# Remedial Action Work Plan

## 1050-1088 Niagara Street Site
## Buffalo, New York

July 2017 0136-013-005

Prepared For:

9271 Group, LLC

Prepared By:

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

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# REMEDIAL ACTION WORK PLAN

**1050-1088 NIAGARA STREET SITE**
**BUFFALO, NEW YORK**
**BCP SITE No. C915277**

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In Association With:

TURNKEY
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RESTORATION, LLC

# Certification

I, Thomas H. Forbes, certify that I am currently a NYS registered professional engineer and that this July 2017 Remedial Action Work Plan (RAWP) for the 1050-1088 Niagara Street Site (C915277) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

7-25-17
Date

# REMEDIAL ACTION WORK PLAN
## 1050-1088 Niagara Street Site
## Buffalo, New York

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# 1.0 INTRODUCTION

Benchmark Environmental Engineering and Science, PLLC (Benchmark), in association with TurnKey Environmental Restoration, LLC (TurnKey), referred to herein as Benchmark-TurnKey, has prepared this Remedial Action (RA) Work Plan for the 1050-1088 Niagara Street Site on behalf of 9271 Group, LLC. 9271 Group, LLC (9271 Group) has elected to pursue cleanup and redevelopment of the Site, located at 1050-1088 Niagara Street, Buffalo, New York (Site; see Figures 1 and 2), under the New York State Brownfield Cleanup Program (BCP) and executed a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) in November 2011 (Site No. C915277).

This document presents the scope of work and procedures for completion of the additional remedial measures beyond the Department approved Interim Remedial Measures (IRMs). The remedial activities will be completed by remedial contractors under contract to 9271 Group, LLC and/or Benchmark-TurnKey. The work will be completed in general accordance with 6NYCRR Part 375 and NYSDEC DER-10 guidelines.

## 1.1 Site Background

The Site consists of three (3) adjoining parcels, identified as 1050, 1054, and 1088 Niagara Street, totaling approximately 2.7 acres, located in the City of Buffalo, Erie County, New York. The Site is currently improved with an existing three-story building, located on the 1050-1054 Niagara Street parcels, and a recently constructed building and parking lot along the eastern portion of the 1088 Niagara Street parcel along Niagara Street, with the western portion of the parcel currently vacant.

The Site has a long history of being utilized for commercial and industrial operations since at least 1889. The International Brewing Company and American Gelatine Corp. operated on-Site in the early 1900s. The northern portion of the Site (1088 Niagara St. parcel) included a filling station from at least the 1920s through at least 1960. Multiple gasoline tanks were identified on the northern portion of the site from at least 1925 through at least 1951. Gulf Oil Corporation and/or Hygrade Petroleum Co. were identified as on-Site operators from at least the 1920s through at least 1960. The Niagara Lithograph Company (current on-site building), a commercial printing company, was located on the

1050 Niagara Street parcel of the Site from at least 1930 through at least 1990; and Miken Companies, also a commercial printing company, was located on-Site until at least 2000.

## 1.2 Summary of Environmental Conditions

Based on the RI and historic investigations (see Figure 3), the following environmental conditions were identified for the Site:

**Geology/Hydrogeology**

- Soils at the Site consists of fill material to varying depths greater than 35 feet below ground surface (fbgs), consisting of sandy lean clay, fine sand and gravel, with brick, concrete, wood, and debris.
- Perched and overburden groundwater was encountered at depths ranging from 11 to 15.5 fbs from the interior wells, and ranging from 14 to greater than 41 fbgs (MW-1 dry at 41 fbgs) in the exterior wells.
- Based on the 2015 Empire geotechnical report completed on the 1088 Niagara Street parcel, bedrock was encountered between 39 and 41 fbgs, with fill material identified to these depths.

**Contamination**

Surface and Near Surface Soil

- The majority of SVOCs were reported as non-detectable or at trace (estimated) concentrations by the analytical laboratory. Certain SVOCs, primarily polycyclic aromatic hydrocarbons (PAHs), were detected above their respective USCOs, RRSCOs, and CSCOs.
- Certain metals, including arsenic, barium, cadmium, iron, lead, and mercury were detected above their respective CSCOs at select locations, primarily NS-04 and NS-05 located on the western loading dock. Certain naturally occurring metals were also detected above their respective USCOs and RRSCOs.
- No PCBs were detected above USCOs, with all results being reported as non-detect (below the MDL) by the laboratory.

- No herbicides were detected above laboratory detection limits and were reported as non-detect. No pesticides were detected above RRSCOs. Only one compound (4,4'-DDT) was detected slightly above its USCOs at two locations.

Subsurface Soil

- No VOCs were detected above RRSCOs, with the vast majority of results being reported as non-detect or estimated values by the laboratory. Only two (2) constituents were detected above USCOs at one location, SB-12 (12-14').
- No SVOCs were detected above RRSCOs, with only two (2) PAHs being detected above USCOs at SB-18 (14-16').
- No metals were detected above RRSCOs, with the minor exception of certain constituents at SB-18 (14-16'), TP-12 (10-16'), and (TP-11, 6-8'). Certain naturally occurring metals were also detected above their respective USCOs.
- Elevated PCBs above RRSCOs were detected in one sample location (SB-17). Supplemental delineation boring analytical results indicate elevated PCBs above RRSCOs in B-3 (8-10') and B-3 (10-12') and B-4 (8-10'). Analytical results indicated that elevated PCBs were spatially limited to SB-17, B-3 and B-4.
- No pesticides or herbicides were detected above RRSCOs. Certain pesticides were detected above their respective USCOs; however, all detections were reported as estimated values by the laboratory.
- Nuisance petroleum odors and elevated PID readings were identified in eleven (11) locations primarily associated with the USTs and former tank areas. Of these, elevated TICs were identified in five (5) locations that are also associated with TICs identified in groundwater, as described below.

Groundwater

- The majority of VOCs were reported as non-detectable or trace (estimated) concentrations below the laboratory quantitation limit. Petroleum-related VOCs were detected above GWQS in TMW-3, MW-3, MW-4 and MW-5. Total petroleum VOCs do not exceed 1 milligram per liter (mg/L).

- The vast majority of SVOCs were reported as non-detectable or trace (estimated) concentrations below the laboratory quantitation limit. Certain SVOCs, primarily PAHs, were detected at estimated concentrations above GWQS, at one location (TMW-3) and phenol was detected above its GWQS in MW-5. Elevated detections are reasonably attributed to turbidity in the groundwater samples.
- VOC and SVOC TICs were provided by the laboratory and identified as mainly petroleum-related hydrocarbons. Elevated TICs were primarily identified at sample locations that also had elevated petroleum-related VOCs, and correspond to soil sample locations with elevated TICs and PID readings.
- Dissolved metals detected at concentrations above GWQS were limited to naturally-occurring minerals, including magnesium, manganese, and sodium.
- All PCBs and herbicide analytes were reported as non-detectable. Certain pesticides were detected above their respective GWQS in MW-3 and MW-4.

## 1.3 Primary Constituents of Concern (COCs)

Based on findings of the RI and the completed IRMs, as detailed below, the site-specific Constituents of Concern (COCs) are comprised of the following:

***Soil/Fill:*** petroleum-related VOCs (nuisance characteristic including TICs), SVOCs, metals and PCBs (addressed under IRM)

***Groundwater:*** petroleum-related VOCs (including TICs)

## 1.4 Remedial Action Objectives

The remedial actions for the 1050-1088 Niagara Street Site must satisfy Remedial Action Objectives (RAOs). Remedial Action Objectives are site-specific statements that convey the goals for minimizing substantial risks to public health and the environment. RAOs remaining for the Site have been defined as:

**Soil/Fill RAOs**

- Prevent ingestion and/or direct contact with contaminated soil/fill.
- Prevent migration of contaminants that would result in groundwater and/or surface water contamination.

**Groundwater RAOs**

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Remove the source of ground or surface water contamination.

## 1.5 Project Organization and Responsibilities

9271 Group, LLC was accepted into the BCP as a non-responsible party (volunteer) per ECL§27-1405. Benchmark-TurnKey will manage the brownfield cleanup on behalf of 9271 Group, LLC. The NYSDEC Division of Environmental Remediation (Region 9), in consultation with the New York State Department of Health (NYSDOH) shall monitor the remedial actions to verify that the work is performed in accordance with the Brownfield Cleanup Agreement, the approved Work Plan, and NYSDEC DER-10 guidance.

# 2.0 INTERIM REMEDIAL MEASURES (IRM)

Interim Remedial Measures (IRMs) were completed on-Site in accordance with the NYSDEC-approved RI-IRM Work Plan (May 2014), and the approved Addendum to the IRM Work Plan (June 2015). Details of the completed IRMs are presented below. Figure 4 presents the approximate extents of the IRM excavation areas and post-excavation confirmatory sample locations.

## 2.1 Petroleum IRM Activities

Petroleum IRM field activities were completed between June 11th through June 16th, 2015 to remove the historic USTs and associated petroleum impacted soil/fill (see Figure 4). The Petroleum IRM activities included:

- Excavation, cleaning and removal of four (4) approximately 1,000 gallon steel USTs. USTs were recycled for scrap at Metalico Inc., Buffalo NY.
- Approximately 635 tons of non-hazardous petroleum impacted soil/fill, including the contents of the USTs (flowable fill) was excavated and transported off-Site by Serafini (9A-737) for disposal at Waste Management's (WM) Chaffee Landfill, located in Chaffee, New York.
- Collection of eight (8) post-excavation confirmatory soil/fill samples from the UST Area, including six (6) sidewall samples and two (2) bottom samples. All post-excavation samples results are below RRSCOs (see Table 2).
- Exploratory excavation was performed in the vicinity of the former hydraulic lift to identify any additional subgrade components related to the former hydraulic lift and/or fuel assets; no additional components were discovered.
- After NYSDEC deemed the excavation complete, demarcation layer was installed and the excavation was backfilled to redevelopment subgrades with DEC-approved virgin source stone.

## 2.2 PCB IRM Activities

During the RI, elevated PCBs above RRSCOs were identified at SB-17. In order to better define the extents of the impacts, delineation borings, identified as B-1 through B-4, were advanced to the north, south, and west of SB-17 to assess the areal extents of PCB

impacts. Based on the results of the delineation, the PCB impacts were limited to SB-17, B-3, and B-4.

An Addendum to the RI-IRM-AA Work Plan was submitted to the NYSDEC in June 2015 to address the PCB impacted material as an IRM. The Department approved the Addendum on June 23, 2015. The PCB IRM remedial activities were completed between June 24th and July 17th, 2015. Details of the PCB IRM are summarized below.

- Based on the depth of PCB contamination (8-12 fbgs) detected during the RI, non-hazardous overburden soil/fill was sampled from 0-6 fbgs for waste characterization parameters to allow for review and approval for disposal at WM Chaffee Landfill. A total of 948 tons of non-hazardous soil/fill was excavated and transported off-Site for disposal at WM Chaffee Landfill, located in Chaffee, New York
- A total of 583.5 tons of PCB-impacted soil/fill was excavated and transported off-Site for disposal at Chemical Waste Management's (CWMs) Chemical Services, LLC landfill, located in Model City, New York.
- Collection of nine (9) post-excavation confirmatory samples, including six (6) sidewall samples and three (3) bottom samples. With DEC concurrence, no sidewall samples were collected from the east wall of the excavation, based on the presence of an existing stone wall with multiple subgrade utilities beyond along Niagara Street. All post excavation samples results are below RRSCOs, with the minor exception of B-3 (1.072 mg/Kg vs RRSCO of 1 mg/Kg). It should be noted that the excavation was completed to 17 fbgs, and redevelopment activities in this portion of the Site will completely cover the excavation area with a new building. Approximate lateral extents of the excavation and post-excavation confirmatory sample locations are shown on Figure 6, and PCB post-excavation analytical results are summarized on Table 10.

After NYSDEC deemed the excavation complete, the excavation was backfilled to redevelopment subgrades with DEC-approved virgin source stone.

Documentation of the completed IRMs described above, and the additional planned IRM and remedial activities to be completed, will be provided in the Final Engineering Report.

## 2.3 Western Loading Dock Activities

The approved IRM activities to address contamination along the western loading dock are planned to be completed during the 2017 construction season. Access for remedial equipment (excavator, loader, and trucks/containers for disposal) is difficult due to the steep grade and infrastructure on adjacent property, including an active rail line and fiber optic transmission line. The Department will be notified when the work schedule is finalized.

# 3.0 CLEANUP APPROACH

The Alternatives Analysis (AA) identified the selected remedy as a Restricted Residential Use Track 4 cleanup approach.

In addition to the completed IRMs, the remedial approach for the Site includes the following elements:

- **Completion of planned IRM for the western loading dock area** in accordance with the approved IRM Work Plan.
- **Installation of Soil Vapor Extraction (SVE) System,** to address nuisance petroleum contamination in soil/fill and groundwater.
- **Remediation of groundwater contamination,** to reduce residual petroleum contaminants in groundwater.
- **Construction of Cover System,** including demarcation layer underlying DER-10 acceptable backfill in areas without hardscape (building, asphalt and concrete) to address remaining contamination above RRSCOs.
- **Implementation of a Site Management Plan (SMP)**. The SMP will include:
  - **Institutional Controls and Engineering Controls (IC/EC)** Engineering controls include any physical barrier or method employed to actively or passively contain, stabilize, or monitor contaminants; restrict the movement of contaminants; or eliminate potential exposure pathways to contaminants. Institutional controls at the site will include groundwater use restrictions and use restrictions of the Site to restricted residential or commercial use.
  - **Operation and Maintenance Plan** that describes the measures necessary to operate, monitor, and maintain any mechanical components of the remedial work.
  - **Excavation Work Plan** to assure that future intrusive activities and soil/fill handling at the Site are completed in a safe and environmentally responsible manner;
  - **Site Monitoring Plan** that includes: provisions for groundwater monitoring program and a Site-wide inspection program to assure that the IC/ECs have not been altered and remain effective; and,
  - **Environmental Easement** filed with Erie County.

## 3.1 Soil Vapor Extraction

Soil Vapor Extraction (SVE) technology has been selected as the preferred technology to address nuisance petroleum characteristics (e.g., odors and elevated PID readings) by inducing negative pressure (vacuum) in the overburden and vadose zone via a

mechanical blower to enhance diffusion and volatilization of VOCs. The general SVE elements are discussed below.

### *3.1.1 Vapor Extraction and Monitoring Network*

The SVE system will be comprised of a series of vertical extraction wells manifolded to a SVE process unit. Figure 5 shows the planned SVE well layout and Figure 6 shows the SVE process flow schematic and details.

SVE wells will be installed to depths that bridge the vadose zone and continue to the upper limits of elevated PID readings and/or elevated TICs in overburden soils. Planned construction depths include:

- SVE-1 - Target depth of 32.5 fbgs (MW-3) with 15 feet of screen material to approximately 17.5 fbgs.
- SVE-2 - Target depth of 28.5 fbgs (MW-4) with 20 feet of screen material to approximately 10 fbgs.
- SVE-3 - Target depth of 22 feet (MW-5/SB-19) with 15 feet of screen to approximately 7 fbgs.

Based on the permeable nature of the soil/fill on-Site and Benchmark-TurnKey's experience with SVE, a conservative radius of influence of approximately 50 feet is expected from the extraction wells. The SVE wells will be constructed of 2-inch schedule 40 PVC with a continuous slot well screen. Length of screen will be determined by the individual location, but it is expected to have between 15 and 20 feet of screen at each well location. The wellheads will be manifolded together with PVC piping. The vertical riser extension will have a removable cap to allow periodic vacuum measurement via a portable vacuum gauge. The 2" horizontal manifold extension will be fitted with a ball valve to allow for regulation of vacuum at each SVE well. The 2" horizontal piping will be plumbed to 4" PVC manifold pipe that leads to the SVE blower.

A vacuum monitoring point (VPM) will be installed (see Figure 5) to allow for assessment of SVE system vacuum and radius of influence (ROI).

### *3.1.2 SVE Process Equipment*

The SVE system will be housed in a secure trailer, or equivalent enclosure, equipped with an entry alarm, an explosion-proof thermostatically-controlled electric heater, and a

thermostatically-controlled ventilation fan with explosion-proof motor. The trailer will be insulated to allow for winter use. Considering frictional losses in the header and manifold piping and a vapor extraction system comprised of three (3) wells, the blower design vacuum is 40" w.c. at a flow rate of 200 scfm.

Figure 6 presents a process flow schematic for the SVE equipment. Manifold piping from the SVE wells will enter the SVE trailer and pass through a moisture separator to remove excess condensate/water vapor, followed by an inline air filter. A fixed pitot tube on the intake line will provide for vacuum and velocity measurement. A dilution valve on the intake line will reduce vacuum, if required, by allowing for entrance of dilution air. A vacuum gauge, connected to the system control panel, will measure inlet vacuum changes as the valve is adjusted to assure that the blower is operated within required minimum vacuum limits. A vacuum switch, wired to the system control panel, will shut down the system in the event that inlet vacuum is too low. A master control panel will be used to monitor the SVE process conditions. Monitored system operating conditions will include: low air vacuum, high air pressure, moisture separator tank high level, and heater/exhaust fan failure. With the exception of heater/exhaust fan failure, these alarm conditions will automatically shut down the SVE system.

### *3.1.3 SVE Emission Controls*

Emissions from the SVE system will be directed into two (2) 500-lb vapor phase granular activated carbon (GAC) filters. GAC filters will be configured in series (lead-lag) with a sample port between the vessels to allow for emissions monitoring. Once the primary (lead) vessel becomes spent, the piping will be rearranged so that the secondary (lag) vessel is repositioned as the primary vessel. The spent GAC will be changed out and the recharged vessel will then be placed back in service as the secondary (lag) vessel. Figure 6 presents the general schematic of the SVE system.

### *3.1.4 SVE System Start-up and Operation*

After the SVE system has been started, preliminary vacuum reading will be collected from the SVE wells, and flow rate at the system blower. Flow valves at each extraction well will be adjusted to optimize system performance. Multiple rounds of adjustments may be needed to optimize the system.

After the SVE system has been started and extraction well vacuum and flow rates have been adjusted, the system will be allowed to operate to reach steady-state conditions (minimum of 48 hours). Vacuum readings will then be checked at each of the SVE wells using a temporary vacuum gage. Vacuum readings will also be collected from the surrounding groundwater wells to assess the area of influence, including: VMP, MW-3, MW-4, MW-5, and TMW-3.

### *3.1.5 SVE System Monitoring and Emission Sampling*

Once steady-state conditions are achieved, two air samples will be collected, including: one (1) from the SVE system effluent, prior to passing through the emission controls, and one from the GAC exhaust, to provide a basis for comparison to subsequent data and allow for GAC loading and emissions evaluation.

The air sample will be collected using tedlar bags or summa canisters, and will be analyzed for TCL VOCs per United States Environmental Protection Agency (USEPA) Method TO-15. PID measurements will also be taken and recorded to provide a basis for comparison to the quantitative air sample data.

SVE system monitoring will be conducted on a maximum frequency of bi-weekly and minimum frequency of monthly throughout the operation period. SVE system monitoring will include: monitoring of mechanical system components for proper operation, vacuum monitoring at each SVE well and at the main intake; influent VOC vapor PID screening at the SVE system, and PID screening of the emissions control exhaust vicinity.

### *3.1.6 SVE Discontinuation Criteria*

SVE discontinuation will be based primarily on VOC concentrations in the untreated air samples and the VOC concentrations in soil samples as compared to initial VOC samples, and the potential benefit of continued SVE operation. Specifically, shut-down will take into consideration reduction in the VOC mass in the samples between startup and shutdown and the total mass of volatile organics (including TICs) removed by the SVE system. Details of the discontinuation evaluation will be provided in the Site Management Plan (SMP).

## 3.2 Groundwater Remedial Measures

Residual petroleum-related groundwater contamination was detected on-Site, primarily located along the western boundary of the 1088 Niagara Street portion of the Site (see Figure 7). Elevated petroleum related constituents above GWQS and elevated TICs, were detected during the RI in MW-3, MW-4, MW-5, and TMW-3. Source area removal was completed as an approved IRM in June 2015, including the removal of four (4) USTs and associated petroleum impacted soil/fill.

Planned SVE extraction wells, as described above, are being installed to depths that will cross the vadose zone, and remove potential source within the smear zone. Additionally, the SVE system will enhance the groundwater contaminant volatilization process. The combination of the completed source area removal and application of SVE is expected to enhance groundwater VOC contaminant degradation and improve on-Site groundwater quality.

If VOC groundwater contamination is not reduced to meet the groundwater remedial action objectives, after completion of IRMs and the application of SVE, additional groundwater remedial measures will be proposed and implemented in consultation with the Department.

### *3.2.1 Pre-SVE Groundwater Sampling*

To assess current groundwater conditions, prior to activation of the SVE system, groundwater samples will be collected from MW-3, MW-4, MW-5, and TMW-3 and analyzed for TCL VOCs, plus TICs in accordance with USEPA SW 846 methodology with equivalent NYSDEC Category B deliverables to allow for independent third-party data usability assessment.

### *3.2.2 Post-SVE Groundwater Sampling*

Groundwater monitoring will be completed post-installation of SVE to assess the effectiveness of the remedy on the reduction of VOC concentrations. Groundwater samples will be collected from MW-3, MW-4, MW-5r, MW-6, TMW-2, and TMW-3 and analyzed for TCL VOCs, plus TICs in accordance with USEPA SW 846 methodology with equivalent NYSDEC Category B deliverables to allow for independent third-party data usability assessment. Long-term groundwater monitoring will be detailed in the SMP.

### *3.2.3 Groundwater Sample Collection*

Field personnel will sample monitoring wells using a submersible pump with dedicated pump tubing following low-flow/minimal drawdown purge and sample collection procedures. In the event of pump failure or the saturated unit does not permit the proper implementation of low-flow sampling, a dedicated polyethylene bailer will be used to sample the well.

Sample collection methods that will be implemented include:

- **Submersible Pump with Dedicated Pump Tubing**

  All monitoring wells will be purged and sampled using a non-dedicated submersible pump and dedicated pump tubing following low-flow (minimal drawdown) purge and sample collection procedures, as described above. Non-dedicated pumps will require decontamination prior to use at each well location and the collection of an equipment blank.

- **Polyethylene Disposable Bailer**

  Wells of any depth (up to 100 fbgs) may be purged and sampled using a polyethylene disposable bailer via direct grab. In general, a bottom filling dedicated polyethylene bailer is attached to a length of dedicated hollow-braid polypropylene rope and lowered into the well smoothly and slowly as not to agitate the groundwater or damage the well. Purging continues until a predetermined volume of water has been removed (typically three well volumes.)

All collected groundwater samples will be placed in pre-cleaned, pre-preserved laboratory provided sample bottles, cooled to 4°C in the field, and transported under chain-of-custody command to a NYSDOH-approved laboratory for analysis.

## 3.3 Cover System

Historic sampling results indicate that certain metals and PAHs are present in on-site soil/fill above Part 375 RRSCOs. The remedial evaluation conducted in the RI/IRM/AA Report concluded that a Track 2 cleanup remedy was not practicable; therefore, placement of a cover system is a feasible engineering control to protect human health and the environment. The soil cover system will be comprised of:

- **Non-Vegetated (Hardscape) Areas:** These areas will be covered by asphalt, concrete and/or building foundations. Subbase materials brought to the Site will be assessed in accordance with DER-10, or as otherwise approved by NYSDEC.

  Select components of the redevelopment are also elements of the BCP cover system, including asphalt and concrete covered areas. Therefore, those specific components of the cover system, that are also part of the redevelopment, will be constructed in general accordance with the municipally approved building details. Construction details are provided electronically in Appendix E for reference.

- **Non-hardscaped (Vegetated) Areas:** In accordance with DER-10 requirements for Restricted Residential Use cleanups, a minimum of 24 inches of approved backfill meeting the requirements of DER-10 Appendix 5 import criteria for Restricted Residential Sites, and/or on-Site material meeting the RRSCOs will be placed in areas not covered by hardscape. Prior to placement of the approved cover materials, a demarcation layer (e.g., orange plastic mesh,) will be placed to visually reference remaining in-place soil/fill.

The planned cover system includes different cover types, including the new building, asphalt and concrete, with non-hardscaped areas, including landscaped beds and grass areas. A planned cover system layout is provided on Figure 7. Where soil cover system transitions to hardscape, and/or at the limits of the BCP property, the cover will be keyed-in as necessary to achieve the minimum 24-inches of approved backfill material without tapering as shown on Cover System Details provided in Appendix E. Additional construction details related to the building, asphalt, concrete, and landscaping, prepared by others, are provided electronically in Appendix E.

### *3.3.1 Cover System – Construction Oversight*

Benchmark-TurnKey personnel will be present during construction of the BCP cover elements to verify that the different cover system elements are constructed in general accordance with the municipally approved civil details, as applicable; and/or soil cover areas are constructed in accordance with Part 375 and DER-10 requirements.

BCP cover system elements construction oversight will include:

- Material Conformance – backfill and surface soil materials will be verified to comply with import criteria per Part 375 and DER-10. The Department will be consulted to confirm import material acceptability.

- Placement of demarcation layer – Per DER-10, areas of the site not covered by hardscape are required to place a demarcation layer to visually identify remaining in-place soil/fill that may exceed the Site SCOs. Demarcation layer will be placed 24-inches below the finished surface grade, and approved cover material meeting the Site import criteria will be placed above the demarcation layer to the surface. Where applicable, Benchmark-TurnKey personnel will verify the placement of geotextile or equivalent, as identified in municipally approved civil design documents (Appendix E).
- Cover System Thickness – Per DER-10, Restricted Residential cleanups are required to have a minimum of 24-inches of approved surface material meeting the RRSCOs in areas of the site not covered by hardscape. Benchmark personnel will field verify that a minimum of 24-inches of acceptable cover material is placed above the demarcation layer to achieve the final surface grade using various measuring methods, including: traditional survey equipment, GPS, laser levels, grade stakes, hand rulers, and/or any combination thereof, as deemed acceptable by the BCP Project Officer (NYS PE), to sufficiently verify that cover thickness meets the BCP requirements and allow certification thereof in the Final Engineering Report. Pre- and post- cover material placement measurements and locations, as applicable, will be recorded by field personnel in the field log; Third-party grade control via site laser, and/or field quantity survey may also be used to verify cover system placement and thickness. Verification measurements will be collected in accordance with general construction practices of 1 per every 50' by 50' (250 sq. ft).

  Where applicable, Benchmark-TurnKey personnel will verify that hardscape cover elements, subbase and cover material thicknesses are constructed in general accordance with the municipally-approved civil design. Any field substitution of materials (e.g., placement of stone in lieu of soils) will be verified conformant with Part 375 and DER-10 and will be identified in the FER.

## 3.4 Site Management Plan

For any BCP site not cleaned up to Part 375 Unrestricted Use, preparation of a Site Management Plan (SMP) that describes site-specific Institutional Controls and/or Engineering Controls (IC/EC) is a required component of the final remedy. Therefore, as part of the final remedy for the BCP Site, an SMP will be prepared. Consistent with NYSDEC BCP requirements, the SMP will include the following components:

- **Engineering and Institutional Controls Plan**. Engineering controls include any physical barrier or method employed to actively or passively contain, stabilize, or monitor contaminants; restrict the movement of contaminants; or eliminate potential exposure pathways to contaminants. Institutional controls at the site will include groundwater use restrictions and use restrictions of the Site to restricted residential, commercial or industrial purposes.
- **Operation and Maintenance Plan** that describes the measures necessary to operate, monitor, and maintain the soil cover system.
- **Excavation Work Plan** to assure that post-remediation intrusive activities and soil/fill handling at the Property related to redevelopment, operation, and maintenance are completed in a safe and environmentally responsible manner.
- **Site Monitoring Plan** that includes: provisions for a groundwater monitoring plan and a Property-wide inspection program to assure that the IC/ECs remain effective.
- **Environmental Easement** filed with Erie County.

# 4.0 REMEDIAL ACTIVITIES SUPPORT DOCUMENTS

## 4.1 Health and Safety Protocols

Benchmark-TurnKey has prepared a Health and Safety Plan (HASP) for use by our employees in accordance with 40 CFR 300.150 of the NCP and 29 CFR 1910.120. The HASP, provided in Appendix A, includes the following site-specific information:

- A hazard assessment.
- Training requirements.
- Definition of exclusion, contaminant reduction, and other work zones.
- Monitoring procedures for Site operations.
- Safety procedures.
- Personal protective clothing and equipment requirements for various field operations.
- Disposal and decontamination procedures.

The HASP also includes a contingency plan that addresses potential site-specific emergencies, and a Community Air Monitoring Plan that describes required particulate monitoring to protect the neighboring community during intrusive site remediation activities.

Health and safety activities will be monitored throughout the remedial field activities. A member of the field team will be designated to serve as the Site Safety and Health Officer (SSHO) throughout the field program. This person will report directly to the Project Manager and the Corporate Health and Safety Coordinator. The HASP will be subject to revision as necessary, based on new information that is discovered during the field investigation and/or remedial activities.

## 4.2 Community Air Monitoring

Real-time community air monitoring will be performed during intrusive remedial activities at the Site. A CAMP is included with Benchmark-TurnKey's HASP. Particulate and VOC monitoring will be performed along the downwind perimeter of the work area during excavation, grading and soil/fill handling activities in accordance with this plan.

TurnKey assumes that upwind concentrations are non-detect and as such only downwind air monitoring will be completed. The downwind monitoring location will be evaluated throughout the work day, as described in the CAMP. The CAMP is generally consistent with the requirements for community air monitoring at remediation sites as established by the NYSDOH and NYSDEC. Accordingly, it generally follows procedures and practices outlined under NYSDEC's DER-10 (May 2010) Appendix 1A (NYSDOH's Generic Community Air Monitoring Plan) and Appendix 1B (Fugitive Dust and Particulate Monitoring).

## 4.3 Storm Water Pollution Prevention Plan

A Storm Water Pollution Prevention Plan (SWPPP) was prepared for the Site, and has been approved by the local municipal separate storm sewer system (MS4) operator (i.e., City of Buffalo) and the NYSDEC. Electronic copies of the SWPPP, Notice of Intent (NOI) and MS4 approval have been provided to the Department for reference. A copy of the SWPPP and approvals are provided electronically in Appendix B.

## 4.4 Citizen Participation Activities

NYSDEC will coordinate and lead community relations throughout the course of the project with support from Benchmark-TurnKey as requested. A Citizen Participation (CP) Plan has been prepared by Benchmark-TurnKey and approved by NYSDEC. A copy of the CP Plan has been placed in the Buffalo and Erie County Public Library, the designated project document repository. The NYSDEC, with input from Benchmark-TurnKey and 9271 Group, LLC, will issue project fact sheets to keep the public informed of remedial activities.

# 5.0 REPORTING

## 5.1 Remedial Activities Reporting

Benchmark-TurnKey will be on-Site full-time during the remedial actions to document remedial activities. Monitoring and documentation of the RA activities will include: construction stake-out; record drawings; daily reports of activities; community air monitoring results; post-injection sampling and analysis; and progress photographs and sketches.

### *5.1.1 Field Construction Monitoring*

Standard daily reporting procedures will include preparation of an Inspector's Daily Report and, when appropriate, problem identification and corrective measures reports. Appendix D contains sample project documentation forms. Information that may be included on the daily report form includes:

- Processes and locations of construction under way.
- Equipment and personnel working in the area, including subcontractors.
- Number and type of truckloads of soil/fill removed from the site.
- Approximate sampling locations (sketches) or GPS (Trimble) coordinates and sample designations for pre-excavation characterization.
- Excavation locations and depths being excavated.

The completed reports will be available on-site and submitted to the NYSDEC as part of the Final Engineering Report. The NYSDEC will be promptly notified of problems requiring modifications to this Work Plan prior to proceeding or completion of the construction item.

Photo documentation of the remedial activities will be prepared by a field representative throughout the duration of the project as necessary to convey typical work activities, changed conditions, and/or special circumstances.

## 5.2 Final Engineering Report

A Final Engineering Report (FER) will be prepared at the conclusion of remedial activities. The FER will include the following information and documentation, consistent with the NYSDEC's DER-10 Technical Guidance for Site Remediation:

- Introduction and background.
- A Site or area planimetric map showing the parcel(s) remediated, including significant site features.
- A Site map showing the lateral limits of any excavations.
- Tabular summaries of unit quantities including: volume of soil excavated and disposition of excavated soil.
- Documentation on the disposition of impacted soil removed from the Site.
- Documentation of the cover system, including survey elevations and licensed professional engineer stamped record drawings.
- Copies of daily inspection reports and, if applicable, problem identification and corrective measure reports.
- Photo documentation of remedial activities.
- Text describing the remedial activities performed; a description of any deviations from the Work Plan and associated corrective measures taken; and other pertinent information necessary to document that the Site activities were carried out in accordance with this Work Plan.

In addition, Benchmark-TurnKey will subcontract for third-party data review of post-excavation verification data by a qualified, independent data validation expert. Specifically, a Data Usability Summary Report (DUSR) will be prepared, with appropriate data qualifiers added to the results. The DUSR format will follow the NYSDEC's September 1997 DUSR guidelines and draft DER-10 guidance. The DUSR and any necessary qualifications to the data will be appended to the FER.

## 5.3 Site Management Plan

A SMP will be prepared and submitted for the Department's review and approval. The SMP will include an: Engineering and Institutional Control Plan; Operation and Maintenance Plan; Excavation Plan; a Site Monitoring Plan; and, an Environmental Easement.

# 6.0 PROJECT SCHEDULE

The anticipated project schedule for the major tasks to be performed during implementation of the Remedial Action are planned as follows:

- *April-May 2017* – Installation of SVE Systemand preparation for Cover System;
- *Spring-Summer 2017* – Complete remaining remedial activities (IRM and Cover System); and, SVE post-installation monitoring, groundwater monitoring
- *July-August 2017* - Submit draft Site Management Plan (SMP)
- *September 2017* – Submit draft Final Engineeirng Report (FER)
- *Fall 2017* – Submit Final SMP and FER
- *December 2017* – Receive Certificate of Completion (COC)

# 7.0 REFERENCES

1. Benchmark Environmental Engineering and Science, PLLC, in association with - TurnKey Environmental Restoration, LLC. *Remedial Investigation/Alternatives Analysis Report, 1050-1088 Niagara Street Site, Buffalo, New York.* June 2015.

2. Benchmark Environmental Engineering and Science, PLLC, in association with - TurnKey Environmental Restoration, LLC. *Addendum to the RI-IRM-AA Work Plan, 1050-1088 Niagara Street Site, Buffalo, New York.* June 2015.

3. Benchmark Environmental Engineering and Science, PLLC, in association with - TurnKey Environmental Restoration, LLC. *Remedial Investigation/Interim Remedial Measures/Alternatives Analysis Work Plan, 1050-1088 Niagara Street Site, Buffalo, New York.* Revised May 2014.

4. TurnKey Environmental Restoration, LLC. Supplemental Phase II Site Investigation, 1050-1088 Niagara Street Site, Buffalo, New York. August 2013.

5. TurnKey Environmental Restoration, LLC. Limited Phase II Environmental Investigation Report, 1050-1088 Niagara Street Site, Buffalo, New York. July 2012.

6. TurnKey Environmental Restoration, LLC. Phase I Environmental Site Assessment, 1050-1088 Niagara Street Site, Buffalo, New York. June 2012.

7. New York State Department of Environmental Conservation. *DER-10; Technical Guidance for Site Investigation and Remediation.* May 2010.

# TABLE

# TABLE 1

## CRITERIA FOR USE OF OFF-SITE SOIL

### 1050-1088 NIAGARA STREET SITE

### BUFFALO, NEW YORK

| Parameter | Allowable Concentration for Use of Off-Site Soil |
|---|---|
| **Volatile Organic Compounds (mg/kg)** | |
| 1,1,1-Trichloroethane | 0.68 |
| 1,1-Dichloroethane | 0.27 |
| 1,1-Dichloroethene | 0.33 |
| 1,2-Dichlorobenzene | 1.1 |
| 1,2-Dichloroethane | 0.02 |
| 1,2-Dichloroethene(cis) | 0.25 |
| 1,2-Dichloroethene(trans) | 0.19 |
| 1,3-Dichlorobenzene | 2.4 |
| 1,4-Dichlorobenzene | 1.8 |
| 1,4-Dioxane | 0.1 |
| Acetone | 0.05 |
| Benzene | 0.06 |
| Butylbenzene | 12 |
| Carbon tetrachloride | 0.76 |
| Chlorobenzene | 1.1 |
| Chloroform | 0.37 |
| Ethylbenzene | 1 |
| Hexachlorobenzene | 1.2 |
| Methyl ethyl ketone | 0.12 |
| Methyl tert-butyl ether | 0.93 |
| Methylene chloride | 0.05 |
| Propylbenzene-n | 3.9 |
| Sec-Butylbenzene | 11 |
| Tert-Butylbenzene | 5.9 |
| Tetrachloroethene | 1.3 |
| Toluene | 0.7 |
| Trichloroethene | 0.47 |

# TABLE 1

## CRITERIA FOR USE OF OFF-SITE SOIL

### 1050-1088 NIAGARA STREET SITE

### BUFFALO, NEW YORK

| Parameter | Allowable Concentration for Use of Off-Site Soil |
|---|---|
| **Volatile Organic Compounds (mg/kg)** | |
| Trimethylbenzene-1,2,4 | 3.6 |
| Trimethylbenzene-1,3,5 | 8.4 |
| Vinyl chloride | 0.02 |
| Xylene (mixed) | 1.6 |
| **Semi-Volatile Organic Compounds (mg/kg)** | |
| Acenaphthene | 98 |
| Acenaphthylene | 100 |
| Anthracene | 100 |
| Benzo(a)anthracene | 1 |
| Benzo(a)pyrene | 1 |
| Benzo(b)fluoranthene | 1 |
| Benzo(g,h,i)perylene | 100 |
| Benzo(k)fluoranthene | 1.7 |
| Chrysene | 1 |
| Dibenz(a,h)anthracene | 0.33 |
| Fluoranthene | 100 |
| Fluorene | 100 |
| Indeno(1,2,3-cd)pyrene | 0.5 |
| m-Cresol(s) | 0.33 |
| Naphthalene | 12 |
| o-Cresol(s) | 0.33 |
| p-Cresol(s) | 0.33 |
| Pentachlorophenol | 0.8 |
| Phenanthrene | 100 |
| Phenol | 0.33 |
| Pyrene | 100 |

# TABLE 1

## CRITERIA FOR USE OF OFF-SITE SOIL

### 1050-1088 NIAGARA STREET SITE

### BUFFALO, NEW YORK

| Parameter | Allowable Concentration for Use of Off-Site Soil |
|---|---|
| **Metals (mg/kg)** | |
| Arsenic | 16 |
| Barium | 400 |
| Beryllium | 47 |
| Cadmium | 4.3 |
| Chromium, Hexavalent[1] | 19 |
| Chromium, Trivalent[1] | 180 |
| Copper | 270 |
| Cyanide | 27 |
| Lead | 400 |
| Manganese | 2000 |
| Mercury (total) | 0.73 |
| Nickel | 130 |
| Selenium | 4 |
| Silver | 8.3 |
| Zinc | 2480 |
| **PCBs/Pesticides (mg/kg)** | |
| 2,4,5-TP Acid (Silvex) | 3.8 |
| 4,4'-DDE | 8.9 |
| 4,4'-DDT | 7.9 |
| 4,4'-DDD | 13 |
| Aldrin | 0.097 |
| Alpha-BHC | 0.02 |
| Beta-BHC | 0.09 |
| Chlordane (alpha) | 2.9 |
| Delta-BHC | 0.25 |
| Dibenzofuran | 59 |
| Dieldrin | 0.1 |
| Endosulfan I | 24 |
| Endosulfan II | 24 |

# TABLE 1

## CRITERIA FOR USE OF OFF-SITE SOIL

### 1050-1088 NIAGARA STREET SITE

### BUFFALO, NEW YORK

| Parameter | Allowable Concentration for Use of Off-Site Soil |
|---|---|
| **PCBs/Pesticides (mg/kg)** | |
| Endosulfan sulfate | 24 |
| Endrin | 0.06 |
| Heptachlor | 0.38 |
| Lindane | 0.1 |
| Polychlorinated biphenyls | 1 |

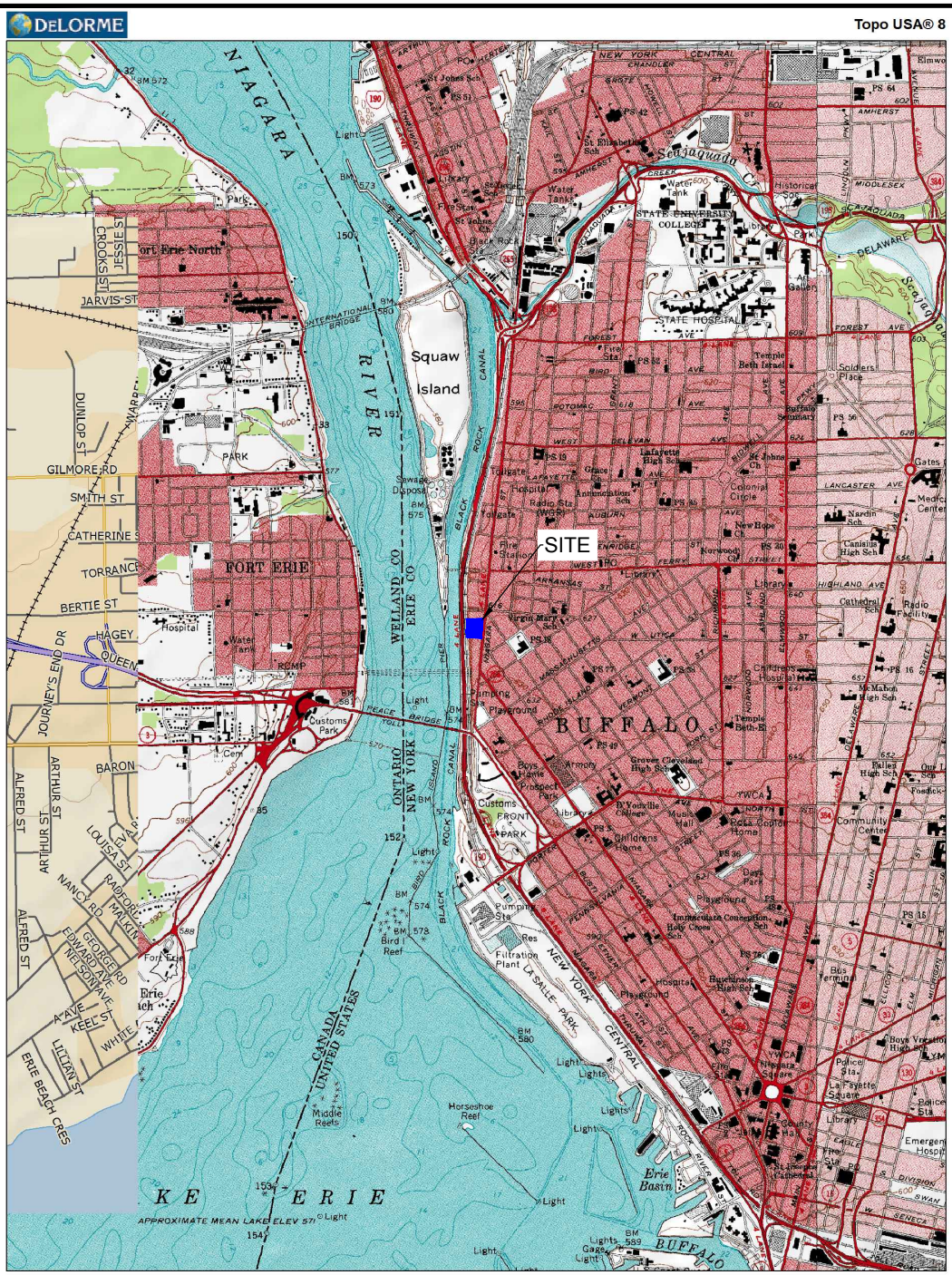
**Notes:**

1. The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.

# FIGURES

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Remedial Action Work Plan\Figure 1; Site Location and Vicinity Map.dwg

# FIGURE 1





BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TURNKEY ENVIRONMENTAL RESTORATION, LLC

*2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599*


PROJECT NO.: 0136-013-005

DATE: SEPTEMBER 2016

DRAFTED BY: KRR

## SITE LOCATION AND VICINITY MAP

REMEDIAL ACTION WORK PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Remedial Action Work Plan\Figure 2; Site Plan (Aerial) REV.dwg

DATE: MARCH 2017
DRAFTED BY: CCB


# FIGURE 2

## SITE PLAN (AERIAL)

REMEDIAL ACTION WORK PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC


BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TURNKEY ENVIRONMENTAL RESTORATION, LLC

*2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599*


JOB NO.: 0136-013-005

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Remedial Action Work Plan\Figure 3; Investigation Locations REV.dwg

LEGEND:

- BCP SITE BOUNDARY
- PARCEL BOUNDARY
- FENCE
- BUILDINGS ON-SITE
- B-4 SOIL BORING LOCATION (JANUARY 2015)
- SS-1 RI SURFACE SOIL LOCATION
- NS-1 RI NEAR SURFACE SOIL LOCATION
- SB-9 RI SOIL BORING LOCATION
- MW-1 RI MONITORING WELL LOCATION
- TP-11 RI TEST PIT LOCATION
- SV-1 RI SUBSLAB VAPOR LOCATION
- SB-1 HISTORIC SOIL BORING LOCATION (JULY 2013)
- TP-1 HISTORIC TEST PIT LOCATION (MAY 2012)

NOTE:

- J = ESTIMATED VALUES, RESULTS LESS THEN THE SAMPLE QUANTITATION LIMIT BUT GRATER THEN ZERO
- R = REJECTED BY THIRD PARTY DATA VALIDATOR
- ONLY SAMPLE LOCATIONS WITH AT LEAST ONE ANALYTE EXCEEDING RESTRICTED SOIL CLEANUP OBJECTIVES (RRSCOs) SHOWN
- SURFACE SOIL ANALYTICAL RESULTS WERE REJECTED BY THE DATA VALIDATOR DUE TO LABORATORY CONTAMINATION. SS-2 THROUGH SS-6 WERE RE-SAMPLED IN MARCH 2016, IDENTIFIED AS SS-2R THROUGH SS-6R. THE MARCH 2016 SURFACE SOIL RE-SAMPLE RESULTS ARE SHOWN.

N

70' 0' 70' 140'

SCALE: 1 INCH = 70 FEET
SCALE IN FEET
(approximate)

DATE: SEPTEMBER 2016
DRAFTED BY: CCB

| SS-2/SS-2R | mg/Kg | RRSCO |
|---|---|---|
| Benzo(b)fluoranthene | 1.1 | 1 |
| Indeno(1,2,3-cd)pyrene | 0.64 | 0.5 |

| SB-18 (14-16) | mg/Kg | RRSCO |
|---|---|---|
| Benzo(a)anthracene | 1.3 J | 1 |
| Cadmium | 27.8 | 4.3 |
| Lead | 865 | 400 |

| TP-12 (10-16) | mg/Kg | RRSCO |
|---|---|---|
| Cabmium | 5 | 4.3 |
| Lead | 1010 | 400 |
| Manganese | 2570 | 2000 |

| TP-1 (7-9) | mg/Kg | RRSCO |
|---|---|---|
| Lead | 1160 | 400 |
| Mercury | 4 | 0.81 |

| SS-5/SS-5R | mg/Kg | RRSCO |
|---|---|---|
| Benzo(a)anthracene | 1.6 | 1 |
| Benzo(a)pyrene | 3 | 1 |
| Benzo(b)fluoranthene | 3.9 | 1 |
| Dibenzo(a,h)anthracene | 0.8 | 0.33 |
| Indeno(1,2,3-cd)pyrene | 2.9 | 0.5 |

| SS-4/SS-4R | mg/Kg | RRSCO |
|---|---|---|
| Benzo(a)anthracene | 15 | 1 |
| Benzo(a)pyrene | 12 | 1 |
| Benzo(b)fluoranthene | 17 | 1 |
| Benzo(k)fluoranthene | 5.8 | 3.9 |
| Chrysene | 13 | 3.9 |
| Dibenzo(a,h)anthracene | 2.3 | 0.33 |
| Indeno(1,2,3-cd)pyrene | 7.7 | 0.5 |
| Copper | 560 | 270 |

| SB-03 (0-0.5) | mg/Kg | RRSCO |
|---|---|---|
| Benzo(a)anthracene | 130 | 1 |
| Benzo(a)pyrene | 120 | 1 |
| Benzo(b)fluoranthene | 120 | 1 |
| Benzo(k)fluoranthene | 110 | 3.9 |
| Chrysene | 120 | 3.9 |
| Dibenzo(a,h)anthracene | 12 | 0.33 |
| Fluoranthene | 300 | 100 |
| Indeno(1,2,3-cd)pyrene | 85 | 0.5 |
| Phenanthrene | 300 | 100 |
| Pyrene | 210 | 100 |
| Arsenic | 42 | 16 |
| Copper | 660 | 270 |
| Lead | 670 | 400 |
| Mercury | 0.99 | 0.18 |

| NS-04 (0-1) | mg/Kg | RRSCO |
|---|---|---|
| Benzo(a)anthracene | 240 R | 1 |
| Benzo(a)pyrene | 210 R | 1 |
| Benzo(b)fluoranthene | 270 R | 1 |
| Benzo(ghi)perylene | 150 R | 100 |
| Benzo(k)fluoranthene | 130 R | 3.9 |
| Chrysene | 240 R | 3.9 |
| Dibenzo(a,h)anthracene | 33 R | 0.33 |
| Fluoranthene | 620 R | 100 |
| Indeno(1,2,3-cd)pyrene | 140 R | 0.5 |
| Phenanthrene | 600 R | 100 |
| Pyrene | 420 R | 100 |
| Arsenic | 260 R | 16 |
| Lead | 558 R | 400 |
| Mercury | 9 R | 0.81 |

| SB-04 (0-0.5) | mg/Kg | RRSCO |
|---|---|---|
| Benzo(a)anthracene | 46 | 1 |
| Benzo(a)pyrene | 39 | 1 |
| Benzo(b)fluoranthene | 36 | 1 |
| Benzo(k)fluoranthene | 33 | 3.9 |
| Chrysene | 44 | 3.9 |
| Dibenzo(a,h)anthracene | 6.6 | 0.33 |
| Indeno(1,2,3-cd)pyrene | 24 | 0.5 |
| Arsenic | 86 | 16 |
| Cadmium | 15 | 4.3 |
| Copper | 320 | 270 |
| Lead | 550 | 400 |
| Mercury | 2.2 | 0.18 |

| NS-05 (0-1) | mg/Kg | RRSCO |
|---|---|---|
| Benzo(a)anthracene | 5.1 | 1 |
| Benzo(a)pyrene | 4.5 | 1 |
| Benzo(b)fluoranthene | 6.1 | 1 |
| Chrysene | 5.4 | 3.9 |
| Dibenzo(a,h)anthracene | 1.1 | 0.33 |
| Indeno(1,2,3-cd)pyrene | 3.3 | 0.5 |
| Arsenic | 49.5 | 16 |
| Barium | 7580 | 400 |
| Cadmium | 26.1 | 4.3 |
| Copper | 2430 | 270 |
| Lead | 16300 | 400 |
| Mercury | 2.3 | 0.18 |

| SB-05 (0.5-1) | mg/Kg | RRSCO |
|---|---|---|
| Benzo(a)anthracene | 40 | 1 |
| Benzo(a)pyrene | 40 | 1 |
| Benzo(b)fluoranthene | 55 | 1 |
| Benzo(k)fluoranthene | 19 | 3.9 |
| Chrysene | 45 | 3.9 |

| TP-11 (6-8) | mg/Kg | RRSCO |
|---|---|---|
| Chromium | 282 | 180 |
| Manganese | 3000 | 2000 |

| NS-01 (0-2) | mg/Kg | RRSCO |
|---|---|---|
| Benzo(a)anthracene | 1 | 1 |
| Benzo(b)fluoranthene | 1.1 | 1 |
| Total PAHs | 11.55 | 100 |
| Manganese | 2600 | 2000 |

| SS-6/SS-6R | mg/Kg | RRSCO |
|---|---|---|
| Benzo(a)anthracene | 16 | 1 |
| Benzo(a)pyrene | 13 | 1 |
| Benzo(b)fluoranthene | 21 | 1 |
| Benzo(k)fluoranthene | 6 | 3.9 |
| Chrysene | 17 | 3.9 |
| Dibenzo(a,h)anthracene | 3 | 0.33 |
| Indeno(1,2,3-cd)pyrene | 9.6 | 0.5 |
| Arsenic | 17 | 16 |
| Mercury | 1.1 | 0.18 |

PLANNED GRAVEL ACCESS ROAD
ALBANY STREET (PA
STEEP GRADE
TP-12
NS-2
TP-1
SB-18
SS-2/SS-2R
NS-1
TP-11
TP-8
TP-6
MW-1
B-1
SS-1
B-2
SB-17
B-3
B-4
TP-5
SS-3/SS-3R
MW-3
TP-2
TP-9
TP-14
TP-7
CONCRETE SIDEWALK
TP-4 AREA
NIAGARA STREET
TP-10
MW-5
SS-4/SS-4R
TP-3
TP-13
MW-4
NS-3
SB-19
SS-5/SS-5R
Outdoor
SB-15/TMW-3
SV-3
SB-3
NS-4
SB-1
SUB-BASEMENT
SB-13
SV-2
Ambient-1
SB-10
SV-1
SB-6
SB-9
SB-14/TMW-2
Ambient-2
BASEMENT
SB-12/TMW-1
SB-4
SB-2
SB-7
SB-16
SB-11
NS-5
SV-4
SB-8
SB-5
SS-6/SS-6R
MW-6
FORMER TRANSFORMERS ( EMPTY)

TURNKEY ENVIRONMENTAL RESTORATION, LLC

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

JOB NO.: 0136-013-005

# HISTORIC AND RI SAMPLE LOCATIONS

REMEDIAL ACTION WORK PLAN
1050-1088 NIAGARA STREET SITE
BUFFALO, NEW YORK
PREPARED FOR
9271 GROUP, LLC

FIGURE 3

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Remedial Action Work Plan\Figure 4; IRM Excavation Areas.dwg

LEGEND:

- BCP PROPERTY BOUNDARY
- PARCEL BOUNDARY
- FENCE
- BUILDINGS ONSITE
- EXCAVATION AREA
- WW-1 ✕ WALL SOIL SAMPLES
- B-1 ● BOTTOM SOIL SAMPLES
- WW-2R ✕ WALL SOIL SAMPLES
- B-2 ● BOTTOM SOIL SAMPLES

SB-17 AREA APPROXIMATELY 17' EXCAVATION

FORMER BUILDING FOUNDATION

NW-2 NW-1 WW-1R B-1 WW-2R B-2 B-3 SW-1R SW-2

CONCRETE SIDEWALK

NIAGARA STREET

TP-4 AREA APPROXIMATELY 10' EXCAVATION

USTs (TYP 4)

NW-2 NW-1 WW-1 B-2 B-1 EW-1 SW-2 SW-1

N

60' 0' 60' 120'

SCALE: 1 INCH = 60 FEET
SCALE IN FEET
(approximate)

DATE: SEPTEMBER 2016
DRAFTED BY: KRR

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
TURNKEY ENVIRONMENTAL RESTORATION, LLC
2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

JOB NO.: 0136-013-005

# IRM EXCAVATION AREAS

REMEDIAL ACTION WORK PLAN
1050 - 1088 NIAGARA STREET SITE
BUFFALO, NEW YORK
PREPARED FOR
9271 GROUP, LLC

**FIGURE 4**

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Remedial Action Work Plan\Figure 5; SVE System Layout Revised REV.dwg

LEGEND:

- BCP PROPERTY BOUNDARY
- PARCEL BOUNDARY
- BUILDING
- FENCE
- SOIL COVER
- HARDSCAPE
- SVE PIPING (SUBGRADE)
- SS-1 RI SURFACE SOIL LOCATION
- NS-1 RI NEAR SURFACE SOIL LOCATION
- SB-9 RI SOIL BORING LOCATION
- MW-1 RI MONITORING WELL LOCATION
- TP-11 RI TEST PIT LOCATION
- SB-1 HISTORIC SOIL BORING LOCATION (JULY 2013)
- TP-1 HISTORIC TEST PIT LOCATION (MAY 2012)
- VMP VACUUM MONITORING POINT

NOTE:
REDEVELOPMENT APPROXIMATE SEE COVER DETAIL


N

50' 0' 50' 100'

SCALE: 1 INCH = 50 FEET
SCALE IN FEET
(approximate)

DATE: APRIL 2017
DRAFTED BY: CCB

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

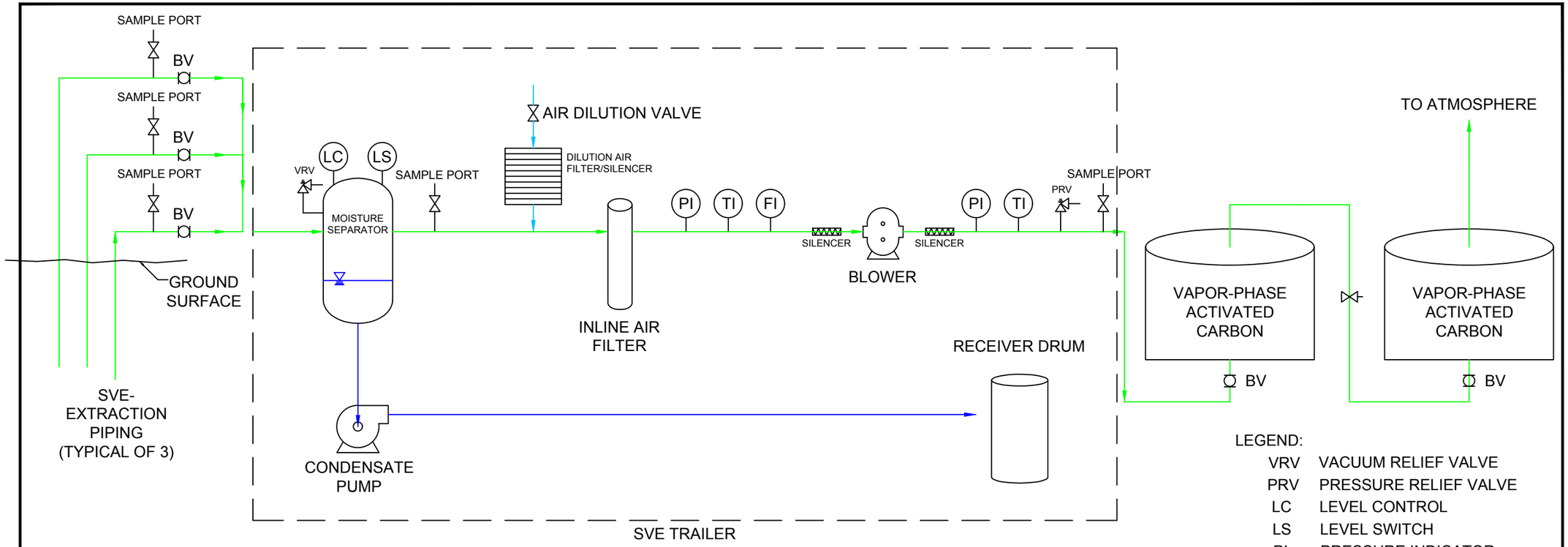
TURNKEY ENVIRONMENTAL RESTORATION, LLC

JOB NO.: 0136-013-005

# SVE SYSTEM LAYOUT

REMEDIAL ACTION WORK PLAN
1050-1088 NIAGARA STREET
BUFFALO, NEW YORK
PREPARED FOR
9271 GROUP, LLC

**FIGURE 5**

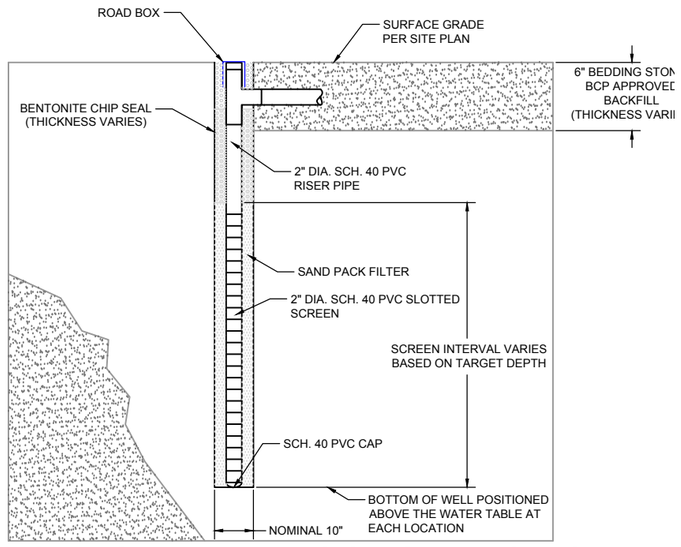



# SVE PROCESS SCHEMATIC

NOT TO SCALE

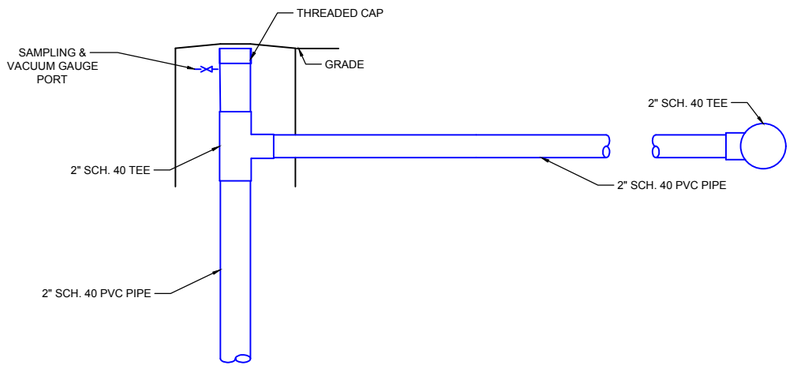
LEGEND:

| | |
|---|---|
| VRV | VACUUM RELIEF VALVE |
| PRV | PRESSURE RELIEF VALVE |
| LC | LEVEL CONTROL |
| LS | LEVEL SWITCH |
| PI | PRESSURE INDICATOR |
| FI | FLOW INDICATOR |
| TI | TEMPERATURE INDICATOR |
| BV | BALL VALVE |




# TYPICAL SVE WELL CONSTRUCTION DETAIL

NOT TO SCALE




# TYPICAL SVE MANIFOLD CONSTRUCTION DETAIL

NOT TO SCALE

DATE: SEPTEMBER 2016
DRAFTED BY: KRR/ CCB

TURNKEY ENVIRONMENTAL RESTORATION, LLC
BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

JOB NO.: 0136-013-005

## SVE SYSTEM PROCESS FLOW SCHEMATIC AND DETAIL

REMEDIAL ACTION WORK PLAN
1050 - 1088 NIAGARA STREET SITE
BUFFALO, NEW YORK
PREPARED FOR
9271 GROUP, LLC

**FIGURE 6**

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Remedial Action Work Plan\Figure 7; RI GW Investigation Results.dwg

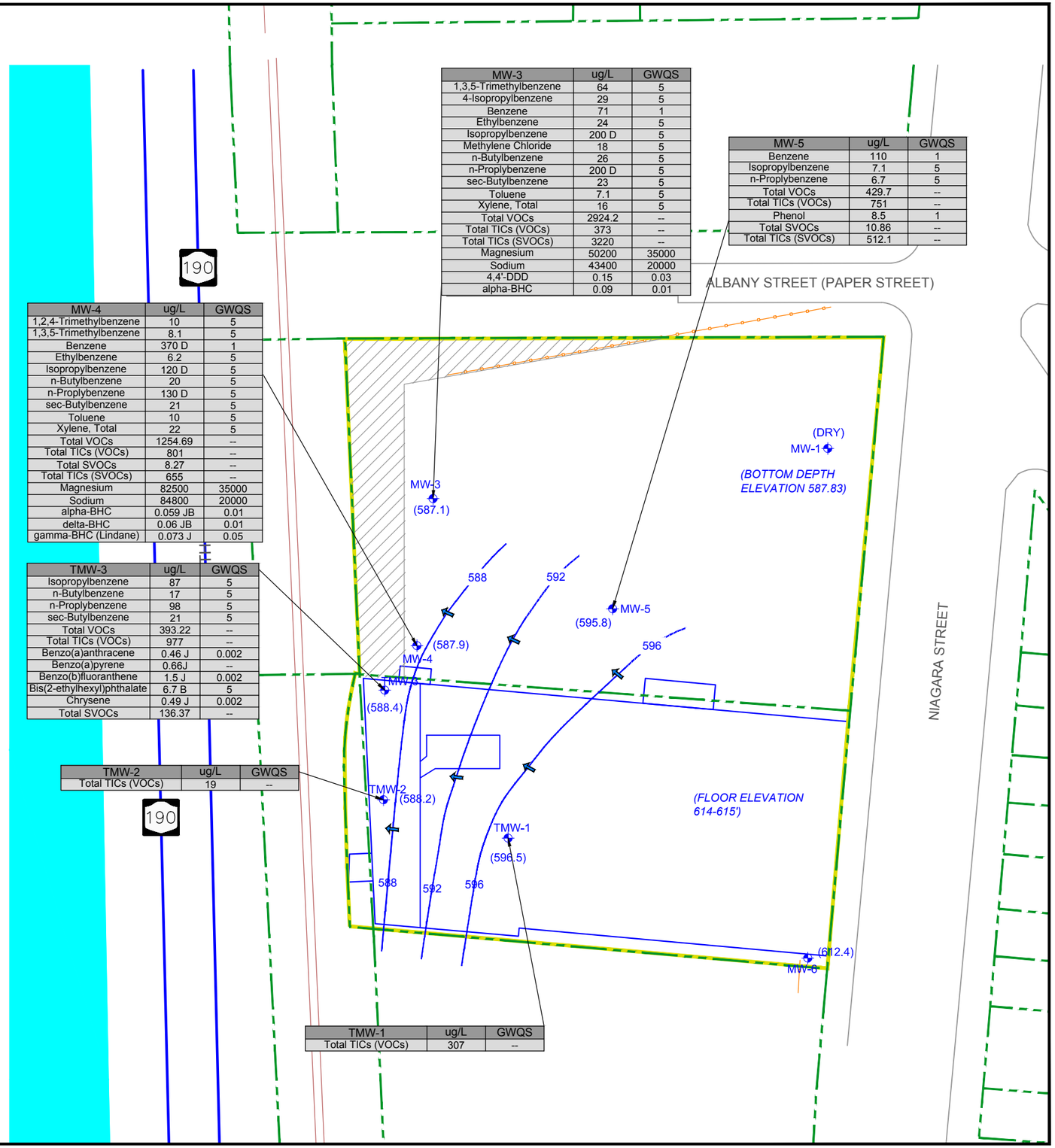
LEGEND:

- BCP SITE BOUNDARY
- PARCEL BOUNDARY
- FENCE
- RAILROAD
- BUILDINGS ONSITE
- MW-1 — RI MONITORING WELL LOCATION
- 596 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION CONTOUR

NOTE: ELEVATION PER MARCH 23, 2015

NOTE

- D=DILUTION REQUIRED DUE TO HIGH CONCENTRATION OF TARGET ANALYTE ABOVE THE LABORATORY REPORTING LIMIT
- J = ESTIMATED VALUES, RESULTS LESS THEN THE SAMPLE QUANTITATION LIMIT BUT GRATER THEN ZERO
- VALUES PER NYSDEC TOGS 1.1.1 CLASS GA GROUNDWATER QUALITY STANDARDS(GWQS)




| MW-3 | ug/L | GWQS |
|---|---|---|
| 1,3,5-Trimethylbenzene | 64 | 5 |
| 4-Isopropylbenzene | 29 | 5 |
| Benzene | 71 | 1 |
| Ethylbenzene | 24 | 5 |
| Isopropylbenzene | 200 D | 5 |
| Methylene Chloride | 18 | 5 |
| n-Butylbenzene | 26 | 5 |
| n-Proplybenzene | 200 D | 5 |
| sec-Butylbenzene | 23 | 5 |
| Toluene | 7.1 | 5 |
| Xylene, Total | 16 | 5 |
| Total VOCs | 2924.2 | -- |
| Total TICs (VOCs) | 373 | -- |
| Total TICs (SVOCs) | 3220 | -- |
| Magnesium | 50200 | 35000 |
| Sodium | 43400 | 20000 |
| 4,4'-DDD | 0.15 | 0.03 |
| alpha-BHC | 0.09 | 0.01 |

| MW-5 | ug/L | GWQS |
|---|---|---|
| Benzene | 110 | 1 |
| Isopropylbenzene | 7.1 | 5 |
| n-Proplybenzene | 6.7 | 5 |
| Total VOCs | 429.7 | -- |
| Total TICs (VOCs) | 751 | -- |
| Phenol | 8.5 | 1 |
| Total SVOCs | 10.86 | -- |
| Total TICs (SVOCs) | 512.1 | -- |

| MW-4 | ug/L | GWQS |
|---|---|---|
| 1,2,4-Trimethylbenzene | 10 | 5 |
| 1,3,5-Trimethylbenzene | 8.1 | 5 |
| Benzene | 370 D | 1 |
| Ethylbenzene | 6.2 | 5 |
| Isopropylbenzene | 120 D | 5 |
| n-Butylbenzene | 20 | 5 |
| n-Proplybenzene | 130 D | 5 |
| sec-Butylbenzene | 21 | 5 |
| Toluene | 10 | 5 |
| Xylene, Total | 22 | 5 |
| Total VOCs | 1254.69 | -- |
| Total TICs (VOCs) | 801 | -- |
| Total SVOCs | 8.27 | -- |
| Total TICs (SVOCs) | 655 | -- |
| Magnesium | 82500 | 35000 |
| Sodium | 84800 | 20000 |
| alpha-BHC | 0.059 JB | 0.01 |
| delta-BHC | 0.06 JB | 0.01 |
| gamma-BHC (Lindane) | 0.073 J | 0.05 |

| TMW-3 | ug/L | GWQS |
|---|---|---|
| Isopropylbenzene | 87 | 5 |
| n-Butylbenzene | 17 | 5 |
| n-Proplybenzene | 98 | 5 |
| sec-Butylbenzene | 21 | 5 |
| Total VOCs | 393.22 | -- |
| Total TICs (VOCs) | 977 | -- |
| Benzo(a)anthracene | 0.46 J | 0.002 |
| Benzo(a)pyrene | 0.66J | -- |
| Benzo(b)fluoranthene | 1.5 J | 0.002 |
| Bis(2-ethylhexyl)phthalate | 6.7 B | 5 |
| Chrysene | 0.49 J | 0.002 |
| Total SVOCs | 136.37 | -- |

| TMW-2 | ug/L | GWQS |
|---|---|---|
| Total TICs (VOCs) | 19 | -- |

| TMW-1 | ug/L | GWQS |
|---|---|---|
| Total TICs (VOCs) | 307 | -- |

70' 0' 70' 140'

SCALE: 1 INCH = 70 FEET
SCALE IN FEET
(approximate)

DATE: APRIL 2017
DRAFTED BY: KRR/CCB

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
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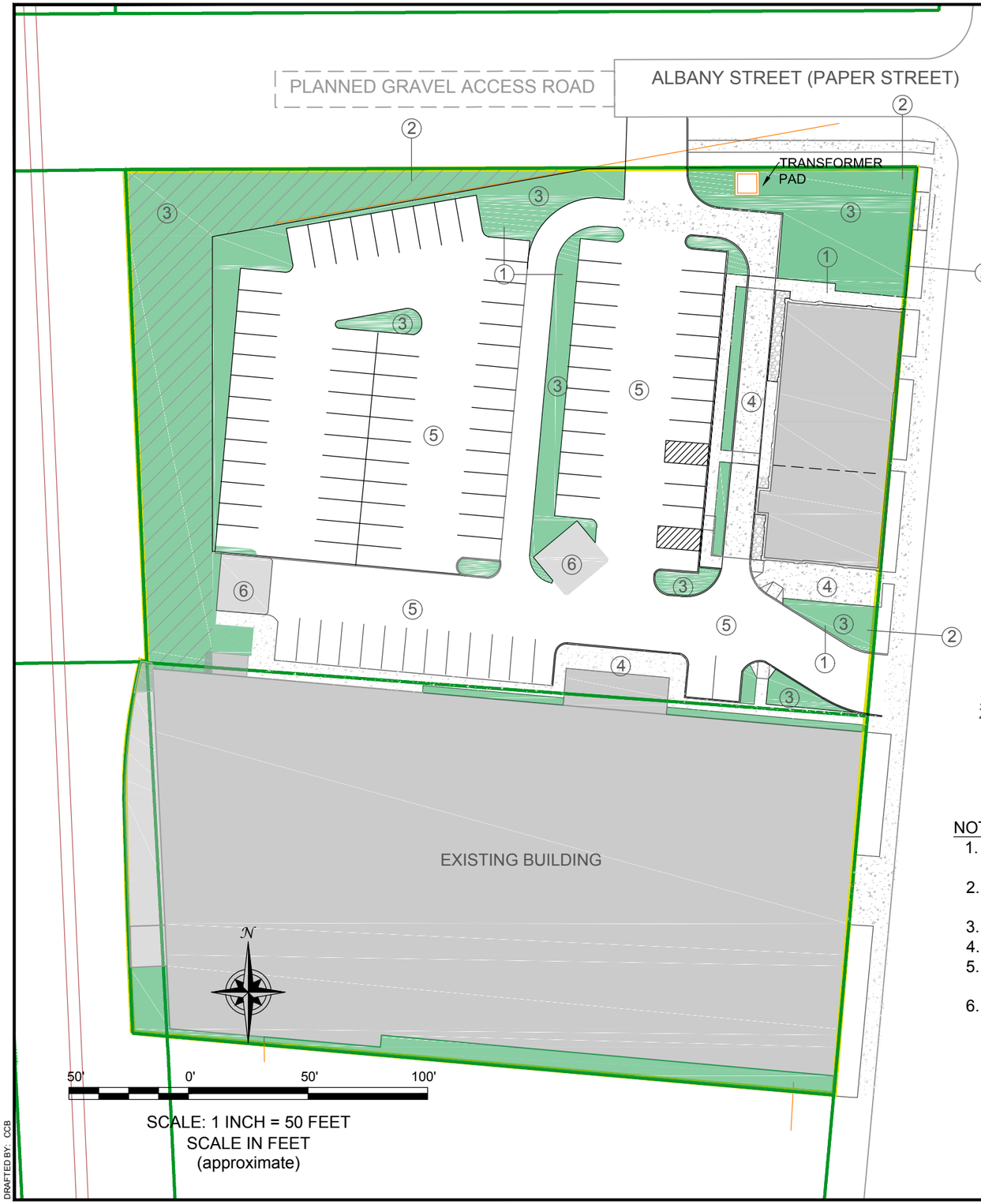
JOB NO.: 0136-013-005

# RI GROUNDWATER INVESTIGATION RESULTS

REMEDIAL ACTION WORK PLAN
1050-1088 NIAGARA STREET SITE
BUFFALO, NEW YORK
PREPARED FOR
9271 GROUP, LLC

**FIGURE 7**




LEGEND:

- BCP PROPERTY BOUNDARY
- PARCEL BOUNDARY
- FENCE
- RAILROAD
- BUILDING
- SOIL COVER AREA
- STONE COVER AREA
- CONCRETE AREA
- EXTERIOR CONCRETE SLAB ON GRADE AREA

NOTES:

1. TYPICAL TRANSITION FROM SOIL COVER TO HARDSCAPE - SEE BENCHMARK DETAILS - DETAIL 1
2. TYPICAL SOIL COVER TRANSITION TO BCP PROPERTY BOUNDARY - SEE BENCHMARK DETAILS - DETAIL 2
3. TYPICAL SOIL COVER - SEE BENCHMARK DETAILS - DETAIL 3
4. TYPICAL CONCRETE - CARMINA WOODS MORRIS C-101 - DETAIL 2
5. TYPICAL STANDARD DUTY ASPHALT - CARMINA WOODS MORRIS C-101 - DETAIL 4A
6. TYPICAL EXTERIOR CONCRETE SLAB ON GRADE - CARMINA WOODS MORRIS C-101 - DETAIL 4C

DATE: FEBRUARY 2017
DRAFTED BY: CCB

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
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JOB NO.: 0136-013-005

# PLANNED COVER SYSTEM LAYOUT

REMEDIAL ACTION WORK PLAN

1050-1088 NIAGARA STREET
BUFFALO, NEW YORK
PREPARED FOR
9271 GROUP, LLC

**FIGURE 8**

# APPENDIX A

## HEALTH AND SAFETY PLAN

# SITE HEALTH AND SAFETY PLAN
# for
# BROWNFIELD CLEANUP PROGRAM
# REMEDIAL ACTION WORK PLAN

## 1050-1088 NIAGARA STREET SITE

## BUFFALO, NEW YORK

September 2016 0136-013-005

Prepared for:

**9271 GROUP, LLC**

# 1050-1088 NIAGARA STREET SITE
# HEALTH AND SAFETY PLAN FOR REMEDIAL ACTIVITIES

## ACKNOWLEDGEMENT

**Plan Reviewed by (initial):**

Corporate Health and Safety Director: Thomas H. Forbes, P.E.

Project Manager: Michael Lesakowski

Designated Site Safety and Health Officer: Bryan C. Hann

**Acknowledgement:**
I acknowledge that I have reviewed the information contained in this site-specific Health and Safety Plan, and understand the hazards associated with performance of the field activities described herein. I agree to comply with the requirements of this plan.

| NAME (PRINT) | SIGNATURE | DATE |
|---|---|---|
| | | |
| | | |
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| | | |
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TURNKEY

# 1050-1088 NIAGARA STREET SITE
# HEALTH AND SAFETY PLAN FOR REMEDIAL ACTIVITIES

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**1050-1088 NIAGARA STREET SITE**
**HEALTH AND SAFETY PLAN FOR REMEDIAL ACTIVITIES**

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**1050-1088 NIAGARA STREET SITE**
**HEALTH AND SAFETY PLAN FOR REMEDIAL ACTIVITIES**

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## ATTACHMENTS

# 1.0 INTRODUCTION

## 1.1 General

In accordance with OSHA requirements contained in 29 CFR 1910.120, this Health and Safety Plan (HASP) describes the specific health and safety practices and procedures to be employed by TurnKey Environmental Restoration, LLC and Benchmark Environmental Engineering & Science, PLLC employees (referred to jointly hereafter as "Benchmark-TurnKey") during remedial activities at the 1050-1088 Niagara Street Site (Site) located in the City of Buffalo, Erie County, New York. This HASP presents procedures for Benchmark-TurnKey employees who will be involved with remaining remedial activities; it does not cover the activities of other contractors, subcontractors or other individuals on the Site. These firms will be required to develop and enforce their own HASPs as discussed in Section 2.0. Benchmark-TurnKey accepts no responsibility for the health and safety of contractor, subcontractor or other personnel.

This HASP presents information on known Site health and safety hazards using available historical information, and identifies the equipment, materials and procedures that will be used to eliminate or control these hazards. Environmental monitoring will be performed during the course of field activities to provide real-time data for on-going assessment of potential hazards.

## 1.2 Background

The Site consists of three adjoining parcels totaling approximately 2.7-acres, located at 1050-1088 Niagara Street in the City of Buffalo, Erie County, New York. The Site is currently improved with a one three-story building, located on the 1050 Niagara Street parcel.

The Site has a long history of being utilized for industrial operations (since at least 1889). The International Brewing Company and American Gelatine Corp. operated on-Site in the early 1900s. The northern portion of the Site (1088 Niagara St parcel) included a filling station from at least the 1920s through at least 1960. Multiple gasoline tanks were identified on the northern portion of the site from at least 1925 through at least 1951. Gulf Oil Corporation and/or Hygrade Petroleum Co. were identified as on-Site operators from at least the 1920s through at least 1960. The Niagara Lithograph Company (current on-site

building), a commercial printing company, was located on the 1050 Niagara Street parcel of the Site from at least 1930 through at least 1990; and Miken Companies, also a commercial printing company, was located on-Site until at least 2000.

## 1.3 Known and Suspected Environmental Conditions

Previous investigations have shown that the former use of the site as a filling station and lithographic printing operation have impacted that Site, which will require remediation prior to redevelopment. The findings of the previous investigation included:

- Historic Site use as a petroleum filling station from at least 1930 through at least 1960.
- Elevated VOCs, some exceeding Commercial Use SCOs were detected in on-Site soil/fill. Several metals were detected above their respective Commercial Use SCOs, including arsenic, cadmium, chromium, copper, lead, and mercury.
- Contaminated soil/fill encountered on Site.
- Multiple underground storage tanks (UST's), a hydraulic lift, and building mounted transformers were identified as being located on site.
- Historic coal bins, rail siding, oil pump houses, and multiple petroleum storage tanks (ASTs and USTs) were noted in historic records searches.
- Evidence of two former 25,000 gallon tanks within the basement of the 1050 Niagara Street building, likely containing fuel oil and/or printing related solvents
- Elevated photoionization detector (PID) readings for volatile organic compounds (VOCs) were detected in multiple locations across the site, with readings as high as 1,268 ppm being detected.

IRM activities were implemented between June 2015 and July 2015 in accordance with the NYSDEC-approved work plan. Such involved removal of four USTs associated with the former filling station and excavation of petroleum-impacted soils. In addition, PCB-impacted soil/fill material exhibiting hazardous waste characteristics were also excavated from the Site.

The Remedial Action Work Plan is associated with the remaining IRM activities planned for the Site, namely installation of the SVE and cover systems.

## 1.4 Parameters of Interest

Based on findings of the RI and previous investigations, the site-specific Constituents of Concern (COCs) are comprised of the following:

***Soil/Fill:*** petroleum-related VOCs (nuisance characteristic), SVOCs, metals and PCBs
***Groundwater:*** petroleum-related VOCs

## 1.5 Overview of IRM Activities

Benchmark-TurnKey personnel will be on-site to observe and perform the remaining IRM Activities. The field activities to be completed are described below:

- Installation of an SVE system with a total of approximately four (4) extraction wells to approximately 40 feet below ground surface.
- Placement of a soil cover system consisting of hardscaped areas, vegetated areas and a demarcation layer.

# 2.0 ORGANIZATIONAL STRUCTURE

This section of the HASP describes the lines of authority, responsibility and communication as they pertain to health and safety functions at the Site. The purpose of this chapter is to identify the personnel who impact the development and implementation of the HASP and to describe their roles and responsibilities. This chapter also identifies other contractors and subcontractors involved in work operations and establish the lines of communications among them for health and safety matters. The organizational structure described in this chapter is consistent with the requirements of 29 CFR 1910.120(b)(2). This section will be reviewed by the Project Manager and updated as necessary to reflect the current organizational structure at this Site.

## 2.1 Roles and Responsibilities

All Benchmark-TurnKey personnel on the Site must comply with the minimum requirements of this HASP. The specific responsibilities and authority of management, safety and health, and other personnel on this Site are detailed in the following paragraphs.

### 2.1.1 Corporate Health and Safety Director

The Benchmark-TurnKey Corporate Health and Safety Director is ***Mr. Thomas H. Forbes, P.E.*** The Corporate Health and Safety Director responsible for developing and implementing the Health and Safety program and policies for Benchmark Environmental Engineering & Science, PLLC and TurnKey Environmental Restoration, LLC, and consulting with corporate management to ensure adequate resources are available to properly implement these programs and policies. The Corporate Health and Safety Director coordinates Benchmark-TurnKey's Health and Safety training and medical monitoring programs and assists project management and field staff in developing site-specific health and safety plans.

### 2.1.2 Project Manager

The Project Manager for this Site is ***Mr. Michael Lesakowski.*** The Project Manager has the responsibility and authority to direct all Benchmark-TurnKey work operations at the Site. The Project Manager coordinates safety and health functions with the Site Safety and Health Officer, and bears ultimate responsibility for proper implementation of this HASP.

He may delegate authority to expedite and facilitate any application of the program, including modifications to the overall project approach as necessary to circumvent unsafe work conditions. Specific duties of the Project Manager include:

- Preparing and coordinating the Site work plan.
- Providing Benchmark-TurnKey workers with work assignments and overseeing their performance.
- Coordinating health and safety efforts with the Site Safety and Health Officer (SSHO).
- Reviewing the emergency response coordination plan to assure its effectiveness.
- Serving as the primary liaison with Site contractors and the property owner.

### 2.1.3 Site Safety and Health Officer

The Site Safety and Health Officer (SSHO) for this Site is ***Mr. Bryan C. Hann***. The qualified alternate SSHO is ***Mr. Nathan Munley.*** The SSHO reports to the Project Manager. The SSHO is on-site or readily accessible to the Site during all work operations and has the authority to halt Site work if unsafe conditions are detected. The specific responsibilities of the SSHO are:

- Managing the safety and health functions for Benchmark-TurnKey personnel on the Site.
- Serving as the point of contact for safety and health matters.
- Ensuring that Benchmark-TurnKey field personnel working on the Site have received proper training (per 29 CFR Part 1910.120(e)), that they have obtained medical clearance to wear respiratory protection (per 29 CFR Part 1910.134), and that they are properly trained in the selection, use and maintenance of personal protective equipment, including qualitative respirator fit testing.
- Performing or overseeing Site monitoring as required by the HASP.
- Assisting in the preparation and review of the HASP.

- Maintaining site-specific safety and health records as described in this HASP.
- Coordinating with the Project Manager, Site Workers, and Contractor's SSHO as necessary for safety and health efforts.

### 2.1.4 Site Workers

Site workers are responsible for: complying with this HASP or a more stringent HASP, if appropriate (i.e., Contractor and Subcontractor's HASP); using proper PPE; reporting unsafe acts and conditions to the SSHO; and following the safety and health instructions of the Project Manager and SSHO.

### 2.1.5 Other Site Personnel

Other Site personnel who will have health and safety responsibilities will include the Drilling Contractor, who will be responsible for developing, implementing and enforcing a Health and Safety Plan equally stringent or more stringent than Benchmark-TurnKey's HASP. Benchmark-TurnKey assumes no responsibility for the health and safety of anyone outside its direct employ. Each Contractor's HASP shall cover all non-Benchmark/TurnKey Site personnel. Each Contractor shall assign a SSHO who will coordinate with Benchmark-TurnKey's SSHO as necessary to ensure effective lines of communication and consistency between contingency plans.

In addition to Benchmark-TurnKey and Contractor personnel, other individuals who may have responsibilities in the work zone include subcontractors and governmental agencies performing Site inspection work (i.e., the New York State Department of Environmental Conservation). The Contractor shall be responsible for ensuring that these individuals have received OSHA-required training (29 CFR 1910.120(e)), including initial, refresher and site-specific training, and shall be responsible for the safety and health of these individuals while they are on-site.

# 3.0 HAZARD EVALUATION

Due to the presence of certain contaminants at the Site, the possibility exists that workers will be exposed to hazardous substances during field activities. The principal points of exposure would be through direct contact with and incidental ingestion of soil, and through the inhalation of contaminated particles or vapors. Other points of exposure may include direct contact with groundwater. In addition, the use of drilling and/or medium to large-sized construction equipment (e.g., excavator) will also present conditions for potential physical injury to workers. Further, since work will be performed outdoors, the potential exists for heat/cold stress to impact workers, especially those wearing protective equipment and clothing. Adherence to the medical evaluations, worker training relative to chemical hazards, safe work practices, proper personal protection, environmental monitoring, establishment work zones and Site control, appropriate decontamination procedures and contingency planning outlined herein will reduce the potential for chemical exposures and physical injuries.

## 3.1 Chemical Hazards

As discussed in Section 1.3, historic activities have potentially resulted in impacts to Site soils, groundwater, and subslab vapors. Visual and olfactory observations, as well as elevated PID readings, indicate a potential VOC impact to Site soil. In addition to VOCs, soil and groundwater may be impacted by SVOCs (PAHs) due to historic use as a lithographic printing operation and gasoline filling station. Table 1 lists exposure limits for airborne concentrations of the COPCs identified in Section 1.4 of this HASP. Brief descriptions of the toxicology of the prevalent COPCs and related health and safety guidance and criteria are provided below.

- **1,2,4-Trimethylbenzene (CAS #95-63-6)** is a common gasoline additive. Acute exposure predominantly results in skin irritation and inhalation causes chemical pneumonitis. Symptoms include headache, dizziness, fatigue, muscular weakness, drowsiness.

- **1,3,5-Trimethylbenzene (CAS #108-67-8)** is a colorless, odorless flammable liquid. The substance is irritating to the eyes , the skin and the respiratory tract . If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system.

- **Isopropylbenzene (CAS #98-82-8)** is a colorless, gasoline-like odor flammable liquid. Acute exposure typically results in irritation of the eyes, mucous membranes and upper respiratory tract. Can be absorbed through the skin. Possible central nervous system depressant. Symptoms may include irritation, dizziness, nausea, lack of coordination and narcosis.

- **N-Propylbenzene (CAS #103-65-1)** is a colorless to pale yellow flammable liquid. Inhalation or contact may irritate or burn skin and eyes. In case fire, smoke-vapor may produce irritating, corrosive and/or toxic gases. Vapors may cause dizziness or suffocation.

- **Ethylbenzene (CAS #100-41-4)** is a component of automobile gasoline. Over-exposure may cause kidney, skin liver and/or respiratory disease. Signs of exposure may include dermatitis, irritation of the eyes and mucus membranes, headache. Narcosis and coma may result in more severe cases.

- **Xylenes (o, m, and p) (CAS #95-47-6, 108-38-3, and 106-42-3)** are colorless, flammable liquids present in paint thinners and fuels. Acute exposure may cause central nervous system depression, resulting in headache, dizziness, fatigue, muscular weakness, drowsiness, and coordination loss. Repeated exposures may also cause removal of lipids from the skin, producing dry, fissured dermatitis. Exposure of high concentrations of vapor may cause eye irritation and damage, as well as irritation of the mucus membranes.

- **Polycyclic Aromatic Hydrocarbons (PAHs)** are formed as a result of the pyrolysis and incomplete combustion of organic matter such as fossil fuel. PAH aerosols formed during the combustion process disperse throughout the atmosphere, resulting in the deposition of PAH condensate in soil, water and on vegetation. In addition, several products formed from petroleum processing operations (e.g., roofing materials and asphalt) also contain elevated levels of PAHs. Hence, these compounds are widely dispersed in the environment. PAHs are characterized by a molecular structure containing three or more fused, unsaturated carbon rings. Seven of the PAHs are classified by USEPA as probable human carcinogens (USEPA Class B2). These are: benzo(a)pyrene; benzo(a)anthracene; benzo(b)fluoranthene; benzo(k)fluoranthene; chrysene; dibenzo(a,h)anthracene; and indeno(1,2,3-cd)pyrene. The primary route of exposure to PAHs is through incidental ingestion and inhalation of contaminated particulates. PAHs are characterized by an organic odor, and exist as oily liquids in pure form. Acute exposure symptoms may include acne-type blemishes in areas of the skin exposed to sunlight.

- **Arsenic (CAS #7440-38-2)** is a naturally occurring element and is usually found combined with one or more elements, such as oxygen or sulfur. Inhalation is a more important exposure route than ingestion. First phase exposure symptoms include nausea, vomiting, diarrhea and pain in the stomach. Prolonged contact is corrosive to the skin and mucus membranes. Arsenic is considered a Group A human carcinogen by the USEPA. Exposure via inhalation is associated with an increased risk of lung cancer. Exposure via the oral route is associated with an increased risk of skin cancer.

- **Barium (CAS #7440-39-3)** is a silver white metal, produced by the reduction of barium oxide. Local effects and symptoms of exposure to barium compounds, such as the hydroxide or carbonate, may include irritation of the eyes, throat, nose and skin. Systemic effects from ingestion include increased muscle contractility, reduction of heart rate/potential arrest, intestinal peristalsis, vascular constriction, and bladder contraction.

- **Cadmium** is a natural element and is usually combined with one or more elements, such as oxygen, chloride, or sulfur. Breathing high levels of cadmium severely damages the lungs and can cause death. Ingestion of high levels of cadmium severely irritates the stomach, leading to vomiting and diarrhea. Long term exposure to lower levels of cadmium leads to a buildup of this substance in the kidneys and possible kidney disease. Other potential long term effects are lung damage and fragile bones. Cadmium is suspected to be a human carcinogen.

- **Chromium (CAS #7440-47-3)** is used in the production of stainless steel, chrome plated metals, and batteries. Two forms of chromium, hexavalent (CR+6) and trivalent (CR+3) are toxic. Hexavalent chromium is an irritant and corrosive to the skin and mucus membranes. Chromium is a potential occupational carcinogen. Acute exposures to dust may cause coughing, wheezing, headaches, pain and fever.

- **Lead (CAS #7439-92-1)** can affect almost every organ and system in our bodies. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the immune system. The effects are the same whether it is breathed or swallowed. Lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect memory. Lead may cause anemia.

- **Mercury (CAS #7439-97-6)** is used in industrial applications for the production of caustic and chlorine, and in electrical control equipment and apparatus. Overexposure to mercury may cause coughing, chest pains, bronchitis,

pneumonia, indecision, headaches, fatigue, and salivation. Mercury is a skin and eye irritant.

With respect to the anticipated IRM activities discussed in Section 1.5, possible routes of exposure to the above-mentioned contaminants are presented in Table 2. The use of proper respiratory equipment, as outlined in Section 7.0 of this HASP, will minimize the potential for exposure to airborne contamination. Exposure to contaminants through dermal and other routes will also be minimized through the use of protective clothing (Section 7.0), safe work practices (Section 6.0), and proper decontamination procedures (Section 12.0).

## 3.2 Physical Hazards

Field activities at the 1050-1088 Niagara Street Site may present the following physical hazards:

- The potential for physical injury during heavy construction equipment use, such as backhoes, excavators and drilling equipment.
- The potential for heat/cold stress to employees during the summer/winter months (see Section 10.0).
- The potential for slip and fall injuries due to rough, uneven terrain and/or open excavations.

These hazards represent only some of the possible means of injury that may be present during field and sampling activities at the Site. Since it is impossible to list all potential sources of injury, it shall be the responsibility of each individual to exercise proper care and caution during all phases of the work.

# 4.0 TRAINING

## 4.1 Site Workers

All personnel performing IRM activities at the Site (such as, but not limited to, equipment operators, general laborers, and drillers) and who may be exposed to hazardous substances, health hazards, or safety hazards and their supervisors/managers responsible for the Site shall receive training in accordance with 29 CFR 1910.120(e) before they are permitted to engage in operations in the exclusion zone or contaminant reduction zone. This training includes an initial 40-hour Hazardous Waste Site Worker Protection Course, an 8-hour Annual Refresher Course subsequent to the initial 40-hour training, and 3 days of actual field experience under the direct supervision of a trained, experienced supervisor. Additional site-specific training shall also be provided by the SSHO prior to the start of field activities. A description of topics to be covered by this training is provided below.

### 4.1.1 Initial and Refresher Training

Initial and refresher training is conducted by a qualified instructor as specified under OSHA 29 CFR 1910.120(e)(5), and is specifically designed to meet the requirements of OSHA 29 CFR 1910.120(e)(3) and 1910.120(e)(8). The training covers, as a minimum, the following topics:

- OSHA HAZWOPER regulations.
- Site safety and hazard recognition, including chemical and physical hazards.
- Medical monitoring requirements.
- Air monitoring, permissible exposure limits, and respiratory protection level classifications.
- Appropriate use of personal protective equipment (PPE), including chemical compatibility and respiratory equipment selection and use.
- Work practices to minimize risk.
- Work zones and Site control.

- Safe use of engineering controls and equipment.
- Decontamination procedures.
- Emergency response and escape.
- Confined space entry procedures.
- Heat and cold stress monitoring.
- Elements of a Health and Safety Plan.
- Spill containment.

Initial training also incorporates workshops for PPE and respiratory equipment use (Levels A, B and C), and respirator fit testing. Records and certification received from the course instructor documenting each employee's successful completion of the training identified above are maintained on file at Benchmark-TurnKey's Buffalo, NY office. Contractors and Subcontractors are required to provide similar documentation of training for all their personnel who will be involved in on-site work activities.

Any employee who has not been certified as having received health and safety training in conformance with 29 CFR 1910.120(e) is prohibited from working in the exclusion and contamination reduction zones, or to engage in any on-site work activities that may involve exposure to hazardous substances or wastes.

### 4.1.2 Site Training

Site workers are given a copy of the HASP and provided a site-specific briefing prior to the commencement of work to ensure that employees are familiar with the HASP and the information and requirements it contains. The Site briefing shall be provided by the SSHO prior to initiating field activities and shall include:

- Names of personnel and alternates responsible for Site safety and health.
- Safety, health and other hazards present on the Site.
- The site lay-out including work zones and places of refuge.

- The emergency communications system and emergency evacuation procedures.
- Use of PPE.
- Work practices by which the employee can minimize risks from hazards.
- Safe use of engineering controls and equipment on the site.
- Medical surveillance, including recognition of symptoms and signs of over-exposure as described in Chapter 5 of this HASP.
- Decontamination procedures as detailed in Chapter 12 of this HASP.
- The emergency response plan as detailed in Chapter 15 of this HASP.
- Confined space entry procedures, if required, as detailed in Chapter 13 of this HASP.
- The spill containment program as detailed in Chapter 9 of this HASP.
- Site control as detailed in Chapter 11 of this HASP.

Supplemental health and safety briefings will also be conducted by the SSHO on an as-needed basis during the course of the work. Supplemental briefings are provided as necessary to notify employees of any changes to this HASP as a result of information gathered during ongoing Site characterization and analysis. Conditions for which the SSHO may schedule additional briefings include, but are not limited to: a change in Site conditions (e.g., based on monitoring results); changes in the work schedule/plan; newly discovered hazards; and safety incidents occurring during Site work.

## 4.2 Supervisor Training

On-site safety and health personnel who are directly responsible for or who supervise the safety and health of workers engaged in hazardous waste operations (i.e., SSHO) shall receive, in addition to the appropriate level of worker training described in Section 4.1, above, 8 additional hours of specialized supervisory training, in compliance with 29 CFR 1910.120(e)(4).

## 4.3 Emergency Response Training

Emergency response training is addressed in Appendix A of this HASP, Emergency Response Plan.

## 4.4 Site Visitors

Each Contractor's SSHO will provide a site-specific briefing to all Site visitors and other non-Benchmark/TurnKey personnel who enter the Site beyond the Site entry point. The site-specific briefing will provide information about Site hazards, the Site layout including work zones and places of refuge, the emergency communications system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

Site visitors will not be permitted to enter the exclusion zone or contaminant reduction zones unless they have received the level of training required for Site workers as described in Section 4.1.

# 5.0 MEDICAL MONITORING

Medical monitoring examinations are provided to Benchmark-TurnKey employees as stipulated under 29 CFR Part 1910.120(f). These exams include initial employment, annual and employment termination physicals for all Benchmark-TurnKey employees involved in hazardous waste site field operations. Post-exposure examinations are also provided for employees who may have been injured, received a health impairment, or developed signs or symptoms of over-exposure to hazardous substances or were accidentally exposed to substances at concentrations above the permissible exposure limits without necessary personal protective equipment. Such exams are performed as soon as possible following development of symptoms or the known exposure event.

Medical evaluations are performed by Health Works, an occupational health care provider under contract with Benchmark-TurnKey. Health Works is located in Seneca Square Plaza, 1900 Ridge Road, West Seneca, New York 14224. The facility can be reached at (716) 823-5050 to schedule routine appointments or post-exposure examinations.

Medical evaluations are conducted according to the Benchmark-TurnKey Medical Monitoring Program and include an evaluation of the workers' ability to use respiratory protective equipment. The examinations include:

- Occupational/medical history review.
- Physical exam, including vital sign measurement.
- Spirometry testing.
- Eyesight testing.
- Audio testing (minimum baseline and exit, annual for employees routinely exposed to greater than 85db).
- EKG (for employees >40 yrs age or as medical conditions dictate).
- Chest X-ray (baseline and exit, and every 5 years).
- Blood biochemistry (including blood count, white cell differential count, serum multiplastic screening).
- Medical certification of physical requirements (i.e., sight, musculoskeletal,

cardiovascular) for safe job performance and to wear respiratory protection equipment.

The purpose of the medical evaluation is to determine an employee's fitness for duty on hazardous waste sites; and to establish baseline medical data.

In conformance with OSHA regulations, Benchmark-TurnKey will maintain and preserve medical records for a period of 30 years following termination of employment. Employees are provided a copy of the physician's post-exam report, and have access to their medical records and analyses.

# 6.0 SAFE WORK PRACTICES

All Benchmark-TurnKey employees shall conform to the following safe work practices during all on-site work activities conducted within the exclusion and contamination reduction zones:

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth contact is strictly prohibited.
- The hands and face must be thoroughly washed upon leaving the work area and prior to engaging in any activity indicated above.
- Respiratory protective equipment and clothing must be worn by all personnel entering the Site as required by the HASP or as modified by the Site safety officer. Excessive facial hair (i.e., beards, long mustaches or sideburns) that interferes with the satisfactory respirator-to-face seal is prohibited.
- Contact with surfaces/materials either suspected or known to be contaminated will be avoided to minimize the potential for transfer to personnel, cross contamination and need for decontamination.
- Medicine and alcohol can synergize the effects of exposure to toxic chemicals. Due to possible contraindications, use of prescribed drugs should be reviewed with the Benchmark-TurnKey occupational physician. Alcoholic beverage and illegal drug intake are strictly forbidden during the workday.
- All personnel shall be familiar with standard operating safety procedures and additional instructions contained in this Health and Safety Plan.
- On-site personnel shall use the "buddy" system. No one may work alone (i.e., out of earshot or visual contact with other workers) in the exclusion zone.
- Personnel and equipment in the contaminated area shall be minimized, consistent with effective Site operations.
- All employees have the obligation to immediately report and if possible, correct unsafe work conditions.
- Use of contact lenses on-site will not be permitted. Spectacle kits for insertion into full-face respirators will be provided for Benchmark-TurnKey employees, as requested and required.

The recommended specific safety practices for working around the contractor's equipment (e.g., backhoes, bulldozers, excavators, drill rigs etc.) are as follows:

- Although the Contractor and subcontractors are responsible for their equipment and safe operation of the Site, Benchmark-TurnKey personnel are also responsible for their own safety.

- Subsurface work will not be initiated without first clearing underground utility services.

- Heavy equipment should not be operated within 20 feet of overhead wires. This distance may be increased if windy conditions are anticipated or if lines carry high voltage. The Site should also be sufficiently clear to ensure the project staff can move around the heavy machinery safely.

- Care should be taken to avoid overhead wires when moving heavy-equipment from location to location.

- Hard hats, safety boots and safety glasses should be worn at all times in the vicinity of heavy equipment. Hearing protection is also recommended.

- The work Site should be kept neat. This will prevent personnel from tripping and will allow for fast emergency exit from the Site.

- Proper lighting must be provided when working at night.

- Construction activities should be discontinued during an electrical storm or severe weather conditions.

- The presence of combustible gases should be checked before igniting any open flame.

- Personnel shall stand upwind of any construction operation when not immediately involved in sampling/logging/observing activities.

- Personnel will not approach the edge of an unsecured trench/excavation closer than 2 feet.

# 7.0 PERSONAL PROTECTIVE EQUIPMENT

## 7.1 Equipment Selection

Personal protective equipment (PPE) will be donned when work activities may result in exposure to physical or chemical hazards beyond acceptable limits, and when such exposure can be mitigated through appropriate PPE. The selection of PPE will be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the Site, the task-specific conditions and duration, and the hazards and potential hazards identified at the Site.

Equipment designed to protect the body against contact with known or suspect chemical hazards are grouped into four categories according to the degree of protection afforded. These categories designated A through D consistent with United States Environmental Protection Agency (USEPA) Level of Protection designation, are:

- **Level A:** Should be selected when the highest level of respiratory, skin and eye protection is needed.

- **Level B:** Should be selected when the highest level of respiratory protection is needed, but a lesser level of skin protection is required. Level B protection is the minimum level recommended on initial Site entries until the hazards have been further defined by on-site studies. Level B (or Level A) is also necessary for oxygen-deficient atmospheres.

- **Level C:** Should be selected when the types of airborne substances are known, the concentrations have been measured and the criteria for using air-purifying respirators are met. In atmospheres where no airborne contaminants are present, Level C provides dermal protection only.

- **Level D:** Should not be worn on any Site with elevated respiratory or skin hazards. This is generally a work uniform providing minimal protection.

OSHA requires the use of certain PPE under conditions where an immediate danger to life and health (IDLH) may be present. Specifically, OSHA 29 CFR 1910.120(g)(3)(iii) requires use of a positive pressure self-contained breathing apparatus, or positive pressure air-line respirator equipped with an escape air supply when chemical exposure levels present a substantial possibility of immediate serious injury, illness or death, or impair the ability to

escape. Similarly, OSHA 29 CFR 1910.120(g)(3)(iv) requires donning totally-encapsulating chemical protective suits (with a protection level equivalent to Level A protection) in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate serious illness, injury or death, or impair the ability to escape.

In situations where the types of chemicals, concentrations, and possibilities of contact are unknown, the appropriate level of protection must be selected based on professional experience and judgment until the hazards can be further characterized. The individual components of clothing and equipment must be assembled into a full protective ensemble to protect the worker from site-specific hazards, while at the same time minimizing hazards and drawbacks of the personal protective gear itself. Ensemble components are detailed below for levels A/B, C, and D protection.

## 7.2 Protection Ensembles

### 7.2.1 Level A/B Protection Ensemble

Level A/B ensembles include similar respiratory protection, however Level A provides a higher degree of dermal protection than Level B. Use of Level A over Level B is determined by: comparing the concentrations of identified substances in the air with skin toxicity data, and assessing the effect of the substance (by its measured air concentrations or splash potential) on the small area of the head and neck unprotected by Level B clothing.

The recommended PPE for level A/B is:

- Pressure-demand, full-face piece self-contained breathing apparatus (MSHA/-NIOSH approved) or pressure-demand supplied-air respirator with escape self-contained breathing apparatus (SCBA).
- Chemical-resistant clothing. For Level A, clothing consists of totally-encapsulating chemical resistant suit. Level B incorporates hooded one-or two-piece chemical splash suit.
- Inner and outer chemical resistant gloves.
- Chemical-resistant safety boots/shoes.
- Hardhat.

### 7.2.2 Level C Protection Ensemble

Level C protection is distinguished from Level B by the equipment used to protect the respiratory system, assuming the same type of chemical-resistant clothing is used. The main selection criterion for Level C is that conditions permit wearing an air-purifying device. The device (when required) must be an air-purifying respirator (MSHA/NIOSH approved) equipped with filter cartridges. Cartridges must be able to remove the substances encountered. Respiratory protection will be used only with proper fitting, training and the approval of a qualified individual. In addition, an air-purifying respirator can be used only if: oxygen content of the atmosphere is at least 19.5% in volume; substances are identified and concentrations measured; substances have adequate warning properties; the individual passes a qualitative fit-test for the mask; and an appropriate cartridge/canister is used, and its service limit concentration is not exceeded.

Recommended PPE for Level C conditions includes:

- Full-face piece, air-purifying respirator equipped with MSHA and NIOSH approved organic vapor/acid gas/dust/mist combination cartridges or as designated by the SSHO.
- Chemical-resistant clothing (hooded, one or two-piece chemical splash suit or disposable chemical-resistant one-piece suit).
- Inner and outer chemical-resistant gloves.
- Chemical-resistant safety boots/shoes.
- Hardhat.

An air-monitoring program is part of all response operations when atmospheric contamination is known or suspected. It is particularly important that the air be monitored thoroughly when personnel are wearing air-purifying respirators. Continual surveillance using direct-reading instruments is needed to detect any changes in air quality necessitating a higher level of respiratory protection.

### 7.2.3 Level D Protection Ensemble

As indicated above, Level D protection is primarily a work uniform. It can be worn in areas where only boots can be contaminated, where there are no inhalable toxic substances

and where the atmospheric contains at least 19.5% oxygen.

Recommended PPE for Level D includes:

- Coveralls.
- Safety boots/shoes.
- Safety glasses or chemical splash goggles.
- Hardhat.
- Optional gloves; escape mask; face shield.

### 7.2.4 Recommended Level of Protection for Site Tasks

Based upon current information regarding both the contaminants suspected to be present at the Site and the various tasks that are included in the remedial activities, the minimum required levels of protection for these tasks shall be as identified in Table 3.

# 8.0 EXPOSURE MONITORING

## 8.1 General

Based on the results of historic sample analysis and the nature of the proposed work activities at the Site, the possibility exist that organic vapors and/or particulates may be released to the air during intrusive construction activities. Ambient breathing zone concentrations may at times, exceed the permissible exposure limits (PELs) established by OSHA for the individual compounds (see Table 1), in which case respiratory protection will be required. Respiratory and dermal protection may be modified (upgraded or downgraded) by the SSHO based upon real-time field monitoring data.

### 8.1.1 On-Site Work Zone Monitoring

Benchmark-TurnKey personnel will conduct routine, real-time air monitoring during all intrusive construction phases such as excavation, backfilling, drilling, etc. The work area will be monitored at regular intervals using a photo-ionization detector (PID), combustible gas meter and a particulate meter. Observed values will be recorded and maintained as part of the permanent field record.

Additional air monitoring measurements may be made by Benchmark-TurnKey personnel to verify field conditions during subcontractor oversight activities. Monitoring instruments will be protected from surface contamination during use. Additional monitoring instruments may be added if the situations or conditions change. Monitoring instruments will be calibrated in accordance with manufacturer's instructions before use.

### 8.1.2 Off-Site Community Air Monitoring

In addition to on-site monitoring within the work zone(s), monitoring at the down-wind portion of the Site perimeter will be conducted. This will provide a real-time method for determination of vapor and/or particulate releases to the surrounding community as a result of ground intrusive investigation work.

Ground intrusive activities are defined in the Generic Community Air Monitoring Plan and attached as Appendix C. Ground intrusive activities include soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells. Non-intrusive activities include the collection of soil and sediment samples or the

collection of groundwater samples from existing wells. Continuous monitoring is required for ground intrusive activities and periodic monitoring is required for non-intrusive activities. Periodic monitoring consists of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring while bailing a well, and taking a reading prior to leaving a sampling location. This may be upgraded to continuous if the sampling location is in close proximity to individuals not involved in the Site activity (i.e., on a curb of a busy street). The action levels below will be used during periodic monitoring.

## 8.2 Monitoring Action Levels

### 8.2.1 On-Site Work Zone Action Levels

The PID, or other appropriate instrument(s), will be used by Benchmark-TurnKey personnel to monitor organic vapor concentrations as specified in this HASP. Combustible gas will be monitored with the "combustible gas" option on the combustible gas meter or other appropriate instrument(s). In addition, fugitive dust/particulate concentrations will be monitored during major soil intrusion (viz., well/boring installation) using a real-time particulate monitor as specified in this plan. In the absence of such monitoring, appropriate respiratory protection for particulates shall be donned. Sustained readings obtained in the breathing zone may be interpreted (with regard to other Site conditions) as follows for Benchmark-TurnKey personnel:

- Total atmospheric concentrations of unidentified vapors or gases ranging from 0 to 1 ppm above background on the PID) - Continue operations under Level D (see Appendix A).

- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings from >1 ppm to 5 ppm above background on the PID (vapors not suspected of containing high levels of chemicals toxic to the skin) - Continue operations under Level C (see Appendix A).

- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings of >5 ppm to 50 ppm above background on the PID - Continue operations under Level B (see Attachment 1), re-evaluate and alter (if possible) construction methods to achieve lower vapor concentrations.

- Total atmospheric concentrations of unidentified vapors or gases above 50 ppm on the PID - Discontinue operations and exit the work zone immediately.

The particulate monitor will be used to monitor respirable dust concentrations during all intrusive activities and during handling of Site soil/fill. Action levels based on the instrument readings shall be as follows:

- Less than 50 $mg/m^3$ - Continue field operations.
- 50-150 $mg/m^3$ - Don dust/particulate mask or equivalent
- Greater than 150 $mg/m^3$ - Don dust/particulate mask or equivalent. Initiate engineering controls to reduce respirable dust concentration (viz., wetting of excavated soils or tools at discretion of Site Health and Safety Officer).

Readings from the field equipment will be recorded and documented on the appropriate Project Field Forms. All instruments will be calibrated before use on a daily basis and the procedure will be documented on the appropriate Project Field Forms.

### 8.2.2 Community Air Monitoring Action Levels

In addition to the action levels prescribed in Section 8.2.1 for Benchmark-TurnKey personnel on-site, the following criteria shall also be adhered to for the protection of downwind receptors consistent with NYSDOH requirements (Appendix C):

- **ORGANIC VAPOR PERIMETER MONITORING:**
  - If the sustained ambient air concentration of organic vapors at the downwind perimeter of the exclusion zone exceeds 5 ppm above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the sustained organic vapor decreases below 5 ppm over background, work activities can resume with continued monitoring.
  - If the sustained ambient air concentration of organic vapors at the downwind perimeter of the exclusion zone are greater than 5 ppm over background but less than 25 ppm for the 15-minute average, activities can resume provided that: the organic vapor level 200 feet downwind of the working site or half the distance to the nearest off-site residential or commercial structure, whichever

is less, but in no case less than 20 feet, is below 5 ppm over background; and more frequent intervals of monitoring, as directed by the Site Health and Safety Officer, are conducted.

- If the sustained organic vapor level is above 25 ppm at the perimeter of the exclusion zone for the 15-minute average, the Site Health and Safety Officer must be notified and work activities shut down. The Site Health and Safety Officer will determine when re-entry of the exclusion zone is possible and will implement downwind air monitoring to ensure vapor emissions do not impact the nearest off-site residential or commercial structure at levels exceeding those specified in the ***Organic Vapor Contingency Monitoring Plan*** below. All readings will be recorded and will be available for New York State Department of Environmental Conservation (DEC) and Department of Health (DOH) personnel to review.

o **ORGANIC VAPOR CONTINGENCY MONITORING PLAN:**

- If the sustained organic vapor level is greater than 5 ppm over background 200 feet downwind from the work area or half the distance to the nearest off-site residential or commercial property, whichever is less, all work activities must be halted.

- If, following the cessation of the work activities or as the result of an emergency, sustained organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest off-site residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest off-site residential or commercial structure (20-foot zone).

- If efforts to abate the emission source are unsuccessful and if sustained organic vapor levels approach or exceed 5 ppm above background within the 20-foot zone for more than 30 minutes, or are sustained at levels greater than 10 ppm above background for longer than one minute, then the ***Major Vapor Emission Response Plan*** (see below) will automatically be placed into effect.

o **MAJOR VAPOR EMISSION RESPONSE PLAN:**

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in this Health and Safety Plan and the Emergency Response Plan (Appendix A) will be advised.

2. The local police authorities will immediately be contacted by the Site Health and Safety Officer and advised of the situation.

3. Frequent air monitoring will be conducted at 30-minute intervals within the 20-foot zone. If two sustained successive readings below action levels are measured, air monitoring may be halted or modified by the Site Health and Safety Officer.

The following personnel are to be notified in the listed sequence in the event that a Major Vapor Emission Plan is activated:

| Responsible Person | Contact | Phone Number |
|---|---|---|
| SSHO | Police | 911 |
| SSHO | State Emergency Response Hotline | (800) 457-7362 |

Additional emergency numbers are listed in the Emergency Response Plan included as Appendix A.

- **EXPLOSIVE VAPORS:**
  - Sustained atmospheric concentrations of greater than 10% LEL in the work area - Initiate combustible gas monitoring at the downwind portion of the Site perimeter.
  - Sustained atmospheric concentrations of greater than 10% LEL at the downwind Site perimeter – Halt work and contact local Fire Department.

- **AIRBORNE PARTICULATE COMMUNITY AIR MONITORING**

Respirable (PM-10) particulate monitoring will be performed on a continuous basis at the upwind and downwind perimeter of the exclusion zone. The monitoring will be performed using real-time monitoring equipment capable of measuring PM-10 and integrating over a period of 15-minutes for comparison to the airborne particulate action levels. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. All readings will be recorded and will be available for NYSDEC and NYSDOH review. Readings will be interpreted as follows:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (ug/$m^3$) greater than the background (upwind perimeter) reading for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression provided that the downwind PM-10 particulate levels do not exceed 150 ug/$m^3$ above the upwind level and that visible dust is not migrating from the work area.

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

Pertinent emergency response information including the telephone number of the Fire Department is included in the Emergency Response Plan (Appendix A).

# 9.0 SPILL RELEASE/RESPONSE

This chapter of the HASP describes the potential for and procedures related to spills or releases of known or suspected petroleum and/or hazardous substances on the Site. The purpose of this Section of the HASP is to plan appropriate response, control, counter-measures and reporting, consistent with OSHA requirements in 29 CFR 1910.120(b)(4)(ii)(J) and (j)(1)(viii). The spill containment program addresses the following elements:

- Potential hazardous material spills and available controls.
- Initial notification and evaluation.
- Spill response.
- Post-spill evaluation.

## 9.1 Potential Spills and Available Controls

An evaluation was conducted to determine the potential for hazardous material and oil/petroleum spills at this Site. For the purpose of this evaluation, hazardous materials posing a significant spill potential are considered to be:

- CERCLA Hazardous Substances as identified in 40 CFR Part 302, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

- Extremely Hazardous Substances as identified in 40 CFR Part 355, Appendix A, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

- Hazardous Chemicals as defined under Section 311(e) of the Emergency Planning and Community Right-To-Know Act of 1986, where such chemicals are present or will be stored in excess of 10,000 lbs.

- Toxic Chemicals as defined in 40 CFR Part 372, where such chemicals are present or will be stored in excess of 10,000 lbs.

- Chemicals regulated under 6NYCRR Part 597, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

Oil/petroleum products are considered to pose a significant spill potential whenever the following situations occur:

- The potential for a "harmful quantity" of oil (including petroleum and non-petroleum-based fuels and lubricants) to reach navigable waters of the U.S. exists (40 CFR Part 112.4). Harmful quantities are considered by USEPA to be volumes that could form a visible sheen on the water or violate applicable water quality standards.

- The potential for any amount of petroleum to reach any waters of NY State, including groundwater, exists. Petroleum, as defined by NY State in 6NYCRR Part 612, is a petroleum-based heat source, energy source, or engine lubricant/maintenance fluid.

- The potential for any release, to soil or water, of petroleum from a bulk storage facility regulated under 6NYCRR Part 612. A regulated petroleum storage facility is defined by NY State as a site having stationary tank(s) and intra-facility piping, fixtures and related equipment with an aggregate storage volume of 1,100 gallons or greater.

The evaluation indicates that, based on Site history and decommissioning records, a hazardous material spill and/or a petroleum product spill is not likely to occur during remedial efforts.

## 9.2 Initial Spill Notification and Evaluation

Any worker who discovers a hazardous substance or oil/petroleum spill will immediately notify the Project Manager and SSHO. The worker will, to the best of his/her ability, report the material involved, the location of the spill, the estimated quantity of material spilled, the direction/flow of the spill material, related fire/explosion incidents, if any, and any associated injuries. The Emergency Response Plan presented in Attachment H2 of this HASP will immediately be implemented if an emergency release has occurred.

Following initial report of a spill, the Project Manager will make an evaluation as to whether the release exceeds RQ levels. If an RQ level is exceeded, the Project Manager will notify the Site owner and NYSDEC at 1-800-457-7362 within 2 hours of spill discovery. The Project Manager will also determine what additional agencies (e.g., USEPA) are to be contacted regarding the release, and will follow-up with written reports as required by the applicable regulations.

## 9.3 Spill Response

For all spill situations, the following general response guidelines will apply:

- Only those personnel involved in overseeing or performing containment operations will be allowed within the spill area. If necessary, the area will be roped, ribboned, or otherwise blocked off to prevent unauthorized access.
- Appropriate PPE, as specified by the SSHO, will be donned before entering the spill area.
- Ignition points will be extinguished/removed if fire or explosion hazards exist.
- Surrounding reactive materials will be removed.
- Drains or drainage in the spill area will be blocked to prevent inflow of spilled materials or applied materials.

For minor spills, the Contractor will maintain a Spill Control and Containment Kit in the Field Office or other readily accessible storage location. The kit will consist of, at a minimum, a 50 lb. bag of "speedy dry" granular absorbent material, absorbent pads, shovels, empty 5-gallon pails and an empty open-top 55-gallon drum. Spilled materials will be absorbed, and shoveled into a 55-gallon drum for proper disposal (NYSDEC approval will be secured for on-site treatment of the impacted soils/absorbent materials, if applicable). Impacted soils will be hand-excavated to the point that no visible signs of contamination remains, and will be drummed with the absorbent.

In the event of a major release or a release that threatens surface water, a spill response contractor will be called to the Site. The response contractor may use heavy equipment (e.g., excavator, backhoe, etc.) to berm the soils surrounding the spill Site or create diversion trenching to mitigate overland migration or release to navigable waters. Where feasible, pumps will be used to transfer free liquid to storage containers. Spill control/cleanup contractors in the Western New York area that may be contacted for assistance include:

- The Environmental Service Group of NY, Inc.: (716) 695-6720
- Environmental Products and Services, Inc.: (716) 447-4700
- Op-Tech: (716) 873-7680

## 9.4 Post-Spill Evaluation

If a reportable quantity of hazardous material or oil/petroleum is spilled as determined by the Project Manager, a written report will be prepared as indicated in Section 9.2. The report will identify the root cause of the spill, type and amount of material released, date/time of release, response actions, agencies notified and/or involved in cleanup, and procedures to be implemented to avoid repeat incidents. In addition, all re-useable spill cleanup and containment materials will be decontaminated, and spill kit supplies/disposable items will be replenished.

# 10.0 HEAT/COLD STRESS MONITORING

Since some of the work activities at the Site will be scheduled for both the summer and winter months, measures will be taken to minimize heat/cold stress to Benchmark-TurnKey employees. The Site Safety and Health Officer and/or his or her designee will be responsible for monitoring Benchmark-TurnKey field personnel for symptoms of heat/cold stress.

## 10.1 Heat Stress Monitoring

Personal protective equipment may place an employee at risk of developing heat stress, a common and potentially serious illnesses often encountered at construction, landfill, waste disposal, industrial or other unsheltered sites. The potential for heat stress is dependent on a number of factors, including environmental conditions, clothing, workload, physical conditioning and age. Personal protective equipment may severely reduce the body's normal ability to maintain temperature equilibrium (via evaporation and convection), and require increased energy expenditure due to its bulk and weight.

Proper training and preventive measures will mitigate the potential for serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress, the following steps should be taken:

- Adjust work schedules.
- Modify work/rest schedules according to monitoring requirements.
- Mandate work slowdowns as needed.
- Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat (i.e., eight fluid ounces must be ingested for approximately every 1 lb of weight lost). The normal thirst

mechanism is not sensitive enough to ensure that enough water will be consumed to replace lost perspiration. When heavy sweating occurs, workers should be encouraged to drink more.

- Train workers to recognize the symptoms of heat related illness.

**Heat-Related Illness - Symptoms:**

- Heat rash may result from continuous exposure to heat or humid air.

- Heat cramps are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include: muscle spasms; pain in the hands, feet and abdomen.

- Heat exhaustion occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include: pale, cool, moist skin; heavy sweating; dizziness; nausea; fainting.

- Heat stroke is the most serious form of heat stress. Temperature regulation fails and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occur. Competent medical help must be obtained. Signs and symptoms are: red, hot, usually dry skin; lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

The monitoring of personnel wearing protective clothing should commence when the ambient temperature is 70 degrees Fahrenheit or above. For monitoring the body's recuperative ability to excess heat, one or more of the following techniques should be used as a screening mechanism.

- Heart rate may be measured by the radial pulse for 30 seconds as early as possible in the resting period. The rate at the beginning of the rest period should not exceed 100 beats per minute. If the rate is higher, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest periods stay the same, If the pulse rate is 100 beats per minute at the beginning of the nest rest period, the following work cycle should be further shortened by 33%.

- Body temperature may be measured orally with a clinical thermometer as early as possible in the resting period. Oral temperature at the beginning of the rest period

should not exceed 99.6 degrees Fahrenheit. If it does, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period remains the same. However, if the oral temperature exceeds 99.6 degrees Fahrenheit at the beginning of the next period, the work cycle may be further shortened by 33%. Oral temperature should be measured at the end of the rest period to make sure that it has dropped below 99.6 degrees Fahrenheit. No Benchmark-TurnKey employee will be permitted to continue wearing semi-permeable or impermeable garments when his/her oral temperature exceeds 100.6 degrees Fahrenheit.

## 10.2 Cold Stress Monitoring

Exposure to cold conditions may result in frostbite or hypothermia, each of which progresses in stages as shown below.

- **Frostbite** occurs when body tissue (usually on the extremities) begins to freeze. The three states of frostbite are:

    1) **Frost nip** - This is the first stage of the freezing process. It is characterized by a whitened area of skin, along with a slight burning or painful sensation. Treatment consists of removing the victim from the cold conditions, removal of boots and gloves, soaking the injured part in warm water (102 to 108 degrees Fahrenheit) and drinking a warm beverage. Do not rub skin to generate friction/ heat.

    2) **Superficial Frostbite** - This is the second stage of the freezing process. It is characterized by a whitish gray area of tissue, which will be firm to the touch but will yield little pain. The treatment is identical for Frost nip.

    3) **Deep Frostbite** - In this final stage of the freezing process the affected tissue will be cold, numb and hard and will yield little to no pain. Treatment is identical to that for Frost nip.

- **Hypothermia** is a serious cold stress condition occurring when the body loses heat at a rate faster than it is produced. If untreated, hypothermia may be fatal. The stages of hypothermia may not be clearly defined or visible at first, but generally include:

    1) Shivering
    2) Apathy (i.e., a change to an indifferent or uncaring mood)

3) Unconsciousness
4) Bodily freezing

Employees exhibiting signs of hypothermia should be treated by medical professionals. Steps that can be taken while awaiting help include:

1) Remove the victim from the cold environment and remove wet or frozen clothing. (Do this carefully as frostbite may have started.)

2) Perform active re-warming with hot liquids for drinking (Note: do not give the victim any liquid containing alcohol or caffeine) and a warm water bath (102 to 108 degrees Fahrenheit).

3) Perform passive re-warming with a blanket or jacket wrapped around the victim.

In any potential cold stress situation, it is the responsibility of the Site Health and Safety Officer to encourage the following:

- Education of workers to recognize the symptoms of frostbite and hypothermia.
- Workers should dress warmly, with more layers of thin clothing as opposed to one thick layer.
- Personnel should remain active and keep moving.
- Personnel should be allowed to take shelter in a heated areas, as necessary.
- Personnel should drink warm liquids (no caffeine or alcohol if hypothermia has set in).
- For monitoring the body's recuperation from excess cold, oral temperature recordings should occur:
  - At the Site Safety Technicians discretion when suspicion is based on changes in a worker's performance or mental status.
  - At a workers request.
  - As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind chill less than 20 degrees Fahrenheit or wind chill

less than 30 degrees Fahrenheit with precipitation).

- As a screening measure, whenever anyone worker on-site develops hypothermia.

Any person developing moderate hypothermia (a core body temperature of 92 degrees Fahrenheit) will not be allowed to return to work for 48 hours without the recommendation of a qualified medical doctor.

# 11.0 WORK ZONES AND SITE CONTROL

Work zones around the areas designated for construction activities will be established on a daily basis and communicated to all employees and other Site users by the SSHO. It shall be each Contractor's Site Safety and Health Officer's responsibility to ensure that all Site workers are aware of the work zone boundaries and to enforce proper procedures in each area. The zones will include:

- Exclusion Zone ("Hot Zone") - The area where contaminated materials may be exposed, excavated or handled and all areas where contaminated equipment or personnel may travel. Flagging tape will delineate the zone. All personnel entering the Exclusion Zone must wear the prescribed level of personal protective equipment identified in Section 7.

- Contamination Reduction Zone - The zone where decontamination of personnel and equipment takes place. Any potentially contaminated clothing, equipment and samples must remain in the Contamination Reduction Zone until decontaminated.

- Support Zone - The part of the site that is considered non-contaminated or "clean." Support equipment will be located in this zone, and personnel may wear normal work clothes within this zone.

In the absence of other task-specific work zone boundaries established by the SSHO, the following boundaries will apply to all investigation and construction activities involving disruption or handling of Site soils or groundwater:

- Exclusion Zone: 50 foot radius from the outer limit of the sampling/construction activity.

- Contaminant Reduction Zone: 100 foot radius from the outer limit of the sampling/construction activity.

- Support Zone: Areas outside the Contaminant Reduction Zone.

Access of non-essential personnel to the Exclusion and Contamination Reduction Zones will be strictly controlled by the SSHO. Only personnel who are essential to the

completion of the task will be allowed access to these areas and only if they are wearing the prescribed level of protection. Entrance of all personnel must be approved by the SSHO.

The SSHO will maintain a Health and Safety Logbook containing the names of Benchmark-TurnKey workers and their level of protection. The zone boundaries may be changed by the SSHO as environmental conditions warrant, and to respond to the necessary changes in work locations on-site.

# 12.0 DECONTAMINATION

## 12.1 Decontamination for Benchmark-TurnKey Employees

The degree of decontamination required is a function of a particular task and the environment within which it occurs. The following decontamination procedure will remain flexible, thereby allowing the decontamination crew to respond appropriately to the changing environmental conditions that may arise at the Site. All Benchmark-TurnKey personnel on-site shall follow the procedure below, or the Contractor's procedure (if applicable), whichever is more stringent.

**Station 1 - Equipment Drop:** Deposit visibly contaminated (if any) re-useable equipment used in the contamination reduction and exclusion zones (tools, containers, monitoring instruments, radios, clipboards, etc.) on plastic sheeting.

**Station 2 - Boots and Gloves Wash and Rinse:** Scrub outer boots and outer gloves. Deposit tape and gloves in waste disposal container.

**Station 3 - Tape, Outer Boot and Glove Removal:** Remove tape, outer boots and gloves. Deposit tape and gloves in waste disposal container.

**Station 4 - Canister or Mask Change:** If worker leaves exclusive zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot cover donned, and worker returns to duty.

**Station 5 - Outer Garment/Face Piece Removal**: Protective suit removed and deposited in separate container provided by Contractor. Face piece or goggles are removed if used. Avoid touching face with fingers. Face piece and/or goggles deposited on plastic sheet. Hard hat removed and placed on plastic sheet.

**Station 6 - Inner Glove Removal:** Inner gloves are the last personal protective equipment to be removed. Avoid touching the outside of the gloves with bare fingers. Dispose of these gloves in waste disposal container.

Following PPE removal, personnel shall wash hands, face and forearms with absorbent wipes. If field activities proceed for duration of 6 consecutive months or longer, shower facilities will be provided for worker use in accordance with OSHA 29 CFR 1910.120(n).

## 12.2 Decontamination for Medical Emergencies

In the event of a minor, non-life threatening injury, personnel should follow the decontamination procedures as defined, and then administer first-aid.

In the event of a major injury or other serious medical concern (e.g., heat stroke), immediate first-aid is to be administered and the victim transported to the hospital in lieu of further decontamination efforts unless exposure to a Site contaminant would be considered "Immediately Dangerous to Life or Health."

## 12.3 Decontamination of Field Equipment

The Contractor in accordance with his approved Health and Safety Plan in the Contamination Reduction Zone will conduct decontamination of heavy equipment. As a minimum, this will include manually removing heavy soil contamination, followed by steam cleaning on an impermeable pad.

Benchmark-TurnKey personnel will conduct decontamination of all tools used for sample collection purposes. It is expected that all tools will be constructed of nonporous, nonabsorbent materials (i.e., metal), which will aid in the decontamination effort. Any tool or part of a tool made of porous, absorbent material (i.e., wood) will be placed into suitable containers and prepared for disposal.

Decontamination of bailers, split-spoons, spatula knives, and other tools used for environmental sampling and examination shall be as follows:

- Disassemble the equipment
- Water wash to remove all visible foreign matter.
- Wash with detergent.
- Rinse all parts with distilled-deionized water.
- Allow to air dry.
- Wrap all parts in aluminum foil or polyethylene.

# 13.0 CONFINED SPACE ENTRY

OSHA 29 CFR 1910.146 identifies a confined space as a space that is large enough and so configured that an employee can physically enter and do assigned work, has limited or restricted means for entry and exit, and is not intended for continuous employee occupancy. Confined spaces include, but are not limited to, trenches, storage tanks, process vessels, pits, sewers, tunnels, underground utility vaults, pipelines, sumps, wells, and excavations.

Confined space entry by Benchmark-TurnKey employees is not anticipated to be necessary to complete the IRM activities identified in Section 2.0. In the event that the scope of work changes or confined space entry appears necessary, the Project Manager will be consulted to determine if feasible engineering alternatives to confined space entry can be implemented. If confined space entry by Benchmark-TurnKey employees cannot be avoided through reasonable engineering measures, task-specific confined space entry procedures will be developed and a confined-space entry permit will be issued through Benchmark-TurnKey's corporate Health and Safety Director. Benchmark-TurnKey employees shall not enter a confined space without these procedures and permits in place.

# 14.0 FIRE PREVENTION AND PROTECTION

## 14.1 General Approach

Recommended practices and standards of the National Fire Protection Association (NFPA) and other applicable regulations will be followed in the development and application of Project Fire Protection Programs. When required by regulatory authorities, the project management will prepare and submit a Fire Protection Plan for the approval of the contracting officers, authorized representative or other designated official. Essential considerations for the Fire Protection Plan will include:

- Proper Site preparation and safe storage of combustible and flammable materials.
- Availability of coordination with private and public fire authorities.
- Adequate job-site fire protection and inspections for fire prevention.
- Adequate indoctrination and training of employees.

## 14.2 Equipment and Requirements

Fire extinguishers will be provided by each Contractor and are required on all heavy equipment and in each field trailer. Fire extinguishers will be inspected, serviced, and maintained in accordance with the manufacturer's instructions. As a minimum, all extinguishers shall be checked monthly and weighed semi-annually, and recharged if necessary. Recharge or replacement shall be mandatory immediately after each use.

## 14.3 Flammable and Combustible Substances

All storage, handling or use of flammable and combustible substances will be under the supervision of qualified persons. All tanks, containers and pumping equipment, whether portable or stationary, used for the storage and handling of flammable and combustible liquids, will meet the recommendations of the National Fire Protection Association.

## 14.4 Hot Work

If the scope of work necessitates welding or blowtorch operation, the hot work permit presented in Appendix B will be completed by the SSHO and reviewed/issued by the Project Manager.

# 15.0 EMERGENCY INFORMATION

In accordance with OSHA 29 CFR Part 1910, an Emergency Response Plan is attached to this HASP as Appendix A. The hospital route map is presented within Appendix A as Figure 1.

# 16.0 REFERENCES

1. New York State Department of Environmental Conservation. *DER-10; Technical Guidance for Site Investigation and Remediation.* May 2010.

# TABLES

**TABLE 1**

**TOXICITY DATA FOR CONSTITUENTS OF POTENTIAL CONCERN**

**1050-1088 Niagara Street Site**

**Buffalo, New York**

| Parameter | Synonyms | CAS No. | Code | Concentration Limits [1] | | |
|---|---|---|---|---|---|---|
| | | | | PEL | TLV | IDLH |
| ***Volatile Organic Compounds (VOCs): ppm*** | | | | | | |
| 1,2,4-Trimethylbenzene | Pseudocumene | 95-63-6 | *none* | 25 | 25 | -- |
| 1,3,5-Trimethylbenzene | Mesitylene | 108-67-8 | *none* | 25 | 25 | -- |
| Ethylbenzene | Ethylbenzol, Phenylethane | 100-41-4 | *none* | 100 | 100 | 800 |
| Isopropylbenzene | Cumene | 98-82-8 | *none* | 50 | 50 | 900 |
| n-Propylbenzene | Isocumene | 103-65-1 | *none* | 50 | 50 | -- |
| Xylene, Total | o-, m-, p-isomers | 1330-20-7 | *none* | 100 | 100 | 900 |
| ***Semi-volatile Organic Compounds (SVOCs) [2] : ppm*** | | | | | | |
| Anthracene | *none* | 120-12-7 | *none* | -- | -- | -- |
| Benzo(a)anthracene | *none* | 56-55-3 | *none* | -- | -- | -- |
| Benzo(a)pyrene | *none* | 50-32-8 | *none* | -- | -- | -- |
| Benzo(b)fluoranthene | *none* | 205-99-2 | *none* | -- | -- | -- |
| Benzo(k)fluoranthene | *none* | 207-08-9 | *none* | -- | -- | -- |
| Chrysene | *none* | 218 01 9 | *none* | -- | -- | -- |
| Dibenzo(a,h)anthracene | *none* | 53-70-3 | *none* | -- | -- | -- |
| Fluoranthene | *none* | 206-44-0 | *none* | -- | -- | -- |
| Fluorene | *none* | 86-73-7 | *none* | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | *none* | 193-39-5 | *none* | -- | -- | -- |
| Naphthalene | Naphthalin, Tar camphor, White tar | 91-20-3 | *none* | 10 | 10 | 250 |
| Phenanthrene | *none* | 85-01-8 | *none* | -- | -- | -- |
| Pyrene | *none* | 129-00-0 | *none* | -- | -- | -- |
| ***Inorganic Compounds: mg/m [2]*** | | | | | | |
| Arsenic | *none* | 7440-38-2 | *Ca* | 0.01 | 0.01 | 5 |
| Barium | *none* | 7440-39-3 | *none* | 0.5 | 0.5 | 50 |
| Cadmium | *none* | 7440-43-9 | *Ca* | 0.005 | 0.01 | 9 |
| Chromium | *none* | 7440-47-3 | *none* | 1 | 0.5 | 250 |
| Copper | *none* | 7440-50-8 | *none* | 0.1 | 0.2 | 200 |
| Lead | *none* | 7439-92-1 | *none* | 0.05 | 0.15 | 100 |
| Mercury | *none* | 7439-97-6 | C-0.1 | 0.1 | 0.05 | 10 |
| Selenium | *none* | 7782-49-2 | *none* | 0.2 | 0.2 | 1 |
| Silver | *none* | 7440-28-0 | *none* | 0.01 | 0.1 | 10 |
| Zinc | *none* | 7440-66-6 | *none* | -- | -- | -- |

Notes:

1. Concentration limits as reported by NIOSH Pocket Guide to Chemical Hazards, February 2004 (NIOSH Publication No. 97-140, fourth printing with chages and updates.
2. " -- " = concentration limit not available; exposure should be minimized to the extent feasible through appropriate engineering controls & PPE.

Explanation:

Ca = NIOSH considers constituent to be a potential occupational carcinogen.
C-## = Ceiling Level equals the maximum exposure concentration allowable during the work day.
IDLH = Immediately Dangerous to Life or Health.
ND indicates that an IDLH has not as yet been determined.
TLV = Threshold Limit Value, established by American Conference of Industrial Hygienists (ACGIH), equals the maximum exposure concentration allowable for 8 hours/day @ 40 ho
TLVs are the amounts of chemicals in the air that almost all healthy adult workers are predicted to be able to tolerate without adverse effects. There are three types.
TLV-TWA (TLV-Time-Weighted Average) which is averaged over the normal eight-hour day/forty-hour work week. (Most TLVs.)
TLV-C or Ceiling limits are the concentration that should not be exceeded during any part of the working exposure.
Unless the initials "STEL" or "C" appear in the Code column, the TLV value should be considered to be the eight-hour TLV-TWA.
PEL = Permissible Exposure Limit, established by OSHA, equals the maximium exposure conconcentration allowable for 8 hours per day @ 40 hours per week

**TABLE 2**

**POTENTIAL ROUTES OF EXPOSURE TO THE CONSTITUENTS OF POTENTIAL CONCERN**

**1050-1088 Niagara Street Site**
**Buffalo, New York**

| Activity [1] | Direct Contact with Soil/Fill | Inhalation of Vapors or Dust | Direct Contact with Groundwater |
|---|---|---|---|
| **Interim Remedial Measures Tasks** | | | |
| 1. Installation of SVE system | x | x | |
| 2. Soil cover system installation | x | x | |

Notes:
1. Activity as described in Section 1.5 of the Health and Safety Plan.

**TABLE 3**

**REQUIRED LEVELS OF PROTECTION**
**FOR IRM TASKS**

**1050-1088 Niagara Street Site**
**Buffalo, New York**

| Activity | Respiratory Protection [1] | Clothing | Gloves [2] | Boots [2, 3] | Other Required PPE/Modifications [2, 4] |
|---|---|---|---|---|---|
| **Interim Remedial Measures Tasks** | | | | | |
| 1. Installation of SVE System | Level D (upgrade to Level C if necessary) | Work Uniform or Tyvek | L/N | outer: L inner: STSS | HH SGSS |
| 2. Cover System Installation Activities | Level D (upgrade to Level C if necessary) | Work Uniform or Tyvek | L/N | outer: L inner: STSS | HH SGSS |

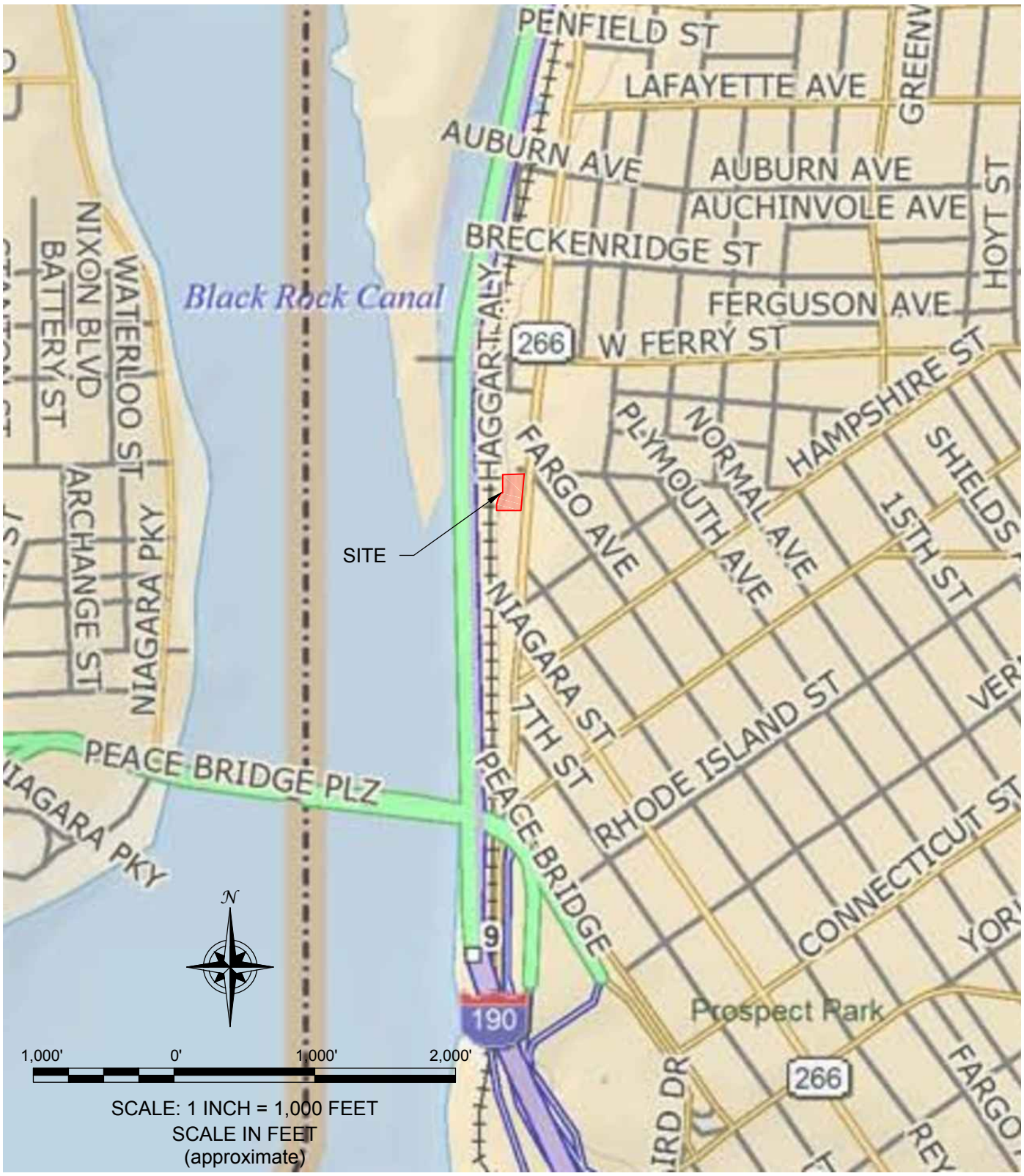
Notes:

1. Respiratory equipment shall conform to guidelines presented in Section 7.0 of this HASP. The Level C requirement is an air-purifying respirator equiped with organic compound/acid gas/dust cartridge.
2. HH = hardhat; L= Latex; L/N = latex inner glove, nitrile outer glove; N = Nitrile; S = Saranex; SG = safety glasses; SGSS = safety glasses with sideshields; STSS = steel toe safety shoes.
3. Latex outer boot (or approved overboot) required whenever contact with contaminated materials may occur. SSHO may downgrade to STSS (steel-toed safety shoes) if contact will be limited to cover/replacement soils.
4. Dust masks shall be donned as directed by the SSHO (site safety and health officer) or site safety technician whenever potentially contaminated airborne particulates (i.e., dust) are present in significant amounts in the breathing zone. Goggles may be substituted with safety glasses w/side-shields whenever contact with contaminated liquids is not anticipated.

# FIGURES

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Remedial Action Work Plan\HASP\Figure 1; Site Location and Vicinity Map.dwg

# FIGURE 1





TurnKey Environmental Restoration, LLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635


PROJECT NO.: 0136-013-005

DATE: APRIL 2016

DRAFTED BY: JGT/CCB

## SITE LOCATION AND VICINITY MAP

HEALTH AND SAFETY PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Remedial Action Work Plan\HASP\Figure 2; Site Plan (Aerial).dwg

DATE: APRIL 2016
DRAFTED BY: KRR

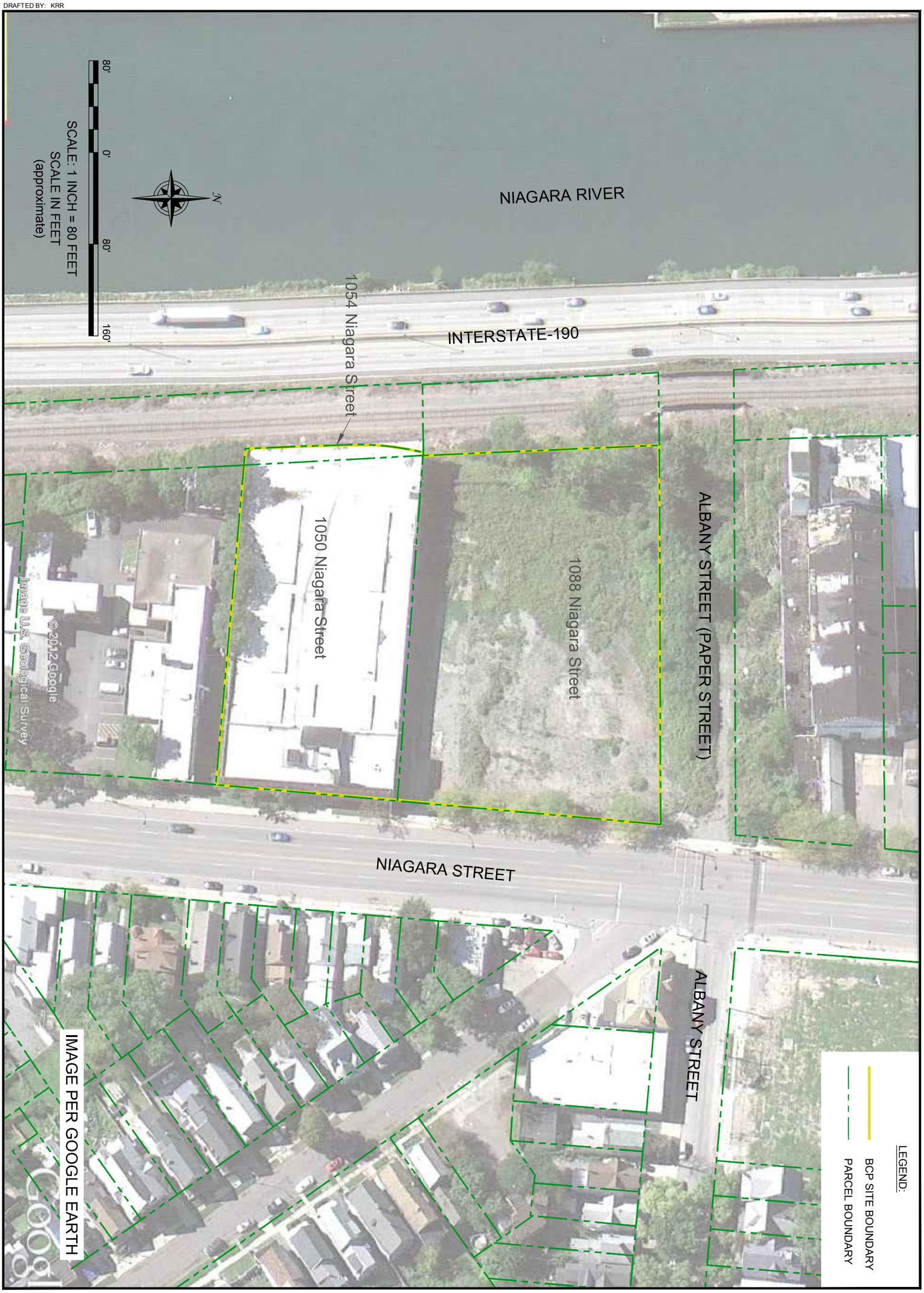



FIGURE 2

# SITE PLAN (AERIAL)

HEALTH AND SAFETY PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC


TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635


JOB NO.: 0136-013-005

# ATTACHMENT A

## EMERGENCY RESPONSE PLAN

# EMERGENCY RESPONSE PLAN
# for
# BROWNFIELD CLEANUP PROGRAM
# REMEDIAL ACTIVITIES

## 1050-1088 NIAGARA STREET SITE
## BUFFALO, NEW YORK

May 2016 0136-013-005

Prepared for:

**9271 GROUP, LLC**

# 1050-1088 NIAGARA STREET SITE
# HEALTH AND SAFETY PLAN FOR REMEDIAL ACTIVITIES
# APPENDIX A: EMERGENCY RESPONSE PLAN

## TABLE OF CONTENTS



## LIST OF FIGURES

## 1.0 GENERAL

This report presents the site-specific Emergency Response Plan (ERP) referenced in the Site Health and Safety Plan (HASP) prepared for remedial activities at the 1050-1088 Niagara Street Site in Buffalo, New York. This appendix of the HASP describes potential emergencies that may occur at the Site; procedures for responding to those emergencies; roles and responsibilities during emergency response; and training all workers must receive in order to follow emergency procedures. This ERP also describes the provisions this Site has made to coordinate its emergency response planning with other contractors on-site and with off-site emergency response organizations.

This ERP is consistent with the requirements of 29 CFR 1910.120(l) and provides the following site-specific information:

- Pre-emergency planning.
- Personnel roles, lines of authority, and communication.
- Emergency recognition and prevention.
- Safe distances and places of refuge.
- Evacuation routes and procedures.
- Decontamination procedures.
- Emergency medical treatment and first aid.
- Emergency alerting and response procedures.
- Critique of response and follow-up.
- Emergency personal protective equipment (PPE) and equipment.

## 2.0 PRE-EMERGENCY PLANNING

This Site has been evaluated for potential emergency occurrences, based on site hazards, the required work tasks, the site topography, and prevailing weather conditions. The results of that evaluation indicate the potential for the following site emergencies to occur at the locations indicated.

Type of Emergency:

1. Medical, due to physical injury

Source of Emergency:

1. Slip/trip/fall

Location of Source:

1. Non-specific

## 3.0 ON-SITE EMERGENCY RESPONSE EQUIPMENT

Emergency procedures may require specialized equipment to facilitate worker rescue, contamination control and reduction, or post-emergency clean up. Emergency response equipment available on the Site is listed below. The equipment inventory and storage locations are based on the potential emergencies described above. This equipment inventory is designed to meet on-site emergency response needs and any specialized equipment needs that off-site responders might require because of the hazards at this Site but not ordinarily stocked.

Any additional personal protective equipment (PPE) required and stocked for emergency response is also listed in below. During an emergency, the Emergency Response Coordinator (ERC) is responsible for specifying the level of PPE required for emergency response. At a minimum, PPE used by emergency responders will comply with Section 7.0, Personal Protective Equipment, of this HASP. Emergency response equipment is inspected at regular intervals and maintained in good working order. The equipment inventory is replenished as necessary to maintain response capabilities.

| Emergency Equipment | Quantity | Location |
|---|---|---|
| First Aid Kit | 1 | Site Vehicle |
| Chemical Fire Extinguisher | 2 (minimum) | All heavy equipment and Site Vehicle |

| Emergency PPE | Quantity | Location |
|---|---|---|
| Full-face respirator | 1 for each worker | Site Vehicle |
| Chemical-resistant suits | 4 (minimum) | Site Vehicle |

## 4.0 EMERGENCY PLANNING MAPS

An area-specific map of the Site will be developed on a daily basis during performance of field activities. The map will be marked to identify critical on-site emergency planning information, including: emergency evacuation routes, a place of refuge, an assembly point, and the locations of key site emergency equipment. Site zone boundaries will be shown to alert responders to known areas of contamination. There are no major topographical features, however the direction of prevailing winds/weather conditions that could affect emergency response planning are also marked on the map. The map will be posted at site-designated place of refuge and inside the TurnKey personnel field vehicle.

## 5.0 EMERGENCY CONTACTS

The following identifies the emergency contacts for this ERP.

Emergency Telephone Numbers:

**Project Manager:** ***Michael Lesakowski***
Work: (716) 856-0599
Mobile: (716) 818-3954

**Corporate Health and Safety Director:** ***Thomas H. Forbes***
Work: (716) 856-0599
Mobile: (716) 864-1730

**Site Safety and Health Officer (SSHO):** ***Bryan C. Hann***
Work: (716) 856-0635
Mobile: (716) 870-1165

**Alternate SSHO:** ***Nathan Munley***
Work: (716) 856-0635
Mobile: (716) 289-1072

| | |
|---|---|
| **BUFFALO GENERAL HOSPITAL (ER):** | (716) 748-2103 |
| **FIRE:** | 911 |
| **AMBULANCE:** | 911 |
| **BUFFALO POLICE:** | 911 |
| **STATE EMERGENCY RESPONSE HOTLINE:** | (800) 457-7362 |
| **NATIONAL RESPONSE HOTLINE:** | (800) 424-8802 |
| **NYSDOH:** | (716) 847-4385 |
| **NYSDEC:** | (716) 851-7220 |
| **NYSDEC 24-HOUR SPILL HOTLINE:** | (800) 457-7252 |

The Site location is:

1050-1088 Niagara Street
Buffalo, New York 14213
Site Phone Number: (Insert Cell Phone or Field Trailer): _____

## 6.0 EMERGENCY ALERTING & EVACUATION

Internal emergency communication systems are used to alert workers to danger, convey safety information, and maintain site control. Any effective system can be employed. Two-way radio headsets or field telephones are often used when work teams are far from the command post. Hand signals and air-horn blasts are also commonly used. Every system must have a backup. It shall be the responsibility of each contractor's Site Health and Safety Officer to ensure all personnel entering the site understand an adequate method of internal communication. Unless all personnel are otherwise informed, the following signals shall be used.

1) Emergency signals by portable air horn, siren, or whistle: two short blasts, personal injury; continuous blast, emergency requiring site excavation.

2) Visual signals: hand gripping throat, out of air/cannot breathe; hands on top of head, need assistance; thumbs up, affirmative/ everything is OK; thumbs down, no/negative; grip partner's wrist or waist, leave area immediately.

If evacuation notice is given, site workers leave the worksite with their respective buddies, if possible, by way of the nearest exit. Emergency decontamination procedures detailed in Section 12.0 of the HASP are followed to the extent practical without compromising the safety and health of site personnel. The evacuation routes and assembly area will be determined by conditions at the time of the evacuation based on wind direction, the location of the hazard source, and other factors as determined by rehearsals and inputs from emergency response organizations. Wind direction indicators are located so that workers can determine a safe up wind or cross wind evacuation route and assembly area if not informed by the emergency response coordinator at the time the evacuation alarm sounds. Since work conditions and work zones within the site may be changing on daily basis, it shall be the responsibility of the construction Site Health and Safety Officer to review evacuation routes and procedures as necessary and to inform all Benchmark-TurnKey workers of any changes.

Personnel exiting the site will gather at a designated assembly point. To determine that everyone has successfully exited the site, personnel will be accounted for at the assembly

site. If any worker cannot be accounted for, notification is given to the SSHO (***Bryan Hann*** or ***Nathan Munley***) so that appropriate action can be initiated. Contractors and subcontractors on this site have coordinated their emergency response plans to ensure that these plans are compatible and that source(s) of potential emergencies are recognized, alarm systems are clearly understood, and evacuation routes are accessible to all personnel relying upon them.

## 7.0 EXTREME WEATHER CONDITIONS

In the event of adverse weather conditions, the Site Safety and Health Officer in conjunction with the Contractor's SSHO will determine if engineering operations can continue without sacrificing the health and safety of site personnel. Items to be considered prior to determining if work should continue include but are not limited to:

- Potential for heat/cold stress.
- Weather-related construction hazards (e.g., flooding or wet conditions producing undermining of structures or sheeting, high wind threats, etc).
- Limited visibility.
- Potential for electrical storms.
- Limited site access/egress (e.g., due to heavy snow)

# 8.0 EMERGENCY MEDICAL TREATMENT & FIRST AID

**Personnel Exposure:**

The following general guidelines will be employed in instances where health impacts threaten to occur acute exposure is realized:

- Skin Contact: Use copious amounts of soap and water. Wash/rinse affected area for at least 15 minutes. Decontaminate and provide medical attention. Eyewash stations will be provided on site. If necessary, transport to Buffalo General Hospital.

- Inhalation: Move to fresh air and, if necessary, transport to Hospital.

- Ingestion: Decontaminate and transport to Hospital.

**Personal Injury:**

Minor first-aid will be applied on-site as deemed necessary. In the event of a life threatening injury, the individual should be transported to Hospital via ambulance. The Site Health and Safety Officer will supply available chemical specific information to appropriate medical personnel as requested.

First aid kits will conform to Red Cross and other applicable good health standards, and shall consist of a weatherproof container with individually sealed packages for each type of item. First aid kits will be fully equipped before being sent out on each job and will be checked weekly by the SSHO to ensure that the expended items are replaced.

**Directions to Buffalo General Hospital (see Figure 1):**

The following directions describe the best route from the Site to Buffalo General Hospital:

- Travel south along Niagara Street
- Turn left on Porter Avenue
- Continue straight on Porter Avenue at round-about – turns into North Street
- Turn right onto Main Street
- Turn left onto High Street
- Hospital on the left (100 High Street)
  (2.4 miles)

## 9.0 EMERGENCY RESPONSE CRITIQUE & RECORD KEEPING

Following an emergency, the SSHO and Project Manager shall review the effectiveness of this Emergency Response Plan (ERP) in addressing notification, control and evacuation requirements. Updates and modifications to this ERP shall be made accordingly. It shall be the responsibility of each contractor to establish and assure adequate records of the following:

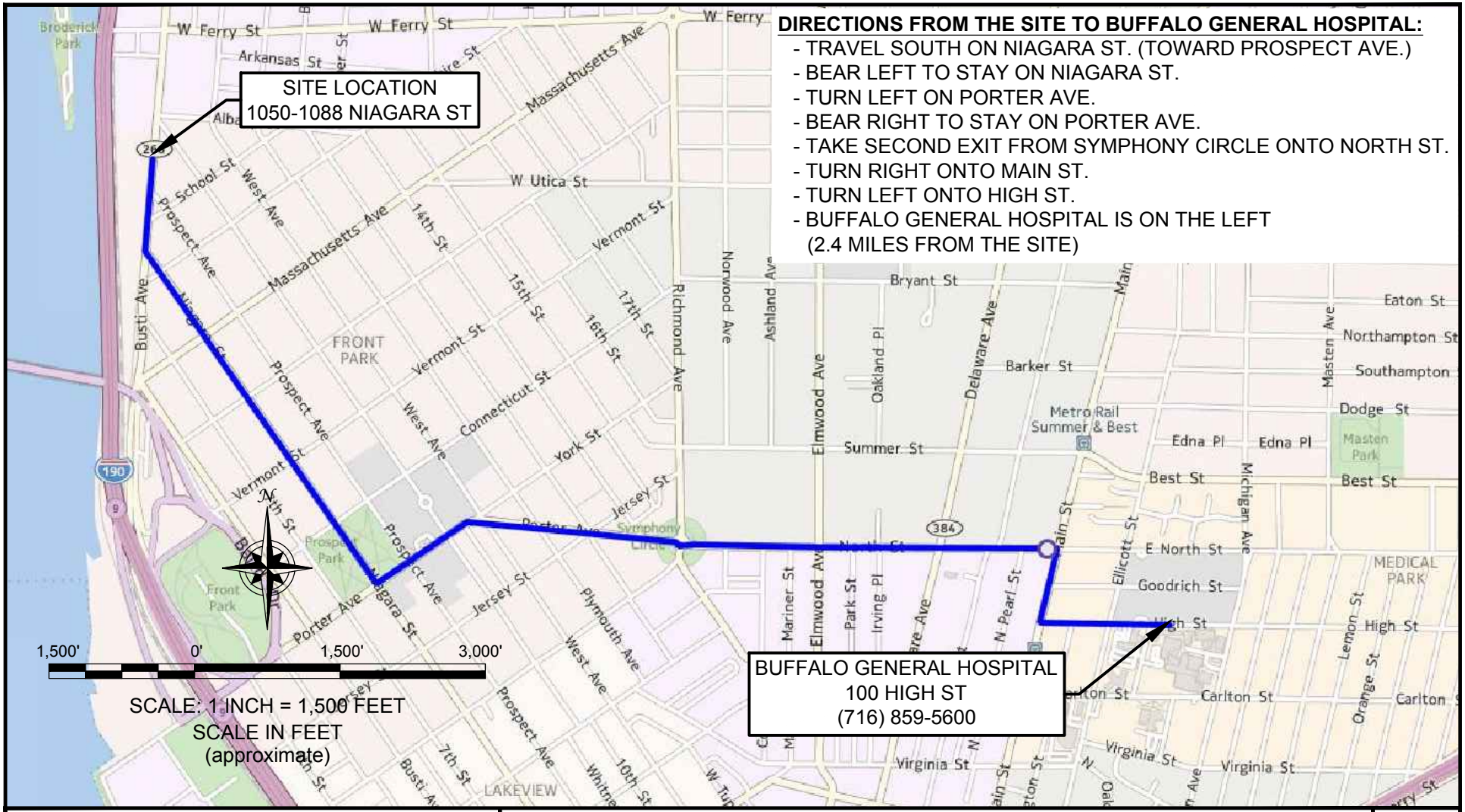
- Occupational injuries and illnesses.
- Accident investigations.
- Reports to insurance carrier or State compensation agencies.
- Reports required by the client.
- Records and reports required by local, state, federal and/or international agencies.
- Property or equipment damage.
- Third party injury or damage claims.
- Environmental testing logs.
- Explosive and hazardous substances inventories and records.
- Records of inspections and citations.
- Safety training.

## 10.0 EMERGENCY RESPONSE TRAINING

All persons who enter the worksite, including visitors, shall receive a site-specific briefing about anticipated emergency situations and the emergency procedures by the SSHO. Where this site relies on off-site organizations for emergency response, the training of personnel in those off-site organizations has been evaluated and is deemed adequate for response to this site.

# FIGURES

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St Remedial Action Work Plan\HASP-ERP\Figure 1; Hospital Route Map (ERP).dwg




**DIRECTIONS FROM THE SITE TO BUFFALO GENERAL HOSPITAL:**

- TRAVEL SOUTH ON NIAGARA ST. (TOWARD PROSPECT AVE.)
- BEAR LEFT TO STAY ON NIAGARA ST.
- TURN LEFT ON PORTER AVE.
- BEAR RIGHT TO STAY ON PORTER AVE.
- TAKE SECOND EXIT FROM SYMPHONY CIRCLE ONTO NORTH ST.
- TURN RIGHT ONTO MAIN ST.
- TURN LEFT ONTO HIGH ST.
- BUFFALO GENERAL HOSPITAL IS ON THE LEFT (2.4 MILES FROM THE SITE)


TURNKEY ENVIRONMENTAL RESTORATION, LLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635


PROJECT NO.: 0136-013-005

DATE: APRIL 2016

DRAFTED BY: JCT

# HOSPITAL ROUTE MAP

EMERGENCY RESPONSE PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

FIGURE 1

# ATTACHMENT B

## HOT WORK PERMIT FORM

# HOT WORK PERMIT

**PART 1 - INFORMATION**

| | |
|---|---|
| Issue Date: | |
| Date Work to be Performed: Start: | Finish (permit terminated): |
| Performed By: | |
| Work Area: | |
| Object to be Worked On: | |

**PART 2 - APPROVAL**

(for 1, 2 or 3: mark Yes, No or NA)*

| | | |
|---|---|---|
| Will working be on or in: | Finish (permit terminated): | |
| 1. Metal partition, wall, ceiling covered by combustible material? | yes | no |
| 2. Pipes, in contact with combustible material? | yes | no |
| 3. Explosive area? | yes | no |

* = If any of these conditions exist (marked "yes"), a permit will not be issued without being reviewed and approved by Thomas H. Forbes (Corporate Health and Safety Director). Required Signature below.

**PART 3 - REQUIRED CONDITIONS****

(Check all conditions that must be met)

| | PROTECTIVE ACTION | | PROTECTIVE EQUIPMENT |
|---|---|---|---|
| | Specific Risk Assessment Required | | Goggles/visor/welding screen |
| | Fire or spark barrier | | Apron/fireproof clothing |
| | Cover hot surfaces | | Welding gloves/gauntlets/other: |
| | Move movable fire hazards, specifically | | Wellintons/Knee pads |
| | Erect screen on barrier | | Ear protection: Ear muffs/Ear plugs |
| | Restrict Access | | B.A.: SCBA/Long Breather |
| | Wet the ground | | Respirator: Type: |
| | Ensure adequate ventilation | | Cartridge: |
| | Provide adequate supports | | Local Exhaust Ventilation |
| | Cover exposed drain/floor or wall cracks | | Extinguisher/Fire blanket |
| | Fire watch (must remain on duty during duration of permit) | | Personal flammable gas monitor |
| | Issue additional permit(s): | | |

Other precautions:

** Permit will not be issued until these conditions are met.

**SIGNATURES**

| | |
|---|---|
| Orginating Employee: | Date: |
| Project Manager: | Date: |
| Part 2 Approval: | Date: |

# ATTACHMENT C

## NYSDOH GENERIC COMMUNITY AIR MONITORING PLAN



TURNKEY

**Appendix** C1
**New York State Department of Health**
**Generic Community Air Monitoring Plan**

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

**Continuous monitoring** will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

**Periodic monitoring** for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

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

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

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

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

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

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

## Appendix C2
## Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50$^{o}$ C (14 to 122$^{o}$ F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

# APPENDIX B

## STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
## (PROVIDED ELECTRONICALLY)

Carmina • Wood • Morris DPC

487 Main Street Suite 600 Buffalo, New York 14203 P: 716.842.3165 F: 716.842.0263 W: cwm-ae.com

Architecture Engineering Interior Design

# STORMWATER POLLUTION PREVENTION PLAN
for
# CONSTRUCTION ACTIVITIES

At

## Mixed Use Building
**1050 & 1088 Niagara Street**
**City of Buffalo, Erie County, New York**

**Prepared for**

## Ellicott Development Company
**(Operator)**

**295 Main Street**
**Buffalo, NY 14203**

**Prepared by**

## Carmina Wood Morris, DPC

**487 Main Street**
**Buffalo, New York 14203**

**Telephone: (716) 842-3165**
**Fax: (716) 842-0263**


**June 2015**
**(rev. 8/12/15)**

# Table of Contents

**Written Storm Water Pollution Prevention Plan**

# Table of Contents (con't)

## 801 SCOPE

A. **PURPOSE: Ellicott Development Company (ED)** has placed an emphasis on following **the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity** governing storm water discharges during construction, and in accordance with erosion control practices. The Contractor's participation in this program is mandatory and its non-compliance is subject to various remedies, including without limitation, monetary set-offs, withholding payments; reimbursement for costs, expenses (including reasonable attorney's fees), fines and civil penalties incurred by **ED;** and/or liquidated damages. This section provides a descriptive explanation of **ED's** Storm Water Pollution Prevention Program and required Contractor participation.

B. **SPDES General Permit for Stormwater Discharges from Construction Activity:** Regulations promulgated by the NYSDEC to regulate the discharge of storm water from construction activities on sites where more than **one (1)** acre of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the General Permit for Construction Activities for New York State. In order to use the General Permit, a Notice of Intent (NOI) form must be completed and mailed to the **NYSDEC** at least ***10 business days*** prior to any earth-disturbing activities (this time frame may increase to 60 business days if a full review of the SWPPP is determined necessary by the NYSDEC) or *5 business days* if electronically filed and a Storm Water Pollution Prevention Plan (SWPPP) for the site must be prepared and followed during the construction activities.

C. **RESPONSIBILITIES OF THE CONTRACTOR:** The Contractor shall manage the discharge of storm water from the site in accordance with the **NYSDEC** General Permit for Construction Activities conditions and the following provisions of this section. The Operator shall be responsible for conducting the storm water management practices in accordance with the permit. The Contractor shall be responsible for providing qualified inspectors to conduct the inspections required by the SWPPP. The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the Contractor's failure to comply with the permit provisions. **It shall be the responsibility of the Contractor to make any changes to the SWPPP necessary when the Contractor or any of his subcontractors elects to use borrow or fill or material storage sites, either contiguous to or remote from the construction site, when such sites are used solely for this construction site. Such sites are considered to be part of the construction site covered by the permit and this SWPPP. Off-site borrow, fill, or material storage sites which are used for multiple construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The Contractor should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site may impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.**

D. **NOTICE OF INTENT:** The Operator has petitioned the **NYSDEC** for coverage under the storm water discharges during construction at this site to be covered by the **SPDES** General Permit for Construction Activity for the State of **New York.** A Notice of Intent (NOI) for coverage under this permit has been filed by the Operator. The SWPPP must be prepared prior to submittal of the NOI form. The Operator will require the Contractor to be a co-permittee with the Operator. The Contractor will be required to post the NOI at the construction site along with any building permits.

E. **CONTRACTOR CERTIFICATION & TRAINING**: Certification and Training of the Contractor's Project Manager and Superintendent will be performed at the Pre-Construction Meeting and administered by the **Operator's Project Manager** and/or **Operator's Engineer**. This Certification and Training Program has been developed to stress the importance of the following topics:

- Erosion and sediment control for water quality protection
- Implementation of erosion and sediment control plans
- The importance to proper installation of erosion and sediment control measures
- Regular inspection by the owner/operator and a Qualified Professional of erosion and sediment control measures
- Diligent maintenance of erosion and sediment control measures
- Expedient preparation of accurate and complete records regarding inspection and maintenance of erosion and sediment control measures
- Record-keeping for inspections and maintenance activities

Upon completion of the certification and training program, the project will receive a *SWPPP Ledger* for use by the Contractor's Project Manager and Superintendent with all required certifications and record keeping forms involved with the installation and/or maintenance of erosion and sediment control measures. The Operator's certification and training shall be in addition to any federal, state or local certifications or training required or available to comply with SPDES stormwater permit requirements by the Contractor.

**F. REQUIREMENTS FOR THE GENERAL CONTRACTOR AND SUBCONTRACTOR(S):** The *SWPPP Ledger* shall provide a **"Contractor's Certification Log" (Form SWPPP-1)** for both the General Contractor and Subcontractor(s) identifying the Company Name, Business Address and Telephone Number along with the Responsible Person for the Contractor and all subcontractors' who will implement the measures identified in the SWPPP. **The General Contractor and Subcontractor(s) shall also sign the "Contractor's Certification Statement" (Form SWPPP-2)** verifying they have been instructed on how to comply with and fully understand the requirements of the **SPDES** General Permit for Construction Activity for the State of **New York** and the SWPPP. These certifications must be signed, by a responsible corporate officer or other party meeting the "Signatory Requirements" of the SPDES General Permit, on behalf of each entity, prior to the beginning of any construction activities and shall be filed in the project's *SWPPP Ledger.* A Signatory Authorization Designation **(Form SWPPP-11)** must be filled out by each entity giving the authorization for the individual to sign on behalf of the entity.

**G. STORM WATER POLLUTION PREVENTION PROGRAM LOCATION REQUIREMENTS:** The *SWPPP Ledger* is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the project, shall be readily available upon request by the Operator's personnel or **NYSDEC** or any other agency with regulatory authority over storm water issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. **A sign or other notice must be posted near the main entrance of the construction site which contains a completed NOI, the location of the SWPPP and the name and phone number of a contact person responsible for scheduling SWPPP viewing times, and any other state specific requirements.**

**H. SWPPP LEDGER:** The SWPPP Ledger shall be a three (3) ring binder, the Ledger shall be tabbed and indexed for the following sections:

- **Table of Contents**
- **Written SWPPP**
- **Site Map**
- **Erosion and Sedimentation Control Plan(s)**
- **Signed NYSDEC Notice of Intent (NOI)**
- **Copy of Notice of Permit Coverage**
- **Copy of the NYSDEC SPDES General Permit for Construction Activity for the State of New York**
- **Blank Copy of NOI and Notice of Termination (NOT)**
- **Contractor's Certification Log (Form SWPPP-1)**
- **Contractor's Certification Statement (Form SWPPP-2)**
- **Inspection Report(s) (Form SWPPP-3)**
- **Stabilization Schedule (Form SWPPP-4)**
- **Final Stabilization/Termination Checklist (Form SWPPP-5)**

- **Project Rainfall Log (Form SWPPP-6)**
- **Requested Changes to the SWPPP (Form SWPPP-7)**
- **Monthly Training Log (Form SWPPP-8)**
- **Reportable Quantity Release Form (Form SWPPP-9)**
- **Implementation Schedule (Form SWPPP-10)**
- **Signatory Authorization Designation (SWPPP-11)**
- **Owner's Certification (SWPPP-12)**
- **Engineer's Certification (SWPPP-13)**
- **Sample Forms**

The Operator's Project Manager must review and evaluate for compliance the *SWPPP Ledger* at each Project Review. All Inspection and Maintenance Forms must be **signed** by the Operator's Project Manager **(or other duly authorized representative)** at this review and be submitted with the Contractor's Monthly Application for Payment. The approval of the Contractor's Application for Payment will be withheld until the *SWPPP Ledger* is deemed in compliance and all SWPPP Inspection and Maintenance Forms and have been submitted to the satisfaction of the Operator.

## I. INSPECTIONS AND RECORD-KEEPING:

### A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.
2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

### B. Owner or Operator Maintenance Inspection Requirements

1. The *owner or operator* shall inspect, in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times.
2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the *owner or operator* can stop conducting the maintenance inspections. The *owner or operator* shall begin conducting the maintenance inspections in accordance with Part IV.B.1 of the General Permit as soon as soil disturbance activities resume.
3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *owner or operator* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

### C. Qualified Inspector Inspection Requirements - The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

Note: The *trained contractor* identified in Part III.A.6 of the General Permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A of the General Permit. In order to perform these inspections, the *trained contractor* would have to be a:

- Licensed Professional Engineer,

- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- Someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity.

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B of the General Permit, with the exception of:

   a. The construction of a single family residential subdivision with 25% or less impervious cover at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C of the General Permit and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;
   b. The construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;
   c. Construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and
   d. Construction activities located in the watersheds identified in Appendix D of the General Permit that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.
   b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.C.3 of the General Permit to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
   c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the Regional Office stormwater contact person (see contact information in Appendix F of the General Permit) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the MS4 (provided the MS4 is not the *owner or operator* of the construction activity) in writing prior to reducing the frequency of inspections.
   d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the Regional Office stormwater contact person or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the MS4 (provided the MS4 is not the *owner or operator* of the construction activity) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary,

structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.A.1 of the General Permit.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

   a. Date and time of inspection;
   b. Name and title of person(s) performing inspection;
   c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;
   d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;
   e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;
   f. Identification of all erosion and sediment control practices that need repair or maintenance;
   g. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
   h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;
   i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;
   j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and
   k. Identification and status of all corrective actions that were required by previous inspection; and
   l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall

complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.C.2 of the General Permit, the inspection reports shall be maintained on site with the SWPPP.

**Record Retention** - The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the site achieves *final stabilization.* This period may be extended by the Department, in its sole discretion, at any time upon written notification.

- **Form SWPPP-3** **Inspection Report**
- **Form SWPPP-4** **Stabilization Schedule**
- **Form SWPPP-5** **Final Stabilization/Termination Checklist**
- **Form SWPPP-6** **Project Rainfall Log**
- **Form SWPPP-7** **Requested Changes to the SWPPP**
- **Form SWPPP-8** **Monthly Training Log**
- **Form SWPPP-9** **Reportable Quantity Release Form**
- **Form SWPPP-10** **Implementation Schedule**
- **Form SWPPP-11** **Signatory Authorization Designation**
- **Form SWPPP-12** **Owner's Certification**
- **Form SWPPP-13** **Engineer's Certification**

J. **SWPPP MODIFICATIONS:** The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant to be a dynamic working guide that is to be kept current and amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants or when the plan proves to be ineffective in eliminating or significantly minimizing pollutant discharges. Any such changes to the SWPPP must be made in writing on the **"Requested Changes to the SWPPP" (Form SWPPP-7)** within 7 days of the date of such modification or amendment is made. The Contractor's failure to modify or report deficiencies to the Operator will result in the Contractor being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

K. **CONTRACTOR'S MONTHLY TRAINING:** The Contractor shall provide monthly training sessions for all entities and subcontractors involved with installing, applying, performing, maintaining and inspection of the SWPPP if required. Logs of each monthly training shall be kept by the Contractor on the "Monthly Training Log" **(Form SWPPP-8)**, in the *SWPPP Ledger.* Training shall educate the attendees on the topics of:

- **The Location and Type of Control Measures**
- **The Construction Requirements for the Control Measures**
- **Maintenance Procedures for each of the Control Measures**
- **Spill Prevention and Cleanup Measures**
- **Inspection and Maintenance Record Keeping Requirements**

L. **FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE:** A site can be considered finally stabilized when all soil disturbing activities have been completed and a uniform perennial vegetative cover with a density of **85%** for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established and the facility no longer discharges storm water associated with construction activities and a Notice of Termination (NOT) form filed by the Operator(s) with the NYSDEC. The Operator's Project Manager must complete the NOT. The NOT must be signed by the signatory (or equivalent position) on the NOI and subsequently submitted to the appropriate agency. The Operator's Project Manager must provide a completed copy of the NOT to the Contractor for inclusion in the SWPPP, which will then be

optically scanned into the final SWPPP document as required. This filing terminates coverage under the General Permit and terminates the Contractor's responsibility to implement the SWPPP, but the requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed. The owner or operator shall also have the qualified inspector perform a final site inspection prior to submitting the NOT to the Department. Upon achieving this milestone, the Contractor shall also submit "Final Stabilization Certification/Termination Checklist" **(Form SWPPP-5)**. Final payment and/or the release of retainage will be withheld until all provisions of the SWPPP have been submitted, completed and accepted by the Operator.

## 802 PROJECT NAME AND LOCATION

Mixed Use Building
1050 & 1088 Niagara Street
City of Buffalo, County of Erie, New York
Latitude: 42.912° N
Longitude: 78.900° W
Estimated Area of Site ≈ 3.2+/- acres (includes Albany Street ROW)
Estimated Area to be Disturbed by Construction Activities ≈ 2.0+/- acres
(includes Albany Street ROW & remediation work)

A general location map is included as Appendix A.

## 803 OPERATOR'S NAME AND ADDRESS

**Ellicott Development Company (Operator)**
**295 Main Street**
**Buffalo, NY 14203**

**Contact Person: William Paladino**

## 804 PROJECT DESCRIPTION

This project is the redevelopment of the existing property at 1050 & 1088 Niagara Street. Construction includes a 2-story building which is a mix of retail, restaurant and second floor apartments. The restaurant is approximately 2,000 gsf of the 1st floor space, with the remaining 3,500 gsf an unknown retail tenant. The 5,500 gsd 2nd floor space will be 4 apartments. To accommodate access to the site, a portion of the undeveloped Albany Street right of way will be improved as a city street. The location of the site is on the west side of Niagara Street on the south side of Albany Street in the City of Buffalo. The site is currently vacant and was previously occupied by parking for the adjacent multi-story building. This project also includes remediation of the contaminated portions of the site and capping the green areas of the site with 24" of clean fill. Given the contaminated nature of the site, this will be considered a "hotspot" under NYSDEC criteria. Approximately 2.3 acres of the overall site will be disturbed in this phase of development which includes work in the Albany Street ROW and the required remediation work. The estimated time for completion of the project is 365 calendar days. Soil disturbing activities will include:

A. Remediation work including excavation and capping
B. Filling areas of the site per construction documents
C. Installation of utilities per construction documents
D. Construction of building foundations

This project is owned by Ellicott Development Company and will be developed by the same. The work area consists of approximately 3.2 +/- acres for which erosion and sediment controls have been developed and fully addressed in this written plan and the Erosion and Sediment Control Plans. See the construction documents for additional details.

## 805 RUNOFF COEFFICIENT, SOILS, AND RAINFALL INFORMATION

The initial runoff curve number for the pre-construction site is "CN" = 87. The post-construction runoff curve number for the site will be "CN" = 88. The site is 3.2+/- acres (including Albany Street ROW) of which approximately 2.0+/- acres will be disturbed by construction activities.

See soils information located in the Engineer's Report.

The site is in Erie County, which receives an average of approximately 35 inches rainfall annually with the highest amounts of rainfall received in the months of May thru September. Annual snow for this area is approximately 100 inches.

## 806 WATERS

The runoff generated from this site will discharge to Black Rock Canal via municipal stormwater conveyance.

## 807 INDIAN COUNTRY LANDS

This project is not located on Indian Lands.

## 808 ENDANGERED AND THREATENED SPECIES

There is no known presence of endangered species on the assessed property is low.

## 809 CRITICAL HABITAT

See section 808 above

## 810 HISTORIC PLACES

The assessed property is not listed in the National Register of Historical Places.

## 811 WETLANDS AND/OR OTHER SURFACE WATERS

The assessed property contains no federal wetlands.

## 812 EROSION AND SEDIMENT CONTROLS

812.1 Stabilization Practices

Stabilization practices for this site include:

A. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed.
B. Use of stabilization method for all slopes having a slope of 1V:3H or greater.
C. Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.
D. Mulching exposed areas.
E. Vegetation preservation.
F. Frequent watering to minimize wind erosion during construction.

For sites where **5 acres or more** are disturbed at any one time: In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures

shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the New York Standards and Specifications for Erosion and Sediment Control.

The owner or operator shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

The owner or operator shall install any additional measures needed to protect water quality.

812.2 Structural Practices

Structural practices for this site include:

A. Inlet protection using methods detailed in the Construction Documents
B. Perimeter protection using temporary silt fence
C. Temporary stone wash off areas
D. Storm sewer
E. Stabilized construction entrance
F. Stone check dams
G. Concrete washout station

812.3 Sequence of Major Activities

The Contractor will be responsible for implementing the following erosion control and storm water management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows:

A. Commence remediation activities which will disturb under 1 acre.
B. Install silt fences/silt sock in the locations shown on the Demolition and Erosion Control plan sheet.
C. Clear and grub site.
D. Rough grading and installation of stone subbase in paved areas and building pads.
E. Commence site grading.
F. Disturbed areas of the site where construction activity has ceased for more than 7 days shall be temporarily seeded and watered.
G. Finalize pavement subgrade preparation.
H. Construct all drainage inlets and storm sewer pipes as shown on the plans. Install temporary inlet protection at the locations of all new inlets.
I. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.
J. Install base material as required for pavement.
K. Carry out final grading and seeding and planting.
L. Clean storm system following construction.
M. Remove silt fencing only after all paving is complete and exposed surfaces are stabilized.

A schedule for implementation for the activities identified above is included as Form SWPPP-4 of the SWPPP.

812.4 Storm Water Management

Existing:

The existing site sheet drains towards the northwest and discharges off site to the unimproved Albany Street right of way. There are several City of Buffalo storm and combined sewers in the vicinity of

this property. The Buffalo Sewer Authority (BSA) has requested we tie into the existing storm sewer located on the north side of Albany Street with a 6" SDR-35 PVC pipe.

Proposed:

The storm sewer system consists of 8" smooth interior HDPE pipes connected by a series of catch basins and manholes located throughout the project site. The proposed storm sewer system will also consist of a storm water treatment structure located in the southwest portion of the site prior to tying into the public storm main.

Design Criteria

Storm pipes: 10-year storm

Detention: not required

RUNOFF SUMMARY -

| EVENT | EX. RUNOFF (CFS) | PRO. RUNOFF (CFS)* | RESULT (CFS) |
|---|---|---|---|
| 1-YEAR | 2.27 | 2.25 | -0.02 |
| 2-YEAR | 3.03 | 2.85 | -0.18 |
| 5-YEAR | 4.19 | 3.75 | -0.44 |
| 10-YEAR | 5.18 | 4.52 | -0.66 |
| 25-YEAR | 5.98 | 5.13 | -0.85 |
| 50-YEAR | 6.98 | 5.90 | -1.08 |
| 100-YEAR | 7.78 | 6.52 | -1.26 |

* the proposed runoff values are taken at the location of the connection of the proposed system to the existing storm sewer main at the north end of Albany Street.

NYSDEC Requirements:

Per Chapter 9 "Redevelopment Projects" of the NYS Stormwater Design Manual, if the redevelopment activities result in no change to hydrology that increases the discharge rate from the project site (Note: Include the redevelopment activity portion of a project and if applicable, any new development in the analysis), the ten-year and hundred-year criteria do not apply. This is the case for this project as evidenced by the above "Runoff Summary". NYSDEC recognizes compacted stone as an impervious surface when classifying surface types for runoff analysis. The current site is a mix of existing concrete, compacted stone areas and weeds. For estimating purposes, the site was assumed to be 70% weeds/grass and 30% stone, this is evidenced by current aerial photos. Water Quality requirements under Chapter 9 include treating 75% of the water quality volume given that an alternative practice (treatment structure) is being implemented. The proposed Stormpro, Model V48 as manufactured by Environment 21 is being proposed. This structure is designed to treat 75% of the water quality volume per NYSDEC requirements. This structure has been tested and approved to meet the goal of 80% TSS removal along with 40% phosphorus removal by NJCAT and NJDEP. The NYSDEC recognizes this approval and this device is approved to address the water quality requirement associated with a redevelopment project.

Also note that this site qualifies as a "hotspot" under NYSDEC criteria. Therefore infiltration practices are not allowed.

## 813 OTHER CONTROLS

### 813.1 Off-Site Vehicle Tracking

A stabilized construction exit will be provided to help reduce vehicle tracking of sediments. The paved streets adjacent to the site entrance shall be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material to/from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

### 813.2 Excavation Spoil Materials

Excavation spoil materials will not be generated by this project.

### 813.3 Dust Control

Minimizing wind erosion and controlling dust will be accomplished by one or more of the following methods:

A. Frequent watering of fill areas.
B. Providing stabilized construction entrance and driveway.

### 813.4 Waste Disposal

If needed, all waste materials will be collected and stored in securely lidded metal dumpsters rented from an approved waste management company. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpsters. The dumpsters will be emptied when full and then hauled to a NYSDEC approved landfill for proper disposal. No construction waste will be buried on-site. All personnel will be instructed regarding the correct procedures for waste disposal.

### 813.5 Sanitary Waste

If needed, portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

813.6 Concrete Waste from Concrete Trucks

A. Emptying of excess unhardened concrete and/or washout from concrete delivery trucks will be allowed on the job site, but in either (1) specifically designated diked areas which have been prepared to prevent contact between concrete and/or washout and stormwater which will be discharged from the site or (2) in locations where waste concrete will be poured into forms to make rip-rap or other useful concrete products.

B. Hardened waste concrete from the designated diked areas described above will be disposed of in accordance with applicable local and state regulations with regards to disposal of construction debris.

813.7 Hazardous Substances & Hazardous Waste

A. All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job superintendent, who will also be responsible for seeing these practices are followed. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such products are stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

B. The contractor will implement the Spill Prevention Control and Countermeasures (SPCC) Plan found within this SWPPP and will train all personnel in the proper cleanup and handling of spilled materials. No spilled hazardous materials of hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge shall be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job superintendent to properly train all personnel in the use of the SPCC plan.

C. Any spills of hazardous materials which are in excess of the Reportable Quantities as defined by the EPA regulations shall be immediately reported to the EPA National Response Center at 1-800-424-8802. From SWPPP-9 "Reportable Quantity Release Form" must be filled out.

D. In order to minimize the potential for a spill of hazardous materials to come in contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use.
2. The minimum practical quantity of all such materials will be kept on the job site.
3. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.
5. All products will be stored in and used from the original container with the original product label.
6. All products will be used in strict compliance with instructions on the product label.
7. The disposal of excess or used products will be in strict compliance with instructions on the product label.

813.8 Contaminated Soils

A. Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations.

B. The job site superintendent will be responsible for seeing that these procedures are followed.

## 814 COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The Contractor will obtain copies of any and all local and state regulations which are applicable to storm water management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the **SPDES** General Permit for Construction Activity for the State of **New York**, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance.

## 815 INSPECTION AND MAINTENANCE PROCEDURES

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

1. All control measures will be inspected by the **owner/operator** at least weekly and within 24 hours following a rainfall event of 0.5" in precipitation or greater and shall continue until the site complies with the Final Stabilization section of this document (See Section 816)

2. All control measures will be inspected by a **Qualified Professional** at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 816)

3. All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report.

4. Built up sediment will be removed from silt fence when it has reached one-third the height of the fence.

5. Silt fences will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.

6. Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.

7. A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.

8. The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.

9. Personnel selected for the inspection and maintenance responsibilities will receive training from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the filing of the inspection forms. Documentation of this personnel training will be kept on site with the SWPPP.

10. Disturbed areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

11. Report to the NYSDEC within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event. The following events require 24 hour reporting: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the NYSDEC in the permit to be reported within 24 hours. The written submission must contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

12. Releases of hazardous substances or oil in excess of reportable quantities (as established under 40 CFR 110, 40 CFR 117 or 40 CFR 302) must be reported.

## 816 INSPECTION AND MAINTENANCE REPORT FORMS

Once installation of any required or optional erosion control device or measure has been implemented, inspections shall be performed by a **Qualified Professional** at least once every seven (7) calendar days. For construction sites where active construction has been suspended, inspection frequency under the general permit can be reduced to once every 30 days, provided temporary stabilization measures have been applied to all disturbed areas. The owner will typically have one of the contractor(s) or subcontractor(s) that have been identified pursuant to Part III.A.5.of the general permit perform inspections within 24 hours of the end of a storm event of 0.5" or greater. The forms found in this SWPPP shall be used by the inspectors to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the Operator's Engineer, and the Operator for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the permittee for five years following the final stabilization of the site.

## 817 OTHER RECORD-KEEPING REQUIREMENTS

The Contractor shall keep the following records related to construction activities at the site:
- Dates when major grading activities occur and the areas which were graded
- Dates and details concerning the installation of structural controls
- Dates when construction activities cease in an area
- Dates when an areas is stabilized, either temporarily or permanently
- Dates of rainfall and the amount of rainfall
- Dates and descriptions of the character and amount of any spills of hazardous materials
- Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

## 818 SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

### 818.1 MATERIALS COVERED

The following materials or substances are expected to be present onsite during construction:

| | |
|---|---|
| Concrete/Additives/Wastes | Cleaning solvents |
| Detergents | Petroleum based products |
| Paints/Solvents | Pesticides |
| Acids | Fertilizers |
| Solid and construction wastes | Sanitary wastes |
| Soil stabilization additives | |

### 818.2 MATERIAL MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The job site superintendent will be responsible for ensuring that these procedures are followed.

A. Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project:

1. An effort will be made to store only enough products required to do the job.
2. All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.
3. Products will be kept in their original containers with the original manufacturer's label in legible condition.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of a product will be used up before disposing of the container.
6. Manufacturer's recommendations for proper use and disposal will be followed.
7. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

B. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

1. Products will be kept in original containers with the original labels in legible condition.
2. Original labels and material safety data sheets (MSDS's) will be procured and used for each material.
3. If surplus product must be disposed of, manufacturers or local/state/federal recommended methods for proper disposal will be followed.
4. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

5. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

C. Hazardous Waste

All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job site superintendent, who will also be responsible for seeing that these practices are followed.

D. Product Specific Practices

The following product specific practices will be followed on the job site:

1. Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. **Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a containment volume that is equal to 110% of the volume of the largest tank.** Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas must be identified on a plan by the contractor once the locations have been determined.

2. Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

3. Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

4. Concrete Wastes

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or wash out and storm water which will be discharged from the site or (2) in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

The hardened residue from the concrete wash out diked areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the Contractor. The job site superintendent will be responsible for seeing that these procedures are followed.

All concrete wash out areas will be located in an area where the likelihood of the area contributing to storm water discharges is negligible. If required, additional BMPs must be implemented to prevent concrete wastes from contributing to storm water discharges. The location of concrete wash out area(s) must be identified on a plan by the contractor once the locations have been determined. In addition, a standard detail on the construction of the concrete wash out shall be included on this plan.

E. Solid and Construction Wastes

All waste materials will be collected and stored in an appropriately covered container and/or securely lidded metal dumpster rented from a local waste management company which must be a solid waste management company licensed to do business in New York and the Town of Cheektowaga. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week or more often if necessary, and the trash will be hauled to a landfill approved by the NYSDEC. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.

All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of waste dumpsters and roll-off containers must be identified on a plan by the contractor once the locations have been determined.

F. Sanitary Wastes

Portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of sanitary waste units must be identified on a plan by the contractor once the locations have been determined.

G. Contaminated Soils

Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Materials Management Plan and in accordance with applicable state and federal regulations.

818.3 Spill Prevention and Response Procedures

The Contractor will train all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job site superintendent to properly train all personnel in spill prevention and clean up procedures.

A. In order to minimize the potential for a spill of hazardous materials to come into contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.
2. The minimum practical quantity of all such materials will be kept on the job site.
3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.
4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

B. In the event of a spill, the following procedures should be followed:

1. All spills will be cleaned up immediately after discovery.
2. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.
3. The project manager and the Engineer of Record will be notified immediately.

   Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the EPA National Response Center, telephone 1-800-424-8802. From SWPPP-9 "Reportable Quantity Release Form" must be filled out.

4. If the spill exceeds a Reportable Quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases.

C. The job site superintendent will be the spill prevention and response coordinator. He will designate the individuals who will receive spill prevention and response training. These individuals will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

## 819 CONTROL OF NON-STORM WATER DISCHARGES

Certain types of discharges are allowable under the **NYSDEC SPDES** General Permit for Construction Activity for the State of **New York**, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The control measures which have been outlined previously in this SWPPP will be strictly followed to ensure that no contamination of these non-storm water discharges takes place. The following allowable non-storm water discharges which may occur at the job site include:

A. Discharges from fire fighting activities.

B. Fire hydrant flushings (see note below)

C. Waters used to wash vehicles or control dust in order to minimize offsite sediment tracking.

D. Routine external building washdown which does not use detergents.

E. Pavement washwaters where spills or leaks of hazardous materials have not occurred or detergents have not been used.

F. Air conditioning condensate.

G. Springs or other uncontaminated groundwater, including dewatering ground water infiltration.

H. Foundation or footing drains where no contamination with process materials such as solvents is present.

Note: The Contractor shall discharge any super-chlorinated water from water distribution pipe disinfection activities into sanitary sewer system.

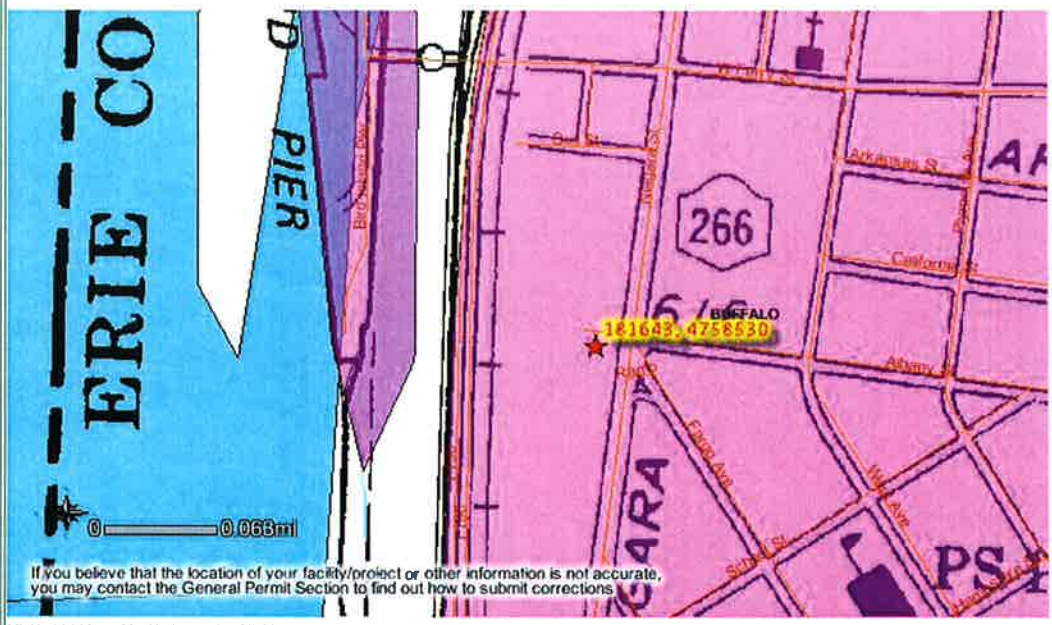
# Appendix A

# Site Location Map

[print page] [close window]

**Please set your printer orientation to "Landscape".**

## Identify Map




MinX: 181124, MaxX: 182041, MinY: 4758830, MaxY: 4758289

### Visible Layers

- Major Roads
- Regulated MS4s
  - Automatic
  - Designation 2003
  - Designation 2008
  - Designation 2010
- Planimetric Maps
- Towns

[print page] [close window]

**The Coordinates of the point you clicked on are:**

| | | | |
|---|---|---|---|
| UTM 18 | E : 181643 | Longitude/Latitude | W : 78.900 |
| | N : 4758530 | | N : 42.912 |

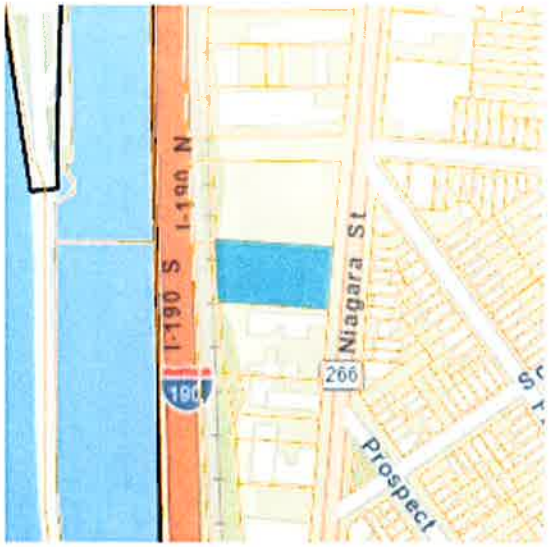
**Regulated MS4s**

**Towns**

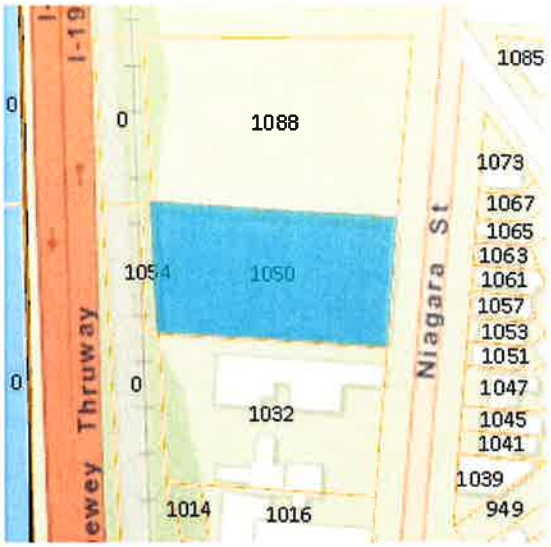
| SWIS | Municipality | County | DEC Region | Area ($Mile^2$) |
|---|---|---|---|---|
| 140200 | BUFFALO | ERIE | 9 | 40.39 |

# Erie County On-Line Mapping System
# Parcel Detail Report

Report generated:
6/16/2015 12:52:53 PM



Parcel Overview Map



Parcel Detail Map

**PIN:** 140200099490000600 2000

**SBL:** 99.49-6-2

**Address:** 1050 NIAGARA

**Owner 1:** 9271 GROUP LLC

**Owner 2:**

**Mailing Address:** 210 ELLICOTT SQUARE BLDG

**City/Zip:** BUFFALO NY 14203

**Municipality:** City of Buffalo

**Property Class:** 710

**Class Description:** C - Manufacture

**Front:** 159.94

**Depth:** 300

**Deed Roll:** 1

**Deed Book:** 11143

**Deed Page:** 1918

**Deed Date:**

**Acreage:** 1.079

**Total Assessment:** $260,000

**Land Assessment:** $23,900

**County Taxes:** $260,000

**Town Taxes:** $0

**School Taxes:** $0

**Village Taxes:** $0

**School District:** CITY OF BUFFALO

**Year Built:** 0

**Sqft Living Area:** 0

**Condition:** 0

**Heating:** 0

**Basement:** 0

**Fireplace:** 0

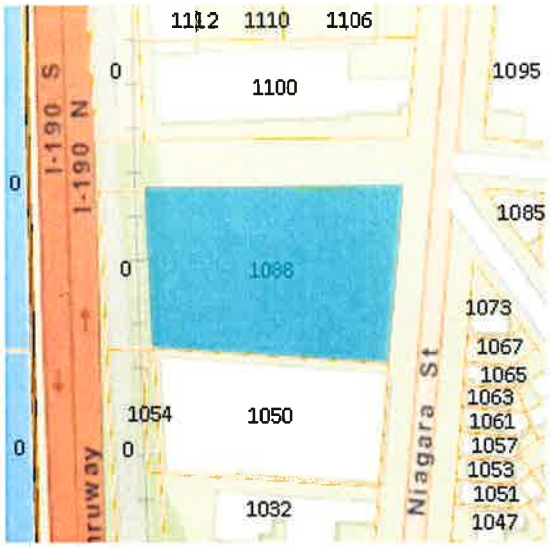
**Beds:** 0

**Baths:** 0

# Erie County On-Line Mapping System
# Parcel Detail Report

Report generated:
6/16/2015 12:52:53 PM

Parcel Overview Map



Parcel Detail Map

**PIN:** 140200099410000101500O

**SBL:** 99.41-1-15

**Address:** 1088 NIAGARA

**Owner 1:** 9271 GROUP LLC

**Owner 2:**

**Mailing Address:** 210 ELLICOTT SQUARE BLDG

**City/Zip:** BUFFALO NY 14203

**Municipality:** City of Buffalo

**Property Class:** 331

**Class Description:** B - Com vac w/imp

**Front:** 231.77

**Depth:** 332.32

**Deed Roll:** 1

**Deed Book:** 11143

**Deed Page:** 1918

**Deed Date:**

**Acreage:** 1.59

**Total Assessment:** $100,000

**Land Assessment:** $77,000

**County Taxes:** $100,000

**Town Taxes:** $0

**School Taxes:** $0

**Village Taxes:** $0

**School District:** CITY OF BUFFALO

**Year Built:** 0

**Sqft Living Area:** 0

**Condition:** 0

**Heating:** 0

**Basement:** 0

**Fireplace:** 0

**Beds:** 0

**Baths:** 0

# Appendix B

# NYSDEC Notice of Intent (NOI)

0644089821

# NOTICE OF INTENT

**New York State Department of Environmental Conservation**
**Division of Water**
**625 Broadway, 4th Floor**
**Albany, New York 12233-3505**

**NYR** _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002

**All sections must be completed unless otherwise noted.** Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

## -IMPORTANT-

## RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR **MUST SIGN FORM**

### Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Ellicott Development Company

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Paladino

Owner/Operator Contact Person First Name
William

Owner/Operator Mailing Address
295 Main Street

City
Buffalo

State
NY

Zip
14203-____

Phone (Owner/Operator)
716-854-0060

Fax (Owner/Operator)
716-852-2829

Email (Owner/Operator)
BPaladino@ellicottdevelopment.com

FED TAX ID
26-233974__ (not required for individuals)

## Project Site Information

Project/Site Name
Mixed Use Building

Street Address (NOT P.O. BOX)
1050 & 1088 Niagara Street

Side of Street
○ North ○ South ○ East ● West

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Buffalo

State NY | Zip 14213- | County Erie | DEC Region 9

Name of Nearest Cross Street
Albany Street

Distance to Nearest Cross Street (Feet)
0

Project In Relation to Cross Street
○ North ● South ○ East ○ West

Tax Map Numbers
Section-Block-Parcel
99.49-6-2

99.41-1-15

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

**www.dec.ny.gov/imsmaps/stormwater/viewer.htm**

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

**X Coordinates (Easting)**: 181643

**Y Coordinates (Northing)**: 4758530

2. What is the nature of this construction project?

○ **New Construction**

● **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
**SELECT ONLY ONE CHOICE FOR EACH**

**Pre-Development Existing Land Use**

- ○ FOREST
- ○ PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ● COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

**Post-Development Future Land Use**

- ○ SINGLE FAMILY HOME — Number of Lots
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ● COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

***Note:** for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

| Total Site Area | Total Area To Be Disturbed | Existing Impervious Area To Be Disturbed | Future Impervious Area Within Disturbed Area |
|---|---|---|---|
| 3.2 | 2.0 | 0.4 | 0.8 |

5. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ● **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

| A | B | C | D |
|---|---|---|---|
| % | % | % | 100 % |

7. Is this a phased project? ○ **Yes** ● **No**

8. Enter the planned start and end dates of the disturbance activities.

| Start Date | End Date |
|---|---|
| 06/01/2015 | 06/30/2016 |

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

Black Rock Canal

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ○ Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ● Other Type Off Site

Canal

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-15-002? ○ Yes ● No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-15-002? ○ Yes ● No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ Yes ● No
**If no, skip question 13.**

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ Yes ● No
**If Yes, what is the acreage to be disturbed?**

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ Yes ● No

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ● Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

City of Buffalo, Buffalo Sewer Authority

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ● Yes ○ No

Remedial Investigation/Interim Remedial Measures/ Alternatives Analysis Work Plan (May 2014), DEC approved June 2014.

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ● Yes ○ No
**If No, skip questions 23 and 27-39.**

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ● Yes ○ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer
Carmina Wood Morris, DPC

Contact Name (Last, Space, First)
Wood Christopher

Mailing Address
487 Main St

City
Buffalo

State Zip
NY 14203-

Phone
716-842-3165

Fax
716-842-0263

Email
cwood@cwm-ae.com

**SWPPP Preparer Certification**

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-15-002. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

**First Name**
Christopher

**MI**

**Last Name**
Wood

**Signature**

**Date**
06/16/2015

25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

**Temporary Structural**

- ● Check Dams
- ○ Construction Road Stabilization
- ○ Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

**Biotechnical**

- ○ Brush Matting
- ○ Wattling

**Vegetative Measures**

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ● Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ● Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ○ Topsoiling
- ○ Vegetating Waterways

**Permanent Structural**

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

**Post-construction Stormwater Management Practice (SMP) Requirements**

**Important: Completion of Questions 27-39 is not required if response to Question 22 is No.**

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ○ **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ● **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

**Total WQv Required**

| | | 0 | . | 0 | 6 | 6 |
|---|---|---|---|---|---|---|

**acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

**Note:** Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

| | Total Contributing Area (acres) | | Total Contributing Impervious Area (acres) |
|---|---|---|---|
| **RR Techniques (Area Reduction)** | | | |
| ○ Conservation of Natural Areas (RR-1) | | and/or | |
| ○ Sheetflow to Riparian Buffers/Filters Strips (RR-2) | | and/or | |
| ○ Tree Planting/Tree Pit (RR-3) | | and/or | |
| ○ Disconnection of Rooftop Runoff (RR-4) | | and/or | |
| **RR Techniques (Volume Reduction)** | | | |
| ○ Vegetated Swale (RR-5) | | | |
| ○ Rain Garden (RR-6) | | | |
| ○ Stormwater Planter (RR-7) | | | |
| ○ Rain Barrel/Cistern (RR-8) | | | |
| ○ Porous Pavement (RR-9) | | | |
| ○ Green Roof (RR-10) | | | |
| **Standard SMPs with RRv Capacity** | | | |
| ○ Infiltration Trench (I-1) | | | |
| ○ Infiltration Basin (I-2) | | | |
| ○ Dry Well (I-3) | | | |
| ○ Underground Infiltration System (I-4) | | | |
| ○ Bioretention (F-5) | | | |
| ○ Dry Swale (O-1) | | | |
| **Standard SMPs** | | | |
| ○ Micropool Extended Detention (P-1) | | | |
| ○ Wet Pond (P-2) | | | |
| ○ Wet Extended Detention (P-3) | | | |
| ○ Multiple Pond System (P-4) | | | |
| ○ Pocket Pond (P-5) | | | |
| ○ Surface Sand Filter (F-1) | | | |
| ○ Underground Sand Filter (F-2) | | | |
| ○ Perimeter Sand Filter (F-3) | | | |
| ○ Organic Filter (F-4) | | | |
| ○ Shallow Wetland (W-1) | | | |
| ○ Extended Detention Wetland (W-2) | | | |
| ○ Pond/Wetland System (W-3) | | | |
| ○ Pocket Wetland (W-4) | | | |
| ○ Wet Swale (O-2) | | | |

**Table 2 - Alternative SMPs**
**(DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)**

| Alternative SMP | Total Contributing Impervious Area (acres) |
|---|---|
| ● Hydrodynamic ..... | 0.77 |
| ○ Wet Vault ..... | |
| ○ Media Filter ..... | |
| ○ Other _____ ..... | |

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name: Stormpro, Model V48

Manufacturer: Environment 21

**Note**: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

**Total RRv provided**

_____ . _____ **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ○ **No**

**If Yes, go to question 36.**
**If No, go to question 32.**

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

**Minimum RRv Required**

_____ . _____ **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

○ **Yes** ○ **No**

**If Yes, go to question 33.**
**Note**: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
**If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.**

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

**Note:** Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

**WQv Provided**

0.066 **acre-feet**

**Note:** For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a). 0.066

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ● **Yes** ○ **No**

**If Yes, go to question 36.**
**If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.**

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

**CPv Required** . **acre-feet**

**CPv Provided** . **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

**Total Overbank Flood Control Criteria (Qp)**

**Pre-Development** . **CFS**

**Post-development** . **CFS**

**Total Extreme Flood Control Criteria (Qf)**

**Pre-Development** . **CFS**

**Post-development** . **CFS**

37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ○ Yes ● No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

Ellicott Development Company

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

The items below explain how Chapter 9 criteria applies and are implemented as part of this specific project. The post-development runoff for this project is less than the pre-development runoff including both the 1-yr and 100-yr storm events, therefore water quantity requirements do not apply per Chapter 9 of the Design Manual. The alternative SMP proposed for this project listed in Question 29, Table 2 is designed to treat 75% of the WQv and is designed to treat 80% TSS and 40% total phosphorus as as required per Chapter 9 of the Design Manual to meet the WQ requirement. This site is a remediation site and is considered a "hotspot" under NYSDEC criteria, therefore infiltration practices are not allowed per Chapter 4 of the Design Manual.

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ]
- ○ Other [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ● **No**
**If Yes, Indicate Size of Impact.** [ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ● **Yes** ○ **No**
**(If No, skip question 43)**

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ][ ]

## Owner/Operator Certification

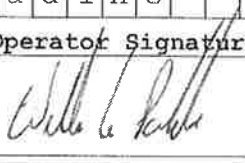
I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

**Print First Name**: William

**MI**:

**Print Last Name**: Paladino

**Owner/Operator Signature**:



**Date**: 06/16/2015

# Appendix C

# NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-15-002

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

**CONSTRUCTION ACTIVITY**

Permit No. GP-0-15-002

Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2015 Expiration Date: January 28, 2020

John J. Ferguson
Chief Permit Administrator

Authorized Signature 1 / 12 / 15 Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

## PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York's *State Pollutant Discharge Elimination System ("SPDES")* is a NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law ("ECL").*

This general permit ("permit") is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An *owner or operator* may obtain coverage under this permit by submitting a Notice of Intent ("NOI") to the Department. Copies of this permit and the NOI for New York are available by calling (518) 402-8109 or at any New York State Department of Environmental Conservation ("the Department") regional office (see Appendix G).They are also available on the Department's website at:

http://www.dec.ny.gov/

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity.* Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a point source and therefore, pursuant to Article 17-0505 of the ECL, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity.* They cannot wait until there is an actual *discharge* from the construction site to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**
**SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES**
**FROM CONSTRUCTION ACTIVITIES**

(Part I)

## Part I. PERMIT COVERAGE AND LIMITATIONS

### A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State*.

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

### B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the Stormwater Pollution Prevention Plan ("SWPPP") the reason(s) for the deviation or alternative design and provide information

which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

(i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharges*;

(ii) Control stormwater *discharges* to *minimize* channel and streambank erosion and scour in the immediate vicinity of the *discharge* points;

(iii) *Minimize* the amount of soil exposed during *construction activity*;

(iv) *Minimize* the disturbance of *steep slopes*;

(v) *Minimize* sediment *discharges* from the site;

(vi) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharges*, unless *infeasible*;

(vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted; and

(viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharges* from dewatering activities, including *discharges*

from dewatering of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharges* are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion

at or below the outlet does not occur.

## C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

   a. ***Sizing Criteria* for *New Development***

      (i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

      (ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

      **In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual**. The remaining portion of the total WQv

that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

b. ***Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed**

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or

standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

**In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual.** The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

c. ***Sizing Criteria* for *Redevelopment Activity***

(Part I.C.2.c.i)

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or
(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or
(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or
(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) Overbank Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(Part I.C.2.c.iv)

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

*d.* ***Sizing Criteria* for Combination of *Redevelopment Activity* and *New Development***

Construction projects that include both *New Development* and *Redevelopment Activity* shall provide post-construction stormwater management controls that meet the *sizing criteria* calculated as an aggregate of the *Sizing Criteria* in Part I.C.2.a. or b. of this permit for the *New Development* portion of the project and Part I.C.2.c of this permit for *Redevelopment Activity* portion of the project.

**D. Maintaining Water Quality**

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or

if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharges* will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

**E. Eligibility Under This General Permit**

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharges* from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater *discharges* may be authorized by this permit: *discharges* from firefighting activities; fire hydrant flushings; waters to which cleansers or other components have not been added that are used to wash vehicles or control dust in accordance with the SWPPP, routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated *groundwater* or spring water; uncontaminated *discharges* from construction site de-watering operations; and foundation or footing drains where flows are not contaminated with process materials such as solvents. For those entities required to obtain coverage under this permit, and who *discharge* as noted in this paragraph, and with the exception of flows from firefighting activities, these *discharges* must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

**F. Activities Which Are Ineligible for Coverage Under This General Permit**
All of the following are **not** authorized by this permit:

(Part I.F)

1. *Discharges* after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an endangered or threatened species unless the *owner or operator* has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.C.2 of this permit.

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which disturb one or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture ("USDA") Soil Survey for the County where the disturbance will occur.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which disturb two or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the USDA Soil Survey for the County where the disturbance will occur.

(Part I.F.8)

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.C.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the construction site within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:
      (i) No Affect
      (ii) No Adverse Affect

(Part I.F.8.c.iii)

(iii) Executed Memorandum of Agreement, or

d. Documentation that:
   (i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharges* from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

## Part II. OBTAINING PERMIT COVERAGE

### A. Notice of Intent (NOI) Submittal

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the Department in order to be authorized to *discharge* under this permit. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/ ). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address.

   **NOTICE OF INTENT**
   **NYS DEC, Bureau of Water Permits**
   **625 Broadway, 4th Floor**
   **Albany, New York 12233-3505**

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI.

   The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the address in Part II.A.1.

(Part II.A.2)

The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.E. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4*.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

**B. Permit Authorization**

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621) have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

   c. the final SWPPP has been prepared, and

   d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.B.2 above

(Part II.B.3)

will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

(ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

(iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. The Department may suspend or deny an *owner's or operator's* coverage

under this permit if the Department determines that the SWPPP does not meet the permit requirements. In accordance with statute, regulation, and the terms and conditions of this permit, the Department may deny coverage under this permit and require submittal of an application for an individual SPDES permit based on a review of the NOI or other information pursuant to Part II.

5. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.B. of this permit.

**C. General Requirements For Owners or Operators With Permit Coverage**

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-15-002), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, and all documentation necessary to demonstrate eligibility with this permit at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:
   a. The *owner or operator* shall

have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator.*

5. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the *regulated, traditional land use control MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice

(Part II.D)

**D. Permit Coverage for Discharges Authorized Under GP-0-10-001**

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-10-001), an *owner or operator* of *a construction activity* with coverage under GP-0-10-001, as of the effective date of GP-0-15-002, shall be authorized to *discharge* in accordance with GP-0-15-002, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-15-002.

**E. Change of *Owner or Operator***

2. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.A.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

(Part III)

## Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

### A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP:

   a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

   b. whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the *discharge* of *pollutants*; and

   c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority.

5. The Department may notify the *owner or operator* at any time that the

(Part III.A.5)

SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.C.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   > "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

   In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the

*trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the construction site. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

**B. Required SWPPP Contents**

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

   a. Background information about the scope of the project, including the location, type and size of project;

   b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

   c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

   d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other

activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the construction site; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005. Include the reason for the deviation or alternative design

and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

   b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

   c. A Stormwater Modeling and Analysis Report that includes:

      (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

      (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

      (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

      (iv) Summary table, with supporting calculations, which demonstrates

that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

(v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

(vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

**C. Required SWPPP Components by Project Type**

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

(Part IV)

## Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

### A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

### B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

### C. Qualified Inspector Inspection Requirements

(Part IV.C)

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:
- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

   d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

   b. For construction sites where soil disturbance activities are on-going and

the *owner or operator* has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.A.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall

be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of *discharge* from the construction site.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

   a. Date and time of inspection;

   b. Name and title of person(s) performing inspection;

   c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

   d. A description of the condition of the runoff at all points of *discharge* from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

   e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

   f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

   g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

   h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

(Part IV.C.4.i)

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.C.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

## Part V. TERMINATION OF PERMIT COVERAGE

### A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.A.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

(Part V.A.2)

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

   b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

   c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.E. of this permit.

   d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

(Part V.A.5)

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

   b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

   c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

   d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

## Part VI. REPORTING AND RETENTION OF RECORDS

### A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

### B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.A.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

(Part VII)

## Part VII. STANDARD PERMIT CONDITIONS

### A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator.*

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

### B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

### C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

### D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

(Part VII.E)

**E. Duty to Mitigate**

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

**F. Duty to Provide Information**

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

**G. Other Information**

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

**H. Signatory Requirements**

1. All NOIs and NOTs shall be signed as follows:

   a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

      (i) a president, secretary, treasurer, or vice-president of the

corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named

individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

**I. Property Rights**

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

**J. Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

**K. Requirement to Obtain Coverage Under an Alternative Permit**

1. The Department may require any *owner or operator* authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any *discharger* authorized by a general permit to apply for an individual SPDES permit, it shall notify the *discharger* in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to

*discharge* under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

**L. Proper Operation and Maintenance**

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

**M. Inspection and Entry**

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a construction site which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

(Part VII.N)

**N. Permit Actions**

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

**O. Definitions**

Definitions of key terms are included in Appendix A of this permit.

**P. Re-Opener Clause**

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with *construction activity* covered by this permit, the *owner or operator* of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

**Q. Penalties for Falsification of Forms and Reports**

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

**R. Other Permits**

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A

# Definitions

**Alter Hydrology from Pre to Post-Development Conditions -** means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

**Combined Sewer -** means a sewer that is designed to collect and convey both "sewage" and "stormwater".

**Commence (Commencement of) Construction Activities -** means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

***Construction Activity*(ies) -** means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

**Direct Discharge (to a specific surface waterbody) -** means that runoff flows from a construction site by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a construction site to a separate storm sewer system and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

**Discharge(s)** - means any addition of any pollutant to waters of the State through an outlet or point source.

**Environmental Conservation Law (ECL)** - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

**Equivalent (Equivalence)** – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

**Final Stabilization -** means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied

on all disturbed areas that are not covered by permanent structures, concrete or pavement.

**General SPDES permit** - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

**Groundwater(s)** - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

**Historic Property** – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State
or National Registers of Historic Places.

**Impervious Area (Cover) -** means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

**Infeasible** – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

**Larger Common Plan of Development or Sale -** means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

**Minimize** – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

**Municipal Separate Storm Sewer (MS4)** - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters,

ditches, man-made
channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State;

(ii) Designed or used for collecting or conveying stormwater;

(iii) Which is not a *combined sewer*; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

**National Pollutant Discharge Elimination System (NPDES)** - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

**New Development** – means any land disturbance that does meet the definition of Redevelopment Activity included in this appendix.

**NOI Acknowledgment Letter** - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

**Owner or Operator** - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

**Performance Criteria** – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf ) in Part I.C.2. of the permit.

**Pollutant** - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

**Qualified Inspector** - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

**Qualified Professional** - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York..

**Redevelopment Activity(ies)** – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

**Regulated, Traditional Land Use Control MS4** - means a city, town or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

**Routine Maintenance Activity** - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Stream bank restoration projects (does not include the placement of spoil material),
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or embankment,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

**Site limitations** – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

**Sizing Criteria** – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), Overbank Flood (Qp), and Extreme Flood (Qf).

**State Pollutant Discharge Elimination System (SPDES)** - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

**Steep Slope** – means land area with a Soil Slope Phase that is identified as an E or F, or

the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture ("USDA") Soil Survey for the County where the disturbance will occur.

**Surface Waters of the State** - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

**Temporarily Ceased** – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

**Temporary Stabilization** - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

**Total Maximum Daily Loads** (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for point source discharges, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

**Trained Contractor** - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

**Uniform Procedures Act (UPA) Permit** - means a permit required under 6 NYCRR Part

621 of the Environmental Conservation Law (ECL), Article 70.

**Water Quality Standard** - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

## APPENDIX B

### Required SWPPP Components by Project Type

**Table 1**
**CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS**

**The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:**

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other agricultural building, silo, stock yard or pen.

**The following construction activities that involve soil disturbances of one (1) or more acres of land:**

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Bike paths and trails
- Sidewalk construction projects that are not part of a road/ highway construction or reconstruction project
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields), excluding projects that *alter hydrology from pre to post development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of less than five acres and construction activities that include the construction or reconstruction of impervious area

**The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:**

- All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

## Table 2

### CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

**The following construction activities that involve soil disturbances of one (1) or more acres of land:**

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other agricultural building(e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional, includes hospitals, prisons, schools and colleges
- Industrial facilities, includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's and water treatment plants
- Office complexes
- Sports complexes
- Racetracks, includes racetracks with earthen (dirt) surface
- Road construction or reconstruction
- Parking lot construction or reconstruction
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project , wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

## APPENDIX C

### Watersheds Where Enhanced Phosphorus Removal Standards Are Required

**Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").**

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

**Figure 1 - New York City Watershed East of the Hudson**

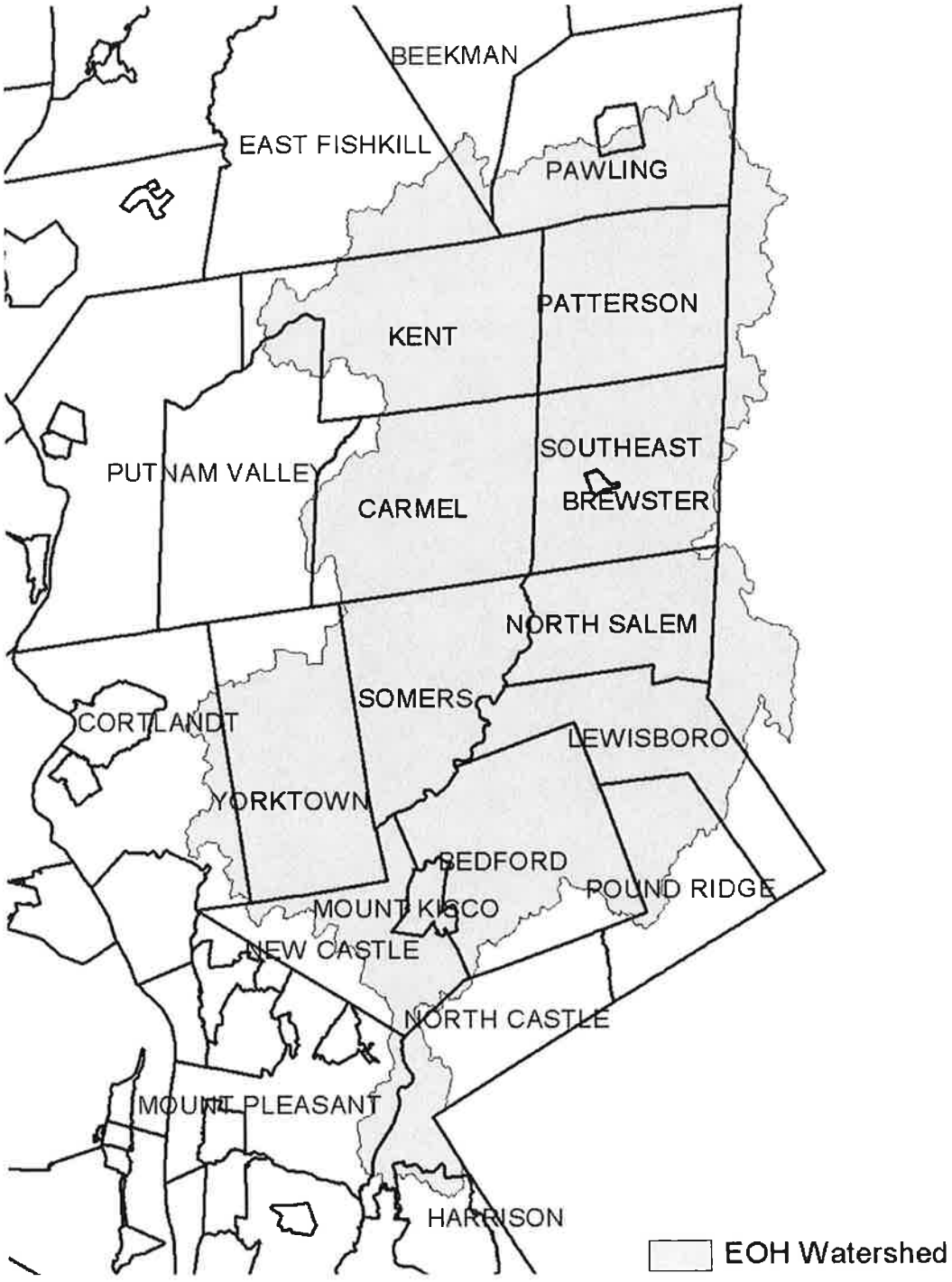


**Figure 2 - Onondaga Lake Watershed**

**Figure 3 - Greenwood Lake Watershed**

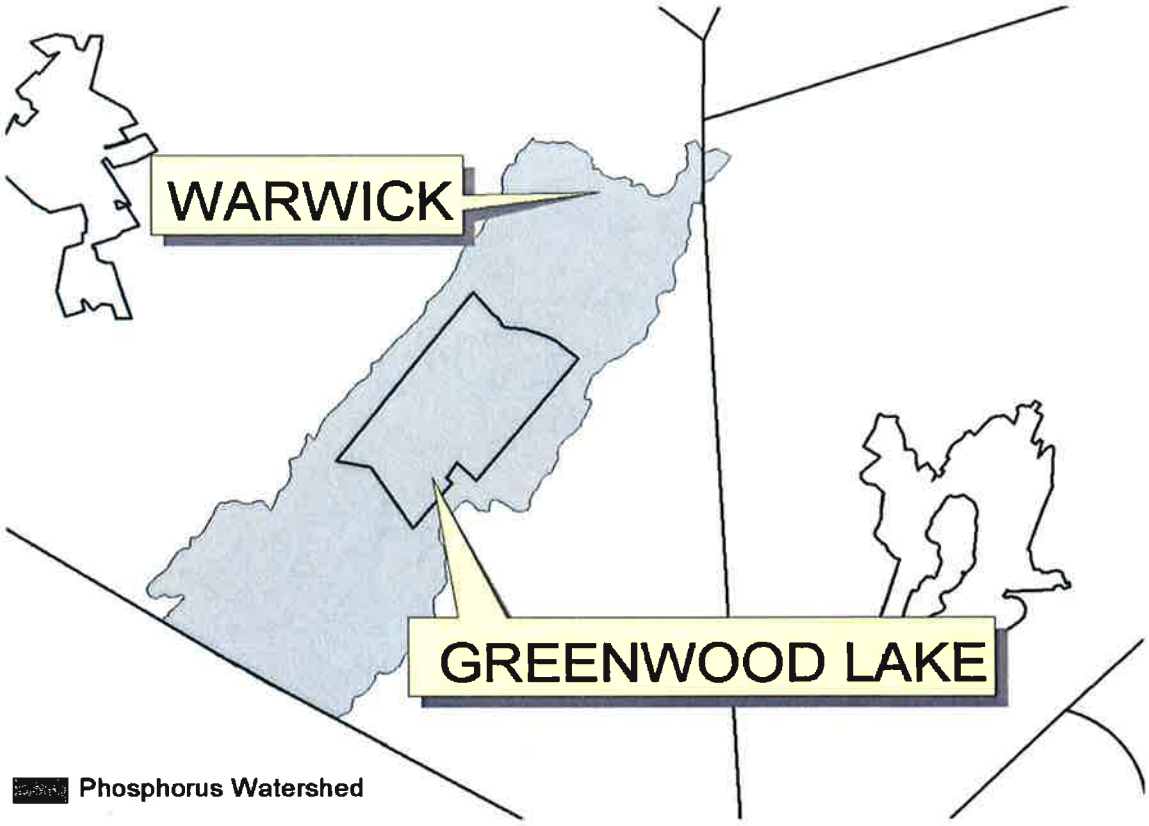


**Figure 4 - Oscawana Lake Watershed**

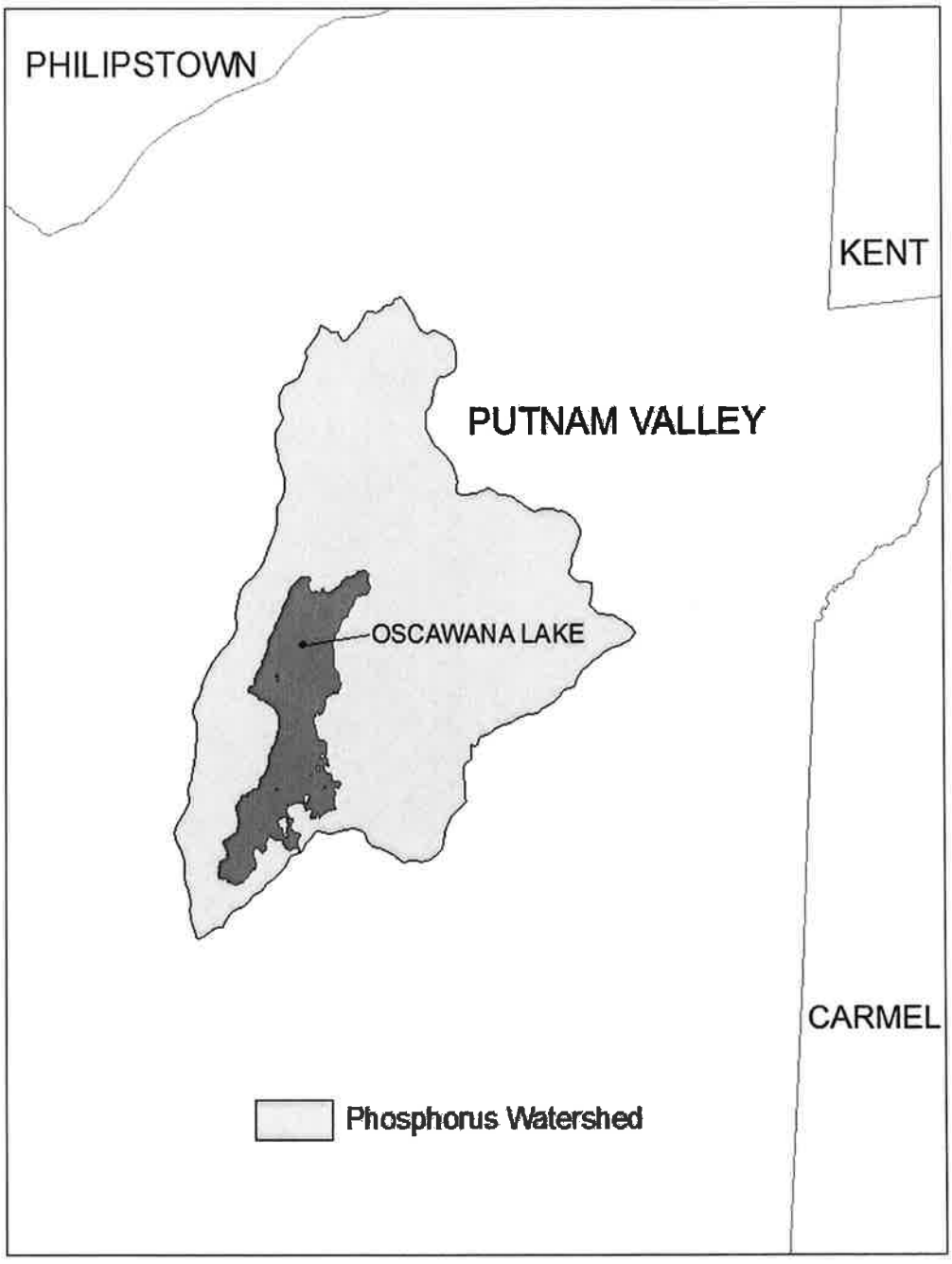
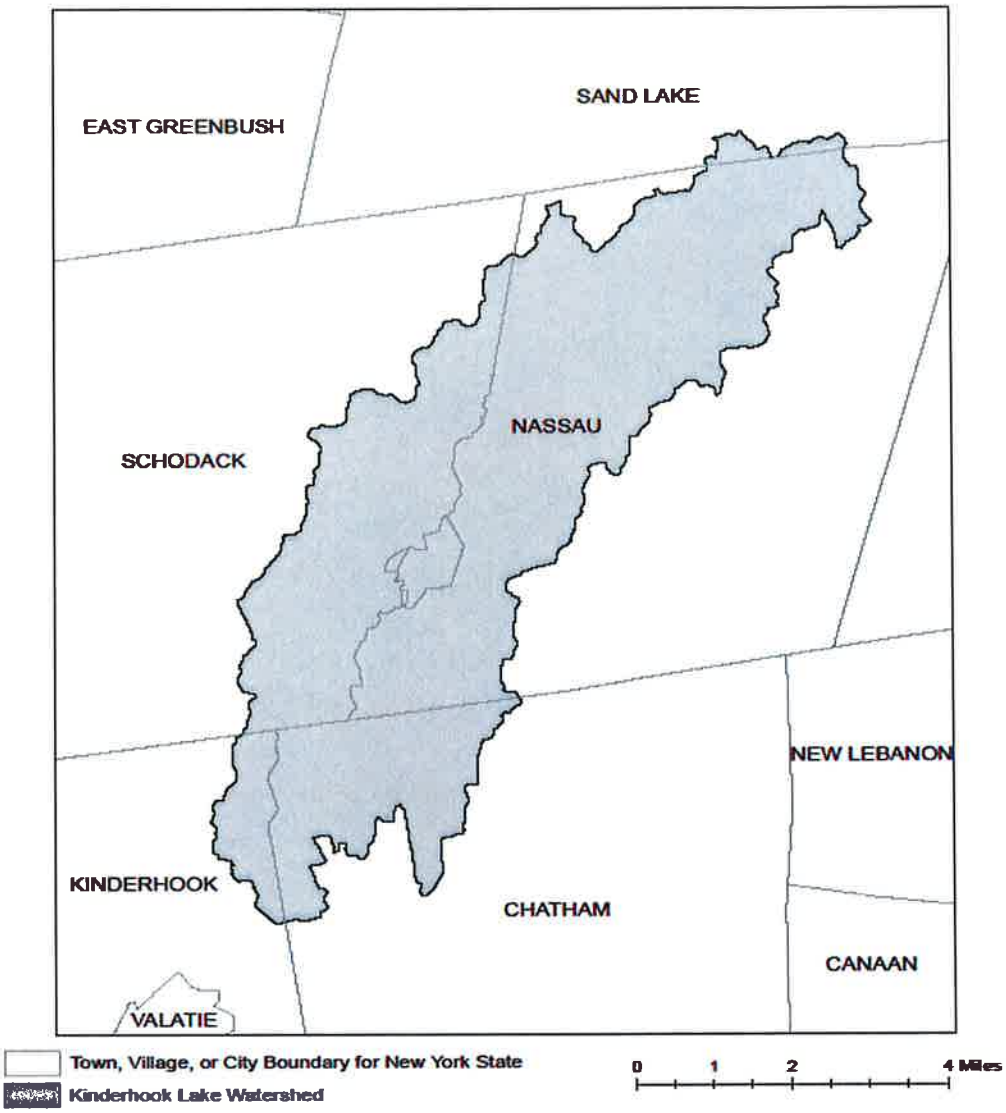


Figure 5: Kinderhook Lake Watershed



## APPENDIX D

**Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.**

| |
|---|
| Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C |

## APPENDIX E

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

| COUNTY | WATERBODY |
|---|---|
| Albany | Ann Lee (Shakers) Pond, Stump Pond |
| Albany | Basic Creek Reservoir |
| Allegheny | Amity Lake, Saunders Pond |
| Bronx | Van Cortlandt Lake |
| Broome | Whitney Point Lake/Reservoir |
| Broome | Fly Pond, Deer Lake |
| Broome | Minor Tribs to Lower Susquehanna (north) |
| Cattaraugus | Allegheny River/Reservoir |
| Cattaraugus | Case Lake |
| Cattaraugus | Linlyco/Club Pond |
| Cayuga | Duck Lake |
| Chautauqua | Chautauqua Lake, North |
| Chautauqua | Chautauqua Lake, South |
| Chautauqua | Bear Lake |
| Chautauqua | Chadakoin River and tribs |
| Chautauqua | Lower Cassadaga Lake |
| Chautauqua | Middle Cassadaga Lake |
| Chautauqua | Findley Lake |
| Clinton | Great Chazy River, Lower, Main Stem |
| Columbia | Kinderhook Lake |
| Columbia | Robinson Pond |
| Dutchess | Hillside Lake |
| Dutchess | Wappinger Lakes |
| Dutchess | Fall Kill and tribs |
| Erie | Green Lake |
| Erie | Scajaquada Creek, Lower, and tribs |
| Erie | Scajaquada Creek, Middle, and tribs |
| Erie | Scajaquada Creek, Upper, and tribs |
| Erie | Rush Creek and tribs |
| Erie | Ellicott Creek, Lower, and tribs |
| Erie | Beeman Creek and tribs |
| Erie | Murder Creek, Lower, and tribs |
| Erie | South Branch Smoke Cr, Lower, and tribs |
| Erie | Little Sister Creek, Lower, and tribs |
| Essex | Lake George (primary county: Warren) |
| Genesee | Black Creek, Upper, and minor tribs |
| Genesee | Tonawanda Creek, Middle, Main Stem |
| Genesee | Oak Orchard Creek, Upper, and tribs |
| Genesee | Bowen Brook and tribs |
| Genesee | Bigelow Creek and tribs |
| Genesee | Black Creek, Middle, and minor tribs |
| Genesee | LeRoy Reservoir |
| Greene | Schoharie Reservoir |
| Greene | Sleepy Hollow Lake |
| Herkimer | Steele Creek tribs |
| Kings | Hendrix Creek |
| Lewis | Mill Creek/South Branch and tribs |
| Livingston | Conesus Lake |
| Livingston | Jaycox Creek and tribs |
| Livingston | Mill Creek and minor tribs |
| Livingston | Bradner Creek and tribs |
| Livingston | Christie Creek and tribs |
| Monroe | Lake Ontario Shoreline, Western |
| Monroe | Mill Creek/Blue Pond Outlet and tribs |
| Monroe | Rochester Embayment - East |
| Monroe | Rochester Embayment - West |
| Monroe | Unnamed Trib to Honeoye Creek |
| Monroe | Genesee River, Lower, Main Stem |
| Monroe | Genesee River, Middle, Main Stem |
| Monroe | Black Creek, Lower, and minor tribs |
| Monroe | Buck Pond |
| Monroe | Long Pond |
| Monroe | Cranberry Pond |
| Monroe | Mill Creek and tribs |
| Monroe | Shipbuilders Creek and tribs |
| Monroe | Minor tribs to Irondequoit Bay |
| Monroe | Thomas Creek/White Brook and tribs |
| Nassau | Glen Cove Creek, Lower, and tribs |
| Nassau | LI Tribs (fresh) to East Bay |
| Nassau | East Meadow Brook, Upper, and tribs |
| Nassau | Hempstead Bay |
| Nassau | Hempstead Lake |
| Nassau | Grant Park Pond |
| Nassau | Beaver Lake |
| Nassau | Camaans Pond |
| Nassau | Halls Pond |
| Nassau | LI Tidal Tribs to Hempstead Bay |
| Nassau | Massapequa Creek and tribs |
| Nassau | Reynolds Channel, east |
| Nassau | Reynolds Channel, west |
| Nassau | Silver Lake, Lofts Pond |
| Nassau | Woodmere Channel |
| Niagara | Hyde Park Lake |
| Niagara | Lake Ontario Shoreline, Western |
| Niagara | Bergholtz Creek and tribs |
| Oneida | Ballou, Nail Creeks |
| Onondaga | Ley Creek and tribs |
| Onondaga | Onondaga Creek, Lower and tribs |

## APPENDIX E

**List of 303(d) segments impaired by pollutants related to construction activity, cont'd.**

| COUNTY | WATERBODY | COUNTY | WATERBODY |
|---|---|---|---|
| Onondaga | Onondaga Creek, Middle and tribs | Suffolk | Great South Bay, West |
| Onondaga | Onondaga Creek, Upp, and minor tribs | Suffolk | Mill and Seven Ponds |
| Onondaga | Harbor Brook, Lower, and tribs | Suffolk | Moriches Bay, East |
| Onondaga | Ninemile Creek, Lower, and tribs | Suffolk | Moriches Bay, West |
| Onondaga | Minor tribs to Onondaga Lake | Suffolk | Quantuck Bay |
| Onondaga | Onondaga Creek, Lower, and tribs | Suffolk | Shinnecock Bay (and Inlet) |
| Ontario | Honeoye Lake | Sullivan | Bodine, Montgomery Lakes |
| Ontario | Hemlock Lake Outlet and minor tribs | Sullivan | Davies Lake |
| Ontario | Great Brook and minor tribs | Sullivan | Pleasure Lake |
| Orange | Monhagen Brook and tribs | Sullivan | Swan Lake |
| Orange | Orange Lake | Tompkins | Cayuga Lake, Southern End |
| Orleans | Lake Ontario Shoreline, Western | Tompkins | Owasco Inlet, Upper, and tribs |
| Oswego | Pleasant Lake | Ulster | Ashokan Reservoir |
| Oswego | Lake Neatahwanta | Ulster | Esopus Creek, Upper, and minor tribs |
| Putnam | Oscawana Lake | | |
| Putnam | Palmer Lake | Ulster | Esopus Creek, Lower, Main Stem |
| Putnam | Lake Carmel | Ulster | Esopus Creek, Middle, and minor tribs |
| Queens | Jamaica Bay, Eastern, and tribs (Queens) | | |
| Queens | Bergen Basin | Warren | Lake George |
| Queens | Shellbank Basin | Warren | Tribs to L.George, Village of L George |
| Rensselaer | Nassau Lake | | |
| Rensselaer | Snyders Lake | Warren | Huddle/Finkle Brooks and tribs |
| Richmond | Grasmere, Arbutus and Wolfes Lakes | Warren | Indian Brook and tribs |
| Rockland | Congers Lake, Swartout Lake | Warren | Hague Brook and tribs |
| Rockland | Rockland Lake | Washington | Tribs to L.George, East Shr Lk George |
| Saratoga | Ballston Lake | | |
| Saratoga | Round Lake | Washington | Cossayuna Lake |
| Saratoga | Dwaas Kill and tribs | Washington | Wood Cr/Champlain Canal, minor tribs |
| Saratoga | Tribs to Lake Lonely | | |
| Saratoga | Lake Lonely | Wayne | Port Bay |
| Schenectady | Collins Lake | Wayne | Marbletown Creek and tribs |
| Schenectady | Duane Lake | Westchester | Lake Katonah |
| Schenectady | Mariaville Lake | Westchester | Lake Mohegan |
| Schoharie | Engleville Pond | Westchester | Lake Shenorock |
| Schoharie | Summit Lake | Westchester | Reservoir No.1 (Lake Isle) |
| Schuyler | Cayuta Lake | Westchester | Saw Mill River, Middle, and tribs |
| St. Lawrence | Fish Creek and minor tribs | Westchester | Silver Lake |
| St. Lawrence | Black Lake Outlet/Black Lake | Westchester | Teatown Lake |
| Steuben | Lake Salubria | Westchester | Truesdale Lake |
| Steuben | Smith Pond | Westchester | Wallace Pond |
| Suffolk | Millers Pond | Westchester | Peach Lake |
| Suffolk | Mattituck (Marratooka) Pond | Westchester | Mamaroneck River, Lower |
| Suffolk | Tidal tribs to West Moriches Bay | Westchester | Mamaroneck River, Upp, and tribs |
| Suffolk | Canaan Lake | Westchester | Sheldrake River and tribs |
| Suffolk | Lake Ronkonkoma | Westchester | Blind Brook, Lower |
| Suffolk | Beaverdam Creek and tribs | Westchester | Blind Brook, Upper, and tribs |
| Suffolk | Big/Little Fresh Ponds | Westchester | Lake Lincolndale |
| Suffolk | Fresh Pond | Westchester | Lake Meahaugh |
| Suffolk | Great South Bay, East | Wyoming | Java Lake |
| Suffolk | Great South Bay, Middle | Wyoming | Silver Lake |

Note: The list above identifies those waters from the final New York State "2014 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", dated January 2015, that are impaired by silt, sediment or nutrients.

## APPENDIX F

### LIST OF NYS DEC REGIONAL OFFICES

| Region | COVERING THE FOLLOWING COUNTIES: | DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS | DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM |
|---|---|---|---|
| 1 | NASSAU AND SUFFOLK | 50 CIRCLE ROAD<br>STONY BROOK, NY 11790<br>TEL. (631) 444-0365 | 50 CIRCLE ROAD<br>STONY BROOK, NY 11790-3409<br>TEL. (631) 444-0405 |
| 2 | BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND | 1 HUNTERS POINT PLAZA,<br>47-40 21ST ST.<br>LONG ISLAND CITY, NY 11101-5407<br>TEL. (718) 482-4997 | 1 HUNTERS POINT PLAZA,<br>47-40 21ST ST.<br>LONG ISLAND CITY, NY 11101-5407<br>TEL. (718) 482-4933 |
| 3 | DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER | 21 SOUTH PUTT CORNERS ROAD<br>NEW PALTZ, NY 12561-1696<br>TEL. (845) 256-3059 | 100 HILLSIDE AVENUE, SUITE 1W<br>WHITE PLAINS, NY 10603<br>TEL. (914) 428 - 2505 |
| 4 | ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE | 1150 NORTH WESTCOTT ROAD<br>SCHENECTADY, NY 12306-2014<br>TEL. (518) 357-2069 | 1130 NORTH WESTCOTT ROAD<br>SCHENECTADY, NY 12306-2014<br>TEL. (518) 357-2045 |
| 5 | CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON | 1115 STATE ROUTE 86, PO BOX 296<br>RAY BROOK, NY 12977-0296<br>TEL. (518) 897-1234 | 232 GOLF COURSE ROAD<br>WARRENSBURG, NY 12885-1172<br>TEL. (518) 623-1200 |
| 6 | HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE | STATE OFFICE BUILDING<br>317 WASHINGTON STREET<br>WATERTOWN, NY 13601-3787<br>TEL. (315) 785-2245 | STATE OFFICE BUILDING<br>207 GENESEE STREET<br>UTICA, NY 13501-2885<br>TEL. (315) 793-2554 |
| 7 | BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS | 615 ERIE BLVD. WEST<br>SYRACUSE, NY 13204-2400<br>TEL. (315) 426-7438 | 615 ERIE BLVD. WEST<br>SYRACUSE, NY 13204-2400<br>TEL. (315) 426-7500 |
| 8 | CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES | 6274 EAST AVON-LIMA ROAD<br>AVON, NY 14414-9519<br>TEL. (585) 226-2466 | 6274 EAST AVON-LIMA RD.<br>AVON, NY 14414-9519<br>TEL. (585) 226-2466 |
| 9 | ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING | 270 MICHIGAN AVENUE<br>BUFFALO, NY 14203-2999<br>TEL. (716) 851-7165 | 270 MICHIGAN AVE.<br>BUFFALO, NY 14203-2999<br>TEL. (716) 851-7070 |

# Appendix D

# Engineer's Report

Carmina • Wood • Morris DPC

487 Main Street Suite 600 Buffalo, New York 14203 P: 716.842.3165 F: 716.842.0263 W: cwm-ae.com

Architecture Engineering Interior Design

**ENGINEER'S REPORT**
**for**
**Mixed Use Building**
**1088 Niagara Street**
**City of Buffalo, New York**


## GENERAL

This project is the construction of a 2-story building which is a mix of retail, restaurant and second floor apartments. The restaurant is approximately 2,000 gsf of the 1st floor space, with the remaining 3,500 gsf an unknown retail tenant. The 5,500 gsd 2nd floor space will be 4 apartments. To accommodate access to the site, a portion of the undeveloped Albany Street right of way will be improved as a city street. The location of the site is on the west side of Niagara Street on the south side of Albany Street in the City of Buffalo. The site is currently vacant and was previously occupied by parking for the adjacent multi-story building. Approximately 2.0 acres of the overall site will be disturbed in this phase of development. This disturbance includes the required remediation work and the extension of Albany Street.

## EXISTING CONDITIONS

### Storm Sewer

The existing site sheet drains towards the northwest and discharges off site to the unimproved Albany Street right of way. There are several City of Buffalo storm and combined sewers in the vicinity of this property. The Buffalo Sewer Authority (BSA) has requested we tie into the existing storm sewer located on the north side of Albany Street with a 6" SDR-35 PVC pipe.

### Sanitary Sewer

There are several public sanitary sewer mains along Niagara Street. The Buffalo Sewer Authority (BSA) has requested we tie into the existing 12" combined sewer located on the west side of Niagara Street with a 6 inch SDR-35 PVC lateral.

### Water System

The site is served by an existing 16" City of Buffalo water main located on the east side Niagara Street.

**PROPOSED FACILITIES**

**Storm Sewer**

The storm sewer system consists of 8" smooth interior HDPE pipes connected by a series of catch basins and manholes located throughout the project site. The proposed storm sewer system will also consist of a storm water treatment structure located in the southwest portion of the site prior to tying into the public storm main.

Design Criteria

Storm pipes: 10-year storm

Detention: not required

RUNOFF SUMMARY -

| EVENT | EX. RUNOFF (CFS) | PRO. RUNOFF (CFS)* | RESULT (CFS) |
|---|---|---|---|
| 1-YEAR | 2.27 | 2.25 | -0.02 |
| 2-YEAR | 3.03 | 2.85 | -0.18 |
| 5-YEAR | 4.19 | 3.75 | -0.44 |
| 10-YEAR | 5.18 | 4.52 | -0.66 |
| 25-YEAR | 5.98 | 5.13 | -0.85 |
| 50-YEAR | 6.98 | 5.90 | -1.08 |
| 100-YEAR | 7.78 | 6.52 | -1.26 |

* the proposed runoff values are taken at the location of the connection of the proposed system to the existing storm sewer main at the north end of Albany Street.

NYSDEC Requirements:

Per Chapter 9 "Redevelopment Projects" of the NYS Stormwater Design Manual, if the redevelopment activities result in no change to hydrology that increases the discharge rate from the project site (Note: Include the redevelopment activity portion of a project and if applicable, any new development in the analysis), the ten-year and hundred-year

criteria do not apply. This is the case for this project as evidenced by the above "Runoff Summary". NYSDEC recognizes compacted stone as an impervious surface when classifying surface types for runoff analysis. The current site is a mix of existing concrete, compacted stone areas and weeds. For estimating purposes, the site was assumed to be 70% weeds/grass and 30% stone, this is evidenced by current aerial photos. Water Quality requirements under Chapter 9 include treating 75% of the water quality volume given that an alternative practice (treatment structure) is being implemented. The proposed Stormpro, Model V48 as manufactured by Environment 21 is being proposed. This structure is designed to treat 75% of the water quality volume per NYSDEC requirements. This structure has been tested and approved to meet the goal of 80% TSS removal along with 40% phosphorus removal by NJCAT and NJDEP. The NYSDEC recognizes this approval and this device is approved to address the water quality requirement associated with a redevelopment project.

Also note that this site qualifies as a "hotspot" under NYSDEC criteria. Therefore infiltration practices are not allowed.

See attached storm calculations.

**Water System**

A 4" class 52 DI combined water service will service the site which will tap the existing 16" Niagara Street main. This service will split into a 4" Class 52 DI fire service and a 2" type "k" copper domestic service at the ROW line. A meter and RPZ will be installed on the domestic service inside the building. A double check valve detector assembly will be installed on the fire service also inside the building. Heat and light will be provided in the area of these devices and the RPZ will have a drain to the exterior for testing and failure purposes. The fire system will be designed by others.

Domestic Summary:

| | |
|---|---|
| Peak Operating Demand: | 6.8 gpm |
| Water Main: | 16" on Niagara Street |
| Static Pressure: | 60 psi (estimated) |
| Friction Loss: | 0.1 psi |
| Loss through meter/RPZ: | 13 psi |
| Elevation Loss: | 0 psi |
| Pressure after RPZ& Meter: | 46.9 psi |
| | |
| @ Top floor | |
| Elevation Loss (to top floor): | 5.6 psi |
| Pressure @ top floor: | 41.3 psi (@ top floor) |

Repairs to all devices will be made during off hours, dual backflow preventers are not required. The proposed buildings are not located in a 100-year flood plain.

Disinfection of the water service following installation will be continuous feed, according to AWWA C-651, latest revision.

**Sanitary Sewer**

The building will have a 6" SDR-35 PVC sanitary lateral 1.0% minimum slope. This sewer will tie into the existing 12" City of Buffalo sanitary sewer located on the west side of Niagara Street. Note that per City of Buffalo standards, an interior grease trap will be provided. This item will be designed by others.

Design Parameters

| | | |
|---|---|---|
| 2-bdrm apartments: | 300 gal/day/unit x 4 units = | 1,200 gpd |
| Retail: | 0.1 gal/day/sf x 3500 sf = | 350 gpd |
| Restaurant: | 35 gal/day/seat x 26 seats = | 910 gpd |
| Total: | | 2,460 gpd |

The hydraulic loading rate is per "Design Standards for Wastewater Treatment Works" 1988, NYSDEC.

# Appendix A

# Water & Sanitary Sewer Calculations

**CARMINA WOOD MORRIS, D.P.C.**
487 MAIN STREET, SUITE 600
BUFFALO, NEW YORK, 14203
(716) 842-3165
FAX (716) 842-0263

Project No.: 15.001 Date: 2/22/2015
Project Name: Mixed Use Building
Project Address: 1088 Niagara St
Subject: Sanitary Sewage & Domestic Water Demand Calcs
Sheet: 1 of 1

## Sanitary Sewage Demand Calculations:

Proposed Retail:
0.10 gal/d/sf x 3,500 sf = 350 gpd *use 0.1 gallons per sf per day

Proposed Apartments:
300 gal/d/unit x 4 units = 1,200 gpd *use 300 gallons per unit per day

Proposed Restaurant:
35 gal x 26 seats = 910 gpd *use 35 gallons per seat per day

Total Site Sanitary Demand: = 2,460 gpd

## Grease Trap Sizing Calculations:

D = 26 = Number of seats in dining area
GL = 2.5 = Gallons of wastewater per meal *meals served "to go" in take out containers, use 2gallons per meal
ST = 1.7 = Storage capacity factor (min. = 1.7, onsite disposal = 2.5)
HR = 24 = Number of hours open
LF = 0.8 = Loading factor (interstate = 1.25, fwy & rec. areas = 1.0, main hwy = 0.8, other hwy = 0.5)

Size of Grease Trap in Gallons = D x GL x ST x HR/2 x LF = 1060.8 gallons

* use 1,250 gallon grease trap

## Water Demand Calculations (domestic):

Proposed Mixed Use Building:

2,460 gpd x 1.1 = 2,706 gpd *use 110% of sewage demand

*use 1.8 peaking factor and assume a 12 hour day

2,706 gpm x 1day/12hr x 1hr/60min = 3.76 gpm

3.76 gpm x 1.8 = 6.77 gpm $Q_{peak}$

Headlosses:
$Q_{peak}$ = 6.77 gpm
Pipe = 2 inch type "k" copper C = 140
Length = 40 LF (approx. distance from split at ROW to RPZ)

$$H_L = \frac{10.44\, L\, Q^{1.85}}{C^{1.85}\, D^{4.866}} = \frac{10.44(224)(5.84)^{1.85}}{(140)^{1.85}\,(1.5)^{4.866}} = 0.21 \text{ ft} = 0.09 \text{ psi}$$

Δ elev = 0 ft = 0.00 psi
Loss through meter = 1 psi
Loss through RPZ = 12 psi
Total Losses = 13.1 psi
Static Pressure = 60 psi (estimated)
Residual Pressure Following RPZ = 94 - 14.7 = 46.9 psi (available after rpz & meter)

Residual Pressure 30" above 2nd Floor
Δ elev = 13 ft = 5.63 psi
Residual Pressure 30" above 2nd Floor = 41.3 psi

# Appendix B

# Storm Sewer Calculations

Version 1.6 Total Water Quality Volume Calculation
Last Updated: 07/30/15 WQv(acre-feet) = [(P)(Rv)(A)] /12

| Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?..... | No |
|---|---|

| Design Point: | connection | |
|---|---|---|
| P= | 1.00 | *inch* |

*Manually enter P, Total Area and Impervious Cover.*

**Breakdown of Subcatchments**

| Catchment Number | Total Area *(Acres)* | Impervious Area *(Acres)* | Percent Impervious *%* | Rv | WQv *($ft^3$)* | Description |
|---|---|---|---|---|---|---|
| 1 | 0.97 | 0.83 | 86% | 0.82 | 2,888 | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| Subtotal (1-30) | 0.97 | 0.83 | 86% | 0.82 | **2,888** | **Subtotal 1** |
| **Total** | 0.97 | 0.83 | 86% | 0.82 | **2,888** | **Initial WQv** |

**Identify Runoff Reduction Techniques By Area**

| Technique | Total Contributing Area *(Acre)* | Contributing Impervious Area *(Acre)* | Notes |
|---|---|---|---|
| Conservation of Natural Areas | 0.00 | 0.00 | *minimum 10,000 sf* |
| Riparian Buffers | 0.00 | 0.00 | *maximum contributing length 75 feet to 150 feet* |
| Filter Strips | 0.00 | 0.00 | |
| Tree Planting | 0.00 | 0.00 | *Up to 100 sf directly connected impervious area may be subtracted per tree* |
| **Total** | **0.00** | **0.00** | |

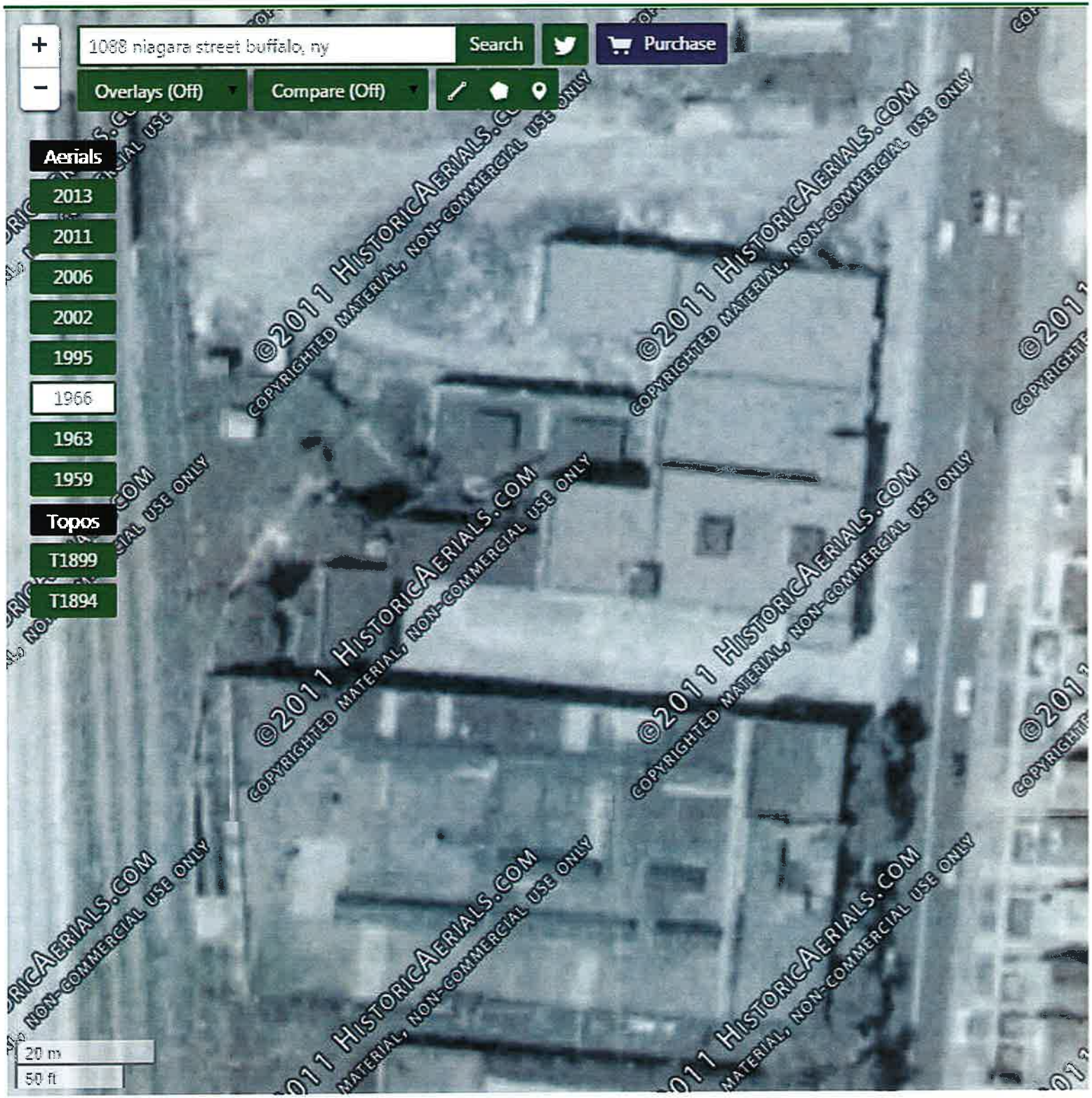
**Recalculate WQv after application of Area Reduction Techniques**

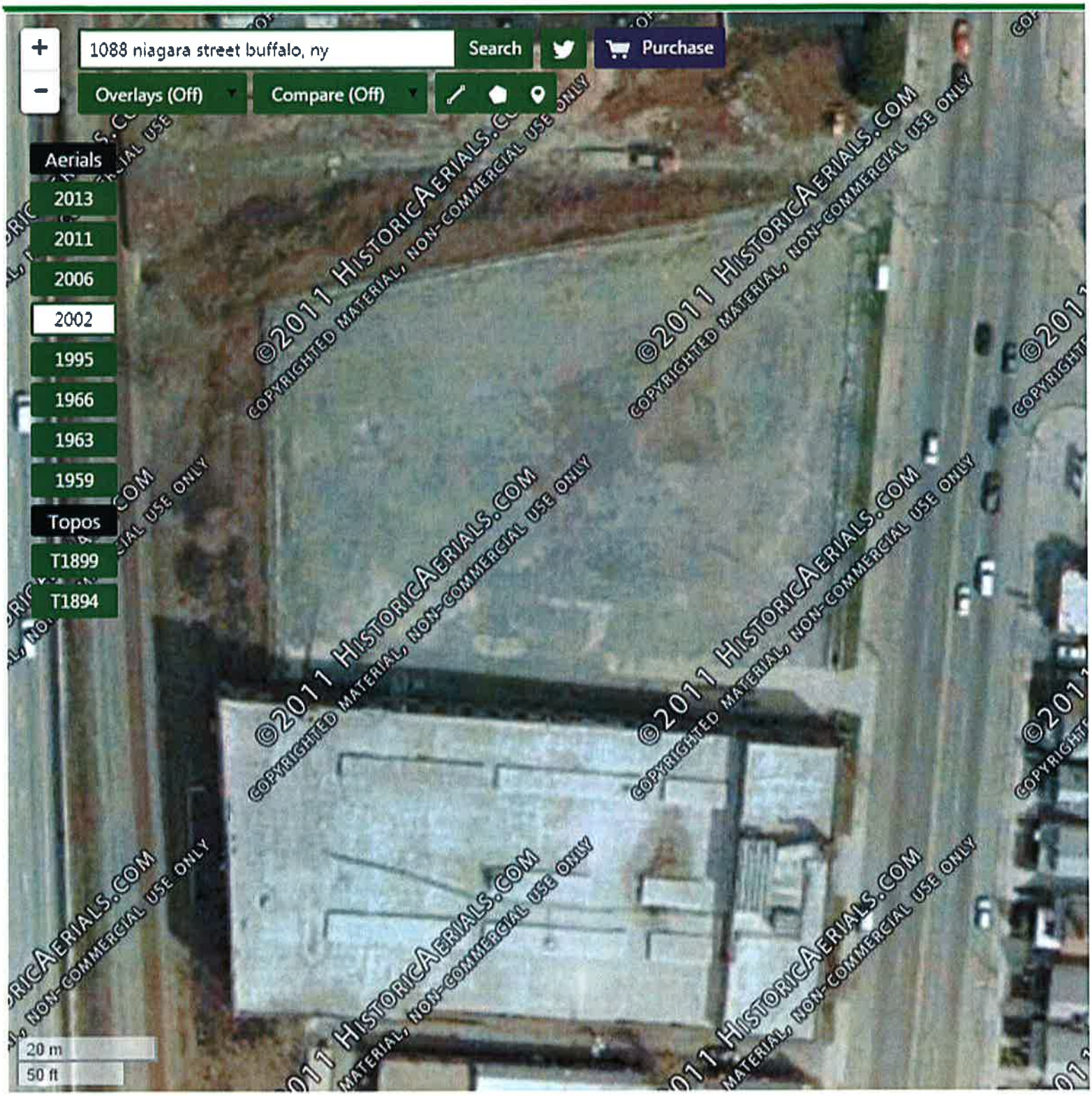
| | Total Area *(Acres)* | Impervious Area *(Acres)* | Percent Impervious *%* | Runoff Coefficient Rv | WQv *($ft^3$)* |
|---|---|---|---|---|---|
| "<<Initial WQv" | 0.97 | 0.83 | 86% | 0.82 | 2,888 |
| Subtract Area | 0.00 | 0.00 | | | |
| WQv adjusted after Area Reductions | **0.97** | **0.83** | 86% | 0.82 | 2,888 |
| Disconnection of Rooftops | | 0.00 | | | |
| Adjusted WQv after Area Reduction and Rooftop Disconnect | 0.97 | 0.83 | 86% | 0.82 | **2,888** |
| WQv reduced by Area Reduction techniques | | | | | 0 |


# Existing

Reach Pond Link

**Routing Diagram for 15.001 Existing w-green**
Prepared by Carmina Wood Morris, PC, Printed 7/30/2015


1088 niagara street buffalo, ny
Search
Purchase
Overlays (Off)
Compare (Off)
Aerials
2013
2011
2006
2002
1995
1966
1963
1959
Topos
T1899
T1894
20 m
50 ft
©2011 HistoricAerials.com
Copyrighted material, non-commercial use only


1088 niagara street buffalo, ny
Search
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Overlays (Off)
Compare (Off)
Aerials
2013
2011
2006
2002
1995
1966
1963
1959
Topos
T1899
T1894
20 m
50 ft
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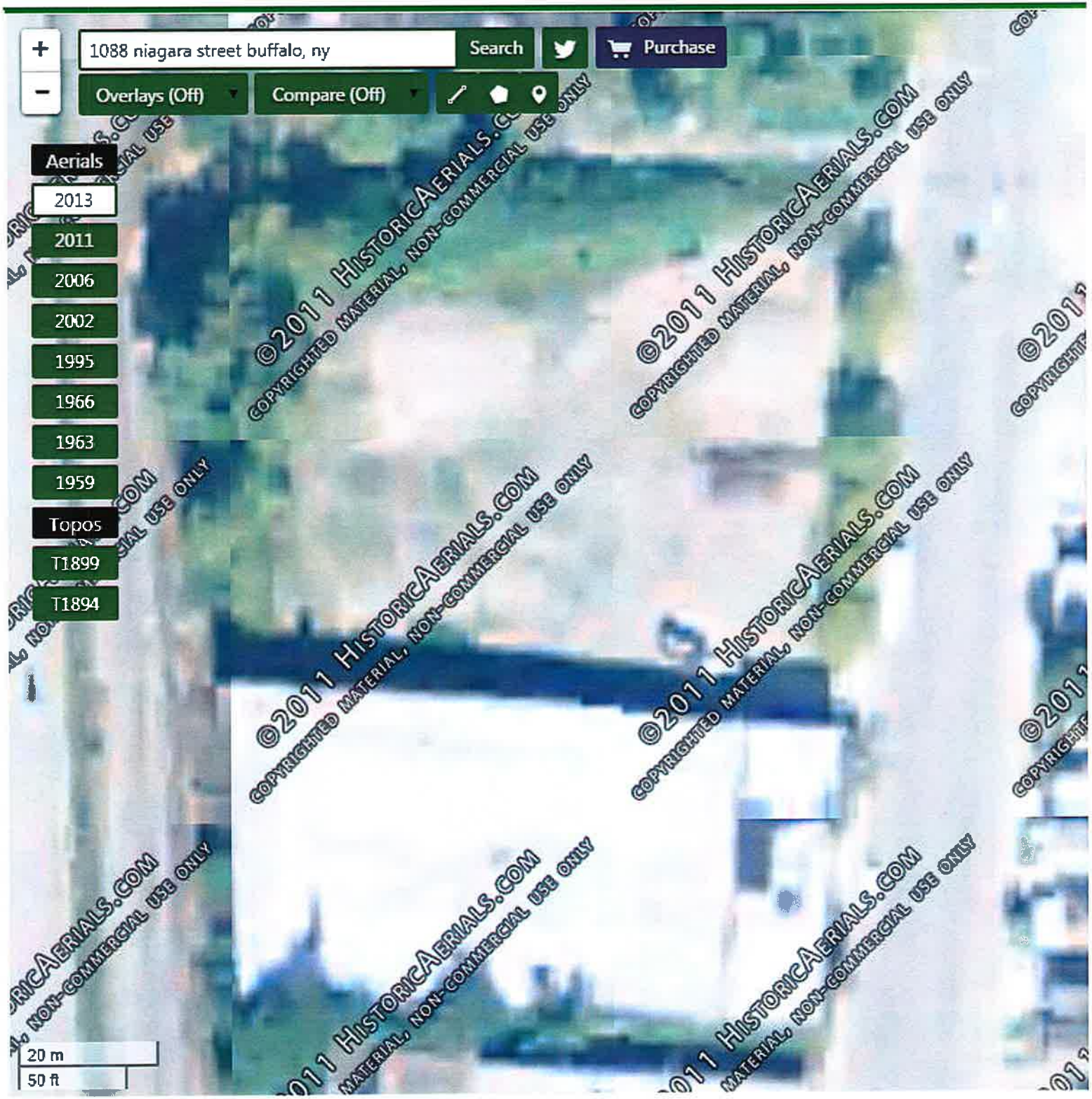
1088 niagara street buffalo, ny
Search
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Overlays (Off)
Compare (Off)
Aerials
2013
2011
2006
2002
1995
1966
1963
1959
Topos
T1899
T1894
20 m
50 ft
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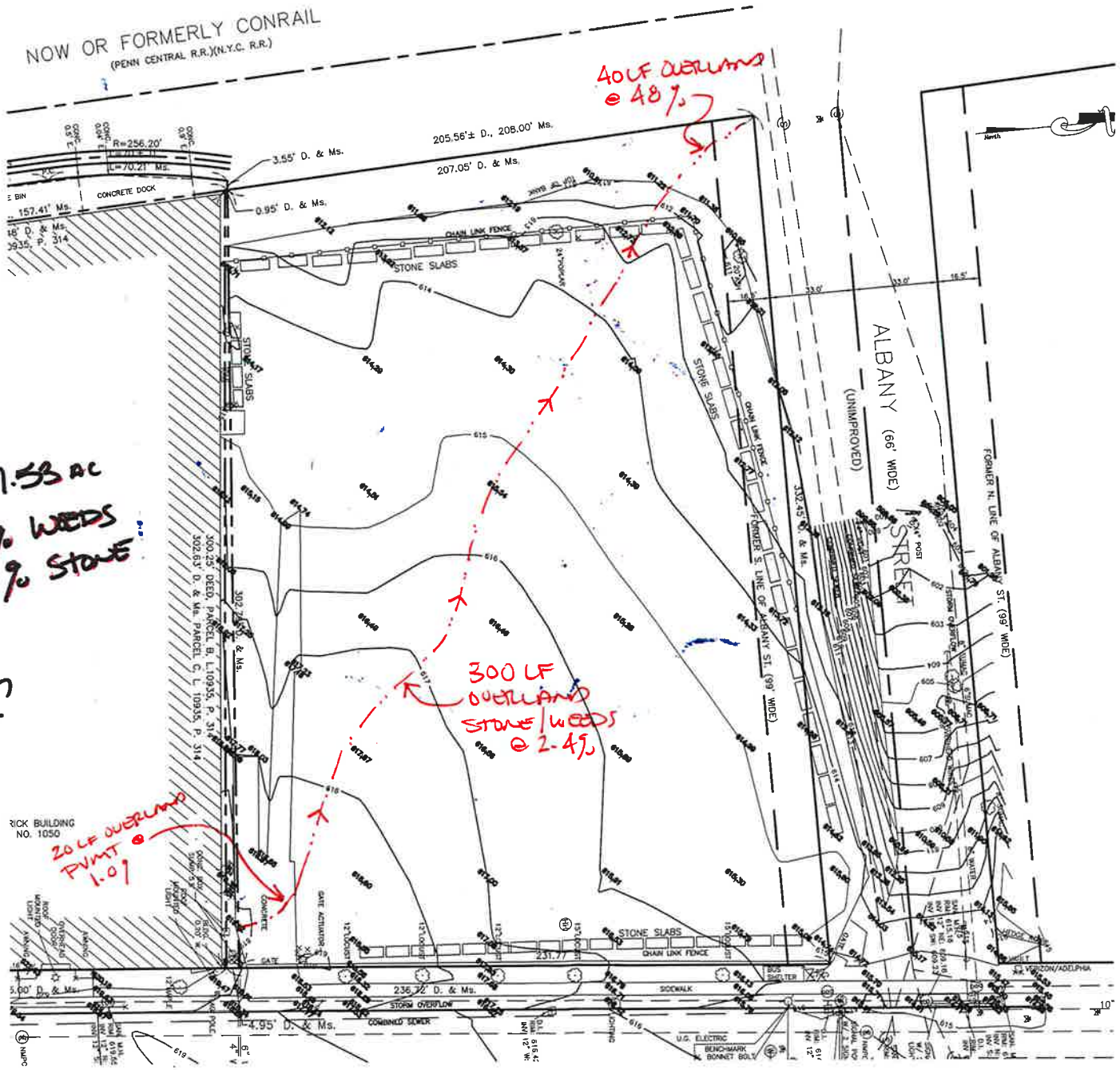



(15)
A = 1.53 AC
70% WEEDS
30% STONE

EXISTING RUNOFF

## Events for Subcatchment 1S: Existing

| Event | Runoff (cfs) | Volume (acre-feet) | Depth (inches) |
|---|---|---|---|
| 1-Year | 2.27 | 0.126 | 0.98 |
| 2-Year | 3.03 | 0.167 | 1.31 |
| 5-Year | 4.19 | 0.233 | 1.83 |
| 10-Year | 5.18 | 0.290 | 2.27 |
| 25-Year | 5.98 | 0.336 | 2.64 |
| 50-Year | 6.98 | 0.395 | 3.10 |
| 100-Year | **7.78** | **0.443** | **3.47** |

## Area Listing (all nodes)

| Area (acres) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 1.070 | 83 | Brush, Poor, HSG D (1S) |
| 0.460 | 96 | Gravel surface, HSG D (1S) |
| **1.530** | **87** | **TOTAL AREA** |

## Soil Listing (all nodes)

| Area (acres) | Soil Group | Subcatchment Numbers |
|---|---|---|
| 0.000 | HSG A | |
| 0.000 | HSG B | |
| 0.000 | HSG C | |
| 1.530 | HSG D | 1S |
| 0.000 | Other | |
| **1.530** | | **TOTAL AREA** |

## Ground Covers (all nodes)

| HSG-A (acres) | HSG-B (acres) | HSG-C (acres) | HSG-D (acres) | Other (acres) | Total (acres) | Ground Cover | Subcatchment Numbers |
|---|---|---|---|---|---|---|---|
| 0.000 | 0.000 | 0.000 | 1.070 | 0.000 | 1.070 | Brush, Poor | 1S |
| 0.000 | 0.000 | 0.000 | 0.460 | 0.000 | 0.460 | Gravel surface | 1S |
| **0.000** | **0.000** | **0.000** | **1.530** | **0.000** | **1.530** | **TOTAL AREA** | |

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Existing** Runoff Area=1.530 ac 0.00% Impervious Runoff Depth=0.98"
Flow Length=360' Tc=10.1 min CN=87 Runoff=2.27 cfs 0.126 af

**Total Runoff Area = 1.530 ac Runoff Volume = 0.126 af Average Runoff Depth = 0.98"**
**100.00% Pervious = 1.530 ac 0.00% Impervious = 0.000 ac**

## Summary for Subcatchment 1S: Existing

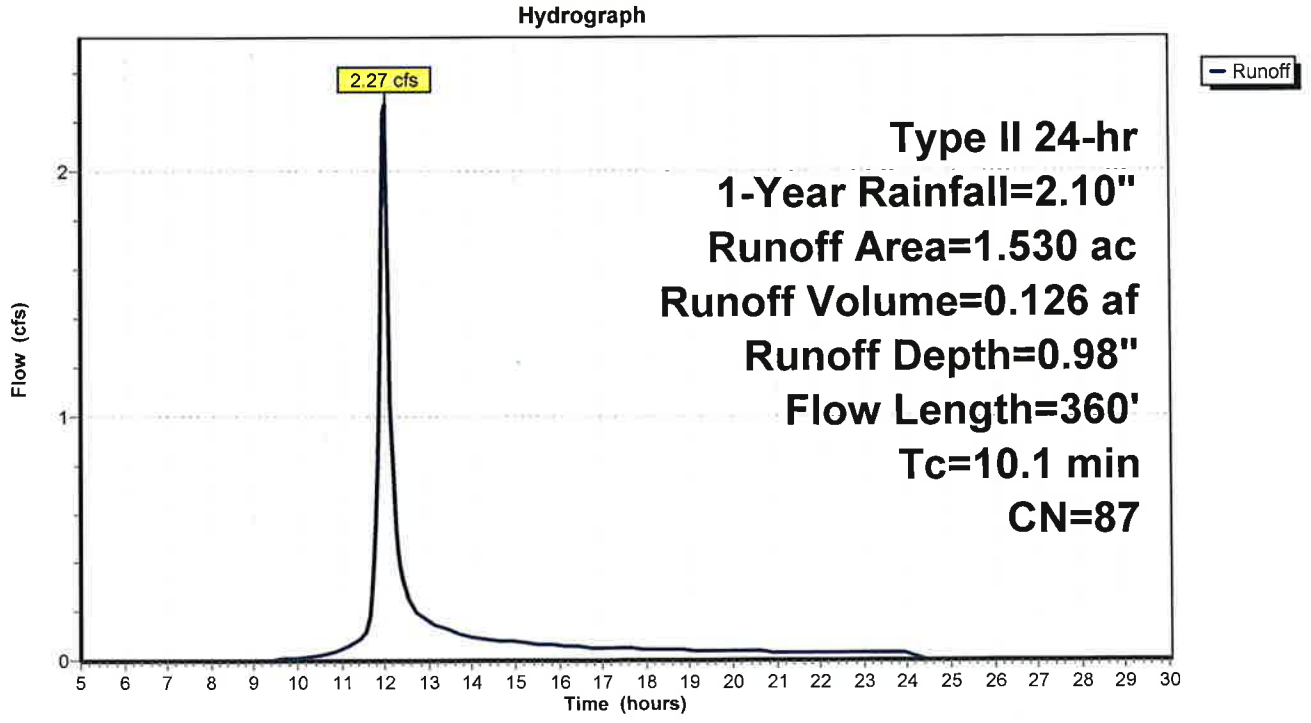
Runoff = 2.27 cfs @ 12.02 hrs, Volume= 0.126 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.10"

| Area (ac) | CN | Description |
|---|---|---|
| 0.460 | 96 | Gravel surface, HSG D |
| 1.070 | 83 | Brush, Poor, HSG D |
| 1.530 | 87 | Weighted Average |
| 1.530 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.5 | 20 | 0.0100 | 0.67 | | **Sheet Flow, Overland** Smooth surfaces n= 0.011 P2= 2.50" |
| 9.5 | 300 | 0.0240 | 0.53 | | **Sheet Flow, overland (70% weeds/30% stone)** n= 0.045 P2= 2.50" |
| 0.1 | 40 | 0.4800 | 11.15 | | **Shallow Concentrated Flow, Overland (weeds)** Unpaved Kv= 16.1 fps |
| 10.1 | 360 | Total | | | |

## Subcatchment 1S: Existing



Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Existing** Runoff Area=1.530 ac 0.00% Impervious Runoff Depth=1.31"
Flow Length=360' Tc=10.1 min CN=87 Runoff=3.03 cfs 0.167 af

**Total Runoff Area = 1.530 ac Runoff Volume = 0.167 af Average Runoff Depth = 1.31"**
**100.00% Pervious = 1.530 ac 0.00% Impervious = 0.000 ac**

## Summary for Subcatchment 1S: Existing

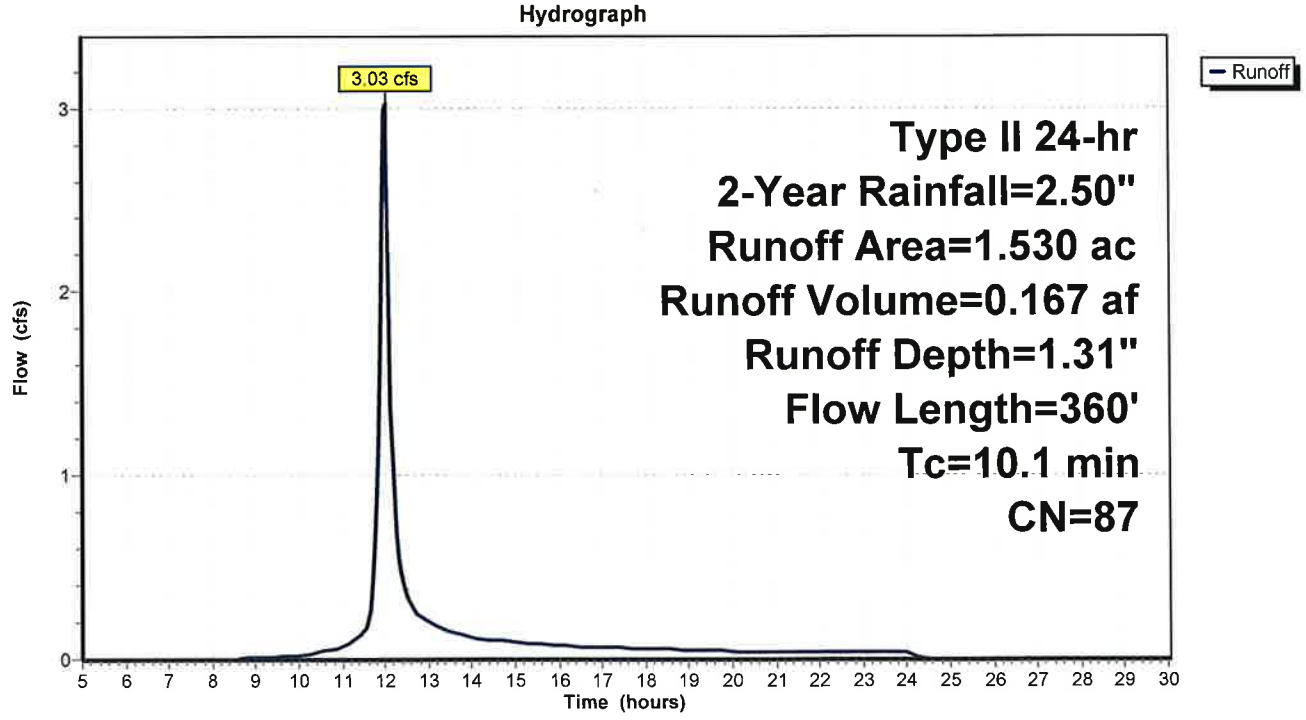
Runoff = 3.03 cfs @ 12.02 hrs, Volume= 0.167 af, Depth= 1.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.50"

| Area (ac) | CN | Description |
|---|---|---|
| 0.460 | 96 | Gravel surface, HSG D |
| 1.070 | 83 | Brush, Poor, HSG D |
| 1.530 | 87 | Weighted Average |
| 1.530 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.5 | 20 | 0.0100 | 0.67 | | **Sheet Flow, Overland** Smooth surfaces n= 0.011 P2= 2.50" |
| 9.5 | 300 | 0.0240 | 0.53 | | **Sheet Flow, overland (70% weeds/30% stone)** n= 0.045 P2= 2.50" |
| 0.1 | 40 | 0.4800 | 11.15 | | **Shallow Concentrated Flow, Overland (weeds)** Unpaved Kv= 16.1 fps |
| 10.1 | 360 | Total | | | |

## Subcatchment 1S: Existing



Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Existing** Runoff Area=1.530 ac 0.00% Impervious Runoff Depth=1.83"
Flow Length=360' Tc=10.1 min CN=87 Runoff=4.19 cfs 0.233 af

**Total Runoff Area = 1.530 ac Runoff Volume = 0.233 af Average Runoff Depth = 1.83"**
**100.00% Pervious = 1.530 ac 0.00% Impervious = 0.000 ac**

## Summary for Subcatchment 1S: Existing

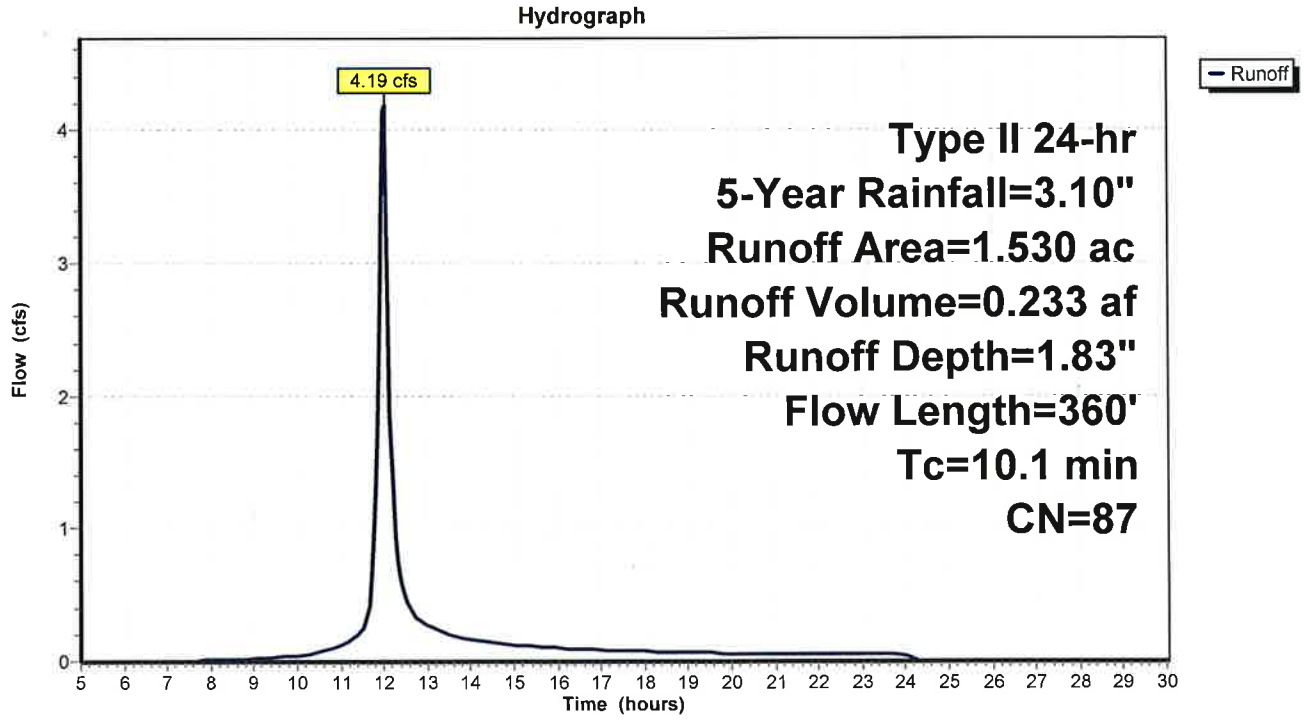
Runoff = 4.19 cfs @ 12.02 hrs, Volume= 0.233 af, Depth= 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.10"

| Area (ac) | CN | Description |
|---|---|---|
| 0.460 | 96 | Gravel surface, HSG D |
| 1.070 | 83 | Brush, Poor, HSG D |
| 1.530 | 87 | Weighted Average |
| 1.530 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.5 | 20 | 0.0100 | 0.67 | | **Sheet Flow, Overland** Smooth surfaces n= 0.011 P2= 2.50" |
| 9.5 | 300 | 0.0240 | 0.53 | | **Sheet Flow, overland (70% weeds/30% stone)** n= 0.045 P2= 2.50" |
| 0.1 | 40 | 0.4800 | 11.15 | | **Shallow Concentrated Flow, Overland (weeds)** Unpaved Kv= 16.1 fps |
| 10.1 | 360 | Total | | | |

## Subcatchment 1S: Existing



Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Existing** Runoff Area=1.530 ac 0.00% Impervious Runoff Depth=2.27"
Flow Length=360' Tc=10.1 min CN=87 Runoff=5.18 cfs 0.290 af

**Total Runoff Area = 1.530 ac Runoff Volume = 0.290 af Average Runoff Depth = 2.27"**
**100.00% Pervious = 1.530 ac 0.00% Impervious = 0.000 ac**

## Summary for Subcatchment 1S: Existing

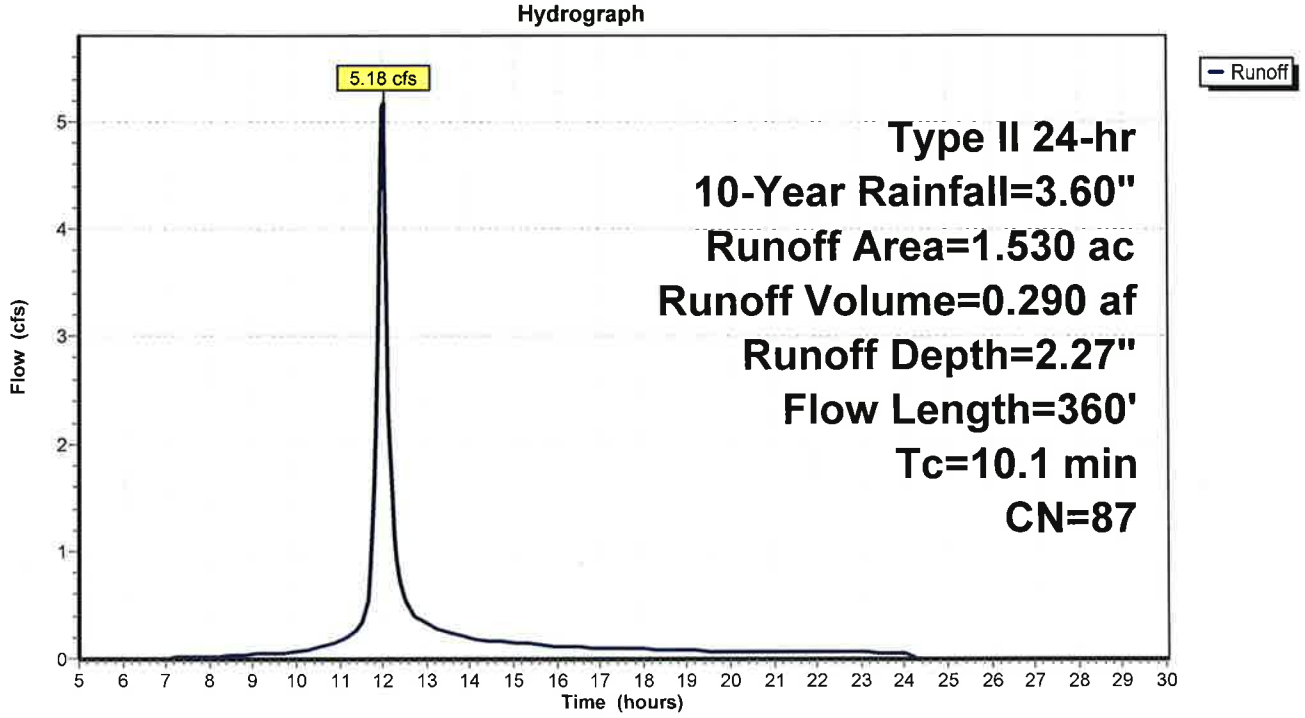
Runoff = 5.18 cfs @ 12.01 hrs, Volume= 0.290 af, Depth= 2.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.60"

| Area (ac) | CN | Description |
|---|---|---|
| 0.460 | 96 | Gravel surface, HSG D |
| 1.070 | 83 | Brush, Poor, HSG D |
| 1.530 | 87 | Weighted Average |
| 1.530 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 0.5 | 20 | 0.0100 | 0.67 | | **Sheet Flow, Overland** Smooth surfaces n= 0.011 P2= 2.50" |
| 9.5 | 300 | 0.0240 | 0.53 | | **Sheet Flow, overland (70% weeds/30% stone)** n= 0.045 P2= 2.50" |
| 0.1 | 40 | 0.4800 | 11.15 | | **Shallow Concentrated Flow, Overland (weeds)** Unpaved Kv= 16.1 fps |
| 10.1 | 360 | Total | | | |

## Subcatchment 1S: Existing



# APPENDIX C

## PROJECT DOCUMENTATION FORMS

| DAILY LOG | DATE | | | |
|---|---|---|---|---|
| | REPORT NO. | | | |
| | PAGE | | OF | |

# CORRECTIVE MEASURES REPORT

Date:

Project:

Job No:

Location:

CQA Monitor(s):

Client:

Contractor:

Contractor's Supervisor:

**WEATHER CONDITIONS:**

Ambient Air Temp. - A.M.:

Ambient Air Temp. - P.M.:

Wind Direction:

Wind Speed:

Precipitation:

Corrective Measures Undertaken (reference Problem Identification Report No.)

Retesing Location:

Suggested Method of Minimizing Re-Occurrence:

Approvals (initial):

CQA Engineer:

Project Manager:

Signed:

CQA Representative

# INSPECTOR'S DAILY REPORT

| | | | |
|---|---|---|---|
| CONTRACTOR | | | |
| CLIENT | | DATE: | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LOCATION | | | | DAY | | JOB NO. | |
| WEATHER | | TEMP | ° F | START | | END | |

**WORK PERFORMED:**

**CONTRACTOR ACTIVITIES:**

*[PUT CONTRACTOR ACTIVITIES HERE, BE SPECIFIC. TYPE OF EQUIPMENT, ACTIVITIES PERFORMED, BY WHOM, LOCATION OF LANDFILL ETC.]*

**TURNKEY ACTIVITIES:**

*[PUT ENGINEER ACTIVITIES HERE, BE SPECIFIC. TYPE OF EQUIPMENT, ACTIVITIES AND TESTING PERFORMED, SAMPLES COLLECTED, BY WHOM, LOCATION OF LANDFILL ETC.]*

| | | | | | |
|---|---|---|---|---|---|
| TEST PERFORMED | | *QA PERSONNEL* SIGNATURE | | | |
| PICTURES TAKEN | none | REPORT NO. | | | |
| VISITORS | none | SHEET | 1 | OF | |

# INSPECTOR'S DAILY REPORT

| | | | |
|---|---|---|---|
| CONTRACTOR | | | |
| CLIENT | | DATE: | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LOCATION | | | | DAY | | JOB NO. | |
| WEATHER | | TEMP | ° F | START | | END | |

# INSPECTOR'S DAILY REPORT

| MEETINGS HELD & RESULTS: |
|---|
| |

**CONTRACTOR'S WORK FORCE AND EQUIPMENT**

| *DESCRIPTION* | *H* | # | *DESCRIPTION* | *H* | # | *DESCRIPTION* | *H* | # | *DESCRIPTION* | *H* | # |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Field Engineer | | | | | | Equipment | | | Front Loader Ton | | |
| Superintendent | | | Ironworker | | | Generators | | | Bulldozer | | |
| | | | | | | Welding Equip. | | | DJ Dump truck | | |
| Laborer-Foreman | | | Carpenter | | | | | | Water Truck | | |
| Laborer | | | | | | | | | Backhoe | | |
| Operating Engineer | | | Concrete Finisher | | | | | | Excavator | | |
| | | | | | | Roller | | | Pad foot roller | | |
| Carpenter | | | | | | Paving Equipment | | | | | |
| | | | | | | Air Compressor | | | | | |

| REMARKS: |
|---|
| |

| REFERENCES TO OTHER FORMS: |
|---|
| |

| SAMPLES COLLECTED: | | | | | |
|---|---|---|---|---|---|
| SAMPLE NUMBER | | | | | |
| APPROX. LOCATION OF STOCKPILE | | | | | |
| NO. OF STOCKPILE | | | | | |
| DATE OF COLLECTION | | | | | |
| CLIMATOLOGIC CONDITIONS | | | | | |
| FIELD OBSERVATION | | SHEET | | OF | |

| DAILY LOG | DATE | | | |
|---|---|---|---|---|
| | REPORT NO. | | | |
| | PAGE | | OF | |

# PROBLEM IDENTIFICATION REPORT

Date:

Project:

Job No:

Location:

CQA Monitor(s):

Client:

Contractor:

Contractor's Supervisor:

**WEATHER CONDITIONS:**

Ambient Air Temp. - A.M.:

Ambient Air Temp. - P.M.:

Wind Direction:

Wind Speed:

Precipitation:

Problem Description:

Problem Location (reference test location, sketch on back of form as appropriate):

Problem Causes:

Suggested Corrective Measures or Variances:

*Linked to Corrective Measures Report No.* *or Variance Log No.*

Approvals (initial):

CQA Engineer:

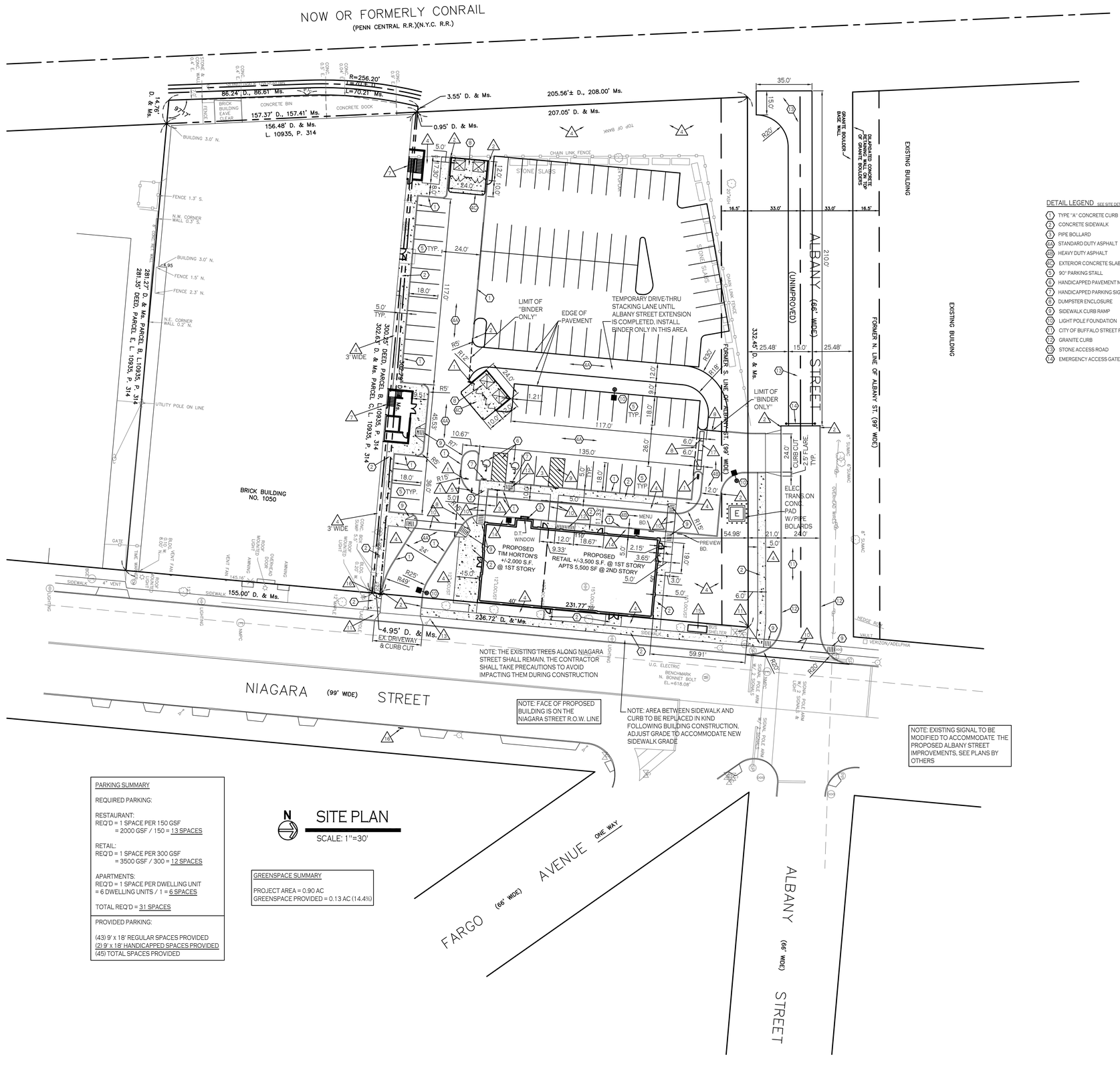
Project Manager:

Signed:

CQA Representative

# APPENDIX D

## CONSTRUCTION DRAWINGS AND DETAILS




## SITE PLAN

SCALE: 1"=30'

**PARKING SUMMARY**

REQUIRED PARKING:

RESTAURANT:
REQ'D = 1 SPACE PER 150 GSF
= 2000 GSF / 150 = 13 SPACES

RETAIL:
REQ'D = 1 SPACE PER 300 GSF
= 3500 GSF / 300 = 12 SPACES

APARTMENTS:
REQ'D = 1 SPACE PER DWELLING UNIT
= 6 DWELLING UNITS / 1 = 6 SPACES

TOTAL REQ'D = 31 SPACES

PROVIDED PARKING:

(43) 9' x 18' REGULAR SPACES PROVIDED
(2) 9' x 18' HANDICAPPED SPACES PROVIDED
(45) TOTAL SPACES PROVIDED

**GREENSPACE SUMMARY**

PROJECT AREA = 0.90 AC
GREENSPACE PROVIDED = 0.13 AC (14.4%)

**DETAIL LEGEND** SEE SITE DETAIL SHEET

1. TYPE "A" CONCRETE CURB
2. CONCRETE SIDEWALK
3. PIPE BOLLARD
4A. STANDARD DUTY ASPHALT
4B. HEAVY DUTY ASPHALT
5. EXTERIOR CONCRETE SLAB ON GRADE
6. 90° PARKING STALL
7. HANDICAPPED PAVEMENT MARKINGS
8. HANDICAPPED PARKING SIGN
9. DUMPSTER ENCLOSURE
10. SIDEWALK CURB RAMP
11. LIGHT POLE FOUNDATION
12. CITY OF BUFFALO STREET PAVEMENT SECTION
13. GRANITE CURB
14. STONE ACCESS ROAD
15. EMERGENCY ACCESS GATE

**NOTE LEGEND**

A. DRIVE-THRU DIRECTIONAL SIGN
1. RUNOUT CURB IN 2' OR MATCH EXISTING CURB
2. INSTALL "NO PARKING" SIGN, M.U.T.C.D. SIGN NO. R7-1C
3. LANDSCAPED AREA - SEE LANDSCAPE PLAN, IF NO PLANTINGS, INSTALL TOPSOIL & SEED
4. INSTALL "DO NOT ENTER" SIGN, M.U.T.C.D. SIGN NO. R5-1C
5. TRANSITION FROM CONCRETE TO GRANITE CURB AT END OF RADIUS
6. EXTERIOR STAIRS, SEE PLANS BY OTHERS
7. LIMIT OF HEAVY DUTY ASPHALT PAVEMENT
8. 4" WIDE YELLOW PAVEMENT STRIPES @ 45° AND 2' O.C., INFILL AREA AS SHOWN
9. 6" WIDE WHITE PAVEMENT STRIPE AT 5' SPACING (CROSSWALK)
10. REPLACE ADDITIONAL SIDEWALK AS REQ'D TO ACCOMMODATE CONSTRUCTION. SLOPE 1:20 MAX.
11. SLOPE SIDEWALK @ 1:12 MAX., PROVIDE COARSE BROOM FINISH ON SLOPED PORTION W/ TACTILE WARNING FIELD
12. EXISTING LIGHT POLE TO REMAIN, CONTRACTOR TO PROTECT DURING CONSTRUCTION
13. INSTALL LANDSCAPE STONE ON FILTER FABRIC BETWEEN CURB AND BUILDING
14. RELOCATED BUS SHELTER BY OTHERS
15. INSTALL "NO LEFT TURN" SIGN, M.U.T.C.D. SIGN NO. R3-2C
16. TEMPORARY DRIVE-THRU LANE BARRICADE/PLANTER

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30' 30 0 30 60Ft.

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

| No. | Description | Date |
|---|---|---|
| 1 | Rev. Foorpint/Doors per Architect | 5/12/15 |
| 2 | Permit Set | 5/18/15 |
| 3 | Revised per DPW letter dated 6/29/15 Revised Albany Street | 7/30/15 |
| 4 | Revised Niagara Street Driveway | 6/8/16 |
| 5 | Revised 1050 Niagara St Entrances | 6/10/16 |
| 6 | Revised Albany Street Extention | 7/8/16 |

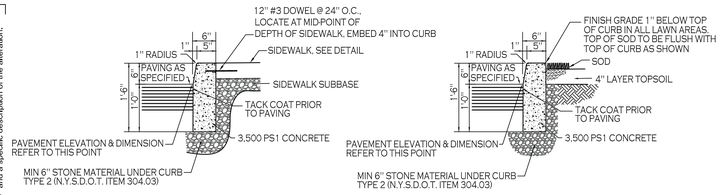
PROJECT NAME:
New Construction
# Mixed Use Building
1088 Niagara Street
City of Buffalo, New York

Issued for Construction: xx.xx.xx
Municipality Submission: 2/18/15
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Plan

DRAWING NO.
C-100

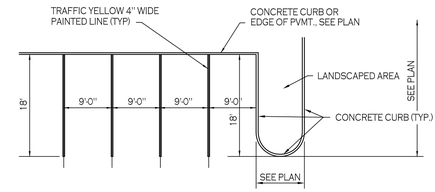
Project no.: 15.001



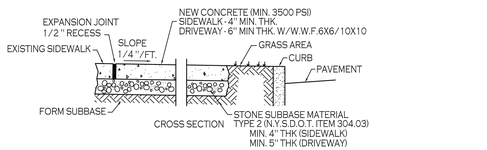

**ABUTTING SIDEWALK** **ABUTTING LANDSCAPE/GRASS**

NOTE: CONTROL JOINTS TO BE 2" DEEP AT 15'-0" O.C. - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 7020700

## TYPE "A" CONCRETE CURB - 1

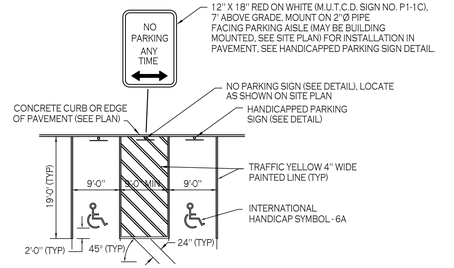



## 90° PARKING STALL LAYOUT - 5

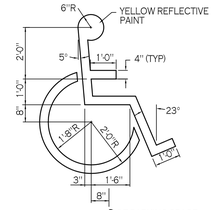



NOTES:
1. CONTROL JOINTS TO BE AT 5'-0" O.C., BOTHWAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 7020700.
2. CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3.
3. SUBBASE GRADE SHALL FOLLOW THE PROPOSED GRADE OF THE SIDEWALK AND SLOPE AWAY FROM BUILDING WHERE APPLICABLE. PROVIDE CONTINUOUS STONE PATH TO CURB UNDERDRAIN WHERE PROVIDED.
4. FULL DEPTH EXPANSION JOINTS SHALL BE INSTALLED EVERY 20' O.C., BOTHWAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 7020700.
5. SEE CURB DETAIL FOR DOWLING REQUIREMENTS WHERE ABUTTING CURB
6. INSTALL 6" LONG #3 DOWELS @ 12" O.C. WHERE SIDEWALK ABUTS A BUILDING WALL. AT AN ENTRANCE, THICKEN SIDEWALK TO 6" AT BUILDING WALL AND INSTALL DOWEL CENTERED IN THE 6" DEPTH. DOWELS AND THICKENING OF SIDEWALK SHALL EXTEND 18" EITHER SIDE OF ENTRANCE.
7. INSTALL ½" PREMOLDED EXPANSION JOINT WITH BACKER ROD & SEALANT WHERE SIDEWALK ABUTS BUILDING OR OTHER STRUCTURE

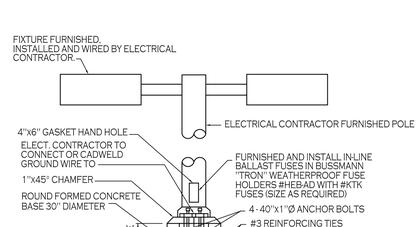
## CONCRETE SIDEWALK - 2




## HANDICAPPED PAVEMENT MARKINGS & SIGNAGE - 6

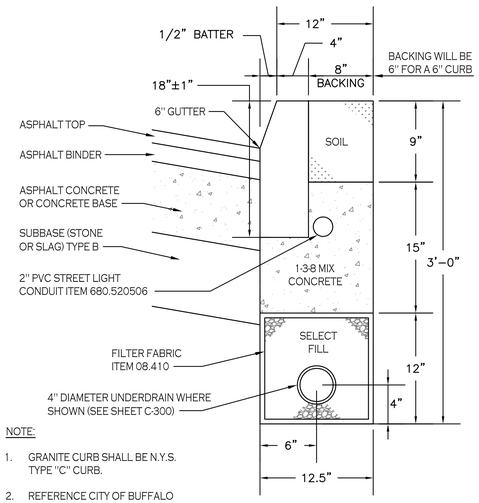



## INTERNATIONAL HANDICAP SYMBOL - 6A



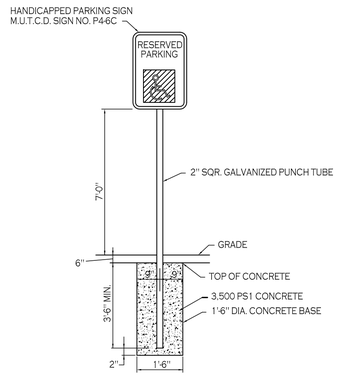

NOTES:
1. FOR LOCATIONS OF FOUNDATIONS SEE SITE PLAN
2. FOR LIGHT FIXTURE ORDERING INFORMATION SEE SITE LIGHTING PLAN
3. LIGHT POLE BASE EXPOSURE ABOVE GRADE SHALL BE:
   IN CURBED ISLANDS: 6" ABOVE TOP OF CURB ELEVATION
   IN PAVEMENT: 3' ABOVE GRADE
   IN NON-CURBED GRASS AREAS: 6" ABOVE GRADE

## LIGHT POLE FOUNDATION - 10




NOTE:
1. GRANITE CURB SHALL BE N.Y.S. TYPE "C" CURB.
2. REFERENCE CITY OF BUFFALO DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING SS-1.

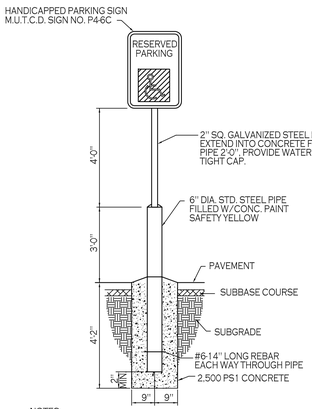
GRANITE CURB - 12
N.T.S




NOTES:
1. HANDICAPPED PARKING SIGN SHALL CONFORM WITH CURRENT STATE AND LOCAL CODES AND REGULATIONS.

## HANDICAP PARKING SIGNS - 7

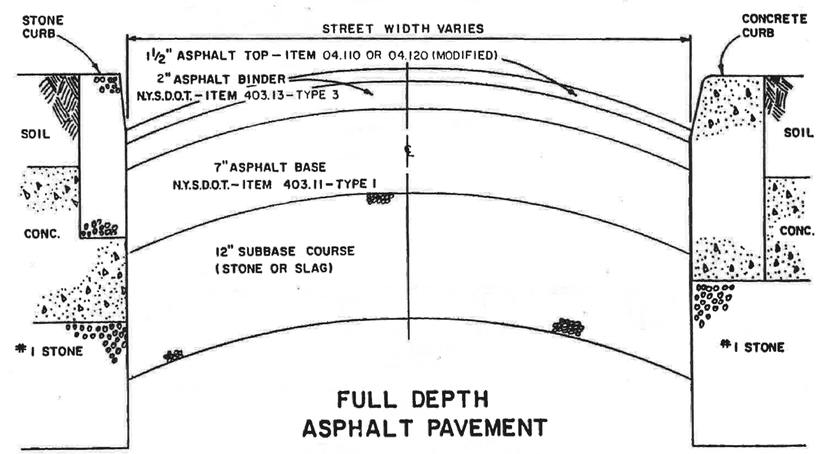
INSTALLED IN GRASS/LANDSCAPED AREA




NOTES:
1. HANDICAPPED PARKING SIGN SHALL CONFORM WITH CURRENT STATE AND LOCAL CODES AND REGULATIONS.

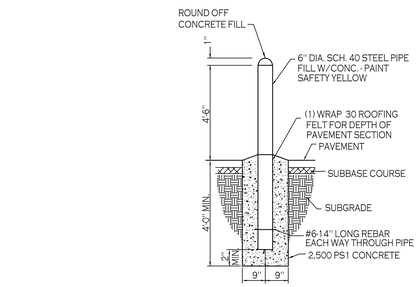
## HANDICAPPED PARKING SIGN - 7

INSTALLED IN PAVEMENT

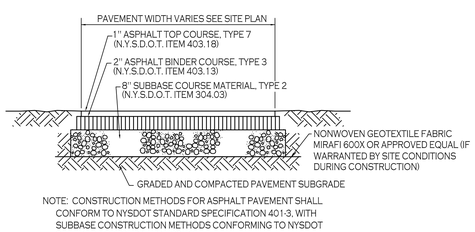



## FULL DEPTH ASPHALT PAVEMENT

## CITY OF BUFFALO STREET PAVEMENT SECTION - 11

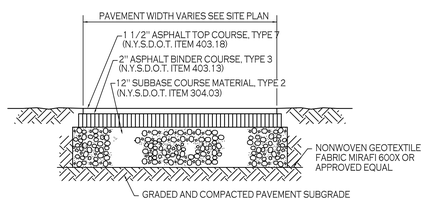



## PIPE BOLLARD - 3



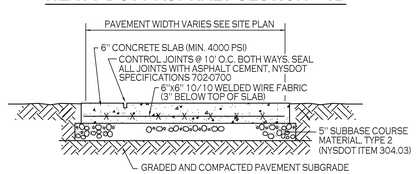

NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

## STANDARD DUTY ASPHALT SECTION - 4A



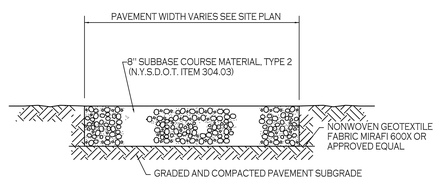

NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3. SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 502-3.

## HEAVY DUTY ASPHALT SECTION - 4B

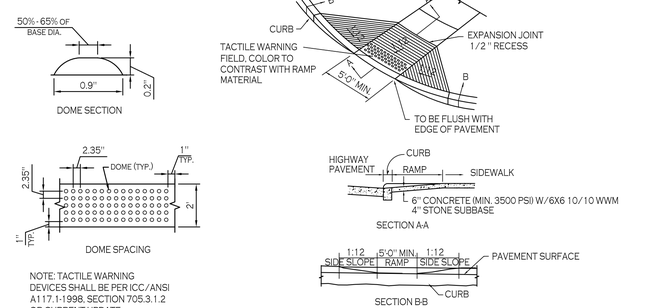



NOTE: CONCRETE PAVEMENT MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 502-3.

## EXTERIOR CONCRETE SLAB-ON-GRADE SECTION - 4C




## STONE ACCESS ROAD SECTION




## SIDEWALK CURB RAMP - 9

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

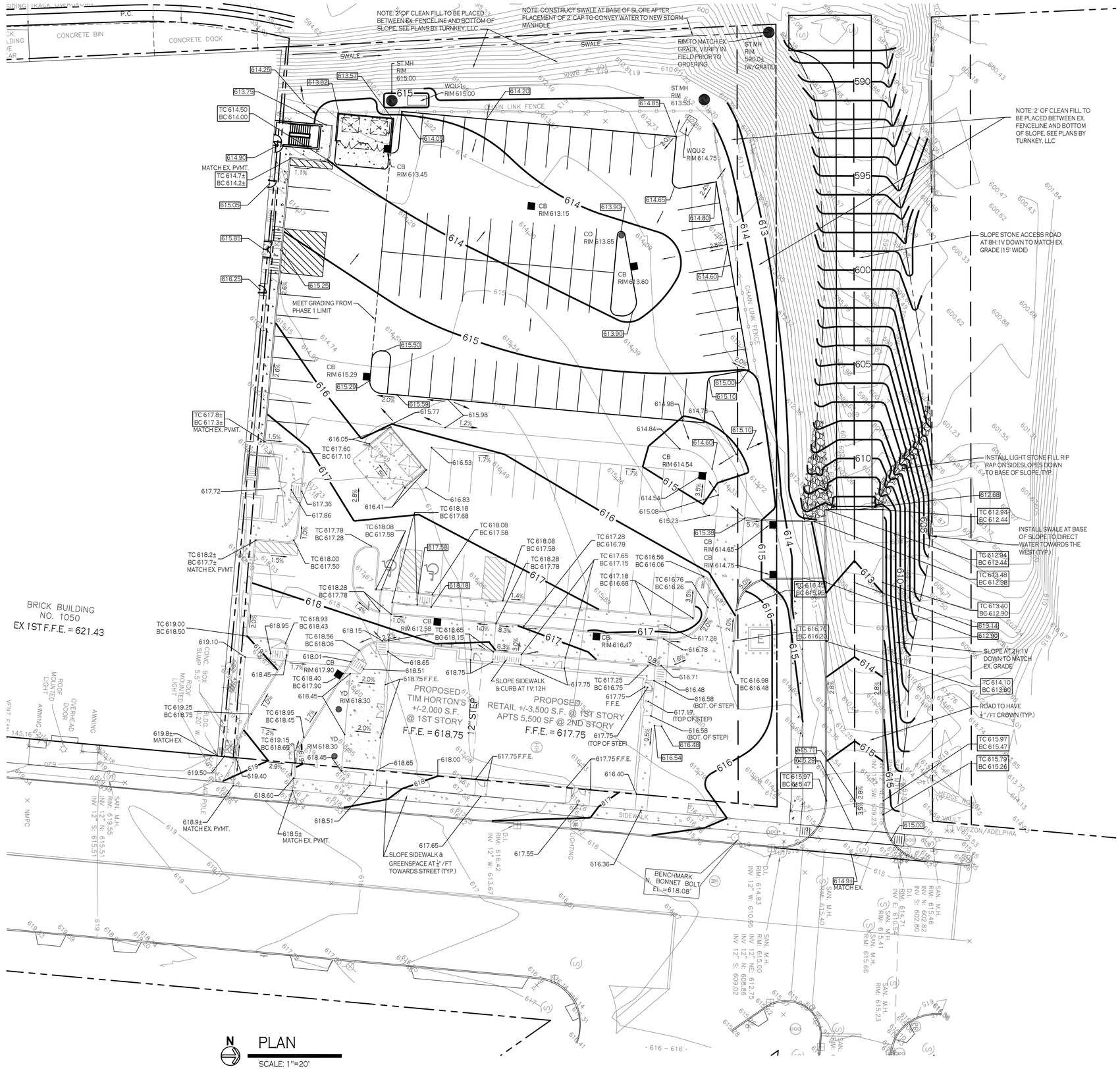
| No. | Description | Date |
|---|---|---|
| 1 | Revised curb and sidewalk details | 3/3/15 |
| 2 | Permit Set | 5/18/15 |
| 3 | Revised per DPW letter dated 6/29/15 | 7/30/15 |

PROJECT NAME:
New Construction
# Mixed Use Building
1088 Niagara Street
City of Buffalo, New York

Issued for Construction: xx.xx.xx
Municipality Submission: 2/24/15
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Details

DRAWING NO.
C-101
Project no.: 15.001




N

PLAN

SCALE: 1"=20'

GRADING LEGEND

| | |
|---|---|
| PROPOSED CONTOUR | 618 |
| PROPOSED SPOT ELEVATION | 618.00 |
| PROPOSED TOP OF CURB/ BOTTOM OF CURB | TC 618.00 BC 617.50 |
| EXISTING SPOT ELEVATION | 615.23 |
| PAVEMENT/GROUND SLOPE | |
| FINISHED FLOOR ELEVATION | F.F.E. |

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

20' 20 0 20 40Ft.

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

| No. | Description | Date |
|---|---|---|
| 1 | Rev. Treatment Structure | 2/23/15 |
| 2 | Rev. F.P./Doors per Architect & WQU | 5/12/15 |
| 3 | Permit Set | 5/18/15 |
| 4 | Added riprap on west end of Albany St Added Swale along West Line per BSA | 6/16/15 |
| 5 | Revised per DPW letter dated 6/29/15. Added Swale along West Line per BSA | 7/30/15 |
| 6 | Revised Bldg FFE, S.W., & Pvmt grades | 8/12/15 |
| 7 | Revised Niagara Street Driveway | 12/15/15 |
| 8 | Revised 1050 Niagara St Entrances | 6/8/16 |
| 9 | Revised Albany Street Extention | 6/8/16 |
| 10 | Rear Parking Lot Addition | 6/8/16 |
| 11 | | 9/14/16 |

PROJECT NAME:

New Construction

# Mixed Use Building

1088 Niagara Street
City of Buffalo, New York

Issued for Construction: xx.xx.xx
Municipality Submission: 2/18/15
Drawn by: C. Wood
Scale: As Noted

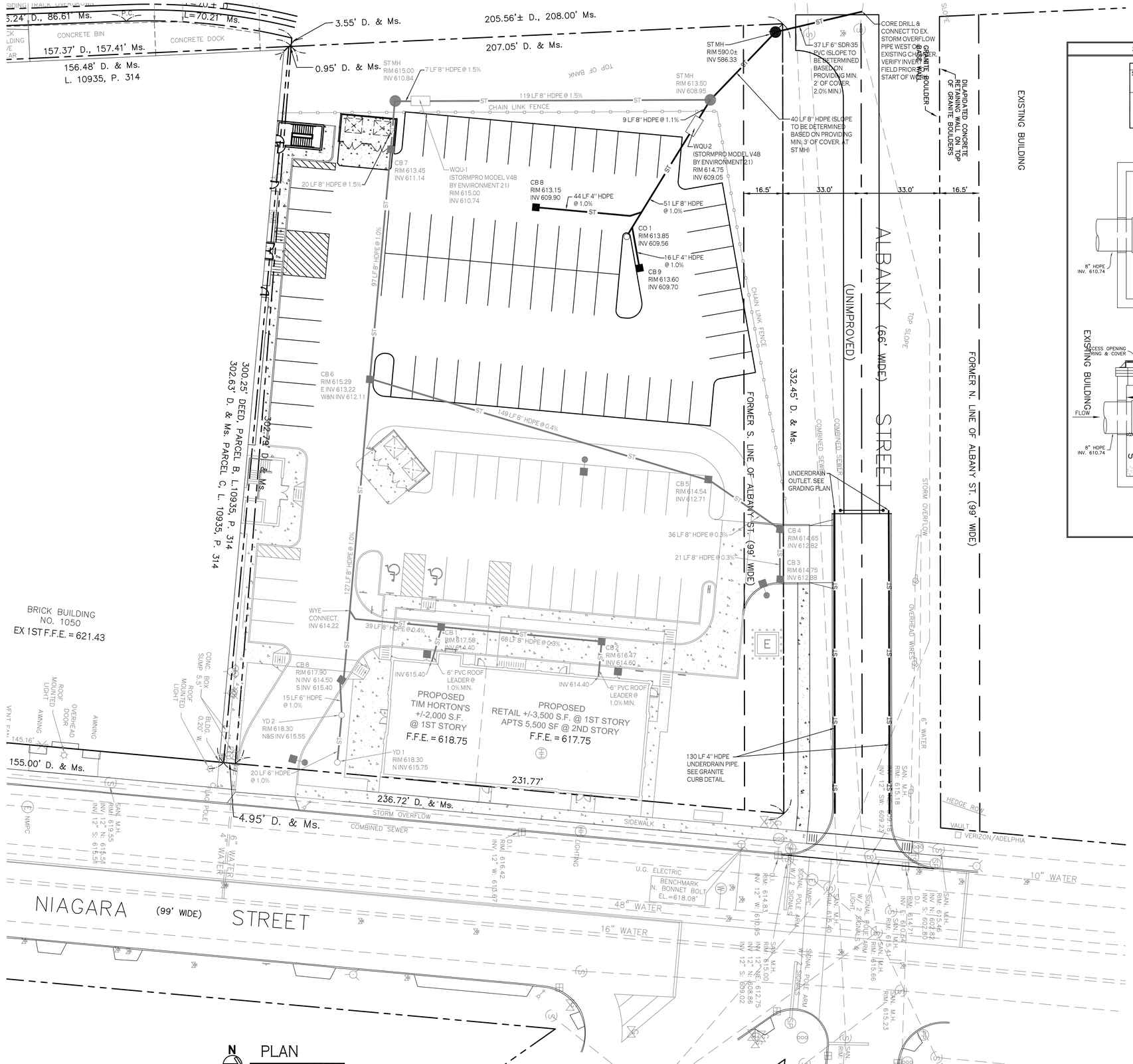
DRAWING NAME:

Grading Plan

DRAWING NO.

C-200

Project no.: 15.001

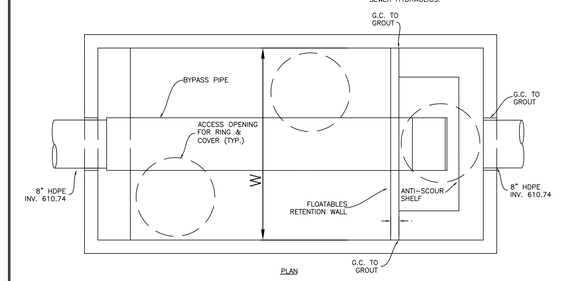



## STORMPRO V WATER QUALITY TREATMENT SYSTEM

DATE: 09/04/2014
DWG. NO.: Detail - STORMPRO V

| STORMPRO SIZING TABLE | | | | |
|---|---|---|---|---|
| STORMPRO MODEL # | W (ft.) | L (ft.) | S (ft.) | NJDEP MTFR (cfs) |
| V48 | 4 | 8 | 2.5+ | 1.29 |
| V510 | 5 | 10 | 2.5+ | 2.02 |
| V612 | 6 | 12 | 3.0+ | 2.91 |
| V816 | 8 | 16 | 4.0+ | 5.17 |
| V1020 | 10 | 20 | 5.0+ | 8.08 |

NOTES:
1. MAXIMUM OPERATING LOSS APPROXIMATELY 0.5 FT.
2. DESIGN SPECIFICATIONS CONFORM TO LATEST A.S.T.M. C478
3. DESIGN LOADING: AASHTO HS20-44 SPEC. FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS.
4. DESIGN OF FLOATABLES RETENTION WALL BASED ON ENVIRONMENT 21 ANALYSIS OF SITE-SPECIFIC STORM SEWER HYDRAULICS.






NOTE: CONTRACTOR TO PROVIDE A SITE SPECIFIC SHOP DRAWING FOR REVIEW BY THE ENGINEER PRIOR TO ORDERING THE STRUCTURE

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

20' 20 0 20 40Ft.

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

| No. | Description | Date |
|---|---|---|
| 1 | Rev. Treatment Structure | 2/23/15 |
| 2 | Rev. per BSA Comments | 5/5/15 |
| 3 | Rev. WQU Location | 5/12/15 |
| 4 | Permit Set | 5/18/15 |
| 5 | Revised per DPW letter dated 6/29/15, M'G W/ PLANNING & BSA LETTER DATED 7/9/15 | 7/30/15 |
| 6 | Revised Niagara Street Driveway | 6/8/16 |
| 7 | Revised Albany Street Extention | 7/8/16 |
| 8 | Rear Parking Lot Addition | 9/14/16 |

PROJECT NAME:
New Construction
# Mixed Use Building
1088 Niagara Street
City of Buffalo, New York

Issued for Construction: xx.xx.xx
Municipality Submission: 2/18/15
Drawn by: C. Wood
Scale: As Noted

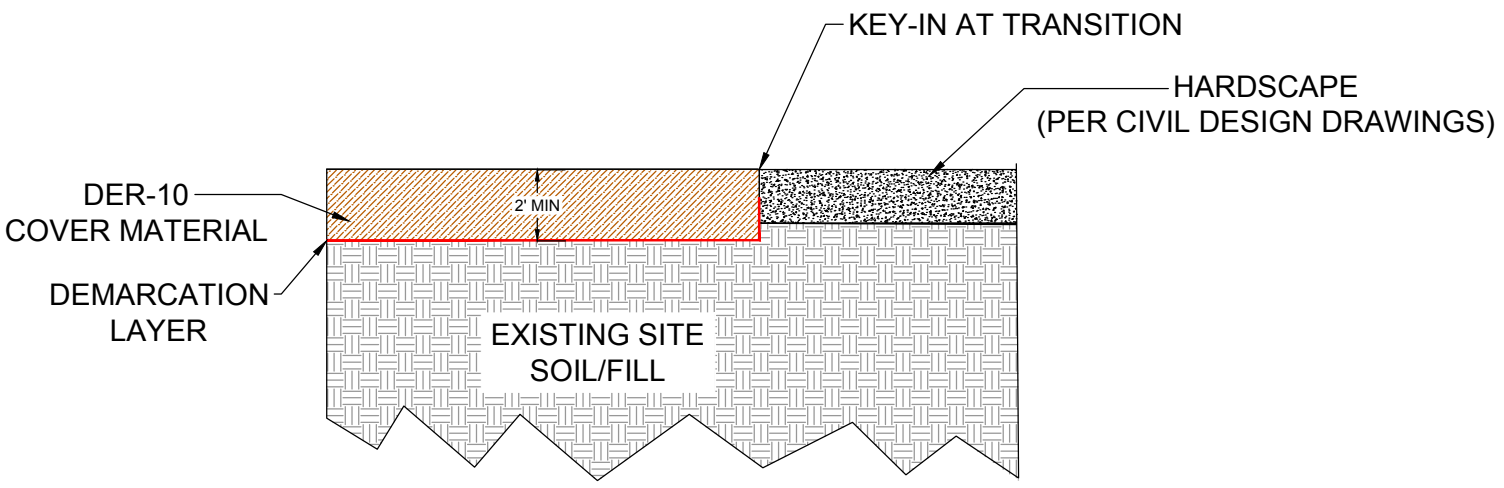
DRAWING NAME:
Storm Drainage Plan

DRAWING NO.
C-300

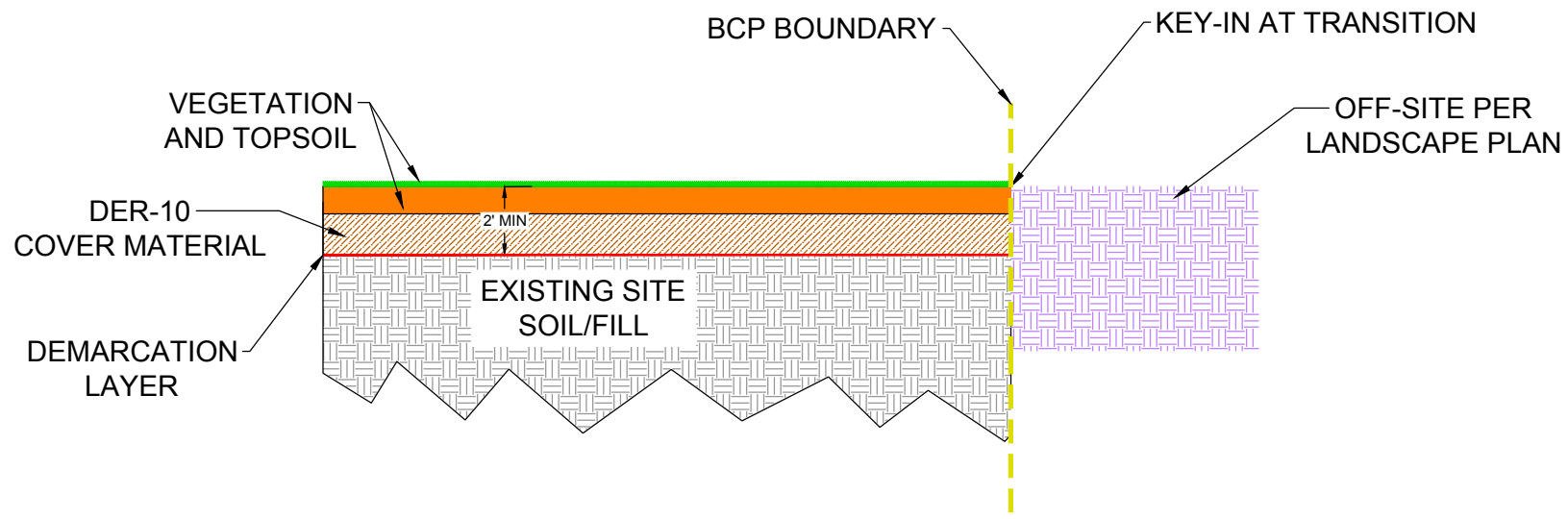
Project no.: 15.001

DATE: FEBRUARY 2017
DRAFTED BY: CCB

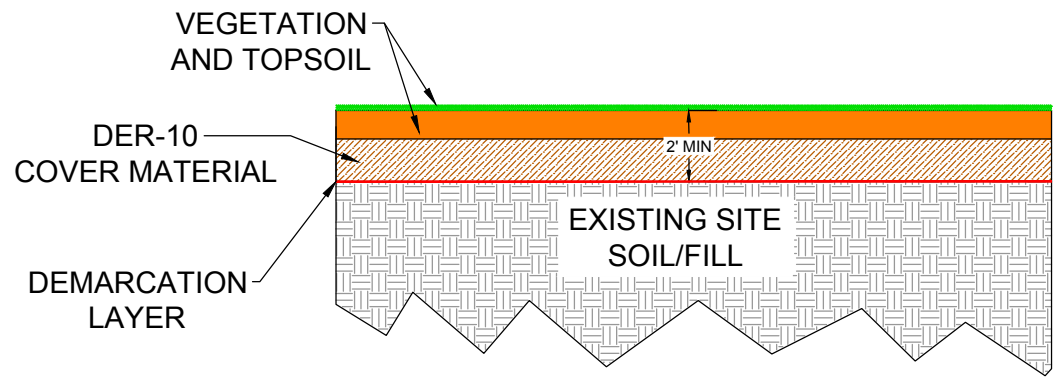
## DETAIL 1 - HARDSCAPE TO SOFTSCAPE TRANSITION




## DETAIL 2 - COVER SYSTEM TIE-IN TO SITE BOUNDARY




## DETAIL 3 - SOIL COVER




NOTES:

1. TRANSITION FROM SOFTSCAPE TO HARDSCAPE AND/OR BCP BOUNDARY REQUIRES KEYING-IN TO PROVIDE A MINIMUM 2' DER-10 COVER MATERIAL AT TRANSITION POINT.

2. ALL COVER MATERIAL MUST BE DEMONSTRATED TO MEET IMPORT CRITERIA FOR RESTRICTED RESIDENTIAL USE PER APPENDIX 5 OF THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) APPENDIX 5 OF DER-10 TECHNICAL GUIDANCE FOR SITE INVESTIGATION AND REMEDIATION, MAY 2010. SOIL SAMPLING TO BE PERFORMED BY QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) PER DER-10 AND ANALYZED BY A NEW YORK STATE DEPARTMENT OF HEALTH ELAP-CERTIFIED ENVIRONMENTAL TESTING LABORATORY. AN IMPORT REQUEST MUST BE PREPARED AND APPROVED BY THE NYSDEC BROWNFIELD CLEAN-UP PROGRAM (BCP) PROJECT MANAGER PRIOR TO IMPORT OF COVER MATERIAL TO THE SITE.

3. DEMARCATION LAYER SHALL BE COMPRISED OF NON-BIODEGRADABLE FABRIC NETTING OR PLASTIC FENCING.

BM DETAILS

# BCP COVER SYSTEM TRANSITION DETAILS

REMEDIAL ACTION WORK PLAN

1050-1088 NIAGARA STREET
BUFFALO, NEW YORK

PREPARED FOR
9271 GROUP, LLC

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
TURNKEY ENVIRONMENTAL RESTORATION, LLC
*2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599*

JOB NO.: 0136-013-005

# APPENDIX E

## ELECTRONIC COPY