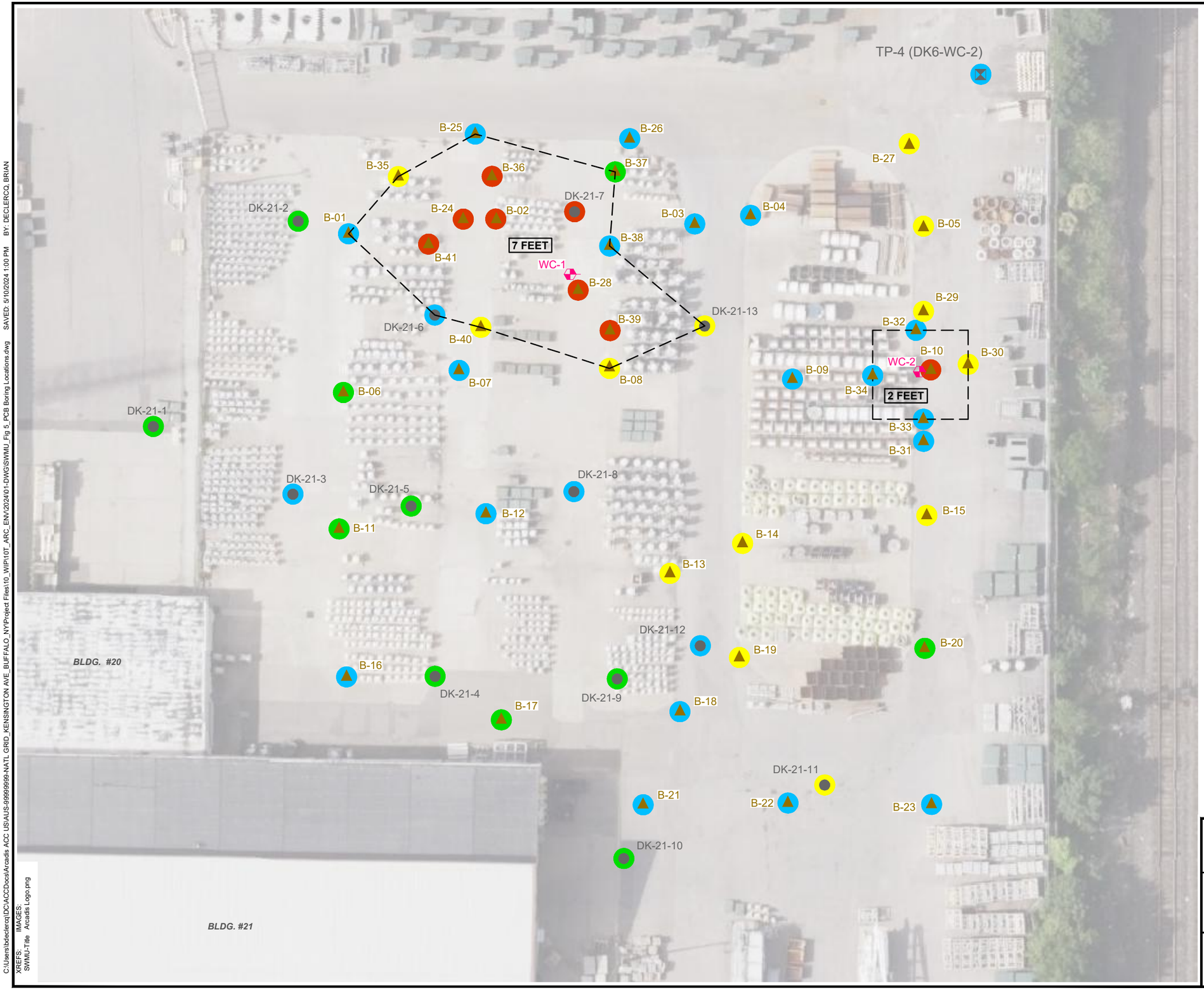

LEGEND:

- EXISTING SOIL SAMPLING LOCATION
- EXISTING TEST PIT
- NG KENSINGTON BORING LOCATION
- WASTE CHARACTERIZATION SAMPLE LOCATION
- < 1 PPM = GREEN
- > 1 PPM TO < 25 PPM = BLUE
- > 25 PPM TO < 100 PPM = YELLOW
- > 100 PPM = RED
- PROPOSED EXCAVATION AREA
- 2 FEET — PROPOSED EXCAVATION DEPTH

NOTES:

1. IMAGERY OBTAINED FROM © 2023 MICROSOFT CORPORATION © 2023 MAXAR © CNES (2023) DISTRIBUTION AIRBUS DS © 2023 TOM TOM.
2. PROPOSED SOIL BORING LOCATIONS ARE APPROXIMATE AND MAY BE ADJUSTED IN THE FIELD BASED ON FIELD CONDITIONS.

0 30' 60'

GRAPHIC SCALE

NATIONAL GRID DEWEY/KENSINGTON SERVICE CENTER
CITY OF BUFFALO, ERIE COUNTY, NEW YORK
PRE-DESIGN INVESTIGATION REPORT

PCB DISTRIBUTION

ARCADIS

FIGURE
5

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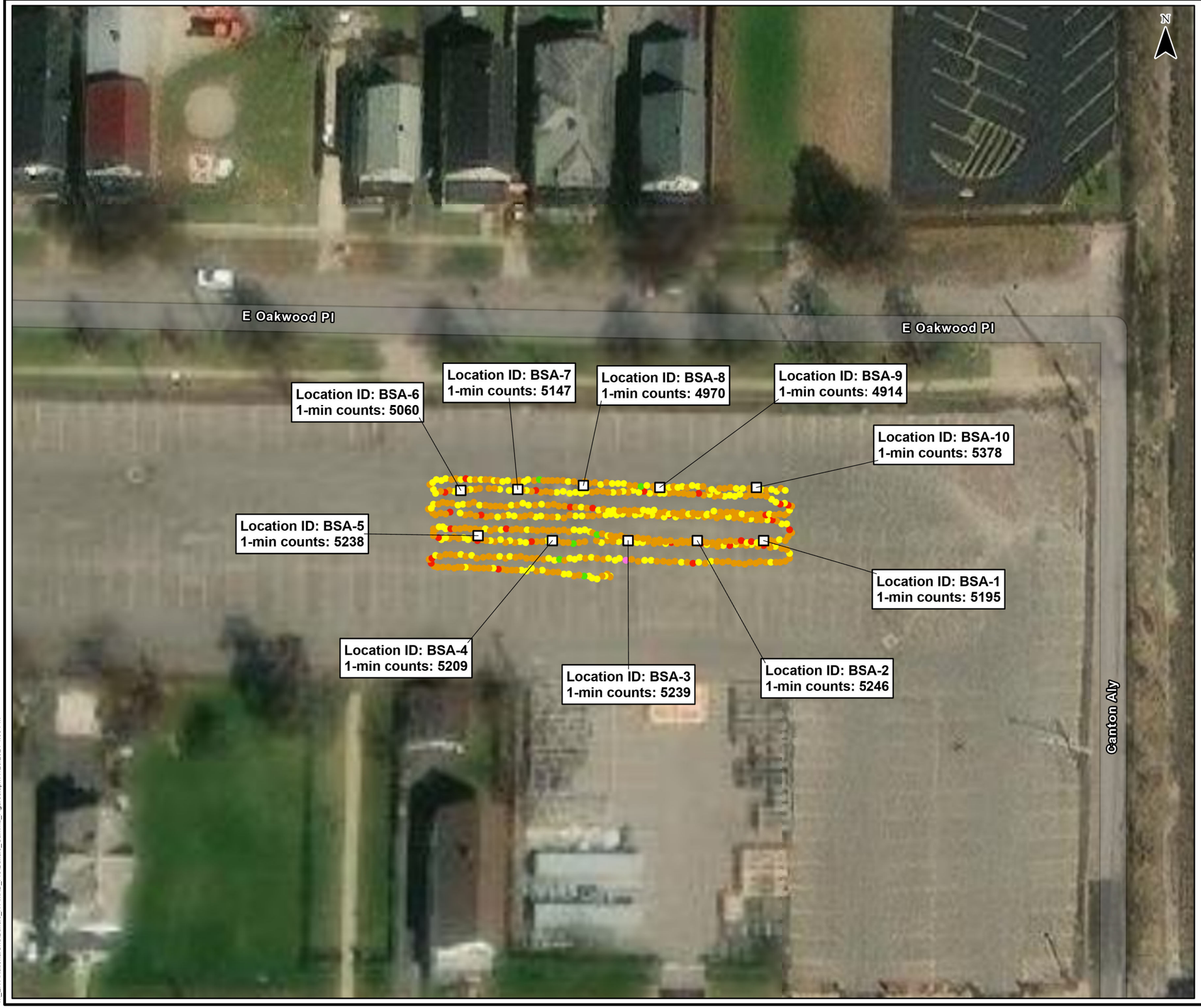
Arcadis Logo.png



LEGEND:

Gamma Radiation (CPM)

- <2,000 cpm
- 2,001 - 3,000 cpm
- 3,001 - 4,000 cpm
- 4,001 - 5,000 cpm
- 5,001 - 6,000 cpm
- 6,001 - 7,000 cpm
- >7,001 cpm
- 1-Minute Static Count Locations

NOTES:

1. IMAGERY OBTAINED FROM ESRI WORLD IMAGERY (2023) FROM ESRI IMAGE SERVICE.
2. IMAGERY DOES NOT REFLECT SITE CONDITIONS AT THE TIME OF THE WALKOVER GAMMA SURVEY, INCLUDING THE LOCATION OF TRANSFORMER PALLETS AND PARKED VEHICLES.
3. CPM = COUNTS PER MINUTE
4. SITE-SPECIFIC BACKGROUND THRESHOLD CALCULATED AT 5,160 CPM FROM THE INDICATED TEN 1-MINUTE STATIC COUNT MEASUREMENTS. CALCULATED SITE-SPECIFIC 1.5X BACKGROUND THRESHOLD = 7,740 CPM.

0 50 100 Feet

NATIONAL GRID DEWEY/KENSINGTON SERVICE CENTER
CITY OF BUFFALO, ERIE COUNTY, NEW YORK
SWMU ASSESSMENT REPORT

BACKGROUND AREA GAMMA WALKOVER SURVEY

ARCADIS

FIGURE 6

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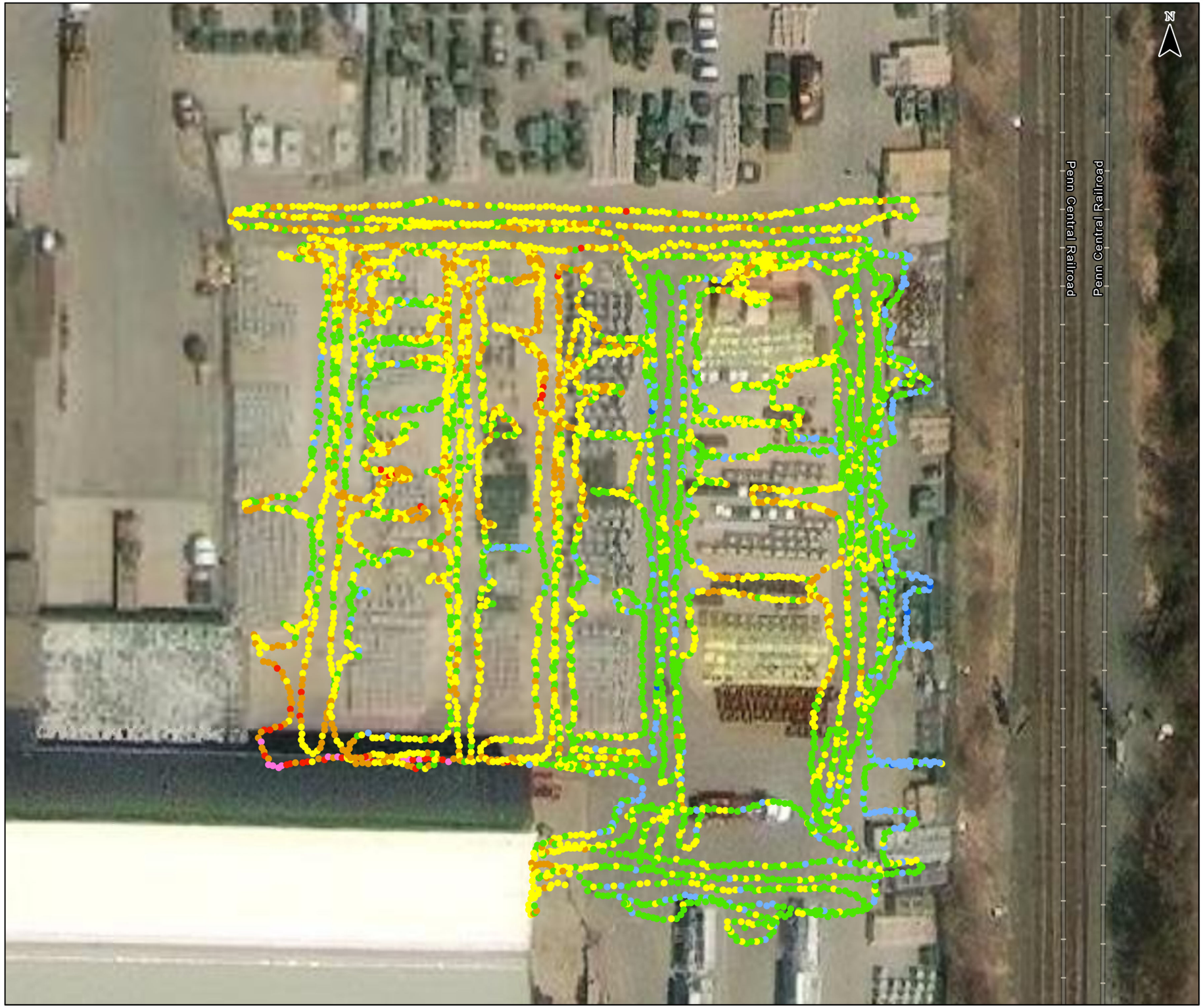

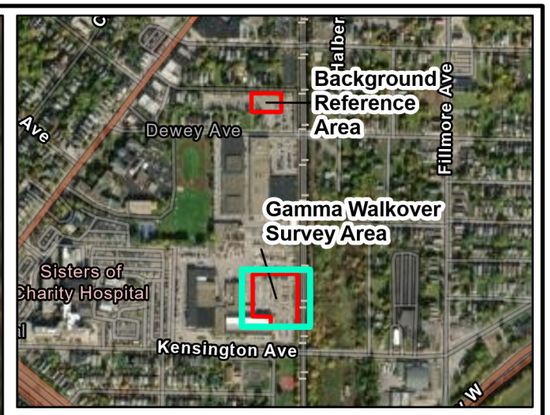

LEGEND:

Gamma Radiation (CPM)

- <2,000 cpm
- 2,001 - 3,000 cpm
- 3,001 - 4,000 cpm
- 4,001 - 5,000 cpm
- 5,001 - 6,000 cpm
- 6,001 - 7,000 cpm
- >7,001 cpm

NOTES:

1. IMAGERY OBTAINED FROM ESRI WORLD IMAGERY (2023) FROM ESRI IMAGE SERVICE.
2. IMAGERY DOES NOT REFLECT SITE CONDITIONS AT THE TIME OF THE WALKOVER GAMMA SURVEY, INCLUDING THE LOCATION OF TRANSFORMER PALLETS AND PARKED VEHICLES.
3. CPM = COUNTS PER MINUTE
4. BACKGROUND = 5,160 CPM

0 50 100 Feet

NATIONAL GRID DEWEY/KENSINGTON SERVICE CENTER
CITY OF BUFFALO, ERIE COUNTY, NEW YORK
SWMU ASSESSMENT REPORT

GAMMA WALKOVER SURVEY

ARCADIS

FIGURE 7

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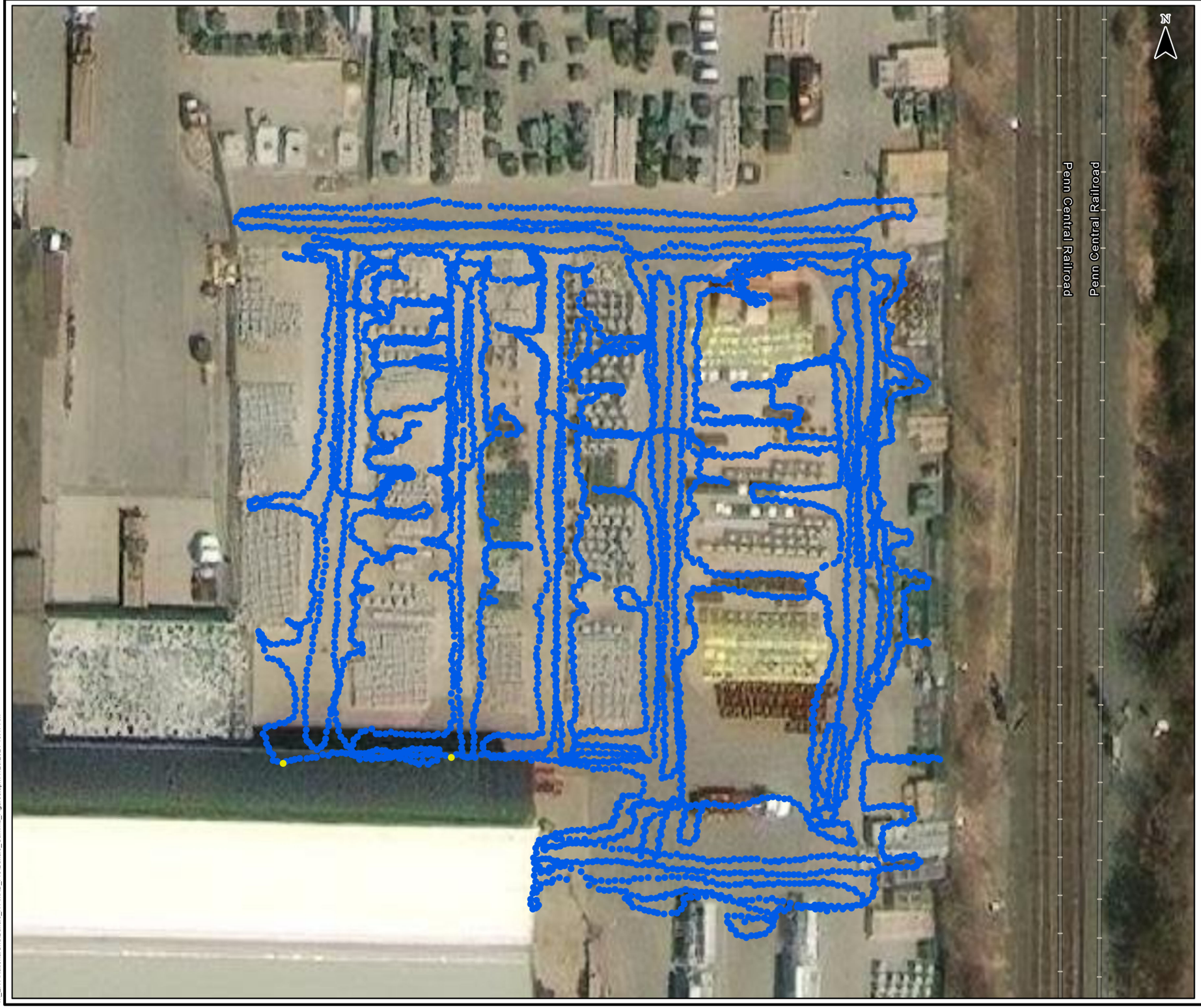

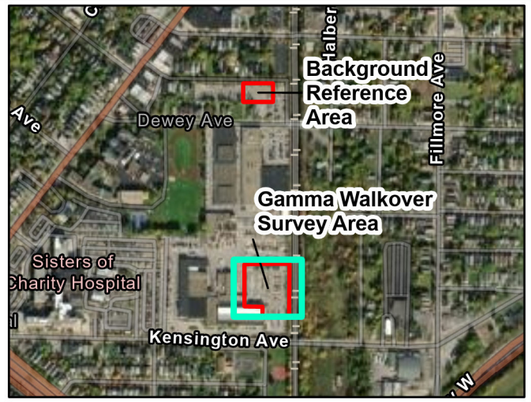

LEGEND:

- < 7,740 cpm
- > 7,740 cpm

NOTES:

1. IMAGERY OBTAINED FROM ESRI WORLD IMAGERY (2023) FROM ESRI IMAGE SERVICE.
2. IMAGERY DOES NOT REFLECT SITE CONDITIONS AT THE TIME OF THE WALKOVER GAMMA SURVEY, INCLUDING THE LOCATION OF TRANSFORMER PALLETS AND PARKED VEHICLES.
3. CPM = COUNTS PER MINUTE
4. THE 1.5X BACKGROUND THRESHOLD OF 7,740 CPM IS BASED OFF STATIC GAMMA MEASUREMENTS COLLECTED IN A BACKGROUND AREA IN A PARKING LOT DIRECTLY NORTH OF THE SITE ON DEWEY AVENUE.

0 50 100
Feet

NATIONAL GRID DEWEY/KENSINGTON SERVICE CENTER
CITY OF BUFFALO, ERIE COUNTY, NEW YORK
SWMU ASSESSMENT REPORT

GAMMA MEASUREMENTS RELATIVE TO 1.5X BACKGROUND

ARCADIS

FIGURE 8

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Attachment A

CAMP Monitoring Data

Instrument Name	DustTrak II
Model Number	8530
Serial Number	8530151709
Firmware Version	3.1
Calibration Date	8/9/2023
Test Name	DOWNWIND1_001
Test Start Time	12:19:47 PM
Test Start Date	1/17/2024
Test Length [D:H:M]	0:01:28
Test Interval [M:S]	1:00
Mass Average [mg/m3]	0.014
Mass Minimum [mg/m3]	0.012
Mass Maximum [mg/m3]	0.04
Mass TWA [mg/m3]	0.005
Photometric User Cal	1
Flow User Cal	0
Errors	
Number of Samples	88

Elapsed Time [s]	Mass [mg/m3]	Alarms	Errors
60	0.026		
120	0.014		
180	0.014		
240	0.014		
300	0.014		
360	0.014		
420	0.013		
480	0.013		
540	0.013		
600	0.016		
660	0.019		
720	0.018		
780	0.016		
840	0.015		
900	0.016		
960	0.018		
1020	0.017		
1080	0.015		
1140	0.014		
1200	0.014		
1260	0.015		
1320	0.013		
1380	0.013		
1440	0.014		
1500	0.014		
1560	0.013		
1620	0.014		

1680	0.013
1740	0.014
1800	0.014
1860	0.014
1920	0.014
1980	0.015
2040	0.014
2100	0.012
2160	0.012
2220	0.012
2280	0.012
2340	0.012
2400	0.014
2460	0.013
2520	0.012
2580	0.013
2640	0.013
2700	0.016
2760	0.013
2820	0.013
2880	0.014
2940	0.013
3000	0.014
3060	0.015
3120	0.013
3180	0.013
3240	0.014
3300	0.013
3360	0.014
3420	0.013
3480	0.013
3540	0.015
3600	0.014
3660	0.013
3720	0.014
3780	0.015
3840	0.013
3900	0.014
3960	0.014
4020	0.014
4080	0.015
4140	0.013
4200	0.016
4260	0.015
4320	0.014
4380	0.014
4440	0.018

4500	0.015
4560	0.013
4620	0.013
4680	0.012
4740	0.014
4800	0.015
4860	0.013
4920	0.013
4980	0.013
5040	0.013
5100	0.013
5160	0.014
5220	0.014
5280	0.014

Instrument Name	DustTrak II
Model Number	8530
Serial Number	8530151709
Firmware Version	3.1
Calibration Date	8/9/2023
Test Name	DOWNWIND1_002
Test Start Time	10:28:34 AM
Test Start Date	1/18/2024
Test Length [D:H:M]	0:04:45
Test Interval [M:S]	1:00
Mass Average [mg/m3]	0.012
Mass Minimum [mg/m3]	0.005
Mass Maximum [mg/m3]	0.437
Mass TWA [mg/m3]	0.011
Photometric User Cal	1
Flow User Cal	0
Errors	
Number of Samples	285

Elapsed Time [s]	Mass [mg/m3]	Alarms	Errors
60	0.013		
120	0.007		
180	0.007		
240	0.008		
300	0.015		
360	0.011		
420	0.009		
480	0.008		
540	0.008		
600	0.009		
660	0.009		
720	0.01		
780	0.008		
840	0.008		
900	0.008		
960	0.008		
1020	0.008		
1080	0.008		
1140	0.008		
1200	0.01		
1260	0.011		
1320	0.008		
1380	0.013		
1440	0.009		
1500	0.008		
1560	0.007		
1620	0.009		

1680	0.013
1740	0.009
1800	0.009
1860	0.009
1920	0.009
1980	0.011
2040	0.011
2100	0.01
2160	0.01
2220	0.013
2280	0.01
2340	0.009
2400	0.01
2460	0.012
2520	0.013
2580	0.009
2640	0.009
2700	0.011
2760	0.01
2820	0.013
2880	0.009
2940	0.009
3000	0.009
3060	0.01
3120	0.015
3180	0.01
3240	0.01
3300	0.01
3360	0.011
3420	0.01
3480	0.011
3540	0.01
3600	0.011
3660	0.011
3720	0.011
3780	0.012
3840	0.011
3900	0.011
3960	0.01
4020	0.01
4080	0.01
4140	0.011
4200	0.011
4260	0.011
4320	0.01
4380	0.01
4440	0.011

4500	0.01
4560	0.009
4620	0.008
4680	0.008
4740	0.008
4800	0.008
4860	0.008
4920	0.009
4980	0.008
5040	0.009
5100	0.009
5160	0.009
5220	0.008
5280	0.009
5340	0.012
5400	0.042
5460	0.014
5520	0.012
5580	0.01
5640	0.012
5700	0.015
5760	0.011
5820	0.012
5880	0.01
5940	0.012
6000	0.011
6060	0.009
6120	0.008
6180	0.009
6240	0.01
6300	0.015
6360	0.01
6420	0.01
6480	0.014
6540	0.018
6600	0.014
6660	0.012
6720	0.01
6780	0.008
6840	0.011
6900	0.009
6960	0.01
7020	0.021
7080	0.008
7140	0.012
7200	0.011
7260	0.009

7320	0.008
7380	0.009
7440	0.012
7500	0.01
7560	0.01
7620	0.009
7680	0.009
7740	0.008
7800	0.008
7860	0.008
7920	0.008
7980	0.008
8040	0.008
8100	0.007
8160	0.007
8220	0.007
8280	0.007
8340	0.008
8400	0.008
8460	0.008
8520	0.008
8580	0.009
8640	0.008
8700	0.009
8760	0.009
8820	0.009
8880	0.009
8940	0.01
9000	0.009
9060	0.01
9120	0.009
9180	0.009
9240	0.009
9300	0.01
9360	0.011
9420	0.009
9480	0.01
9540	0.009
9600	0.009
9660	0.009
9720	0.009
9780	0.009
9840	0.009
9900	0.01
9960	0.01
10020	0.009
10080	0.009

10140	0.009
10200	0.01
10260	0.009
10320	0.009
10380	0.01
10440	0.009
10500	0.009
10560	0.009
10620	0.009
10680	0.009
10740	0.009
10800	0.009
10860	0.009
10920	0.011
10980	0.009
11040	0.008
11100	0.009
11160	0.008
11220	0.009
11280	0.009
11340	0.009
11400	0.009
11460	0.009
11520	0.009
11580	0.008
11640	0.008
11700	0.008
11760	0.008
11820	0.008
11880	0.008
11940	0.007
12000	0.007
12060	0.007
12120	0.01
12180	0.008
12240	0.007
12300	0.007
12360	0.007
12420	0.006
12480	0.007
12540	0.01
12600	0.009
12660	0.008
12720	0.009
12780	0.009
12840	0.008
12900	0.009

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13500	0.02
13560	0.024
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13680	0.017
13740	0.013
13800	0.011
13860	0.012
13920	0.011
13980	0.258
14040	0.096
14100	0.034
14160	0.009
14220	0.008
14280	0.009
14340	0.008
14400	0.009
14460	0.009
14520	0.01
14580	0.008
14640	0.008
14700	0.011
14760	0.009
14820	0.009
14880	0.009
14940	0.008
15000	0.006
15060	0.006
15120	0.006
15180	0.006
15240	0.006
15300	0.006
15360	0.005
15420	0.005
15480	0.005
15540	0.005
15600	0.005
15660	0.006
15720	0.005

15780	0.006
15840	0.006
15900	0.005
15960	0.005
16020	0.007
16080	0.006
16140	0.005
16200	0.006
16260	0.005
16320	0.437
16380	0.023
16440	0.051
16500	0.027
16560	0.006
16620	0.006
16680	0.006
16740	0.006
16800	0.007
16860	0.007
16920	0.007
16980	0.006
17040	0.006
17100	0.006

Instrument Name	DustTrak II
Model Number	8530
Serial Number	8530151709
Firmware Version	3.1
Calibration Date	8/9/2023
Test Name	DOWNWIND1_003
Test Start Time	7:46:34 AM
Test Start Date	1/19/2024
Test Length [D:H:M]	0:02:19
Test Interval [M:S]	1:00
Mass Average [mg/m3]	0.063
Mass Minimum [mg/m3]	0.053
Mass Maximum [mg/m3]	0.092
Mass TWA [mg/m3]	0.063
Photometric User Cal	1
Flow User Cal	0
Errors	
Number of Samples	158

Elapsed Time [s]	Mass [mg/m3]	Alarms	Errors
60	0.092		
120	0.062		
180	0.062		
240	0.062		
300	0.062		
360	0.062		
420	0.062		
480	0.063		
540	0.063		
600	0.065		
660	0.064		
720	0.066		
780	0.068		
840	0.069		
900	0.072		
960	0.068		
1020	0.069		
1080	0.068		
1140	0.067		
1200	0.068		
1260	0.073		
1320	0.072		
1380	0.07		
1440	0.069		
1500	0.07		
1560	0.07		
1620	0.069		

1680	0.069
1740	0.068
1800	0.07
1860	0.068
1920	0.069
1980	0.072
2040	0.07
2100	0.07
2160	0.071
2220	0.072
2280	0.072
2340	0.073
2400	0.071
2460	0.073
2520	0.073
2580	0.072
2640	0.073
2700	0.073
2760	0.072
2820	0.072
2880	0.072
2940	0.072
3000	0.072
3060	0.072
3120	0.073
3180	0.072
3240	0.072
3300	0.072
3360	0.072
3420	0.072
3480	0.073
3540	0.075
3600	0.074
3660	0.073
3720	0.08
3780	0.072
3840	0.074
3900	0.073
3960	0.072
4020	0.073
4080	0.073
4140	0.072
4200	0.073
4260	0.072
4320	0.071
4380	0.068
4440	0.062

4500	0.059
4560	0.058
4620	0.057
4680	0.055
4740	0.054
4800	0.053
4860	0.053
4920	0.053
4980	0.053
5040	0.053
5100	0.053
5160	0.053
5220	0.053
5280	0.053
5340	0.053
5400	0.053
5460	0.054
5520	0.054
5580	0.054
5640	0.054
5700	0.054
5760	0.054
5820	0.055
5880	0.054
5940	0.054
6000	0.053
6060	0.055
6120	0.055
6180	0.055
6240	0.054
6300	0.055
6360	0.055
6420	0.055
6480	0.056
6540	0.055
6600	0.054
6660	0.054
6720	0.054
6780	0.055
6840	0.055
6900	0.055
6960	0.055
7020	0.055
7080	0.055
7140	0.056
7200	0.055
7260	0.055

7320	0.056
7380	0.056
7440	0.057
7500	0.057
7560	0.057
7620	0.058
7680	0.059
7740	0.058
7800	0.058
7860	0.056
7920	0.056
7980	0.057
8040	0.057
8100	0.057
8160	0.057
8220	0.057
8280	0.058
8340	0.058
8400	0.059
8460	0.059
8520	0.059
8580	0.059
8640	0.059
8700	0.059
8760	0.059
8820	0.059
8880	0.06
8940	0.06
9000	0.06
9060	0.059
9120	0.059
9180	0.06
9240	0.061
9300	0.06
9360	0.06
9420	0.06
9480	0.06

Instrument Name	DustTrak II
Model Number	8530
Serial Number	8530151709
Firmware Version	3.1
Calibration Date	8/9/2023
Test Name	DOWNWIND1_004
Test Start Time	10:41:34 AM
Test Start Date	1/22/2024
Test Length [D:H:M]	0:03:58
Test Interval [M:S]	1:00
Mass Average [mg/m3]	0.012
Mass Minimum [mg/m3]	0.005
Mass Maximum [mg/m3]	0.258
Mass TWA [mg/m3]	0.011
Photometric User Cal	1
Flow User Cal	0
Errors	
Number of Samples	285

Elapsed Time [s]	Mass [mg/m3]	Alarms	Errors
60	0.088		
120	0.007		
180	0.007		
240	0.008		
300	0.015		
360	0.011		
420	0.009		
480	0.008		
540	0.008		
600	0.009		
660	0.009		
720	0.01		
780	0.008		
840	0.008		
900	0.008		
960	0.008		
1020	0.008		
1080	0.008		
1140	0.008		
1200	0.01		
1260	0.011		
1320	0.008		
1380	0.013		
1440	0.009		
1500	0.008		
1560	0.007		
1620	0.009		

1680	0.013
1740	0.009
1800	0.009
1860	0.009
1920	0.009
1980	0.011
2040	0.011
2100	0.01
2160	0.01
2220	0.013
2280	0.01
2340	0.009
2400	0.01
2460	0.012
2520	0.013
2580	0.009
2640	0.009
2700	0.011
2760	0.01
2820	0.013
2880	0.009
2940	0.009
3000	0.009
3060	0.01
3120	0.015
3180	0.01
3240	0.01
3300	0.01
3360	0.011
3420	0.01
3480	0.011
3540	0.01
3600	0.011
3660	0.011
3720	0.011
3780	0.012
3840	0.011
3900	0.011
3960	0.01
4020	0.01
4080	0.01
4140	0.011
4200	0.011
4260	0.011
4320	0.01
4380	0.01
4440	0.011

4500	0.01
4560	0.009
4620	0.008
4680	0.008
4740	0.008
4800	0.008
4860	0.008
4920	0.009
4980	0.008
5040	0.009
5100	0.009
5160	0.009
5220	0.008
5280	0.009
5340	0.012
5400	0.042
5460	0.014
5520	0.012
5580	0.01
5640	0.012
5700	0.015
5760	0.011
5820	0.012
5880	0.01
5940	0.012
6000	0.011
6060	0.009
6120	0.008
6180	0.009
6240	0.01
6300	0.015
6360	0.01
6420	0.01
6480	0.014
6540	0.018
6600	0.014
6660	0.012
6720	0.01
6780	0.008
6840	0.011
6900	0.009
6960	0.01
7020	0.021
7080	0.008
7140	0.012
7200	0.011
7260	0.009

7320	0.008
7380	0.009
7440	0.012
7500	0.01
7560	0.01
7620	0.009
7680	0.009
7740	0.008
7800	0.008
7860	0.008
7920	0.008
7980	0.008
8040	0.008
8100	0.007
8160	0.007
8220	0.007
8280	0.007
8340	0.008
8400	0.008
8460	0.008
8520	0.008
8580	0.009
8640	0.008
8700	0.009
8760	0.009
8820	0.009
8880	0.009
8940	0.01
9000	0.009
9060	0.01
9120	0.009
9180	0.009
9240	0.009
9300	0.01
9360	0.011
9420	0.009
9480	0.01
9540	0.009
9600	0.009
9660	0.009
9720	0.009
9780	0.009
9840	0.009
9900	0.01
9960	0.01
10020	0.009
10080	0.009

10140	0.009
10200	0.01
10260	0.009
10320	0.009
10380	0.01
10440	0.009
10500	0.009
10560	0.009
10620	0.009
10680	0.009
10740	0.009
10800	0.009
10860	0.009
10920	0.011
10980	0.009
11040	0.008
11100	0.009
11160	0.008
11220	0.009
11280	0.009
11340	0.009
11400	0.009
11460	0.009
11520	0.009
11580	0.008
11640	0.008
11700	0.008
11760	0.008
11820	0.008
11880	0.008
11940	0.007
12000	0.007
12060	0.007
12120	0.01
12180	0.008
12240	0.007
12300	0.007
12360	0.007
12420	0.006
12480	0.007
12540	0.01
12600	0.009
12660	0.008
12720	0.009
12780	0.009
12840	0.008
12900	0.009

12960	0.009
13020	0.009
13080	0.01
13140	0.01
13200	0.009
13260	0.009
13320	0.009
13380	0.009
13440	0.015
13500	0.02
13560	0.024
13620	0.018
13680	0.017
13740	0.013
13800	0.011
13860	0.012
13920	0.011
13980	0.258
14040	0.096
14100	0.034
14160	0.009
14220	0.008
14280	0.009

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24/01/17 12:19
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Summary

Unit Name	MiniRAE 3000(PGM-7320)
Unit SN	592-925658
Unit Firmware Ver	V2.22A

Running Mode	Hygiene Mode
Datalog Mode	Auto
Diagnostic Mode	No
Stop Reason	Power Down

Site ID	RAE00000
User ID	USER0000

Begin	1/17/2024 12:19
End	1/17/2024 13:47
Sample Period(s)	60
Number of Records	88

Sensor	PID(ppm)
Sensor SN	S023030153V8
Measure Type	Min; Avg; Max
Span	100
Span 2	1000
Low Alarm	50
High Alarm	100
Over Alarm	15000
STEL Alarm	25
TWA Alarm	10
Measurement Gas	Isobutylene
Calibration Time	1/4/2024 10:17
Peak	N/A
Min	N/A
Average	N/A

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Datalog

Index	Date/Time
1	1/17/2024 12:20
2	1/17/2024 12:21
3	1/17/2024 12:22
4	1/17/2024 12:23
5	1/17/2024 12:24

6	1/17/2024 12:25
7	1/17/2024 12:26
8	1/17/2024 12:27
9	1/17/2024 12:28
10	1/17/2024 12:29
11	1/17/2024 12:30
12	1/17/2024 12:31
13	1/17/2024 12:32
14	1/17/2024 12:33
15	1/17/2024 12:34
16	1/17/2024 12:35
17	1/17/2024 12:36
18	1/17/2024 12:37
19	1/17/2024 12:38
20	1/17/2024 12:39
21	1/17/2024 12:40
22	1/17/2024 12:41
23	1/17/2024 12:42
24	1/17/2024 12:43
25	1/17/2024 12:44
26	1/17/2024 12:45
27	1/17/2024 12:46
28	1/17/2024 12:47
29	1/17/2024 12:48
30	1/17/2024 12:49
31	1/17/2024 12:50
32	1/17/2024 12:51
33	1/17/2024 12:52
34	1/17/2024 12:53
35	1/17/2024 12:54
36	1/17/2024 12:55
37	1/17/2024 12:56
38	1/17/2024 12:57
39	1/17/2024 12:58
40	1/17/2024 12:59
41	1/17/2024 13:00
42	1/17/2024 13:01
43	1/17/2024 13:02
44	1/17/2024 13:03
45	1/17/2024 13:04
46	1/17/2024 13:05
47	1/17/2024 13:06
48	1/17/2024 13:07
49	1/17/2024 13:08
50	1/17/2024 13:09
51	1/17/2024 13:10
52	1/17/2024 13:11

53	1/17/2024 13:12
54	1/17/2024 13:13
55	1/17/2024 13:14
56	1/17/2024 13:15
57	1/17/2024 13:16
58	1/17/2024 13:17
59	1/17/2024 13:18
60	1/17/2024 13:19
61	1/17/2024 13:20
62	1/17/2024 13:21
63	1/17/2024 13:22
64	1/17/2024 13:23
65	1/17/2024 13:24
66	1/17/2024 13:25
67	1/17/2024 13:26
68	1/17/2024 13:27
69	1/17/2024 13:28
70	1/17/2024 13:29
71	1/17/2024 13:30
72	1/17/2024 13:31
73	1/17/2024 13:32
74	1/17/2024 13:33
75	1/17/2024 13:34
76	1/17/2024 13:35
77	1/17/2024 13:36
78	1/17/2024 13:37
79	1/17/2024 13:38
80	1/17/2024 13:39
81	1/17/2024 13:40
82	1/17/2024 13:41
83	1/17/2024 13:42
84	1/17/2024 13:43
85	1/17/2024 13:44
86	1/17/2024 13:45
87	1/17/2024 13:46
88	1/17/2024 13:47

Peak
Min
Average

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24/01/18 10:28

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Summary

Unit Name	MiniRAE 3000(PGM-7320)
Unit SN	592-925658

Unit Firmware Ver	V2.22A

Running Mode	Hygiene Mode
Datalog Mode	Auto
Diagnostic Mode	No
Stop Reason	Pause in Menu Mode

Site ID	RAE00000
User ID	USER0000

Begin	1/18/2024 10:28
End	1/18/2024 15:13
Sample Period(s)	60
Number of Records	285

Sensor	PID(ppm)
Sensor SN	S023030153V8
Measure Type	Min; Avg; Max
Span	100
Span 2	1000
Low Alarm	50
High Alarm	100
Over Alarm	15000
STEL Alarm	25
TWA Alarm	10
Measurement Gas	Isobutylene
Calibration Time	1/4/2024 10:17
Peak	N/A
Min	N/A
Average	N/A

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Datalog

Index	Date/Time
1	1/18/2024 10:29
2	1/18/2024 10:30
3	1/18/2024 10:31
4	1/18/2024 10:32
5	1/18/2024 10:33
6	1/18/2024 10:34
7	1/18/2024 10:35
8	1/18/2024 10:36
9	1/18/2024 10:37
10	1/18/2024 10:38
11	1/18/2024 10:39
12	1/18/2024 10:40

13	1/18/2024 10:41
14	1/18/2024 10:42
15	1/18/2024 10:43
16	1/18/2024 10:44
17	1/18/2024 10:45
18	1/18/2024 10:46
19	1/18/2024 10:47
20	1/18/2024 10:48
21	1/18/2024 10:49
22	1/18/2024 10:50
23	1/18/2024 10:51
24	1/18/2024 10:52
25	1/18/2024 10:53
26	1/18/2024 10:54
27	1/18/2024 10:55
28	1/18/2024 10:56
29	1/18/2024 10:57
30	1/18/2024 10:58
31	1/18/2024 10:59
32	1/18/2024 11:00
33	1/18/2024 11:01
34	1/18/2024 11:02
35	1/18/2024 11:03
36	1/18/2024 11:04
37	1/18/2024 11:05
38	1/18/2024 11:06
39	1/18/2024 11:07
40	1/18/2024 11:08
41	1/18/2024 11:09
42	1/18/2024 11:10
43	1/18/2024 11:11
44	1/18/2024 11:12
45	1/18/2024 11:13
46	1/18/2024 11:14
47	1/18/2024 11:15
48	1/18/2024 11:16
49	1/18/2024 11:17
50	1/18/2024 11:18
51	1/18/2024 11:19
52	1/18/2024 11:20
53	1/18/2024 11:21
54	1/18/2024 11:22
55	1/18/2024 11:23
56	1/18/2024 11:24
57	1/18/2024 11:25
58	1/18/2024 11:26
59	1/18/2024 11:27

60	1/18/2024 11:28
61	1/18/2024 11:29
62	1/18/2024 11:30
63	1/18/2024 11:31
64	1/18/2024 11:32
65	1/18/2024 11:33
66	1/18/2024 11:34
67	1/18/2024 11:35
68	1/18/2024 11:36
69	1/18/2024 11:37
70	1/18/2024 11:38
71	1/18/2024 11:39
72	1/18/2024 11:40
73	1/18/2024 11:41
74	1/18/2024 11:42
75	1/18/2024 11:43
76	1/18/2024 11:44
77	1/18/2024 11:45
78	1/18/2024 11:46
79	1/18/2024 11:47
80	1/18/2024 11:48
81	1/18/2024 11:49
82	1/18/2024 11:50
83	1/18/2024 11:51
84	1/18/2024 11:52
85	1/18/2024 11:53
86	1/18/2024 11:54
87	1/18/2024 11:55
88	1/18/2024 11:56
89	1/18/2024 11:57
90	1/18/2024 11:58
91	1/18/2024 11:59
92	1/18/2024 12:00
93	1/18/2024 12:01
94	1/18/2024 12:02
95	1/18/2024 12:03
96	1/18/2024 12:04
97	1/18/2024 12:05
98	1/18/2024 12:06
99	1/18/2024 12:07
100	1/18/2024 12:08
101	1/18/2024 12:09
102	1/18/2024 12:10
103	1/18/2024 12:11
104	1/18/2024 12:12
105	1/18/2024 12:13
106	1/18/2024 12:14

107	1/18/2024 12:15
108	1/18/2024 12:16
109	1/18/2024 12:17
110	1/18/2024 12:18
111	1/18/2024 12:19
112	1/18/2024 12:20
113	1/18/2024 12:21
114	1/18/2024 12:22
115	1/18/2024 12:23
116	1/18/2024 12:24
117	1/18/2024 12:25
118	1/18/2024 12:26
119	1/18/2024 12:27
120	1/18/2024 12:28
121	1/18/2024 12:29
122	1/18/2024 12:30
123	1/18/2024 12:31
124	1/18/2024 12:32
125	1/18/2024 12:33
126	1/18/2024 12:34
127	1/18/2024 12:35
128	1/18/2024 12:36
129	1/18/2024 12:37
130	1/18/2024 12:38
131	1/18/2024 12:39
132	1/18/2024 12:40
133	1/18/2024 12:41
134	1/18/2024 12:42
135	1/18/2024 12:43
136	1/18/2024 12:44
137	1/18/2024 12:45
138	1/18/2024 12:46
139	1/18/2024 12:47
140	1/18/2024 12:48
141	1/18/2024 12:49
142	1/18/2024 12:50
143	1/18/2024 12:51
144	1/18/2024 12:52
145	1/18/2024 12:53
146	1/18/2024 12:54
147	1/18/2024 12:55
148	1/18/2024 12:56
149	1/18/2024 12:57
150	1/18/2024 12:58
151	1/18/2024 12:59
152	1/18/2024 13:00
153	1/18/2024 13:01

154	1/18/2024 13:02
155	1/18/2024 13:03
156	1/18/2024 13:04
157	1/18/2024 13:05
158	1/18/2024 13:06
159	1/18/2024 13:07
160	1/18/2024 13:08
161	1/18/2024 13:09
162	1/18/2024 13:10
163	1/18/2024 13:11
164	1/18/2024 13:12
165	1/18/2024 13:13
166	1/18/2024 13:14
167	1/18/2024 13:15
168	1/18/2024 13:16
169	1/18/2024 13:17
170	1/18/2024 13:18
171	1/18/2024 13:19
172	1/18/2024 13:20
173	1/18/2024 13:21
174	1/18/2024 13:22
175	1/18/2024 13:23
176	1/18/2024 13:24
177	1/18/2024 13:25
178	1/18/2024 13:26
179	1/18/2024 13:27
180	1/18/2024 13:28
181	1/18/2024 13:29
182	1/18/2024 13:30
183	1/18/2024 13:31
184	1/18/2024 13:32
185	1/18/2024 13:33
186	1/18/2024 13:34
187	1/18/2024 13:35
188	1/18/2024 13:36
189	1/18/2024 13:37
190	1/18/2024 13:38
191	1/18/2024 13:39
192	1/18/2024 13:40
193	1/18/2024 13:41
194	1/18/2024 13:42
195	1/18/2024 13:43
196	1/18/2024 13:44
197	1/18/2024 13:45
198	1/18/2024 13:46
199	1/18/2024 13:47
200	1/18/2024 13:48

201	1/18/2024 13:49
202	1/18/2024 13:50
203	1/18/2024 13:51
204	1/18/2024 13:52
205	1/18/2024 13:53
206	1/18/2024 13:54
207	1/18/2024 13:55
208	1/18/2024 13:56
209	1/18/2024 13:57
210	1/18/2024 13:58
211	1/18/2024 13:59
212	1/18/2024 14:00
213	1/18/2024 14:01
214	1/18/2024 14:02
215	1/18/2024 14:03
216	1/18/2024 14:04
217	1/18/2024 14:05
218	1/18/2024 14:06
219	1/18/2024 14:07
220	1/18/2024 14:08
221	1/18/2024 14:09
222	1/18/2024 14:10
223	1/18/2024 14:11
224	1/18/2024 14:12
225	1/18/2024 14:13
226	1/18/2024 14:14
227	1/18/2024 14:15
228	1/18/2024 14:16
229	1/18/2024 14:17
230	1/18/2024 14:18
231	1/18/2024 14:19
232	1/18/2024 14:20
233	1/18/2024 14:21
234	1/18/2024 14:22
235	1/18/2024 14:23
236	1/18/2024 14:24
237	1/18/2024 14:25
238	1/18/2024 14:26
239	1/18/2024 14:27
240	1/18/2024 14:28
241	1/18/2024 14:29
242	1/18/2024 14:30
243	1/18/2024 14:31
244	1/18/2024 14:32
245	1/18/2024 14:33
246	1/18/2024 14:34
247	1/18/2024 14:35

248	1/18/2024 14:36
249	1/18/2024 14:37
250	1/18/2024 14:38
251	1/18/2024 14:39
252	1/18/2024 14:40
253	1/18/2024 14:41
254	1/18/2024 14:42
255	1/18/2024 14:43
256	1/18/2024 14:44
257	1/18/2024 14:45
258	1/18/2024 14:46
259	1/18/2024 14:47
260	1/18/2024 14:48
261	1/18/2024 14:49
262	1/18/2024 14:50
263	1/18/2024 14:51
264	1/18/2024 14:52
265	1/18/2024 14:53
266	1/18/2024 14:54
267	1/18/2024 14:55
268	1/18/2024 14:56
269	1/18/2024 14:57
270	1/18/2024 14:58
271	1/18/2024 14:59
272	1/18/2024 15:00
273	1/18/2024 15:01
274	1/18/2024 15:02
275	1/18/2024 15:03
276	1/18/2024 15:04
277	1/18/2024 15:05
278	1/18/2024 15:06
279	1/18/2024 15:07
280	1/18/2024 15:08
281	1/18/2024 15:09
282	1/18/2024 15:10
283	1/18/2024 15:11
284	1/18/2024 15:12
285	1/18/2024 15:13

Peak
Min
Average

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24/01/18 15:14

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Summary

Unit Name	MiniRAE 3000(PGM-7320)
Unit SN	592-925658
Unit Firmware Ver	V2.22A

Running Mode	Hygiene Mode
Datalog Mode	Auto
Diagnostic Mode	No
Stop Reason	Power Down

Site ID	RAE00000
User ID	USER0000

Begin	1/18/2024 15:14
End	1/18/2024 15:16
Sample Period(s)	60
Number of Records	2

Sensor	PID(ppm)
Sensor SN	S023030153V8
Measure Type	Min; Avg; Max
Span	100
Span 2	1000
Low Alarm	50
High Alarm	100
Over Alarm	15000
STEL Alarm	25
TWA Alarm	10
Measurement Gas	Isobutylene
Calibration Time	1/4/2024 10:17
Peak	N/A
Min	N/A
Average	N/A

****

Datalog

Index	Date/Time
1	1/18/2024 15:15
2	1/18/2024 15:16

Peak
Min
Average

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24/01/19 07:46

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Summary

Unit Name	MiniRAE 3000(PGM-7320)
Unit SN	592-925658
Unit Firmware Ver	V2.22A

Running Mode	Hygiene Mode
Datalog Mode	Auto
Diagnostic Mode	No
Stop Reason	Power Down

Site ID	RAE00000
User ID	USER0000

Begin	1/19/2024 7:46
End	1/19/2024 10:05
Sample Period(s)	60
Number of Records	138

Sensor	PID(ppm)
Sensor SN	S023030153V8
Measure Type	Min; Avg; Max
Span	100
Span 2	1000
Low Alarm	50
High Alarm	100
Over Alarm	15000
STEL Alarm	25
TWA Alarm	10
Measurement Gas	Isobutylene
Calibration Time	1/4/2024 10:17
Peak	N/A
Min	N/A
Average	N/A

****

Datalog

Index	Date/Time
1	1/19/2024 7:47
2	1/19/2024 7:48
3	1/19/2024 7:49
4	1/19/2024 7:50
5	1/19/2024 7:51
6	1/19/2024 7:52
7	1/19/2024 7:53
8	1/19/2024 7:54
9	1/19/2024 7:55

10	1/19/2024 7:56
11	1/19/2024 7:57
12	1/19/2024 7:58
13	1/19/2024 7:59
14	1/19/2024 8:00
15	1/19/2024 8:01
16	1/19/2024 8:02
17	1/19/2024 8:03
18	1/19/2024 8:04
19	1/19/2024 8:05
20	1/19/2024 8:06
21	1/19/2024 8:07
22	1/19/2024 8:08
23	1/19/2024 8:09
24	1/19/2024 8:10
25	1/19/2024 8:11
26	1/19/2024 8:12
27	1/19/2024 8:13
28	1/19/2024 8:14
29	1/19/2024 8:15
30	1/19/2024 8:16
31	1/19/2024 8:17
32	1/19/2024 8:18
33	1/19/2024 8:19
34	1/19/2024 8:20
35	1/19/2024 8:21
36	1/19/2024 8:22
37	1/19/2024 8:23
38	1/19/2024 8:24
39	1/19/2024 8:25
40	1/19/2024 8:26
41	1/19/2024 8:27
42	1/19/2024 8:28
43	1/19/2024 8:29
44	1/19/2024 8:30
45	1/19/2024 8:31
46	1/19/2024 8:32
47	1/19/2024 8:33
48	1/19/2024 8:34
49	1/19/2024 8:35
50	1/19/2024 8:36
51	1/19/2024 8:37
52	1/19/2024 8:38
53	1/19/2024 8:39
54	1/19/2024 8:40
55	1/19/2024 8:41
56	1/19/2024 8:42

57	1/19/2024 8:43
58	1/19/2024 8:44
59	1/19/2024 8:45
60	1/19/2024 8:46
61	1/19/2024 8:47
62	1/19/2024 8:48
63	1/19/2024 8:49
64	1/19/2024 8:50
65	1/19/2024 8:51
66	1/19/2024 8:52
67	1/19/2024 8:53
68	1/19/2024 8:54
69	1/19/2024 8:55
70	1/19/2024 8:56
71	1/19/2024 8:57
72	1/19/2024 8:58
73	1/19/2024 8:59
74	1/19/2024 9:00
75	1/19/2024 9:01
76	1/19/2024 9:02
77	1/19/2024 9:03
78	1/19/2024 9:04
79	1/19/2024 9:05
80	1/19/2024 9:06
81	1/19/2024 9:07
82	1/19/2024 9:08
83	1/19/2024 9:09
84	1/19/2024 9:10
85	1/19/2024 9:11
86	1/19/2024 9:12
87	1/19/2024 9:13
88	1/19/2024 9:14
89	1/19/2024 9:15
90	1/19/2024 9:16
91	1/19/2024 9:17
92	1/19/2024 9:18
93	1/19/2024 9:19
94	1/19/2024 9:20
95	1/19/2024 9:21
96	1/19/2024 9:22
97	1/19/2024 9:23
98	1/19/2024 9:24
99	1/19/2024 9:25
100	1/19/2024 9:26
101	1/19/2024 9:27
102	1/19/2024 9:28
103	1/19/2024 9:29

104	1/19/2024 9:30
105	1/19/2024 9:31
106	1/19/2024 9:32
107	1/19/2024 9:33
108	1/19/2024 9:34
109	1/19/2024 9:35
110	1/19/2024 9:36
111	1/19/2024 9:37
112	1/19/2024 9:38
113	1/19/2024 9:39
114	1/19/2024 9:40
115	1/19/2024 9:41
116	1/19/2024 9:42
117	1/19/2024 9:43
118	1/19/2024 9:44
119	1/19/2024 9:45
120	1/19/2024 9:46
121	1/19/2024 9:47
122	1/19/2024 9:48
123	1/19/2024 9:49
124	1/19/2024 9:50
125	1/19/2024 9:51
126	1/19/2024 9:52
127	1/19/2024 9:53
128	1/19/2024 9:54
129	1/19/2024 9:55
130	1/19/2024 9:56
131	1/19/2024 9:57
132	1/19/2024 9:58
133	1/19/2024 9:59
134	1/19/2024 10:00
135	1/19/2024 10:01
136	1/19/2024 10:02
137	1/19/2024 10:03
138	1/19/2024 10:04

Peak
Min
Average

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24/01/22 10:41

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Summary

Unit Name	MiniRAE 3000(PGM-7320)
Unit SN	592-925658
Unit Firmware Ver	V2.22A

Running Mode	Hygiene Mode
Datalog Mode	Auto
Diagnostic Mode	No
Stop Reason	Battery Low

Site ID	RAE00000
User ID	USER0000

Begin	1/22/2024 10:41
End	1/22/2024 14:39
Sample Period(s)	60
Number of Records	238

Sensor	PID(ppm)
Sensor SN	S023030153V8
Measure Type	Min; Avg; Max
Span	100
Span 2	1000
Low Alarm	50
High Alarm	100
Over Alarm	15000
STEL Alarm	25
TWA Alarm	10
Measurement Gas	Isobutylene
Calibration Time	1/4/2024 10:17
Peak	N/A
Min	N/A
Average	N/A

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Datalog

Index	Date/Time
1	1/22/2024 10:42
2	1/22/2024 10:43
3	1/22/2024 10:44
4	1/22/2024 10:45
5	1/22/2024 10:46
6	1/22/2024 10:47
7	1/22/2024 10:48
8	1/22/2024 10:49
9	1/22/2024 10:50
10	1/22/2024 10:51
11	1/22/2024 10:52
12	1/22/2024 10:53
13	1/22/2024 10:54

14	1/22/2024 10:55
15	1/22/2024 10:56
16	1/22/2024 10:57
17	1/22/2024 10:58
18	1/22/2024 10:59
19	1/22/2024 11:00
20	1/22/2024 11:01
21	1/22/2024 11:02
22	1/22/2024 11:03
23	1/22/2024 11:04
24	1/22/2024 11:05
25	1/22/2024 11:06
26	1/22/2024 11:07
27	1/22/2024 11:08
28	1/22/2024 11:09
29	1/22/2024 11:10
30	1/22/2024 11:11
31	1/22/2024 11:12
32	1/22/2024 11:13
33	1/22/2024 11:14
34	1/22/2024 11:15
35	1/22/2024 11:16
36	1/22/2024 11:17
37	1/22/2024 11:18
38	1/22/2024 11:19
39	1/22/2024 11:20
40	1/22/2024 11:21
41	1/22/2024 11:22
42	1/22/2024 11:23
43	1/22/2024 11:24
44	1/22/2024 11:25
45	1/22/2024 11:26
46	1/22/2024 11:27
47	1/22/2024 11:28
48	1/22/2024 11:29
49	1/22/2024 11:30
50	1/22/2024 11:31
51	1/22/2024 11:32
52	1/22/2024 11:33
53	1/22/2024 11:34
54	1/22/2024 11:35
55	1/22/2024 11:36
56	1/22/2024 11:37
57	1/22/2024 11:38
58	1/22/2024 11:39
59	1/22/2024 11:40
60	1/22/2024 11:41

61	1/22/2024 11:42
62	1/22/2024 11:43
63	1/22/2024 11:44
64	1/22/2024 11:45
65	1/22/2024 11:46
66	1/22/2024 11:47
67	1/22/2024 11:48
68	1/22/2024 11:49
69	1/22/2024 11:50
70	1/22/2024 11:51
71	1/22/2024 11:52
72	1/22/2024 11:53
73	1/22/2024 11:54
74	1/22/2024 11:55
75	1/22/2024 11:56
76	1/22/2024 11:57
77	1/22/2024 11:58
78	1/22/2024 11:59
79	1/22/2024 12:00
80	1/22/2024 12:01
81	1/22/2024 12:02
82	1/22/2024 12:03
83	1/22/2024 12:04
84	1/22/2024 12:05
85	1/22/2024 12:06
86	1/22/2024 12:07
87	1/22/2024 12:08
88	1/22/2024 12:09
89	1/22/2024 12:10
90	1/22/2024 12:11
91	1/22/2024 12:12
92	1/22/2024 12:13
93	1/22/2024 12:14
94	1/22/2024 12:15
95	1/22/2024 12:16
96	1/22/2024 12:17
97	1/22/2024 12:18
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100	1/22/2024 12:21
101	1/22/2024 12:22
102	1/22/2024 12:23
103	1/22/2024 12:24
104	1/22/2024 12:25
105	1/22/2024 12:26
106	1/22/2024 12:27
107	1/22/2024 12:28

108	1/22/2024 12:29
109	1/22/2024 12:30
110	1/22/2024 12:31
111	1/22/2024 12:32
112	1/22/2024 12:33
113	1/22/2024 12:34
114	1/22/2024 12:35
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121	1/22/2024 12:42
122	1/22/2024 12:43
123	1/22/2024 12:44
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131	1/22/2024 12:52
132	1/22/2024 12:53
133	1/22/2024 12:54
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135	1/22/2024 12:56
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137	1/22/2024 12:58
138	1/22/2024 12:59
139	1/22/2024 13:00
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141	1/22/2024 13:02
142	1/22/2024 13:03
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145	1/22/2024 13:06
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147	1/22/2024 13:08
148	1/22/2024 13:09
149	1/22/2024 13:10
150	1/22/2024 13:11
151	1/22/2024 13:12
152	1/22/2024 13:13
153	1/22/2024 13:14
154	1/22/2024 13:15

155	1/22/2024 13:16
156	1/22/2024 13:17
157	1/22/2024 13:18
158	1/22/2024 13:19
159	1/22/2024 13:20
160	1/22/2024 13:21
161	1/22/2024 13:22
162	1/22/2024 13:23
163	1/22/2024 13:24
164	1/22/2024 13:25
165	1/22/2024 13:26
166	1/22/2024 13:27
167	1/22/2024 13:28
168	1/22/2024 13:29
169	1/22/2024 13:30
170	1/22/2024 13:31
171	1/22/2024 13:32
172	1/22/2024 13:33
173	1/22/2024 13:34
174	1/22/2024 13:35
175	1/22/2024 13:36
176	1/22/2024 13:37
177	1/22/2024 13:38
178	1/22/2024 13:39
179	1/22/2024 13:40
180	1/22/2024 13:41
181	1/22/2024 13:42
182	1/22/2024 13:43
183	1/22/2024 13:44
184	1/22/2024 13:45
185	1/22/2024 13:46
186	1/22/2024 13:47
187	1/22/2024 13:48
188	1/22/2024 13:49
189	1/22/2024 13:50
190	1/22/2024 13:51
191	1/22/2024 13:52
192	1/22/2024 13:53
193	1/22/2024 13:54
194	1/22/2024 13:55
195	1/22/2024 13:56
196	1/22/2024 13:57
197	1/22/2024 13:58
198	1/22/2024 13:59
199	1/22/2024 14:00
200	1/22/2024 14:01
201	1/22/2024 14:02

202	1/22/2024 14:03
203	1/22/2024 14:04
204	1/22/2024 14:05
205	1/22/2024 14:06
206	1/22/2024 14:07
207	1/22/2024 14:08
208	1/22/2024 14:09
209	1/22/2024 14:10
210	1/22/2024 14:11
211	1/22/2024 14:12
212	1/22/2024 14:13
213	1/22/2024 14:14
214	1/22/2024 14:15
215	1/22/2024 14:16
216	1/22/2024 14:17
217	1/22/2024 14:18
218	1/22/2024 14:19
219	1/22/2024 14:20
220	1/22/2024 14:21
221	1/22/2024 14:22
222	1/22/2024 14:23
223	1/22/2024 14:24
224	1/22/2024 14:25
225	1/22/2024 14:26
226	1/22/2024 14:27
227	1/22/2024 14:28
228	1/22/2024 14:29
229	1/22/2024 14:30
230	1/22/2024 14:31
231	1/22/2024 14:32
232	1/22/2024 14:33
233	1/22/2024 14:34
234	1/22/2024 14:35
235	1/22/2024 14:36
236	1/22/2024 14:37
237	1/22/2024 14:38
238	1/22/2024 14:39

Peak
Min
Average

PID(ppm) (Min)	PID(ppm) (Avg)	PID(ppm) (Max)
0.1	0.1	0.2
0	0.1	0.1
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
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0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0.1	0.1	0.2
0	0	0
0	0	0

PID(ppm) (Min)	PID(ppm) (Avg)	PID(ppm) (Max)
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	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	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
0	0	0
0	0	0
0	0	0.2
0	0	0
0	0	0.1
0	0	0
0	0	0
0	0	0.3
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	0	0
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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	0.1	0.3
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	0	0
0	0	0
0	0	0
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0	0	0
0	0	0
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0.1	0.1	0.1
0.1	0.1	0.3
0	0	0
0	0	0

PID(ppm) (Min)	PID(ppm) (Avg)	PID(ppm) (Max)
0	3.1	7.7
0.7	0.7	1
0.7	3.1	7.7
0	0.7	1
0.4	1.9	4.4

PID(ppm) (Min)	PID(ppm) (Avg)	PID(ppm) (Max)
0	0	0
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0	0	0.1
0	0.1	0.1
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Attachment B

Soil Boring Logs

ARCADIS

Soil Boring and Construction Log

Boring No.: B-32

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-17-2024
Date Completed: 01-17-2024
Total Depth: 6.5 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
0					ASPHALT.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	Surface restored to grade with asphalt patch.
					Dark greyish brown fine to medium sub angular GRAVEL, some fine to medium Sand, moist, loose.		
1	B-32 (0-9-1.4)				Very dark greyish brown Silty CLAY, some Anthropogenic (Red Brick, Concrete, Wood, Glass), some to little fine to medium sub angular Gravel, fine to medium Sand, moist, firm, non-plastic. [FILL]		
2		4.0	0.0				
3							Borehole backfilled with bentonite.
4						(4-6 ft) Advanced boring using direct push methods.	
5		2.4	0.0		Dark brown Silty CLAY, little fine sub angular embedded Gravel, moist, stiff, non-plastic becoming slightly plastic.		
6	B-32 (4.9-6.5)						
7					Bottom of borehole at 6.5 feet.		

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig: AMS 9520 VTR Power Probe

Remarks:
Northing and easting provided in U.S. survey feet, referenced to NY State Plane West Zone NAD 83. Elevations are in U.S. survey feet, referenced to the North American Vertical Datum of 1988 (NAVD 1988).

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 652.03 ft
North Coor.: 1067158.23
East Coor.: 1078731.46

ARCADIS

Soil Boring and Construction Log

Boring No.: B-33

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-17-2024
Date Completed: 01-17-2024
Total Depth: 7.5 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
0					ASPHALT.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	
					Dark grey fine to medium sub angular GRAVEL, some fine to medium Sand, moist, loose.		Surface restored to grade with asphalt patch.
1	B-33 (0.0-1.4)				Very dark greyish brown Silty CLAY, some to little Anthropogenic (Red Brick, Concrete, Glass, Wood), little fine sub angular Gravel, moist, firm, non-plastic. [FILL]		
2		4.0	0.0				
3							
4						(4-8 ft) Advanced boring using direct push methods.	Borehole backfilled with bentonite.
5							
6		2.5	0.0		Dark brown Silty CLAY, little fine sub angular embedded Gravel, stiff, moist, non-plastic.		
7	B-33 (6.9-7.5)						
					Bottom of borehole at 7.5 feet.		
8							
9							

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig: AMS 9520 VTR Power Probe

Remarks:
Northing and easting provided in U.S. survey feet, referenced to NY State Plane West Zone NAD 83. Elevations are in U.S. survey feet, referenced to the North American Vertical Datum of 1988 (NAVD 1988).

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 651.81 ft
North Coor.: 1067130.49
East Coor.: 1078733.74

ARCADIS

Soil Boring and Construction Log

Boring No.: B-34

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-19-2024
Date Completed: 01-19-2024
Total Depth: 6.0 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
0					CONCRETE.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	Surface restored to grade with high strength concrete.
1					Dark grey fine to medium sub angular GRAVEL, some fine to medium Sand, moist, loose.		
2	B-34 (1.4-1.9)	4.0	0.0		Very dark greyish brown Silty CLAY, some Anthropogenics (Red Brick, Concrete, Glass), fine to medium sub angular Gravel, little fine to medium Sand, moist, firm, non-plastic. [FILL]		
3							Borehole backfilled with bentonite.
4						(4-6 ft) Advanced boring using direct push methods.	
5		0.7	0.0				
6	B-34 (5.4-6.0)				Dark brown Silty CLAY, little fine sub angular embedded Gravel, moist, stiff, non-plastic.		
7					Bottom of borehole at 6.0 feet.		

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig: AMS 9520 VTR Power Probe

Remarks:
Northing and easting provided in U.S. survey feet, referenced to NY State Plane West Zone NAD 83. Elevations are in U.S. survey feet, referenced to the North American Vertical Datum of 1988 (NAVD 1988).

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 651.91 ft
North Coor.: 1067144.11
East Coor.: 1078717.93

ARCADIS

Soil Boring and Construction Log

Boring No.: B-35

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-22-2024
Date Completed: 01-22-2024
Total Depth: 4.0 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
0					CONCRETE.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	Surface restored to grade with high strength concrete.
1	B-35 (1.0-1.5)	4.0	0.0		Dark greyish brown fine to medium sub angular GRAVEL, some fine to medium Sand, moist, loose. Very dark greyish brown Silty CLAY, some Cobbles, little Anthropogenic (Red Brick, Concrete), little fine to medium sub angular Gravel, moist, firm, non-plastic. [FILL]		
2							Borehole backfilled with bentonite.
3	B-35 (3.0-4.0)						
4					Bottom of borehole at 4.0 feet.		
5							
6							
7							

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig: AMS 9520 VTR Power Probe

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 651.82 ft
North Coor.: 1067206.18
East Coor.: 1078569.89

Remarks:
Northing and easting provided in U.S. survey feet, referenced to NY State Plane West Zone NAD 83. Elevations are in U.S. survey feet, referenced to the North American Vertical Datum of 1988 (NAVD 1988).

ARCADIS

Soil Boring and Construction Log

Boring No.: B-36

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-18-2024
Date Completed: 01-18-2024
Total Depth: 5.0 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
0					CONCRETE.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	Surface restored to grade with high strength concrete.
1					Dark grey fine to medium sub angular GRAVEL, some fine to medium Sand, moist, loose.		
2	B-36 (1.9-2.4)	4.0	0.0		Very dark greyish brown Silty CLAY, some Anthropogenic (Red Brick, Concrete), little fine to medium sub angular Gravel, trace fine Sand, moist, firm, non-plastic. [FILL]		Borehole backfilled with bentonite.
3							
4	B-36 (3.9-5.0)	1.0	0.0		Dark brown Silty CLAY, little fine sub angular embedded Gravel, moist, stiff, non-plastic.	(4-5 ft) Advanced boring using direct push methods.	
5					Bottom of borehole at 5.0 feet.		
6							
7							

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig: AMS 9520 VTR Power Probe

Remarks:
Northing and easting provided in U.S. survey feet, referenced to NY State Plane West Zone NAD 83. Elevations are in U.S. survey feet, referenced to the North American Vertical Datum of 1988 (NAVD 1988).

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 651.91 ft
North Coor.: 1067206.25
East Coor.: 1078599.16

ARCADIS

Soil Boring and Construction Log

Boring No.: B-37

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-18-2024
Date Completed: 01-18-2024
Total Depth: 5.2 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
0					CONCRETE.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	Surface restored to grade with high strength concrete.
1					Dark grey fine to medium sub angular GRAVEL, some fine to medium Sand, moist, loose.		
1	B-37 (1.2-1.7)				Very dark greyish brown Silty CLAY, some Anthropogenic (Red Brick, Concrete, Glass), little fine to medium sub angular Gravel, moist, firm, non-plastic. [FILL]		
2		4.0	0.0				
3							Borehole backfilled with bentonite.
3					Dark brown Silty CLAY, some fine to medium sub angular embedded Gravel, moist, stiff, non-plastic.		
4	B-37 (3.2-5.2)					(4-5 ft) Advanced boring using direct push methods.	
4		1.2	0.0				
5					Bottom of borehole at 5.2 feet.		
6							
7							

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig: AMS 9520 VTR Power Probe

Remarks:
Northing and easting provided in U.S. survey feet, referenced to NY State Plane West Zone NAD 83. Elevations are in U.S. survey feet, referenced to the North American Vertical Datum of 1988 (NAVD 1988).

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 651.85 ft
North Coor.: 1067207.63
East Coor.: 1078637.60

ARCADIS

Soil Boring and Construction Log

Boring No.: B-38

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-18-2024
Date Completed: 01-18-2024
Total Depth: 5.4 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
0					CONCRETE.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	Surface restored to grade with high strength concrete.
1					Dark grey fine to medium sub angular GRAVEL, some fine to medium Sand, moist, loose.		
2	B-38 (1.4-1.9)	4.0	0.0		Very dark greyish brown Silty CLAY, some Anthropogenic (Red Brick, Concrete, Glass, Slag), fine to medium sub angular Gravel, moist, firm, non-plastic. [FILL]		
3							Borehole backfilled with bentonite.
4	B-38 (3.4-5.4)	1.3	0.0			(4-5 ft) Advanced boring using direct push methods.	
5							
6					Bottom of borehole at 5.4 feet.		
7							

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig: AMS 9520 VTR Power Probe

Remarks:
Northing and easting provided in U.S. survey feet, referenced to NY State Plane West Zone NAD 83. Elevations are in U.S. survey feet, referenced to the North American Vertical Datum of 1988 (NAVD 1988).

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 651.94 ft
North Coor.: 1067184.52
East Coor.: 1078635.82

ARCADIS

Soil Boring and Construction Log

Boring No.: B-39

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-18-2024
Date Completed: 01-18-2024
Total Depth: 5.6 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
0					CONCRETE.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	Surface restored to grade with high strength concrete.
1					Dark grey fine to medium sub angular GRAVEL, some medium to fine Sand, moist, loose.		
	B-39 (1.2-1.7)				Very dark greyish brown Silty CLAY, some Anthropogenic (Red Brick, Concrete, Wood, Glass), some to little fine to medium sub angular Gravel, moist, firm to stiff. [FILL]		
2		4.0	0.0				
3							Borehole backfilled with bentonite.
4					Dark brown Silty CLAY, little fine sub angular embedded GRAVEL, moist, stiff, non-plastic to slightly plastic.	(4-6 ft) Advanced boring using direct push methods.	
5		1.6	0.0				
	B-39 (5.2-5.6)						
6					Bottom of borehole at 5.6 feet.		
7							

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig: AMS 9520 VTR Power Probe

Remarks:
Northing and easting provided in U.S. survey feet, referenced to NY State Plane West Zone NAD 83. Elevations are in U.S. survey feet, referenced to the North American Vertical Datum of 1988 (NAVD 1988).

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 651.76 ft
North Coor.: 1067158.14
East Coor.: 1078635.97

ARCADIS

Soil Boring and Construction Log

Boring No.: B-40

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-22-2024
Date Completed: 01-22-2024
Total Depth: 4.8 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
0					CONCRETE.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	Surface restored to grade with high strength concrete.
1					Dark greyish brown fine to medium sub angular GRAVEL, some fine to medium Sand, moist, loose.		
	B-40 (1.2-1.7)				Very dark greyish brown Silty CLAY, some Cobbles, Anthropogenic (Red Brick, Concrete, Slag), little fine to medium sub angular Gravel, fine Sand, moist, firm, non-plastic. [FILL]		
2		4.0	0.0				
3							Borehole backfilled with bentonite.
4	B-40 (3.2-4.8)	0.8	0.0			(4-5 ft) Advanced boring using direct push methods.	
5					Bottom of borehole at 4.8 feet.		
6							
7							

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig: AMS 9520 VTR Power Probe

Remarks:
Northing and easting provided in U.S. survey feet, referenced to NY State Plane West Zone NAD 83. Elevations are in U.S. survey feet, referenced to the North American Vertical Datum of 1988 (NAVD 1988).

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 651.58 ft
North Coor.: 1067159.16
East Coor.: 1078595.65

ARCADIS

Soil Boring and Construction Log

Boring No.: B-41

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-22-2024
Date Completed: 01-22-2024
Total Depth: 4.2 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
0					CONCRETE.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	Surface restored to grade with high strength concrete.
1					Dark greyish brown fine to medium sub angular GRAVEL, some fine to medium Sand, moist, loose.		
1	B-41 (1.3-1.8				Very dark greyish brown Silty CLAY, some Cobbles, Anthropogenic (Red Brick, Concrete, Slag), little fine to medium Gravel, Sand, moist, firm, non-plastic. [FILL]		
2		4.0	0.0				
3							Borehole backfilled with bentonite.
3	B-41 (3.3-4.2)						
4		0.1				(4-4 ft) Advanced boring using direct push methods.	
4					Bottom of borehole at 4.2 feet.		
5							
6							
7							

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig: AMS 9520 VTR Power Probe

Remarks:
Northing and easting provided in U.S. survey feet, referenced to NY State Plane West Zone NAD 83. Elevations are in U.S. survey feet, referenced to the North American Vertical Datum of 1988 (NAVD 1988).

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 651.63 ft
North Coor.: 1067185.09
East Coor.: 1078579.34

ARCADIS

Soil Boring and Construction Log

Boring No.: WC-1

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-18-2024
Date Completed: 01-18-2024
Total Depth: 6.2 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
0					CONCRETE.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	Surface restored to grade with high strength concrete.
1					Dark grey fine to medium sub angular GRAVEL, some fine to medium Sand, moist, loose.		
2		4.0	7.7				
3	WC-1				Very dark greyish brown Silty CLAY, some to little Anthropogenic (Red Brick, Concrete, Wood, Glass, Slag), little fine to medium sub angular Gravel, trace fine Sand, moist, firm, non-plastic. Solvent-like odor. [FILL]		Borehole backfilled with bentonite.
4						(4-6 ft) Advanced boring using direct push methods.	
5		2.2	3.3		Dark grey Silty CLAY, little fine sub angular embedded Gravel, moist, stiff, non-plastic. Pulverized rock fragments from 5.7 to 6.2 feet bgs; likely bedrock.		
6					Bottom of borehole at 6.2 feet.		
7							

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig: AMS 9520 VTR Power Probe

Remarks:
Northing and easting provided in U.S. survey feet, referenced to NY State Plane West Zone NAD 83. Elevations are in U.S. survey feet, referenced to the North American Vertical Datum of 1988 (NAVD 1988).

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 651.80 ft
North Coor.: 1067175.73
East Coor.: 1078623.53

ARCADIS

Soil Boring and Construction Log

Boring No.: WC-2

Sheet: 1 of 1

Client Name: National Grid
Project Number: 30184770
Project Name: National Grid Buffalo

Date Started: 01-17-2024
Date Completed: 01-17-2024
Total Depth: 7.0 ft bgs

Logger(s): Joshua Miller
Reviewer: Joshua Miller

Depth (ft)	Sample ID	Rec. (ft)	PID (ppm)	Graphic	Material Description	Drilling Fluid and Notes	Construction Details
					ASPHALT.	(0-4 ft) Hand cleared boring for utilities prior to drilling.	
					Dark grey fine to medium sub angular GRAVEL, some fine to medium Sand, moist, loose.		
1					Very dark greyish brown Silty CLAY, some Anthropogenic (Red Brick, Concrete, Wood, Glass), little fine to medium sub angular Gravel, moist, firm, non-plastic. [FILL]		Surface restored to grade with asphalt patch.
2		4.0	0.0				
3	WC-2						
4						(4-7 ft) Advanced boring using direct push methods.	Borehole backfilled with bentonite.
5		1.6	0.0				
6							
7					Bottom of borehole at 7.0 feet.		

Drilling Co.: Arcadis
Driller: Douglas Richmond
Drilling Method: Direct Push
Drill Rig:
Remarks:

Sampling Method: Continuous
Sampling Interval: 4.00 ft
First Encountered Water (ft bgs): NA
Static Water Level (ft bgs): NA
Top of Casing Elev:
Surface Elev.: 652.23 ft
North Coor.: 1067145.32
East Coor.: 1078732.51

Attachment C

IDW Disposal Documentation

SO# 2400750486

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
NYD 000 730 390	1	(800) 424-9300	026201647 JJK

5. Generator's Name and Mailing Address
Niagara Mohawk Power Corporation
300 Erie Blvd. West, Syracuse, NY 13202
(315) 247-6400 Attn: Steve Stucker
Generator's Phone:

Generator's Site Address (if different than mailing address)
SIR Site
144 Kensington Avenue
Buffalo, NY 14214

6. Transporter 1 Company Name: Sun Environmental Corporation — U.S. EPA ID Number: NYR 000 176 958

7. Transporter 2 Company Name: Clean Harbors Environmental Services, Inc. — U.S. EPA ID Number: MAD 039 322 250

8. Designated Facility Name and Site Address
Clean Harbors of Braintree, Inc.
1 Hill Ave., Braintree, MA 02184
Facility's Phone: 781-380-7100
U.S. EPA ID Number: MAD 053 452 637

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, Polychlorinated Biphenyls, Solid, 9, PG III,	1	DM	76	K	B007 L
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1: Profile# CH2691478 - CHSL (TSCA solids > 500 ppm) ERG 171 Out of Service Date 1/22/24 Container size 55-Gal,
Doc# BAH152 Container ID# 1647-1 Sales Order
EMERGENCY RESPONSE: (800) 424-9300 CHEMTREC Gen.#: NI15505 Job# WILM-MSCH-

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Sean Smyth — Signature: S Smyth — Month 2 Day 13 Year 24

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jaden White — Signature: Jaden White — Month 2 Day 13 Year 24

Transporter 2 Printed/Typed Name: Scott Cowher — Signature: Scott Cowher — Month 2 Day 21 Year 24

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
CHSL			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Anne McGinty — Signature: Anne McGinty — Month 3 Day 20 Year 24

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

9/9/24

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: NYD 000 730 390

22. Page: 2

23. Manifest Tracking Number: 026201647 JJK

24. Generator's Name: Niagara Mohawk Power Corporation

25. Transporter 3 Company Name: Clean Harbors Environmental Serv. U.S. EPA ID Number: MAD 039322250

26. Transporter _____ Company Name U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

GENERATOR

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name: T Neville Signature: T Neville Month: 3 Day: 29 Year: 24

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name Signature Month Day Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Attachment D

Data Usability Summary Reports

National Grid

Dewey Avenue

Data Review Report

Buffalo, New York

Polychlorinated Biphenlys (PCBs) Analyses

SDG # J216500

Analyses Performed By:

SGS Laboratories, Inc.
Dayton, New Jersey

Report #53281R
Review Level: Stage 4/Level 4
Project: 30184770.07

Summary

This Data Review Report summarizes the review of Sample Delivery Group (SDG) # J216500 for samples collected in association with the National Grid – Dewey Avenue Site in Buffalo, New York. The review was conducted as a Stage 4/Level 4 evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
					VOC	SVOC	PCB	PEST	MET	MISC
B-33 (0.9-1.4)-20240117	480-216500-1	Soil	1/17/2024				X			
B-33 (6.9-7-5)-20240117	480-216500-5	Soil	1/17/2024				X			
B-32 (0.9-1.4)-20240118	480-216500-6	Soil	1/18/2024				X			
B-32 (4.9-6.5)-20240118	480-216500-9	Soil	1/18/2024				X			
B-39 (1.2-1.7)-20240118	480-216500-10	Soil	1/18/2024				X			
B-39 (5.2-5.6)-20240118	480-216500-13	Soil	1/18/2024				X			
B-36 (1.9-2.4)-20240118	480-216500-14	Soil	1/18/2024				X			
B-36 (3.9-5.0)-20240118	480-216500-16	Soil	1/18/2024				X			
B-37 (1.2-1.7)-20240118	480-216500-17	Soil	1/18/2024				X			
B-37 (3.2-5.2)-20240118	480-216500-19	Soil	1/18/2024				X			
B-38 (1.4-1.9)-20240118	480-216500-20	Soil	1/18/2024				X			
B-38 (3.4-5.4)-20240118	480-216500-22	Soil	1/18/2024				X			
B-34 (1.4-1.9)-20240119	480-216500-23	Soil	1/19/2024				X			
B-34 (5.4-6.0)-20240119	480-216500-26	Soil	1/19/2024				X			

Note: This data review only included PCB analysis

1. The matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location B-33 (0.9-1.4)-20240117.

Analytical Data Package Documentation

The table below evaluates the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limitss		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed chain-of-custody form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data package completeness and compliance		X		X	

Note:
QA = quality assurance

Organic Analysis Introduction

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8082A. Data were reviewed in accordance with USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review, EPA-540-R-20-005 (November 2020), and the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, EPA540/R-99/008, October 1999 (as applicable).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
  - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
  - E The compound was quantitated above the calibration range.
  - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
  - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
  - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
  - UB Compound is considered non-detect at the listed value due to associated blank contamination.
  - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
  - R The sample results are rejected.

The "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second

fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Polychlorinated Biphenyls (PCBs) Analysis

1. Holding Times

The specified holding times for the following methods are presented in the table below.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Soil	One year from collection to analysis	Cool to <6 °C

Note:
s.u. = standard units

Samples were analyzed within the specified holding time criterion.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All Aroclors associated with calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB analysis requires that one of the two PCB surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
B-39 (1.2-1.7)-20240118	Tetrachloro-m-xylene	AC
	Decachlorobiphenyl	<LL but >10%

Note:
AC = acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
B-33 (0.9-1.4)-20240117	PCB-1016	>UL	>UL
	PCB-1260	AC	AC

Note:
AC = acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil.

Field duplicate analysis was not performed on a sample location within this SDG.

9. Compound Identification

Compounds are identified on the GC by using the analytes relative retention time.

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 25%.

Sample locations associated with %D analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	%D
B-36 (3.9-5.0)-20240118	PCB-1242	>50 (101.1%)
B-37 (3.2-5.2)-20240118	PCB-1242	>50 (75.4%)
B-38 (3.4-5.4)-20240118	PCB-1242	>50 (60.2%)

The criteria used to evaluate the %D are presented in the following table. In the case of a %D deviation, the sample results are qualified as documented in the table below.

Control Limit (%D)	Qualification
>25% to 70%	J
>70% to 100%	JN
>100% [1]	R
>100% to 200% (Interference detected)[2]	J or JN
>50% (pesticide) sample results less than the RL)	U

When the PCB sample results are less than the RL and the RPD greater than 50% the sample result are raised to the RL and reported as non-detect.

Note 1: If the pattern is confirmed sample results will be qualified as estimated (J). If pattern exhibits interference or if the PCB cannot be positively determined due to weathering the sample results will be qualified as tentative identification estimate (JN).

Note 2: If interference is detected in either column the sample results will be qualified as tentative identification estimate (JN).

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

Data Validation Checklist for Organochlorine PCBs

PCBs; SW-846 8082	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X	X		
Column (RPD)		X	X		
Dilution Factor		X		X	
Moisture Content	X				X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

SAMPLE COMPLIANCE REPORT

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB	MET	MISC	
	1/17/2024	SW-846	B-33 (0.9-1.4)-20240117	Solids	--	--	Yes	--	--	MS/MSD percent recovery
	1/18/2024	SW-846	B-33 (6.9-7-5)-20240117	Solids	--	--	Yes	--	--	
	1/18/2024	SW-846	B-32 (0.9-1.4)-20240118	Solids	--	--	Yes	--	--	
	1/18/2024	SW-846	B-32 (4.9-6.5)-20240118	Solids	--	--	Yes	--	--	
	1/18/2024	SW-846	B-39 (1.2-1.7)-20240118	Solids	--	--	Yes	--	--	
	1/18/2024	SW-846	B-39 (5.2-5.6)-20240118	Solids	--	--	Yes	--	--	
	1/18/2024	SW-846	B-36 (1.9-2.4)-20240118	Solids	--	--	Yes	--	--	
480-204973-1	1/18/2024	SW-846	B-36 (3.9-5.0)-20240118	Solids	--	--	No	--	--	PCB – dual column percent difference
	1/18/2024	SW-846	B-37 (1.2-1.7)-20240118	Solids	--	--	Yes	--	--	
	1/18/2024	SW-846	B-37 (3.2-5.2)-20240118	Solids	--	--	No	--	--	PCB – dual column percent difference
	1/18/2024	SW-846	B-37 (1.2-1.7)-20240118	Solids	--	--	Yes	--	--	
	1/18/2024	SW-846	B-37 (3.2-5.2)-20240118	Solids	--	--	Yes	--	--	
	1/18/2024	SW-846	B-38 (1.4-1.9)-20240118	Solids	--	--	Yes	--	--	
	1/18/2024	SW-846	B-38 (3.4-5.4)-20240118	Solids	--	--	No	--	--	PCB – dual column percent difference
	1/19/2024	SW-846	B-34 (1.4-1.9)-20240119	Solids	--	--	Yes	--	--	

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB	MET	MISC	
	1/19/2024	SW-846	B-34 (5.4-6.0)-20240119	Solids	--	--	Yes	--	--	

Note:

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

VALIDATION PERFORMED BY: Todd Church

SIGNATURE: 

DATE: April 1, 2024

PEER REVIEW: Dennis Capria

DATE: April 3, 2024

Chain of Custody Corrected Sample Analysis Data Sheets

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: John Miller	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-191634-38491.1
Client Contact: Mr. Michael Jones	Phone: (315) 436-1419	E-Mail: John.Schove@et.eurofinsus.com	State of Origin: NY	Page: Page 1 of 2
Company: ARCADIS U.S. Inc	PWSID:			Job #:
Address: One Lincoln Center 110 West Fayette St, Suite 300	Due Date Requested:			
City: Syracuse	TAT Requested (days): STANDARD			
State, Zip: NY, 13202	Compliance Project: Δ Yes Δ No			
Phone: 315-671-9211(Tel)	PO #: Purchase Order Requested			
Email: michael.jones@arcadis.com	WO #:			
Project Name: National Grid - Dewey Avenue Site	Project #: 48024791			
Site: Buffalo, NY	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A - TCL PCBs	8082A - TCL PCBs + ARCHIVE	Total Number of containers	Special Instructions/Note:
Preservation Code:							N	N		
B-33 (0.9-1.4)	1/17/24	1400	G	Solid			X			
B-33 (1.4-2.9)		1430	G	Solid				X		
B-33 (2.9-4.9)		1430	G	Solid				X		
B-33 (4.9-6.9)		1445	G	Solid				X		
B-33 (6.9-7.5)		1446	G	Solid			X			
B-32 (0.9-1.4)	1/18/24	0845	G	Solid			X			
B-32 (1.4-2.9)		0855	G	Solid				X		
B-32 (2.9-4.9)		0905	G	Solid				X		
B-32 (4.9-6.5)		0930	G	Solid			X			
B-39 (1.2-1.7)		0920	G	Solid			X			
B-39 (1.7-3.2)		0935	G	Solid				X		

480-216500 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/19/24 1500	Arcadis			
2		1/19/24 1050	Arcadis		1/19/24 1050	TAL B
3		Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: #1 2.8

Ver: 06/08/2021

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Joshua Miller	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-191634-38491.2
Client Contact: Mr. Michael Jones	Phone: (315) 482-1419	E-Mail: John.Schove@et.eurofinsus.com	State of Origin: NY	Page: Page 2 of 2
Company: ARCADIS U.S. Inc	PWSID:			Job #:
Address: One Lincoln Center 110 West Fayette St, Suite 300	Due Date Requested:			
City: Syracuse	TAT Requested (days):			
State, Zip: NY, 13202	Compliance Project: Δ Yes Δ No			
Phone: 315-671-9211(Tel)	PO #: Purchase Order Requested			
Email: michael.jones@arcadis.com	WO #:			
Project Name: National Grid - Dewey Avenue Site	Project #: 48024791			
Site: Buffalo, NY	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A - TCL PCBs	8082A-TCL PCBs + ARCHIVE	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N		
B-39 (3.2-5.2)	1/18/24	0940	G	Solid				X		
B-39 (5.2-5.6)		0941	G	Solid			X			
B-36 (1.9-2.4)		1000	G	Solid			X			
B-36 (2.4-3.9)		1015	G	Solid				X		
B-36 (3.9-5.0)		1050	G	Solid			X			
B-37 (1.2-1.7)		1200	G	Solid			X			
B-37 (1.7-3.2)		1230	G	Solid				X		
B-37 (3.2-5.2)		1330	G	Solid			X			
B-38 (1.4-1.9)		1400	G	Solid			X			
B-38 (1.9-3.4)		1415	G	Solid				X		
B-38 (3.4-5.4)	↓	1420	G	Solid			X			

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		1/18/24 / 1000	Arcadis			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		1/19/24 / 1050	Arcadis		1/19/24 1050	TAB
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Mr. Michael Jones	Phone: (315) 480-1419	Schove, John R		480-191634-38491.3
Company: ARCADIS U.S. Inc	PWSID:	E-Mail: John.Schove@et.eurofinsus.com	State of Origin: NY	Page: Page 3 of
Address: One Lincoln Center 110 West Fayette St, Suite 300	Due Date Requested:			Job #:
City: Syracuse	TAT Requested (days):			
State, Zip: NY, 13202	Compliance Project: Δ Yes Δ No			
Phone: 315-671-9211(Tel)	PO #: Purchase Order Requested			
Email: michael.jones@arcadis.com	WO #:			
Project Name: National Grid - Dewey Avenue Site	Project #: 48024791			
Site: Buffalo, NY	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A - TCL PCBs	8082A - TCL PCBs *ARCHIVE	Total Number of containers	Special Instructions/Note:
Preservation Code:							N			
B-34 (1.4-1.9)	1/19/24	0825	G	Solid			X			
B-34 (1.9-3.4)		0835	G	Solid				X		
B-34 (3.4-5.4)		0840	G	Solid				X		
B-34 (5.4-6.0)		0841	G	Solid			X			
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/18/24 1000	Arcadis			
2		1/19/24 1050	Arcadis		1/19/24 1050	TAB
3		Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample ID: B-33 (0.9-1.4)
Lab Sample ID: 480-216500-1
Date Collected: 01/17/24 14:00
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 88.1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	1.1	U F1	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 16:51	5
PCB-1221	1.1	U	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 16:51	5
PCB-1232	1.1	U	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 16:51	5
PCB-1242	**13**		1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 16:51	5
PCB-1248	1.1	U	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 16:51	5
PCB-1254	1.1	U	1.1	0.50	mg/Kg	☼	01/22/24 16:25	01/23/24 16:51	5
PCB-1260	1.1	U	1.1	0.50	mg/Kg	☼	01/22/24 16:25	01/23/24 16:51	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*74*		*65 - 174*	*01/22/24 16:25*	*01/23/24 16:51*	*5*
DCB Decachlorobiphenyl	*100*		*65 - 174*	*01/22/24 16:25*	*01/23/24 16:51*	*5*
Tetrachloro-m-xylene	*96*		*60 - 154*	*01/22/24 16:25*	*01/23/24 16:51*	*5*
Tetrachloro-m-xylene	*102*		*60 - 154*	*01/22/24 16:25*	*01/23/24 16:51*	*5*

Client Sample ID: B-33 (6.9-7-5)
Lab Sample ID: 480-216500-5
Date Collected: 01/17/24 14:46
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 86.7

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.26	U	0.26	0.052	mg/Kg	☼	01/22/24 16:25	01/23/24 11:55	1
PCB-1221	0.26	U	0.26	0.052	mg/Kg	☼	01/22/24 16:25	01/23/24 11:55	1
PCB-1232	0.26	U	0.26	0.052	mg/Kg	☼	01/22/24 16:25	01/23/24 11:55	1
PCB-1242	0.26	U	0.26	0.052	mg/Kg	☼	01/22/24 16:25	01/23/24 11:55	1
PCB-1248	0.26	U	0.26	0.052	mg/Kg	☼	01/22/24 16:25	01/23/24 11:55	1
PCB-1254	0.26	U	0.26	0.12	mg/Kg	☼	01/22/24 16:25	01/23/24 11:55	1
PCB-1260	0.26	U	0.26	0.12	mg/Kg	☼	01/22/24 16:25	01/23/24 11:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*92*		*65 - 174*	*01/22/24 16:25*	*01/23/24 11:55*	*1*
DCB Decachlorobiphenyl	*105*		*65 - 174*	*01/22/24 16:25*	*01/23/24 11:55*	*1*
Tetrachloro-m-xylene	*94*		*60 - 154*	*01/22/24 16:25*	*01/23/24 11:55*	*1*
Tetrachloro-m-xylene	*100*		*60 - 154*	*01/22/24 16:25*	*01/23/24 11:55*	*1*

Client Sample ID: B-32 (0.9-1.4)
Lab Sample ID: 480-216500-6
Date Collected: 01/18/24 08:45
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 87.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	1.1	U	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 21:14	5
PCB-1221	1.1	U	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 21:14	5
PCB-1232	1.1	U	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 21:14	5
PCB-1242	**12**		1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 21:14	5
PCB-1248	1.1	U	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 21:14	5
PCB-1254	1.1	U	1.1	0.50	mg/Kg	☼	01/22/24 16:25	01/23/24 21:14	5
PCB-1260	1.1	U	1.1	0.50	mg/Kg	☼	01/22/24 16:25	01/23/24 21:14	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*77*		*65 - 174*	*01/22/24 16:25*	*01/23/24 21:14*	*5*
DCB Decachlorobiphenyl	*101*		*65 - 174*	*01/22/24 16:25*	*01/23/24 21:14*	*5*

Client Sample ID: B-32 (0.9-1.4)
Lab Sample ID: 480-216500-6
Date Collected: 01/18/24 08:45
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 87.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*93*		*60 - 154*	*01/22/24 16:25*	*01/23/24 21:14*	*5*
Tetrachloro-m-xylene	*102*		*60 - 154*	*01/22/24 16:25*	*01/23/24 21:14*	*5*

Client Sample ID: B-32 (4.9-6.5)
Lab Sample ID: 480-216500-9
Date Collected: 01/18/24 09:30
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 85.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.25	U	0.25	0.049	mg/Kg	☼	01/22/24 16:25	01/23/24 12:30	1
PCB-1221	0.25	U	0.25	0.049	mg/Kg	☼	01/22/24 16:25	01/23/24 12:30	1
PCB-1232	0.25	U	0.25	0.049	mg/Kg	☼	01/22/24 16:25	01/23/24 12:30	1
PCB-1242	0.25	U	0.25	0.049	mg/Kg	☼	01/22/24 16:25	01/23/24 12:30	1
PCB-1248	0.25	U	0.25	0.049	mg/Kg	☼	01/22/24 16:25	01/23/24 12:30	1
PCB-1254	0.25	U	0.25	0.12	mg/Kg	☼	01/22/24 16:25	01/23/24 12:30	1
PCB-1260	0.25	U	0.25	0.12	mg/Kg	☼	01/22/24 16:25	01/23/24 12:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*91*		*65 - 174*	*01/22/24 16:25*	*01/23/24 12:30*	*1*
DCB Decachlorobiphenyl	*101*		*65 - 174*	*01/22/24 16:25*	*01/23/24 12:30*	*1*
Tetrachloro-m-xylene	*93*		*60 - 154*	*01/22/24 16:25*	*01/23/24 12:30*	*1*
Tetrachloro-m-xylene	*97*		*60 - 154*	*01/22/24 16:25*	*01/23/24 12:30*	*1*

Client Sample ID: B-39 (1.2-1.7)
Lab Sample ID: 480-216500-10
Date Collected: 01/18/24 09:20
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 78.0

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	5.3	U	5.3	1.0	mg/Kg	☼	01/22/24 16:25	01/23/24 21:32	20
PCB-1221	5.3	U	5.3	1.0	mg/Kg	☼	01/22/24 16:25	01/23/24 21:32	20
PCB-1232	5.3	U	5.3	1.0	mg/Kg	☼	01/22/24 16:25	01/23/24 21:32	20
PCB-1242	**120**		5.3	1.0	mg/Kg	☼	01/22/24 16:25	01/23/24 21:32	20
PCB-1248	5.3	U	5.3	1.0	mg/Kg	☼	01/22/24 16:25	01/23/24 21:32	20
PCB-1254	5.3	U	5.3	2.5	mg/Kg	☼	01/22/24 16:25	01/23/24 21:32	20
PCB-1260	5.3	U	5.3	2.5	mg/Kg	☼	01/22/24 16:25	01/23/24 21:32	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*60*	*S1-*	*65 - 174*	*01/22/24 16:25*	*01/23/24 21:32*	*20*
DCB Decachlorobiphenyl	*111*		*65 - 174*	*01/22/24 16:25*	*01/23/24 21:32*	*20*
Tetrachloro-m-xylene	*103*		*60 - 154*	*01/22/24 16:25*	*01/23/24 21:32*	*20*
Tetrachloro-m-xylene	*124*		*60 - 154*	*01/22/24 16:25*	*01/23/24 21:32*	*20*

Client Sample ID: B-39 (5.2-5.6)
Lab Sample ID: 480-216500-13
Date Collected: 01/18/24 09:41
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 81.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 13:05	1
PCB-1221	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 13:05	1

Client Sample ID: B-39 (5.2-5.6)
Lab Sample ID: 480-216500-13
Date Collected: 01/18/24 09:41
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 81.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1232	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 13:05	1
PCB-1242	**0.17**	**J**	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 13:05	1
PCB-1248	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 13:05	1
PCB-1254	0.27	U	0.27	0.13	mg/Kg	☼	01/22/24 16:25	01/23/24 13:05	1
PCB-1260	0.27	U	0.27	0.13	mg/Kg	☼	01/22/24 16:25	01/23/24 13:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*95*		*65 - 174*	*01/22/24 16:25*	*01/23/24 13:05*	*1*
DCB Decachlorobiphenyl	*98*		*65 - 174*	*01/22/24 16:25*	*01/23/24 13:05*	*1*
Tetrachloro-m-xylene	*99*		*60 - 154*	*01/22/24 16:25*	*01/23/24 13:05*	*1*
Tetrachloro-m-xylene	*99*		*60 - 154*	*01/22/24 16:25*	*01/23/24 13:05*	*1*

Client Sample ID: B-36 (1.9-2.4)
Lab Sample ID: 480-216500-14
Date Collected: 01/18/24 10:00
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 89.0

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	4.8	U	4.8	0.94	mg/Kg	☼	01/22/24 16:25	01/23/24 22:25	20
PCB-1221	4.8	U	4.8	0.94	mg/Kg	☼	01/22/24 16:25	01/23/24 22:25	20
PCB-1232	4.8	U	4.8	0.94	mg/Kg	☼	01/22/24 16:25	01/23/24 22:25	20
PCB-1242	**110**		4.8	0.94	mg/Kg	☼	01/22/24 16:25	01/23/24 22:25	20
PCB-1248	4.8	U	4.8	0.94	mg/Kg	☼	01/22/24 16:25	01/23/24 22:25	20
PCB-1254	4.8	U	4.8	2.2	mg/Kg	☼	01/22/24 16:25	01/23/24 22:25	20
PCB-1260	4.8	U	4.8	2.2	mg/Kg	☼	01/22/24 16:25	01/23/24 22:25	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*68*		*65 - 174*	*01/22/24 16:25*	*01/23/24 22:25*	*20*
DCB Decachlorobiphenyl	*118*		*65 - 174*	*01/22/24 16:25*	*01/23/24 22:25*	*20*
Tetrachloro-m-xylene	*124*		*60 - 154*	*01/22/24 16:25*	*01/23/24 22:25*	*20*
Tetrachloro-m-xylene	*128*		*60 - 154*	*01/22/24 16:25*	*01/23/24 22:25*	*20*

Client Sample ID: B-36 (3.9-5.0)
Lab Sample ID: 480-216500-16
Date Collected: 01/18/24 10:50
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 82.6

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 13:40	1
PCB-1221	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 13:40	1
PCB-1232	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 13:40	1
PCB-1242 0.27	~~0.059~~	~~J~~ U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 13:40	1
PCB-1248	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 13:40	1
PCB-1254	0.27	U	0.27	0.13	mg/Kg	☼	01/22/24 16:25	01/23/24 13:40	1
PCB-1260	0.27	U	0.27	0.13	mg/Kg	☼	01/22/24 16:25	01/23/24 13:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*89*		*65 - 174*	*01/22/24 16:25*	*01/23/24 13:40*	*1*
DCB Decachlorobiphenyl	*94*		*65 - 174*	*01/22/24 16:25*	*01/23/24 13:40*	*1*
Tetrachloro-m-xylene	*97*		*60 - 154*	*01/22/24 16:25*	*01/23/24 13:40*	*1*
Tetrachloro-m-xylene	*101*		*60 - 154*	*01/22/24 16:25*	*01/23/24 13:40*	*1*

Client Sample ID: B-37 (1.2-1.7)
Lab Sample ID: 480-216500-17
Date Collected: 01/18/24 12:00
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 88.5

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.25	U	0.25	0.048	mg/Kg	☼	01/22/24 16:25	01/23/24 13:57	1
PCB-1221	0.25	U	0.25	0.048	mg/Kg	☼	01/22/24 16:25	01/23/24 13:57	1
PCB-1232	0.25	U	0.25	0.048	mg/Kg	☼	01/22/24 16:25	01/23/24 13:57	1
PCB-1242	**0.63**		0.25	0.048	mg/Kg	☼	01/22/24 16:25	01/23/24 13:57	1
PCB-1248	0.25	U	0.25	0.048	mg/Kg	☼	01/22/24 16:25	01/23/24 13:57	1
PCB-1254	0.25	U	0.25	0.12	mg/Kg	☼	01/22/24 16:25	01/23/24 13:57	1
PCB-1260	**0.15**	**J**	0.25	0.12	mg/Kg	☼	01/22/24 16:25	01/23/24 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*65 - 174*	*01/22/24 16:25*	*01/23/24 13:57*	*1*
DCB Decachlorobiphenyl	*97*		*65 - 174*	*01/22/24 16:25*	*01/23/24 13:57*	*1*
Tetrachloro-m-xylene	*94*		*60 - 154*	*01/22/24 16:25*	*01/23/24 13:57*	*1*
Tetrachloro-m-xylene	*107*		*60 - 154*	*01/22/24 16:25*	*01/23/24 13:57*	*1*

Client Sample ID: B-37 (3.2-5.2)
Lab Sample ID: 480-216500-19
Date Collected: 01/18/24 13:30
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 90.9

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.22	U	0.22	0.042	mg/Kg	☼	01/22/24 16:25	01/23/24 14:15	1
PCB-1221	0.22	U	0.22	0.042	mg/Kg	☼	01/22/24 16:25	01/23/24 14:15	1
PCB-1232	0.22	U	0.22	0.042	mg/Kg	☼	01/22/24 16:25	01/23/24 14:15	1
PCB-1242	0.22 ~~0.11~~	~~J~~	U 0.22	0.042	mg/Kg	☼	01/22/24 16:25	01/23/24 14:15	1
PCB-1248	0.22	U	0.22	0.042	mg/Kg	☼	01/22/24 16:25	01/23/24 14:15	1
PCB-1254	0.22	U	0.22	0.10	mg/Kg	☼	01/22/24 16:25	01/23/24 14:15	1
PCB-1260	0.22	U	0.22	0.10	mg/Kg	☼	01/22/24 16:25	01/23/24 14:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*88*		*65 - 174*	*01/22/24 16:25*	*01/23/24 14:15*	*1*
DCB Decachlorobiphenyl	*98*		*65 - 174*	*01/22/24 16:25*	*01/23/24 14:15*	*1*
Tetrachloro-m-xylene	*96*		*60 - 154*	*01/22/24 16:25*	*01/23/24 14:15*	*1*
Tetrachloro-m-xylene	*101*		*60 - 154*	*01/22/24 16:25*	*01/23/24 14:15*	*1*

Client Sample ID: B-38 (1.4-1.9)
Lab Sample ID: 480-216500-20
Date Collected: 01/18/24 14:00
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 83.0

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 14:32	1
PCB-1221	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 14:32	1
PCB-1232	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 14:32	1
PCB-1242	**1.5**		0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 14:32	1
PCB-1248	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 14:32	1
PCB-1254	0.27	U	0.27	0.13	mg/Kg	☼	01/22/24 16:25	01/23/24 14:32	1
PCB-1260	**0.45**		0.27	0.13	mg/Kg	☼	01/22/24 16:25	01/23/24 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*65 - 174*	*01/22/24 16:25*	*01/23/24 14:32*	*1*
DCB Decachlorobiphenyl	*89*		*65 - 174*	*01/22/24 16:25*	*01/23/24 14:32*	*1*

Client Sample ID: B-38 (1.4-1.9)
Lab Sample ID: 480-216500-20
Date Collected: 01/18/24 14:00
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 83.0

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*87*		*60 - 154*	*01/22/24 16:25*	*01/23/24 14:32*	*1*
Tetrachloro-m-xylene	*95*		*60 - 154*	*01/22/24 16:25*	*01/23/24 14:32*	*1*

Client Sample ID: B-38 (3.4-5.4)
Lab Sample ID: 480-216500-22
Date Collected: 01/18/24 14:20
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 86.3

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.28	U	0.28	0.054	mg/Kg	☼	01/22/24 16:25	01/23/24 14:50	1
PCB-1221	0.28	U	0.28	0.054	mg/Kg	☼	01/22/24 16:25	01/23/24 14:50	1
PCB-1232	0.28	U	0.28	0.054	mg/Kg	☼	01/22/24 16:25	01/23/24 14:50	1
PCB-1242	0.28 ~~0.088~~	J U	0.28	0.054	mg/Kg	☼	01/22/24 16:25	01/23/24 14:50	1
PCB-1248	0.28	U	0.28	0.054	mg/Kg	☼	01/22/24 16:25	01/23/24 14:50	1
PCB-1254	**0.19**	**J**	0.28	0.13	mg/Kg	☼	01/22/24 16:25	01/23/24 14:50	1
PCB-1260	0.28	U	0.28	0.13	mg/Kg	☼	01/22/24 16:25	01/23/24 14:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	*83*		*65 - 174*	*01/22/24 16:25*	*01/23/24 14:50*	*1*
DCB Decachlorobiphenyl	*88*		*65 - 174*	*01/22/24 16:25*	*01/23/24 14:50*	*1*
Tetrachloro-m-xylene	*85*		*60 - 154*	*01/22/24 16:25*	*01/23/24 14:50*	*1*
Tetrachloro-m-xylene	*85*		*60 - 154*	*01/22/24 16:25*	*01/23/24 14:50*	*1*

Client Sample ID: B-34 (1.4-1.9)
Lab Sample ID: 480-216500-23
Date Collected: 01/19/24 08:25
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 85.9

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 15:08	1
PCB-1221	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 15:08	1
PCB-1232	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 15:08	1
PCB-1242	**7.5**		0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 15:08	1
PCB-1248	0.27	U	0.27	0.053	mg/Kg	☼	01/22/24 16:25	01/23/24 15:08	1
PCB-1254	0.27	U	0.27	0.13	mg/Kg	☼	01/22/24 16:25	01/23/24 15:08	1
PCB-1260	0.27	U	0.27	0.13	mg/Kg	☼	01/22/24 16:25	01/23/24 15:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	*83*		*65 - 174*	*01/22/24 16:25*	*01/23/24 15:08*	*1*
DCB Decachlorobiphenyl	*91*		*65 - 174*	*01/22/24 16:25*	*01/23/24 15:08*	*1*
Tetrachloro-m-xylene	*92*		*60 - 154*	*01/22/24 16:25*	*01/23/24 15:08*	*1*
Tetrachloro-m-xylene	*101*		*60 - 154*	*01/22/24 16:25*	*01/23/24 15:08*	*1*

Client Sample ID: B-34 (5.4-6.0)
Lab Sample ID: 480-216500-26
Date Collected: 01/19/24 08:41
Matrix: Solid
Date Received: 01/19/24 10:50
Percent Solids: 81.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	1.1	U	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 22:42	5
PCB-1221	1.1	U	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 22:42	5

Client Sample ID: B-34 (5.4-6.0)
Date Collected: 01/19/24 08:41
Date Received: 01/19/24 10:50

Lab Sample ID: 480-216500-26
Matrix: Solid
Percent Solids: 81.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1232	1.1	U	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 22:42	5
PCB-1242	**10**		1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 22:42	5
PCB-1248	1.1	U	1.1	0.21	mg/Kg	☼	01/22/24 16:25	01/23/24 22:42	5
PCB-1254	1.1	U	1.1	0.51	mg/Kg	☼	01/22/24 16:25	01/23/24 22:42	5
PCB-1260	1.1	U	1.1	0.51	mg/Kg	☼	01/22/24 16:25	01/23/24 22:42	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*100*		*65 - 174*	*01/22/24 16:25*	*01/23/24 22:42*	*5*
DCB Decachlorobiphenyl	*121*		*65 - 174*	*01/22/24 16:25*	*01/23/24 22:42*	*5*
Tetrachloro-m-xylene	*122*		*60 - 154*	*01/22/24 16:25*	*01/23/24 22:42*	*5*
Tetrachloro-m-xylene	*124*		*60 - 154*	*01/22/24 16:25*	*01/23/24 22:42*	*5*

National Grid

Dewey Avenue

Data Review Report

Buffalo, New York

Polychlorinated Biphenlys (PCBs) Analyses

SDG # J216574

Analyses Performed By:

SGS Laboratories, Inc.
Dayton, New Jersey

Report #53311R
Review Level: Stage 4/Level 4
Project: 30184770.07

Summary

This Data Review Report summarizes the review of Sample Delivery Group (SDG) # J216574 for samples collected in association with the National Grid – Dewey Avenue Site in Buffalo, New York. The review was conducted as a Stage 4/Level 4 evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
					VOC	SVOC	PCB	PEST	MET	MISC
B-35 (1.0-1.5)-20240122	480-216574-1	Soil	1/22/2024				X			
B-35 (3.0-4.0)-20240122	480-216574-3	Soil	1/22/2024				X			
B-41 (1.3-1.8)-20240122	480-216574-4	Soil	1/22/2024				X			
B-41 (3.3-4.2)-20240122	480-216574-6	Soil	1/22/2024				X			
B-40 (1.2-1.7)-20240122	480-216574-7	Soil	1/22/2024				X			
B-40 (3.2-4.8)-20240122	480-216574-9	Soil	1/22/2024				X			

Note: This data review only included PCB analysis

1. The matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location B-35 (1.0-1.5)-20240122.

Analytical Data Package Documentation

The table below evaluates the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limitss		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed chain-of-custody form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data package completeness and compliance		X		X	

Note:
QA = quality assurance

Organic Analysis Introduction

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8082A. Data were reviewed in accordance with USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review, EPA-540-R-20-005 (November 2020), and the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, EPA540/R-99/008, October 1999 (as applicable).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
  - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
  - E The compound was quantitated above the calibration range.
  - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
  - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
  - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
  - UB Compound is considered non-detect at the listed value due to associated blank contamination.
  - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
  - R The sample results are rejected.

The "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second

fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Polychlorinated Biphenyls (PCBs) Analysis

1. Holding Times

The specified holding times for the following methods are presented in the table below.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Soil	One year from collection to analysis	Cool to <6 °C

Note:
s.u. = standard units

Samples were analyzed within the specified holding time criterion.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All Aroclors associated with calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB analysis requires that one of the two PCB surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
B-35 (3.0-4.0)-20240122	Tetrachloro-m-xylene	AC
	Decachlorobiphenyl	<LL but >10%
B-41 (3.3-4.2)-20240122	Tetrachloro-m-xylene	D
	Decachlorobiphenyl	D

Notes:
AC = acceptable
D = diluted

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	
Surrogates diluted below the calibration curve due to the high concentration of a target compound.	Non-detect	UJ/J[1]
	Detect	

Note:

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
B-35 (1.0-1.5)-20240122	PCB-1016	>UL	>UL
	PCB-1260	AC	AC

Note:
AC = acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil.

Field duplicate analysis was not performed on a sample location within this SDG.

9. Compound Identification

Compounds are identified on the GC by using the analytes relative retention time.

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 25%.

Sample locations associated with %D analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	%D
B-35 (3.0-4.0)-20240122	PCB-1254	41.9%

The criteria used to evaluate the %D are presented in the following table. In the case of a %D deviation, the sample results are qualified as documented in the table below.

Control Limit (%D)	Qualification
>25% to 70%	J
>70% to 100%	JN
>100% [1]	R
>100% to 200% (Interference detected)[2]	J or JN
>50% (pesticide) sample results less than the RL)	U

When the PCB sample results are less than the RL and the RPD greater than 50% the sample result are raised to the RL and reported as non-detect.

Note 1: If the pattern is confirmed sample results will be qualified as estimated (J). If pattern exhibits interference or if the PCB cannot be positively determined due to weathering the sample results will be qualified as tentative identification estimate (JN).

Note 2: If interference is detected in either column the sample results will be qualified as tentative identification estimate (JN).

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

Data Validation Checklist for Organochlorine PCBs

PCBs; SW-846 8082	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)	X				X
Surrogate Spike Recoveries		X	X		
Column (RPD)		X	X		
Dilution Factor		X		X	
Moisture Content	X				X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

SAMPLE COMPLIANCE REPORT

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB	MET	MISC	
480-216574-1	1/22/2024	SW-846	B-35 (1.0-1.5)-20240122	Soils	--	--	No	--	--	MS/MSD percent recovery
		SW-846	B-35 (3.0-4.0)-20240122	Soils	--	--	Yes	--	--	
		SW-846	B-41 (1.3-1.8)-20240122	Soils	--	--	Yes	--	--	
		SW-846	B-41 (3.3-4.2)-20240122	Soils	--	--	No	--	--	PCB – surrogate diluted out
		SW-846	B-40 (1.2-1.7)-20240122	Soils	--	--	Yes	--	--	
		SW-846	B-40 (3.2-4.8)-20240122	Soils	--	--	Yes	--	--	

Note:

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

VALIDATION PERFORMED BY: Todd Church

SIGNATURE: 

DATE: April 1, 2024

PEER REVIEW: Dennis Capria

DATE: April 3, 2024

Chain of Custody Corrected Sample Analysis Data Sheets

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing

Client Information

Field	Value
Client Contact:	Mr. Michael Jones
Company:	ARCADIS U.S. Inc
Address:	One Lincoln Center 110 West Fayette St, Suite 300
City:	Syracuse
State, Zip:	NY, 13202
Phone:	315-671-9211(Tel)
Email:	michael.jones@arcadis.com
Project Name:	National Grid - Dewey Avenue Site
Site:	Buffalo, NY
Sampler:	Joshua Miller
Phone:	(315) 480-1419
PWSID:	
Due Date Requested:	STANDARD
TAT Requested (days):	
Compliance Project:	Δ Yes Δ No
PO #:	Purchase Order Requested
WO #:	
Project #:	48024791
SSOW#:	
Lab PM:	Schove, John R
E-Mail:	John.Schove@et.eurofinsus.com
Carrier Tracking No(s):	
State of Origin:	NY
COC No:	480-191634-38491.6
Page:	Page 1 of 1
Job #:	

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A - TCL PCBs	8082A -TCL-PCB, *Archive*	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N			
B-35 (1.0-1.5)	1/22/24	1500	G	Solid			X			
B-35 (1.5-3.0)	↓	1505	G	Solid				X		
B-35 (3.0-4.0)	↓	1515	G	Solid			X			
B-41 (1.3-1.8)	↓	1400	G	Solid			X			
B-41 (1.8-3.3)	↓	1420	G	Solid				X		
B-41 (3.3-4.2)	↓	1440	G	Solid			X			
B-40 (1.2-1.7)	↓	1105	G	Solid			X			
B-40 (1.7-3.2)	↓	1120	G	Solid				X		
B-40 (3.2-4.8)	↓	1140	G	Solid			X			
				Solid						
				Solid						

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

480-216574 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/23/24 / 1100	Arcadis			
			[signature]	1/23/24 1100	TA-B

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.8 #1 ICE

Ver: 06/08/2021

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample ID: B-35 (1.0-1.5)
Lab Sample ID: 480-216574-1

Date Collected: 01/22/24 15:00
Matrix: Solid
Date Received: 01/23/24 11:00
Percent Solids: 88.5

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	1.2	U F1	1.2	0.24	mg/Kg	☼	01/25/24 08:48	01/26/24 19:39	5
PCB-1221	1.2	U	1.2	0.24	mg/Kg	☼	01/25/24 08:48	01/26/24 19:39	5
PCB-1232	1.2	U	1.2	0.24	mg/Kg	☼	01/25/24 08:48	01/26/24 19:39	5
PCB-1242	1.2	U	1.2	0.24	mg/Kg	☼	01/25/24 08:48	01/26/24 19:39	5
PCB-1248	**14**		1.2	0.24	mg/Kg	☼	01/25/24 08:48	01/26/24 19:39	5
PCB-1254	1.2	U	1.2	0.57	mg/Kg	☼	01/25/24 08:48	01/26/24 19:39	5
PCB-1260	**15**		1.2	0.57	mg/Kg	☼	01/25/24 08:48	01/26/24 19:39	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*63*	*S1-*	*65 - 174*	*01/25/24 08:48*	*01/26/24 19:39*	*5*
DCB Decachlorobiphenyl	*81*		*65 - 174*	*01/25/24 08:48*	*01/26/24 19:39*	*5*
Tetrachloro-m-xylene	*87*		*60 - 154*	*01/25/24 08:48*	*01/26/24 19:39*	*5*
Tetrachloro-m-xylene	*93*		*60 - 154*	*01/25/24 08:48*	*01/26/24 19:39*	*5*

Client Sample ID: B-35 (3.0-4.0)
Lab Sample ID: 480-216574-3

Date Collected: 01/22/24 15:15
Matrix: Solid
Date Received: 01/23/24 11:00
Percent Solids: 81.0

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	5.9	U	5.9	1.2	mg/Kg	☼	01/25/24 08:48	01/26/24 20:31	20
PCB-1221	5.9	U	5.9	1.2	mg/Kg	☼	01/25/24 08:48	01/26/24 20:31	20
PCB-1232	5.9	U	5.9	1.2	mg/Kg	☼	01/25/24 08:48	01/26/24 20:31	20
PCB-1242	**57**		5.9	1.2	mg/Kg	☼	01/25/24 08:48	01/26/24 20:31	20
PCB-1248	5.9	U	5.9	1.2	mg/Kg	☼	01/25/24 08:48	01/26/24 20:31	20
PCB-1254	**3.0**	**J**	5.9	2.8	mg/Kg	☼	01/25/24 08:48	01/26/24 20:31	20
PCB-1260	5.9	U	5.9	2.8	mg/Kg	☼	01/25/24 08:48	01/26/24 20:31	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*41*	*S1-*	*65 - 174*	*01/25/24 08:48*	*01/26/24 20:31*	*20*
DCB Decachlorobiphenyl	*70*		*65 - 174*	*01/25/24 08:48*	*01/26/24 20:31*	*20*
Tetrachloro-m-xylene	*112*		*60 - 154*	*01/25/24 08:48*	*01/26/24 20:31*	*20*
Tetrachloro-m-xylene	*106*		*60 - 154*	*01/25/24 08:48*	*01/26/24 20:31*	*20*

Client Sample ID: B-41 (1.3-1.8)
Lab Sample ID: 480-216574-4

Date Collected: 01/22/24 14:00
Matrix: Solid
Date Received: 01/23/24 11:00
Percent Solids: 93.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	2.2	U	2.2	0.44	mg/Kg	☼	01/25/24 08:48	01/26/24 20:49	10
PCB-1221	2.2	U	2.2	0.44	mg/Kg	☼	01/25/24 08:48	01/26/24 20:49	10
PCB-1232	2.2	U	2.2	0.44	mg/Kg	☼	01/25/24 08:48	01/26/24 20:49	10
PCB-1242	2.2	U	2.2	0.44	mg/Kg	☼	01/25/24 08:48	01/26/24 20:49	10
PCB-1248	**18**		2.2	0.44	mg/Kg	☼	01/25/24 08:48	01/26/24 20:49	10
PCB-1254	2.2	U	2.2	1.0	mg/Kg	☼	01/25/24 08:48	01/26/24 20:49	10
PCB-1260	2.2	U	2.2	1.0	mg/Kg	☼	01/25/24 08:48	01/26/24 20:49	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*70*		*65 - 174*	*01/25/24 08:48*	*01/26/24 20:49*	*10*
DCB Decachlorobiphenyl	*99*		*65 - 174*	*01/25/24 08:48*	*01/26/24 20:49*	*10*

Client Sample ID: B-41 (1.3-1.8)
Lab Sample ID: 480-216574-4
Date Collected: 01/22/24 14:00
Matrix: Solid
Date Received: 01/23/24 11:00
Percent Solids: 93.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*97*		*60 - 154*	*01/25/24 08:48*	*01/26/24 20:49*	*10*
Tetrachloro-m-xylene	*110*		*60 - 154*	*01/25/24 08:48*	*01/26/24 20:49*	*10*

Client Sample ID: B-41 (3.3-4.2)
Lab Sample ID: 480-216574-6
Date Collected: 01/22/24 14:40
Matrix: Solid
Date Received: 01/23/24 11:00
Percent Solids: 85.1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	47	U J	47	9.2	mg/Kg	☼	01/25/24 08:48	01/28/24 17:14	200
PCB-1221	47	U J	47	9.2	mg/Kg	☼	01/25/24 08:48	01/28/24 17:14	200
PCB-1232	47	U J	47	9.2	mg/Kg	☼	01/25/24 08:48	01/28/24 17:14	200
PCB-1242	47	U J	47	9.2	mg/Kg	☼	01/25/24 08:48	01/28/24 17:14	200
PCB-1248	**680**	J	47	9.2	mg/Kg	☼	01/25/24 08:48	01/28/24 17:14	200
PCB-1254	47	U J	47	22	mg/Kg	☼	01/25/24 08:48	01/28/24 17:14	200
PCB-1260	47	U J	47	22	mg/Kg	☼	01/25/24 08:48	01/28/24 17:14	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	*0*	*S1-*	*65 - 174*	*01/25/24 08:48*	*01/28/24 17:14*	*200*
DCB Decachlorobiphenyl	*0*	*S1-*	*65 - 174*	*01/25/24 08:48*	*01/28/24 17:14*	*200*
Tetrachloro-m-xylene	*0*	*S1-*	*60 - 154*	*01/25/24 08:48*	*01/28/24 17:14*	*200*
Tetrachloro-m-xylene	*0*	*S1-*	*60 - 154*	*01/25/24 08:48*	*01/28/24 17:14*	*200*

Client Sample ID: B-40 (1.2-1.7)
Lab Sample ID: 480-216574-7
Date Collected: 01/22/24 11:05
Matrix: Solid
Date Received: 01/23/24 11:00
Percent Solids: 84.4

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	2.5	U	2.5	0.49	mg/Kg	☼	01/25/24 08:48	01/26/24 21:24	10
PCB-1221	2.5	U	2.5	0.49	mg/Kg	☼	01/25/24 08:48	01/26/24 21:24	10
PCB-1232	2.5	U	2.5	0.49	mg/Kg	☼	01/25/24 08:48	01/26/24 21:24	10
PCB-1242	2.5	U	2.5	0.49	mg/Kg	☼	01/25/24 08:48	01/26/24 21:24	10
PCB-1248	**40**		2.5	0.49	mg/Kg	☼	01/25/24 08:48	01/26/24 21:24	10
PCB-1254	2.5	U	2.5	1.2	mg/Kg	☼	01/25/24 08:48	01/26/24 21:24	10
PCB-1260	2.5	U	2.5	1.2	mg/Kg	☼	01/25/24 08:48	01/26/24 21:24	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	*64*	*S1-*	*65 - 174*	*01/25/24 08:48*	*01/26/24 21:24*	*10*
DCB Decachlorobiphenyl	*95*		*65 - 174*	*01/25/24 08:48*	*01/26/24 21:24*	*10*
Tetrachloro-m-xylene	*90*		*60 - 154*	*01/25/24 08:48*	*01/26/24 21:24*	*10*
Tetrachloro-m-xylene	*129*		*60 - 154*	*01/25/24 08:48*	*01/26/24 21:24*	*10*

Client Sample ID: B-40 (3.2-4.8)
Lab Sample ID: 480-216574-9
Date Collected: 01/22/24 11:40
Matrix: Solid
Date Received: 01/23/24 11:00
Percent Solids: 77.9

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	0.27	U	0.27	0.052	mg/Kg	☼	01/25/24 08:48	01/26/24 21:41	1
PCB-1221	0.27	U	0.27	0.052	mg/Kg	☼	01/25/24 08:48	01/26/24 21:41	1

Client Sample ID: B-40 (3.2-4.8)
Date Collected: 01/22/24 11:40
Date Received: 01/23/24 11:00

Lab Sample ID: 480-216574-9
Matrix: Solid
Percent Solids: 77.9

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1232	0.27	U	0.27	0.052	mg/Kg	☼	01/25/24 08:48	01/26/24 21:41	1
PCB-1242	0.27	U	0.27	0.052	mg/Kg	☼	01/25/24 08:48	01/26/24 21:41	1
PCB-1248	**1.6**		0.27	0.052	mg/Kg	☼	01/25/24 08:48	01/26/24 21:41	1
PCB-1254	0.27	U	0.27	0.12	mg/Kg	☼	01/25/24 08:48	01/26/24 21:41	1
PCB-1260	0.27	U	0.27	0.12	mg/Kg	☼	01/25/24 08:48	01/26/24 21:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*107*		*65 - 174*	*01/25/24 08:48*	*01/26/24 21:41*	*1*
DCB Decachlorobiphenyl	*103*		*65 - 174*	*01/25/24 08:48*	*01/26/24 21:41*	*1*
Tetrachloro-m-xylene	*110*		*60 - 154*	*01/25/24 08:48*	*01/26/24 21:41*	*1*
Tetrachloro-m-xylene	*109*		*60 - 154*	*01/25/24 08:48*	*01/26/24 21:41*	*1*

Attachment E

Waste Characterization Analytical Results

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ANALYTICAL REPORT

PREPARED FOR

Attn: Michael Jones
ARCADIS U.S. Inc
One Lincoln Center
110 West Fayette St, Suite 300
Syracuse NY 13202

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JOB DESCRIPTION

National Grid - Dewey Avenue Site

JOB NUMBER

480-216497-1

Eurofins Buffalo
10 Hazelwood Drive
Amherst NY 14228-2298

See page two for job notes and contact information.

myEOL

Eurofins Buffalo

Job Notes

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Authorization

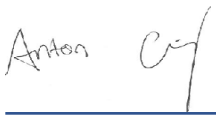

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Table of Contents

Table of Contents

Table of Contents

Job Narrative
480-216497-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 1/19/2024 10:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C

GC/MS VOA
Method 8260C: The following samples were diluted due to the nature of the TCLP matrix: WC-1 (480-216497-1), WC-2 (480-216497-2) and (LB 480-698641/1-A). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 9045D: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: WC-1 (480-216497-1) and WC-2 (480-216497-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: ARCADIS U.S. Inc
Job ID: 480-216497-1
Project/Site: National Grid - Dewey Avenue Site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-216497-1	WC-1	Solid	01/18/24 13:10	01/19/24 10:50
480-216497-2	WC-2	Solid	01/17/24 12:40	01/19/24 10:50

Detection Summary

Client: ARCADIS U.S. Inc
Job ID: 480-216497-1
Project/Site: National Grid - Dewey Avenue Site

Client Sample ID: WC-1
Lab Sample ID: 480-216497-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.012	J	0.015	0.0056	mg/L	1		6010C	TCLP
Barium	1.1		1.0	0.10	mg/L	1		6010C	TCLP
Lead	0.23		0.020	0.0030	mg/L	1		6010C	TCLP
Flashpoint	>180		50.0	50.0	Degrees F	1		1010A	Total/NA
pH	9.6	HF	0.1	0.1	SU	1		9045D	Total/NA
Temperature	18.3	HF	0.001	0.001	Degrees C	1		9045D	Total/NA

Client Sample ID: WC-2
Lab Sample ID: 480-216497-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.012	J	0.015	0.0056	mg/L	1		6010C	TCLP
Barium	0.82	J	1.0	0.10	mg/L	1		6010C	TCLP
Cadmium	0.0011	J	0.0020	0.00050	mg/L	1		6010C	TCLP
Lead	0.33		0.020	0.0030	mg/L	1		6010C	TCLP
Mercury	0.00023		0.00020	0.000043	mg/L	1		7470A	TCLP
Flashpoint	>180		50.0	50.0	Degrees F	1		1010A	Total/NA
pH	8.6	HF	0.1	0.1	SU	1		9045D	Total/NA
Temperature	18.3	HF	0.001	0.001	Degrees C	1		9045D	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S. Inc
Job ID: 480-216497-1
Project/Site: National Grid - Dewey Avenue Site

Method	Method Description	Protocol	Laboratory
8260C	TCLP Volatiles	SW846	EET BUF
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET BUF
6010C	Metals (ICP)	SW846	EET BUF
7470A	TCLP Mercury	SW846	EET BUF
1010A	Ignitability, Pensky-Martens Closed-Cup Method	SW846	EET BUF
9012	Cyanide, Reactive	SW846	EET BUF
9034	Sulfide, Reactive	SW846	EET BUF
9045D	pH	SW846	EET BUF
Moisture	Percent Moisture	EPA	EET BUF
1311	TCLP Extraction	SW846	EET BUF
3010A	Preparation, Total Metals	SW846	EET BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET BUF
5030C	Purge and Trap	SW846	EET BUF
7.3.3	Cyanide, Reactive	SW846	EET BUF
7.3.4	Sulfide, Reactive	SW846	EET BUF
7470A	Preparation, Mercury	SW846	EET BUF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Client Sample ID: WC-1
Date Collected: 01/18/24 13:10
Date Received: 01/19/24 10:50

Lab Sample ID: 480-216497-1
Matrix: Solid

Method: SW846 8260C - TCLP Volatiles - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.010	U	0.010	0.0029	mg/L			01/24/24 14:44	10
1,2-Dichloroethane	0.010	U	0.010	0.0021	mg/L			01/24/24 14:44	10
2-Butanone (MEK)	0.050	U	0.050	0.013	mg/L			01/24/24 14:44	10
Benzene	0.010	U	0.010	0.0041	mg/L			01/24/24 14:44	10
Carbon tetrachloride	0.010	U	0.010	0.0027	mg/L			01/24/24 14:44	10
Chlorobenzene	0.010	U	0.010	0.0075	mg/L			01/24/24 14:44	10
Chloroform	0.010	U	0.010	0.0034	mg/L			01/24/24 14:44	10
Tetrachloroethene	0.010	U	0.010	0.0036	mg/L			01/24/24 14:44	10
Trichloroethene	0.010	U	0.010	0.0046	mg/L			01/24/24 14:44	10
Vinyl chloride	0.010	U	0.010	0.0090	mg/L			01/24/24 14:44	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*77 - 120*		*01/24/24 14:44*	*10*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*01/24/24 14:44*	*10*
Dibromofluoromethane (Surr)	*104*		*75 - 123*		*01/24/24 14:44*	*10*
Toluene-d8 (Surr)	*99*		*80 - 120*		*01/24/24 14:44*	*10*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.040	U	0.040	0.0018	mg/L		01/24/24 10:00	01/25/24 23:04	1
2,4,5-Trichlorophenol	0.020	U	0.020	0.0019	mg/L		01/24/24 10:00	01/25/24 23:04	1
2,4,6-Trichlorophenol	0.020	U	0.020	0.0024	mg/L		01/24/24 10:00	01/25/24 23:04	1
2,4-Dinitrotoluene	0.020	U	0.020	0.0017	mg/L		01/24/24 10:00	01/25/24 23:04	1
2-Methylphenol	0.020	U	0.020	0.0016	mg/L		01/24/24 10:00	01/25/24 23:04	1
3-Methylphenol	0.040	U	0.040	0.0016	mg/L		01/24/24 10:00	01/25/24 23:04	1
4-Methylphenol	0.040	U	0.040	0.0014	mg/L		01/24/24 10:00	01/25/24 23:04	1
Hexachlorobenzene	0.020	U	0.020	0.0020	mg/L		01/24/24 10:00	01/25/24 23:04	1
Hexachlorobutadiene	0.020	U	0.020	0.0027	mg/L		01/24/24 10:00	01/25/24 23:04	1
Hexachloroethane	0.020	U	0.020	0.0023	mg/L		01/24/24 10:00	01/25/24 23:04	1
Nitrobenzene	0.020	U	0.020	0.0011	mg/L		01/24/24 10:00	01/25/24 23:04	1
Pentachlorophenol	0.040	U	0.040	0.0088	mg/L		01/24/24 10:00	01/25/24 23:04	1
Pyridine	0.10	U	0.10	0.0016	mg/L		01/24/24 10:00	01/25/24 23:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*103*		*41 - 120*	*01/24/24 10:00*	*01/25/24 23:04*	*1*
2-Fluorobiphenyl (Surr)	*94*		*48 - 120*	*01/24/24 10:00*	*01/25/24 23:04*	*1*
2-Fluorophenol (Surr)	*47*		*35 - 120*	*01/24/24 10:00*	*01/25/24 23:04*	*1*
Nitrobenzene-d5 (Surr)	*94*		*46 - 120*	*01/24/24 10:00*	*01/25/24 23:04*	*1*
Phenol-d5 (Surr)	*37*		*22 - 120*	*01/24/24 10:00*	*01/25/24 23:04*	*1*
p-Terphenyl-d14 (Surr)	*97*		*60 - 148*	*01/24/24 10:00*	*01/25/24 23:04*	*1*

Method: SW846 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.012**	**J**	0.015	0.0056	mg/L		01/24/24 08:37	01/30/24 05:11	1
Barium	**1.1**		1.0	0.10	mg/L		01/24/24 08:37	01/30/24 05:11	1
Cadmium	0.0020	U	0.0020	0.00050	mg/L		01/24/24 08:37	01/30/24 05:11	1
Chromium	0.020	U	0.020	0.010	mg/L		01/24/24 08:37	01/30/24 05:11	1
Lead	**0.23**		0.020	0.0030	mg/L		01/24/24 08:37	01/30/24 05:11	1
Selenium	0.025	U	0.025	0.0087	mg/L		01/24/24 08:37	01/30/24 05:11	1
Silver	0.0060	U	0.0060	0.0017	mg/L		01/24/24 08:37	01/30/24 05:11	1

Client Sample ID: WC-1
Lab Sample ID: 480-216497-1

Date Collected: 01/18/24 13:10
Matrix: Solid
Date Received: 01/19/24 10:50

Method: SW846 7470A - TCLP Mercury - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	0.000043	mg/L		01/24/24 11:23	01/24/24 15:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Reactive (SW846 9012)	9.9	U	9.9	9.9	mg/Kg		01/24/24 11:00	01/24/24 14:33	1
Sulfide, Reactive (SW846 9034)	9.9	U	9.9	9.9	mg/Kg		01/24/24 11:00	01/24/24 14:38	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint (SW846 1010A)	**>180**		50.0	50.0	Degrees F			01/22/24 09:56	1
pH (SW846 9045D)	**9.6**	**HF**	0.1	0.1	SU			01/22/24 16:40	1
Temperature (SW846 9045D)	**18.3**	**HF**	0.001	0.001	Degrees C			01/22/24 16:40	1

Client Sample ID: WC-2
Lab Sample ID: 480-216497-2

Date Collected: 01/17/24 12:40
Matrix: Solid
Date Received: 01/19/24 10:50

Method: SW846 8260C - TCLP Volatiles - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.010	U	0.010	0.0029	mg/L			01/24/24 15:06	10
1,2-Dichloroethane	0.010	U	0.010	0.0021	mg/L			01/24/24 15:06	10
2-Butanone (MEK)	0.050	U	0.050	0.013	mg/L			01/24/24 15:06	10
Benzene	0.010	U	0.010	0.0041	mg/L			01/24/24 15:06	10
Carbon tetrachloride	0.010	U	0.010	0.0027	mg/L			01/24/24 15:06	10
Chlorobenzene	0.010	U	0.010	0.0075	mg/L			01/24/24 15:06	10
Chloroform	0.010	U	0.010	0.0034	mg/L			01/24/24 15:06	10
Tetrachloroethene	0.010	U	0.010	0.0036	mg/L			01/24/24 15:06	10
Trichloroethene	0.010	U	0.010	0.0046	mg/L			01/24/24 15:06	10
Vinyl chloride	0.010	U	0.010	0.0090	mg/L			01/24/24 15:06	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*77 - 120*		*01/24/24 15:06*	*10*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*01/24/24 15:06*	*10*
Dibromofluoromethane (Surr)	*104*		*75 - 123*		*01/24/24 15:06*	*10*
Toluene-d8 (Surr)	*97*		*80 - 120*		*01/24/24 15:06*	*10*

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.040	U	0.040	0.0018	mg/L		01/24/24 10:00	01/25/24 23:29	1
2,4,5-Trichlorophenol	0.020	U	0.020	0.0019	mg/L		01/24/24 10:00	01/25/24 23:29	1
2,4,6-Trichlorophenol	0.020	U	0.020	0.0024	mg/L		01/24/24 10:00	01/25/24 23:29	1
2,4-Dinitrotoluene	0.020	U	0.020	0.0017	mg/L		01/24/24 10:00	01/25/24 23:29	1
2-Methylphenol	0.020	U	0.020	0.0016	mg/L		01/24/24 10:00	01/25/24 23:29	1
3-Methylphenol	0.040	U	0.040	0.0016	mg/L		01/24/24 10:00	01/25/24 23:29	1
4-Methylphenol	0.040	U	0.040	0.0014	mg/L		01/24/24 10:00	01/25/24 23:29	1
Hexachlorobenzene	0.020	U	0.020	0.0020	mg/L		01/24/24 10:00	01/25/24 23:29	1
Hexachlorobutadiene	0.020	U	0.020	0.0027	mg/L		01/24/24 10:00	01/25/24 23:29	1
Hexachloroethane	0.020	U	0.020	0.0023	mg/L		01/24/24 10:00	01/25/24 23:29	1
Nitrobenzene	0.020	U	0.020	0.0011	mg/L		01/24/24 10:00	01/25/24 23:29	1
Pentachlorophenol	0.040	U	0.040	0.0088	mg/L		01/24/24 10:00	01/25/24 23:29	1
Pyridine	0.10	U	0.10	0.0016	mg/L		01/24/24 10:00	01/25/24 23:29	1

Client Sample ID: WC-2
Date Collected: 01/17/24 12:40
Date Received: 01/19/24 10:50

Lab Sample ID: 480-216497-2
Matrix: Solid

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*99*		*41 - 120*	*01/24/24 10:00*	*01/25/24 23:29*	*1*
2-Fluorobiphenyl (Surr)	*97*		*48 - 120*	*01/24/24 10:00*	*01/25/24 23:29*	*1*
2-Fluorophenol (Surr)	*53*		*35 - 120*	*01/24/24 10:00*	*01/25/24 23:29*	*1*
Nitrobenzene-d5 (Surr)	*97*		*46 - 120*	*01/24/24 10:00*	*01/25/24 23:29*	*1*
Phenol-d5 (Surr)	*36*		*22 - 120*	*01/24/24 10:00*	*01/25/24 23:29*	*1*
p-Terphenyl-d14 (Surr)	*98*		*60 - 148*	*01/24/24 10:00*	*01/25/24 23:29*	*1*

Method: SW846 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.012**	**J**	0.015	0.0056	mg/L		01/24/24 08:37	01/30/24 05:15	1
Barium	**0.82**	**J**	1.0	0.10	mg/L		01/24/24 08:37	01/30/24 05:15	1
Cadmium	**0.0011**	**J**	0.0020	0.00050	mg/L		01/24/24 08:37	01/30/24 05:15	1
Chromium	0.020	U	0.020	0.010	mg/L		01/24/24 08:37	01/30/24 05:15	1
Lead	**0.33**		0.020	0.0030	mg/L		01/24/24 08:37	01/30/24 05:15	1
Selenium	0.025	U	0.025	0.0087	mg/L		01/24/24 08:37	01/30/24 05:15	1
Silver	0.0060	U	0.0060	0.0017	mg/L		01/24/24 08:37	01/30/24 05:15	1

Method: SW846 7470A - TCLP Mercury - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00023**		0.00020	0.000043	mg/L		01/24/24 11:23	01/24/24 15:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Reactive (SW846 9012)	9.4	U	9.4	9.4	mg/Kg		01/24/24 11:00	01/24/24 14:36	1
Sulfide, Reactive (SW846 9034)	9.4	U	9.4	9.4	mg/Kg		01/24/24 11:00	01/24/24 14:38	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint (SW846 1010A)	**>180**		50.0	50.0	Degrees F			01/22/24 09:56	1
pH (SW846 9045D)	**8.6**	**HF**	0.1	0.1	SU			01/22/24 16:40	1
Temperature (SW846 9045D)	**18.3**	**HF**	0.001	0.001	Degrees C			01/22/24 16:40	1

Surrogate Summary

Client: ARCADIS U.S. Inc
Job ID: 480-216497-1
Project/Site: National Grid - Dewey Avenue Site

Method: 8260C - TCLP Volatiles

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(77-120)	(73-120)	(75-123)	(80-120)
LCS 480-698812/6	Lab Control Sample	100	101	108	100
MB 480-698812/9	Method Blank	105	99	111	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C - TCLP Volatiles

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(77-120)	(73-120)	(75-123)	(80-120)
480-216497-1	WC-1	104	98	104	99
480-216497-2	WC-2	106	99	104	97
LB 480-698641/1-A	Method Blank	106	98	111	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL	TPHd14
Lab Sample ID	Client Sample ID	(41-120)	(48-120)	(35-120)	(46-120)	(22-120)	(60-148)
LCS 480-698797/2-A	Lab Control Sample	104	97	52	93	39	101
LCSD 480-698797/3-A	Lab Control Sample Dup	107	98	54	93	37	100
MB 480-698797/1-A	Method Blank	77	85	44	83	32	84

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL	TPHd14
Lab Sample ID	Client Sample ID	(41-120)	(48-120)	(35-120)	(46-120)	(22-120)	(60-148)
480-216497-1	WC-1	103	94	47	94	37	97
480-216497-2	WC-2	99	97	53	97	36	98
LB 480-698639/1-C	Method Blank	91	90	50	91	35	92

Surrogate Summary

Client: ARCADIS U.S. Inc
Job ID: 480-216497-1
Project/Site: National Grid - Dewey Avenue Site

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8260C - TCLP Volatiles

Lab Sample ID: MB 480-698812/9
Matrix: Solid
Analysis Batch: 698812

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.0010	U	0.0010	0.00029	mg/L			01/24/24 13:14	1
1,2-Dichloroethane	0.0010	U	0.0010	0.00021	mg/L			01/24/24 13:14	1
2-Butanone (MEK)	0.0050	U	0.0050	0.0013	mg/L			01/24/24 13:14	1
Benzene	0.0010	U	0.0010	0.00041	mg/L			01/24/24 13:14	1
Carbon tetrachloride	0.0010	U	0.0010	0.00027	mg/L			01/24/24 13:14	1
Chlorobenzene	0.0010	U	0.0010	0.00075	mg/L			01/24/24 13:14	1
Chloroform	0.0010	U	0.0010	0.00034	mg/L			01/24/24 13:14	1
Tetrachloroethene	0.0010	U	0.0010	0.00036	mg/L			01/24/24 13:14	1
Trichloroethene	0.0010	U	0.0010	0.00046	mg/L			01/24/24 13:14	1
Vinyl chloride	0.0010	U	0.0010	0.00090	mg/L			01/24/24 13:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*77 - 120*		*01/24/24 13:14*	*1*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*01/24/24 13:14*	*1*
Dibromofluoromethane (Surr)	*111*		*75 - 123*		*01/24/24 13:14*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*01/24/24 13:14*	*1*

Lab Sample ID: LCS 480-698812/6
Matrix: Solid
Analysis Batch: 698812

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	0.0250	0.0294		mg/L		117	66 - 127
1,2-Dichloroethane	0.0250	0.0259		mg/L		104	75 - 120
2-Butanone (MEK)	0.125	0.134		mg/L		108	57 - 140
Benzene	0.0250	0.0274		mg/L		110	71 - 124
Carbon tetrachloride	0.0250	0.0311		mg/L		125	72 - 134
Chlorobenzene	0.0250	0.0262		mg/L		105	80 - 120
Chloroform	0.0250	0.0271		mg/L		108	73 - 127
Tetrachloroethene	0.0250	0.0287		mg/L		115	74 - 122
Trichloroethene	0.0250	0.0274		mg/L		110	74 - 123
Vinyl chloride	0.0250	0.0268		mg/L		107	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*
Dibromofluoromethane (Surr)	*108*		*75 - 123*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LB 480-698641/1-A
Matrix: Solid
Analysis Batch: 698812

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.010	U	0.010	0.0029	mg/L			01/24/24 14:21	10
1,2-Dichloroethane	0.010	U	0.010	0.0021	mg/L			01/24/24 14:21	10
2-Butanone (MEK)	0.050	U	0.050	0.013	mg/L			01/24/24 14:21	10
Benzene	0.010	U	0.010	0.0041	mg/L			01/24/24 14:21	10

Method: 8260C - TCLP Volatiles (Continued)

Lab Sample ID: LB 480-698641/1-A
Matrix: Solid
Analysis Batch: 698812

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.010	U	0.010	0.0027	mg/L			01/24/24 14:21	10
Chlorobenzene	0.010	U	0.010	0.0075	mg/L			01/24/24 14:21	10
Chloroform	0.010	U	0.010	0.0034	mg/L			01/24/24 14:21	10
Tetrachloroethene	0.010	U	0.010	0.0036	mg/L			01/24/24 14:21	10
Trichloroethene	0.010	U	0.010	0.0046	mg/L			01/24/24 14:21	10
Vinyl chloride	0.010	U	0.010	0.0090	mg/L			01/24/24 14:21	10

Surrogate	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*77 - 120*		*01/24/24 14:21*	*10*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*01/24/24 14:21*	*10*
Dibromofluoromethane (Surr)	*111*		*75 - 123*		*01/24/24 14:21*	*10*
Toluene-d8 (Surr)	*99*		*80 - 120*		*01/24/24 14:21*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-698797/1-A
Matrix: Solid
Analysis Batch: 699015

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 698797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.010	U	0.010	0.00045	mg/L		01/24/24 10:00	01/25/24 21:28	1
2,4,5-Trichlorophenol	0.0050	U	0.0050	0.00048	mg/L		01/24/24 10:00	01/25/24 21:28	1
2,4,6-Trichlorophenol	0.0050	U	0.0050	0.00060	mg/L		01/24/24 10:00	01/25/24 21:28	1
2,4-Dinitrotoluene	0.0050	U	0.0050	0.00043	mg/L		01/24/24 10:00	01/25/24 21:28	1
2-Methylphenol	0.0050	U	0.0050	0.00040	mg/L		01/24/24 10:00	01/25/24 21:28	1
3-Methylphenol	0.010	U	0.010	0.00040	mg/L		01/24/24 10:00	01/25/24 21:28	1
4-Methylphenol	0.010	U	0.010	0.00035	mg/L		01/24/24 10:00	01/25/24 21:28	1
Hexachlorobenzene	0.0050	U	0.0050	0.00050	mg/L		01/24/24 10:00	01/25/24 21:28	1
Hexachlorobutadiene	0.0050	U	0.0050	0.00068	mg/L		01/24/24 10:00	01/25/24 21:28	1
Hexachloroethane	0.0050	U	0.0050	0.00058	mg/L		01/24/24 10:00	01/25/24 21:28	1
Nitrobenzene	0.0050	U	0.0050	0.00028	mg/L		01/24/24 10:00	01/25/24 21:28	1
Pentachlorophenol	0.010	U	0.010	0.0022	mg/L		01/24/24 10:00	01/25/24 21:28	1
Pyridine	0.025	U	0.025	0.00040	mg/L		01/24/24 10:00	01/25/24 21:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*77*		*41 - 120*	*01/24/24 10:00*	*01/25/24 21:28*	*1*
2-Fluorobiphenyl (Surr)	*85*		*48 - 120*	*01/24/24 10:00*	*01/25/24 21:28*	*1*
2-Fluorophenol (Surr)	*44*		*35 - 120*	*01/24/24 10:00*	*01/25/24 21:28*	*1*
Nitrobenzene-d5 (Surr)	*83*		*46 - 120*	*01/24/24 10:00*	*01/25/24 21:28*	*1*
Phenol-d5 (Surr)	*32*		*22 - 120*	*01/24/24 10:00*	*01/25/24 21:28*	*1*
p-Terphenyl-d14 (Surr)	*84*		*60 - 148*	*01/24/24 10:00*	*01/25/24 21:28*	*1*

Lab Sample ID: LCS 480-698797/2-A
Matrix: Solid
Analysis Batch: 699015

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 698797

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dichlorobenzene			0.0500	0.0323		mg/L		65	42 - 120		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-698797/2-A
Client Sample ID: Lab Control Sample
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 699015
Prep Batch: 698797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4,5-Trichlorophenol	0.0500	0.0484		mg/L		97	65 - 126
2,4,6-Trichlorophenol	0.0500	0.0482		mg/L		96	64 - 120
2,4-Dinitrotoluene	0.0500	0.0485		mg/L		97	69 - 120
2-Methylphenol	0.0500	0.0376		mg/L		75	39 - 120
3-Methylphenol	0.0500	0.0365		mg/L		73	39 - 120
4-Methylphenol	0.0500	0.0365		mg/L		73	29 - 131
Hexachlorobenzene	0.0500	0.0482		mg/L		96	61 - 120
Hexachlorobutadiene	0.0500	0.0337		mg/L		67	35 - 120
Hexachloroethane	0.0500	0.0291		mg/L		58	33 - 120
Nitrobenzene	0.0500	0.0427		mg/L		85	53 - 123
Pentachlorophenol	0.100	0.0958		mg/L		96	10 - 136
Pyridine	0.100	0.0308		mg/L		31	10 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*104*		*41 - 120*
2-Fluorobiphenyl (Surr)	*97*		*48 - 120*
2-Fluorophenol (Surr)	*52*		*35 - 120*
Nitrobenzene-d5 (Surr)	*93*		*46 - 120*
Phenol-d5 (Surr)	*39*		*22 - 120*
p-Terphenyl-d14 (Surr)	*101*		*60 - 148*

Lab Sample ID: LCSD 480-698797/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 699015
Prep Batch: 698797

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dichlorobenzene	0.0500	0.0324		mg/L		65	42 - 120	0	36
2,4,5-Trichlorophenol	0.0500	0.0478		mg/L		96	65 - 126	1	18
2,4,6-Trichlorophenol	0.0500	0.0483		mg/L		97	64 - 120	0	19
2,4-Dinitrotoluene	0.0500	0.0488		mg/L		98	69 - 120	1	20
2-Methylphenol	0.0500	0.0366		mg/L		73	39 - 120	3	27
3-Methylphenol	0.0500	0.0349		mg/L		70	39 - 120	4	30
4-Methylphenol	0.0500	0.0349		mg/L		70	29 - 131	5	24
Hexachlorobenzene	0.0500	0.0489		mg/L		98	61 - 120	1	15
Hexachlorobutadiene	0.0500	0.0349		mg/L		70	35 - 120	3	44
Hexachloroethane	0.0500	0.0297		mg/L		59	33 - 120	2	46
Nitrobenzene	0.0500	0.0423		mg/L		85	53 - 123	1	24
Pentachlorophenol	0.100	0.0975		mg/L		97	10 - 136	2	37
Pyridine	0.100	0.0311		mg/L		31	10 - 120	1	49

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*107*		*41 - 120*
2-Fluorobiphenyl (Surr)	*98*		*48 - 120*
2-Fluorophenol (Surr)	*54*		*35 - 120*
Nitrobenzene-d5 (Surr)	*93*		*46 - 120*
Phenol-d5 (Surr)	*37*		*22 - 120*
p-Terphenyl-d14 (Surr)	*100*		*60 - 148*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LB 480-698639/1-C
Matrix: Solid
Analysis Batch: 699015

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 698797

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.040	U	0.040	0.0018	mg/L		01/24/24 10:00	01/25/24 22:40	1
2,4,5-Trichlorophenol	0.020	U	0.020	0.0019	mg/L		01/24/24 10:00	01/25/24 22:40	1
2,4,6-Trichlorophenol	0.020	U	0.020	0.0024	mg/L		01/24/24 10:00	01/25/24 22:40	1
2,4-Dinitrotoluene	0.020	U	0.020	0.0017	mg/L		01/24/24 10:00	01/25/24 22:40	1
2-Methylphenol	0.020	U	0.020	0.0016	mg/L		01/24/24 10:00	01/25/24 22:40	1
3-Methylphenol	0.040	U	0.040	0.0016	mg/L		01/24/24 10:00	01/25/24 22:40	1
4-Methylphenol	0.040	U	0.040	0.0014	mg/L		01/24/24 10:00	01/25/24 22:40	1
Hexachlorobenzene	0.020	U	0.020	0.0020	mg/L		01/24/24 10:00	01/25/24 22:40	1
Hexachlorobutadiene	0.020	U	0.020	0.0027	mg/L		01/24/24 10:00	01/25/24 22:40	1
Hexachloroethane	0.020	U	0.020	0.0023	mg/L		01/24/24 10:00	01/25/24 22:40	1
Nitrobenzene	0.020	U	0.020	0.0011	mg/L		01/24/24 10:00	01/25/24 22:40	1
Pentachlorophenol	0.040	U	0.040	0.0088	mg/L		01/24/24 10:00	01/25/24 22:40	1
Pyridine	0.10	U	0.10	0.0016	mg/L		01/24/24 10:00	01/25/24 22:40	1

Surrogate	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*91*		*41 - 120*	*01/24/24 10:00*	*01/25/24 22:40*	*1*
2-Fluorobiphenyl (Surr)	*90*		*48 - 120*	*01/24/24 10:00*	*01/25/24 22:40*	*1*
2-Fluorophenol (Surr)	*50*		*35 - 120*	*01/24/24 10:00*	*01/25/24 22:40*	*1*
Nitrobenzene-d5 (Surr)	*91*		*46 - 120*	*01/24/24 10:00*	*01/25/24 22:40*	*1*
Phenol-d5 (Surr)	*35*		*22 - 120*	*01/24/24 10:00*	*01/25/24 22:40*	*1*
p-Terphenyl-d14 (Surr)	*92*		*60 - 148*	*01/24/24 10:00*	*01/25/24 22:40*	*1*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-698766/2-A
Matrix: Solid
Analysis Batch: 699362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 698766

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	U	0.015	0.0056	mg/L		01/24/24 08:37	01/30/24 05:04	1
Barium	1.0	U	1.0	0.10	mg/L		01/24/24 08:37	01/30/24 05:04	1
Cadmium	0.0020	U	0.0020	0.00050	mg/L		01/24/24 08:37	01/30/24 05:04	1
Chromium	0.020	U	0.020	0.010	mg/L		01/24/24 08:37	01/30/24 05:04	1
Lead	0.020	U	0.020	0.0030	mg/L		01/24/24 08:37	01/30/24 05:04	1
Selenium	0.025	U	0.025	0.0087	mg/L		01/24/24 08:37	01/30/24 05:04	1
Silver	0.0060	U	0.0060	0.0017	mg/L		01/24/24 08:37	01/30/24 05:04	1

Lab Sample ID: LCS 480-698766/3-A
Matrix: Solid
Analysis Batch: 699362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 698766

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.07		mg/L		107	80 - 120
Barium	1.00	1.03		mg/L		103	80 - 120
Cadmium	1.00	1.03		mg/L		103	80 - 120
Chromium	1.00	1.00		mg/L		100	80 - 120
Lead	1.00	1.04		mg/L		104	80 - 120
Selenium	1.00	1.06		mg/L		106	80 - 120
Silver	1.00	1.04		mg/L		104	80 - 120

Method: 6010C - Metals (ICP)

Lab Sample ID: LB 480-698639/1-B
Matrix: Solid
Analysis Batch: 699362

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 698766

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015	U	0.015	0.0056	mg/L		01/24/24 08:37	01/30/24 05:00	1
Barium	1.0	U	1.0	0.10	mg/L		01/24/24 08:37	01/30/24 05:00	1
Cadmium	0.0020	U	0.0020	0.00050	mg/L		01/24/24 08:37	01/30/24 05:00	1
Chromium	0.020	U	0.020	0.010	mg/L		01/24/24 08:37	01/30/24 05:00	1
Lead	0.020	U	0.020	0.0030	mg/L		01/24/24 08:37	01/30/24 05:00	1
Selenium	0.025	U	0.025	0.0087	mg/L		01/24/24 08:37	01/30/24 05:00	1
Silver	0.0060	U	0.0060	0.0017	mg/L		01/24/24 08:37	01/30/24 05:00	1

Lab Sample ID: 480-216497-2 MS
Matrix: Solid
Analysis Batch: 699362

Client Sample ID: WC-2
Prep Type: TCLP
Prep Batch: 698766

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.012	J	1.00	1.07		mg/L		106	75 - 125
Barium	0.82	J	1.00	1.80		mg/L		98	75 - 125
Cadmium	0.0011	J	1.00	1.05		mg/L		105	75 - 125
Chromium	0.020	U	1.00	0.958		mg/L		96	75 - 125
Lead	0.33		1.00	1.32		mg/L		99	75 - 125
Selenium	0.025	U	1.00	1.05		mg/L		105	75 - 125
Silver	0.0060	U	1.00	1.07		mg/L		107	75 - 125

Lab Sample ID: 480-216497-2 MSD
Matrix: Solid
Analysis Batch: 699362

Client Sample ID: WC-2
Prep Type: TCLP
Prep Batch: 698766

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.012	J	1.00	1.07		mg/L		105	75 - 125	1	20
Barium	0.82	J	1.00	1.80		mg/L		98	75 - 125	0	20
Cadmium	0.0011	J	1.00	1.04		mg/L		104	75 - 125	1	20
Chromium	0.020	U	1.00	0.953		mg/L		95	75 - 125	0	20
Lead	0.33		1.00	1.32		mg/L		99	75 - 125	0	20
Selenium	0.025	U	1.00	1.04		mg/L		104	75 - 125	1	20
Silver	0.0060	U	1.00	1.05		mg/L		105	75 - 125	2	20

Method: 7470A - TCLP Mercury

Lab Sample ID: MB 480-698816/2-A
Matrix: Solid
Analysis Batch: 698875

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 698816

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	0.000043	mg/L		01/24/24 11:23	01/24/24 15:30	1

Lab Sample ID: LCS 480-698816/3-A
Matrix: Solid
Analysis Batch: 698875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 698816

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00680	0.00655		mg/L		96	80 - 120

Method: 7470A - TCLP Mercury (Continued)

Lab Sample ID: LB 480-698639/1-D
Matrix: Solid
Analysis Batch: 698875

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 698816

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	0.000043	mg/L		01/24/24 11:23	01/24/24 15:28	1

Lab Sample ID: 480-216497-2 MS
Matrix: Solid
Analysis Batch: 698875

Client Sample ID: WC-2
Prep Type: TCLP
Prep Batch: 698816

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00023		0.00680	0.00711		mg/L		101	80 - 120

Lab Sample ID: 480-216497-2 MSD
Matrix: Solid
Analysis Batch: 698875

Client Sample ID: WC-2
Prep Type: TCLP
Prep Batch: 698816

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00023		0.00680	0.00721		mg/L		103	80 - 120	1	20

Method: 1010A - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: LCS 480-698533/1
Matrix: Solid
Analysis Batch: 698533

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Flashpoint	81.0	81.00		Degrees F		100	97.5 - 102.5

Lab Sample ID: 480-216497-1 DU
Matrix: Solid
Analysis Batch: 698533

Client Sample ID: WC-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Flashpoint	>180		>180.0		Degrees F		NC	10

Method: 9012 - Cyanide, Reactive

Lab Sample ID: MB 480-698833/1-A
Matrix: Solid
Analysis Batch: 698952

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 698833

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Reactive	10.0	U	10.0	10.0	mg/Kg		01/24/24 11:00	01/24/24 14:30	1

Lab Sample ID: LCS 480-698833/2-A
Matrix: Solid
Analysis Batch: 698952

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 698833

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Reactive	1000	675.0		mg/Kg		68	10 - 100

Method: 9012 - Cyanide, Reactive (Continued)

Lab Sample ID: 480-216497-1 DU
Matrix: Solid
Analysis Batch: 698952

Client Sample ID: WC-1
Prep Type: Total/NA
Prep Batch: 698833

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cyanide, Reactive	9.9	U		9.7	U	mg/Kg				NC	20

Method: 9034 - Sulfide, Reactive

Lab Sample ID: MB 480-698835/1-A
Matrix: Solid
Analysis Batch: 698959

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 698835

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	10.0	U	10.0	10.0	mg/Kg		01/24/24 11:00	01/24/24 14:38	1

Lab Sample ID: LCS 480-698835/2-A
Matrix: Solid
Analysis Batch: 698959

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 698835

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfide, Reactive			780	721.4		mg/Kg		92	10 - 100		

Lab Sample ID: 480-216497-1 DU
Matrix: Solid
Analysis Batch: 698959

Client Sample ID: WC-1
Prep Type: Total/NA
Prep Batch: 698835

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfide, Reactive	9.9	U		9.7	U	mg/Kg				NC	20

Method: 9045D - pH

Lab Sample ID: LCS 480-698605/1
Matrix: Solid
Analysis Batch: 698605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH			7.00	7.0		SU		100	99 - 101		

Lab Sample ID: 480-216497-2 DU
Matrix: Solid
Analysis Batch: 698605

Client Sample ID: WC-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	8.6	HF		8.8		SU				3	5
Temperature	18.3	HF		18.3		Degrees C				0	10

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

GC/MS VOA

Leach Batch: 698641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	TCLP	Solid	1311	
480-216497-2	WC-2	TCLP	Solid	1311	
LB 480-698641/1-A	Method Blank	TCLP	Solid	1311	

Analysis Batch: 698812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	TCLP	Solid	8260C	698641
480-216497-2	WC-2	TCLP	Solid	8260C	698641
LB 480-698641/1-A	Method Blank	TCLP	Solid	8260C	698641
MB 480-698812/9	Method Blank	Total/NA	Solid	8260C	
LCS 480-698812/6	Lab Control Sample	Total/NA	Solid	8260C	

GC/MS Semi VOA

Leach Batch: 698639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	TCLP	Solid	1311	
480-216497-2	WC-2	TCLP	Solid	1311	
LB 480-698639/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 698797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	TCLP	Solid	3510C	698639
480-216497-2	WC-2	TCLP	Solid	3510C	698639
LB 480-698639/1-C	Method Blank	TCLP	Solid	3510C	698639
MB 480-698797/1-A	Method Blank	Total/NA	Solid	3510C	
LCS 480-698797/2-A	Lab Control Sample	Total/NA	Solid	3510C	
LCSD 480-698797/3-A	Lab Control Sample Dup	Total/NA	Solid	3510C	

Analysis Batch: 699015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	TCLP	Solid	8270D	698797
480-216497-2	WC-2	TCLP	Solid	8270D	698797
LB 480-698639/1-C	Method Blank	TCLP	Solid	8270D	698797
MB 480-698797/1-A	Method Blank	Total/NA	Solid	8270D	698797
LCS 480-698797/2-A	Lab Control Sample	Total/NA	Solid	8270D	698797
LCSD 480-698797/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	698797

Metals

Leach Batch: 698639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	TCLP	Solid	1311	
480-216497-2	WC-2	TCLP	Solid	1311	
LB 480-698639/1-B	Method Blank	TCLP	Solid	1311	
LB 480-698639/1-D	Method Blank	TCLP	Solid	1311	
480-216497-2 MS	WC-2	TCLP	Solid	1311	
480-216497-2 MSD	WC-2	TCLP	Solid	1311	

Prep Batch: 698766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	TCLP	Solid	3010A	698639

Metals (Continued)

Prep Batch: 698766 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-2	WC-2	TCLP	Solid	3010A	698639
LB 480-698639/1-B	Method Blank	TCLP	Solid	3010A	698639
MB 480-698766/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 480-698766/3-A	Lab Control Sample	Total/NA	Solid	3010A	
480-216497-2 MS	WC-2	TCLP	Solid	3010A	698639
480-216497-2 MSD	WC-2	TCLP	Solid	3010A	698639

Prep Batch: 698816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	TCLP	Solid	7470A	698639
480-216497-2	WC-2	TCLP	Solid	7470A	698639
LB 480-698639/1-D	Method Blank	TCLP	Solid	7470A	698639
MB 480-698816/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 480-698816/3-A	Lab Control Sample	Total/NA	Solid	7470A	
480-216497-2 MS	WC-2	TCLP	Solid	7470A	698639
480-216497-2 MSD	WC-2	TCLP	Solid	7470A	698639

Analysis Batch: 698875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	TCLP	Solid	7470A	698816
480-216497-2	WC-2	TCLP	Solid	7470A	698816
LB 480-698639/1-D	Method Blank	TCLP	Solid	7470A	698816
MB 480-698816/2-A	Method Blank	Total/NA	Solid	7470A	698816
LCS 480-698816/3-A	Lab Control Sample	Total/NA	Solid	7470A	698816
480-216497-2 MS	WC-2	TCLP	Solid	7470A	698816
480-216497-2 MSD	WC-2	TCLP	Solid	7470A	698816

Analysis Batch: 699362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	TCLP	Solid	6010C	698766
480-216497-2	WC-2	TCLP	Solid	6010C	698766
LB 480-698639/1-B	Method Blank	TCLP	Solid	6010C	698766
MB 480-698766/2-A	Method Blank	Total/NA	Solid	6010C	698766
LCS 480-698766/3-A	Lab Control Sample	Total/NA	Solid	6010C	698766
480-216497-2 MS	WC-2	TCLP	Solid	6010C	698766
480-216497-2 MSD	WC-2	TCLP	Solid	6010C	698766

General Chemistry

Analysis Batch: 698465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	Total/NA	Solid	Moisture	
480-216497-2	WC-2	Total/NA	Solid	Moisture	

Analysis Batch: 698533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	Total/NA	Solid	1010A	
480-216497-2	WC-2	Total/NA	Solid	1010A	
LCS 480-698533/1	Lab Control Sample	Total/NA	Solid	1010A	
480-216497-1 DU	WC-1	Total/NA	Solid	1010A	

QC Association Summary

Client: ARCADIS U.S. Inc
Job ID: 480-216497-1
Project/Site: National Grid - Dewey Avenue Site

General Chemistry

Analysis Batch: 698605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	Total/NA	Solid	9045D	
480-216497-2	WC-2	Total/NA	Solid	9045D	
LCS 480-698605/1	Lab Control Sample	Total/NA	Solid	9045D	
480-216497-2 DU	WC-2	Total/NA	Solid	9045D	

Prep Batch: 698833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	Total/NA	Solid	7.3.3	
480-216497-2	WC-2	Total/NA	Solid	7.3.3	
MB 480-698833/1-A	Method Blank	Total/NA	Solid	7.3.3	
LCS 480-698833/2-A	Lab Control Sample	Total/NA	Solid	7.3.3	
480-216497-1 DU	WC-1	Total/NA	Solid	7.3.3	

Prep Batch: 698835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	Total/NA	Solid	7.3.4	
480-216497-2	WC-2	Total/NA	Solid	7.3.4	
MB 480-698835/1-A	Method Blank	Total/NA	Solid	7.3.4	
LCS 480-698835/2-A	Lab Control Sample	Total/NA	Solid	7.3.4	
480-216497-1 DU	WC-1	Total/NA	Solid	7.3.4	

Analysis Batch: 698952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	Total/NA	Solid	9012	698833
480-216497-2	WC-2	Total/NA	Solid	9012	698833
MB 480-698833/1-A	Method Blank	Total/NA	Solid	9012	698833
LCS 480-698833/2-A	Lab Control Sample	Total/NA	Solid	9012	698833
480-216497-1 DU	WC-1	Total/NA	Solid	9012	698833

Analysis Batch: 698959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-216497-1	WC-1	Total/NA	Solid	9034	698835
480-216497-2	WC-2	Total/NA	Solid	9034	698835
MB 480-698835/1-A	Method Blank	Total/NA	Solid	9034	698835
LCS 480-698835/2-A	Lab Control Sample	Total/NA	Solid	9034	698835
480-216497-1 DU	WC-1	Total/NA	Solid	9034	698835

Lab Chronicle

Client: ARCADIS U.S. Inc
Job ID: 480-216497-1
Project/Site: National Grid - Dewey Avenue Site

Client Sample ID: WC-1
Lab Sample ID: 480-216497-1
Date Collected: 01/18/24 13:10
Matrix: Solid
Date Received: 01/19/24 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			698641	SMP	EET BUF	01/23/24 09:27 - 01/24/24 08:18 [1]
TCLP	Analysis	8260C		10	698812	LCH	EET BUF	01/24/24 14:44
TCLP	Leach	1311			698639	SMP	EET BUF	01/23/24 09:23 - 01/24/24 08:06 [1]
TCLP	Prep	3510C			698797	JMP	EET BUF	01/24/24 10:00
TCLP	Analysis	8270D		1	699015	JMM	EET BUF	01/25/24 23:04
TCLP	Leach	1311			698639	SMP	EET BUF	01/23/24 09:23 - 01/24/24 08:06 [1]
TCLP	Prep	3010A			698766	ESB	EET BUF	01/24/24 08:37
TCLP	Analysis	6010C		1	699362	BMB	EET BUF	01/30/24 05:11
TCLP	Leach	1311			698639	SMP	EET BUF	01/23/24 09:23 - 01/24/24 08:06 [1]
TCLP	Prep	7470A			698816	NVK	EET BUF	01/24/24 11:23
TCLP	Analysis	7470A		1	698875	NVK	EET BUF	01/24/24 15:32
Total/NA	Analysis	1010A		1	698533	KM	EET BUF	01/22/24 09:56
Total/NA	Prep	7.3.3			698833	AM	EET BUF	01/24/24 11:00
Total/NA	Analysis	9012		1	698952	AM	EET BUF	01/24/24 14:33
Total/NA	Prep	7.3.4			698835	AM	EET BUF	01/24/24 11:00
Total/NA	Analysis	9034		1	698959	AM	EET BUF	01/24/24 14:38
Total/NA	Analysis	9045D		1	698605	KB	EET BUF	01/22/24 16:40
Total/NA	Analysis	Moisture		1	698465	AF	EET BUF	01/19/24 15:33

Client Sample ID: WC-2
Lab Sample ID: 480-216497-2
Date Collected: 01/17/24 12:40
Matrix: Solid
Date Received: 01/19/24 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			698641	SMP	EET BUF	01/23/24 09:27 - 01/24/24 08:18 [1]
TCLP	Analysis	8260C		10	698812	LCH	EET BUF	01/24/24 15:06
TCLP	Leach	1311			698639	SMP	EET BUF	01/23/24 09:23 - 01/24/24 08:06 [1]
TCLP	Prep	3510C			698797	JMP	EET BUF	01/24/24 10:00
TCLP	Analysis	8270D		1	699015	JMM	EET BUF	01/25/24 23:29
TCLP	Leach	1311			698639	SMP	EET BUF	01/23/24 09:23 - 01/24/24 08:06 [1]
TCLP	Prep	3010A			698766	ESB	EET BUF	01/24/24 08:37
TCLP	Analysis	6010C		1	699362	BMB	EET BUF	01/30/24 05:15
TCLP	Leach	1311			698639	SMP	EET BUF	01/23/24 09:23 - 01/24/24 08:06 [1]
TCLP	Prep	7470A			698816	NVK	EET BUF	01/24/24 11:23
TCLP	Analysis	7470A		1	698875	NVK	EET BUF	01/24/24 15:34
Total/NA	Analysis	1010A		1	698533	KM	EET BUF	01/22/24 09:56
Total/NA	Prep	7.3.3			698833	AM	EET BUF	01/24/24 11:00
Total/NA	Analysis	9012		1	698952	AM	EET BUF	01/24/24 14:36
Total/NA	Prep	7.3.4			698835	AM	EET BUF	01/24/24 11:00
Total/NA	Analysis	9034		1	698959	AM	EET BUF	01/24/24 14:38
Total/NA	Analysis	9045D		1	698605	KB	EET BUF	01/22/24 16:40
Total/NA	Analysis	Moisture		1	698465	AF	EET BUF	01/19/24 15:33

[1] This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

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