

1440 Empire Boulevard

MONROE COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: C828135

Prepared for:

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SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at 1440 Empire Boulevard (hereinafter referred to as the “Site”) under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by New York State Department of Environmental Conservation (NYSDEC). The site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index #B8-0721-06-06, which was executed on September 1, 2006 and last amended on February 4, 2011.

1.1.1 General

Upstate Brownfield Partners, LLC entered into a BCA with the NYSDEC to remediate a 4.7-acre property located in Penfield, New York. This BCA required the Remedial Party, Upstate Brownfield Partners, LLC, to investigate and remediate contaminated media at the site. A figure showing the site location and boundaries of this 4.7-acre “site” is provided in Figures 1 and 2. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement (Appendix B).

After completion of the remedial work described in the Remedial Action Work Plan, some contamination was left in the subsurface at this site, which is hereafter referred to as ‘remaining contamination.’ This Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports

associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by Passero Associates, on behalf of Southpoint Cove LLC, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site.

1.1.2 Purpose

The site contains contamination left after completion of the remedial action. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Monroe County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; and (2) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes two plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; and (2) a Monitoring Plan for implementation of Site Monitoring.

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the environmental easement, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA (Index # B8-0721-06-06) for the site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The site is located in the Town of Penfield, County of Monroe, New York and is identified as part of tax parcel on the Monroe County Tax Map. The site is an approximately 4.7-acres bounded by wetlands and land adjacent to Irondequoit Bay to the north, Empire Boulevard and lands adjacent to that road to the southeast, and lands at 1420 Empire Boulevard owned by Focus Property Management LLC to the west (Figures 1 and 2). The boundaries of the site are more fully described in Appendix B: Metes and Bounds.

1.2.2 Site History

A portion of the Site was used as a sand quarry and later an unpermitted disposal area for construction and demolition (C&D) debris, from the late 1940s to the early 1980s. According to James Costello from the Town of Penfield, the site owners were taken to court by the Town of Penfield in the early 1980s to address the unpermitted waste disposal. At that time, the restoration of the “Olde Rochesterville Apartments” was occurring in the City of Rochester, and the owners allowed the Site to be used as a C&D disposal site as part of that reconstruction project.

A Phase I Environmental Site Assessment (ESA) was completed on the Site by Sear-Brown in December 2000. At the time that Sear-Brown conducted its work, the acreage of the property at 1440 Empire Boulevard totaled approximately 27 acres. The Phase I ESA revealed evidence of numerous recognized environmental conditions (RECs), including drums, fill and C&D debris. In February 2001, Sear-Brown conducted a Phase II Environmental Test Pit Program (ETP) which identified semivolatile organic compounds (SVOCs), metals, polychlorinated biphenyl (PCB) Aroclor 1254, and volatile organic compounds (VOCs), all above their respective TAGM #4046 RSCO, as well as ash fill.

The property at 1440 Empire was acquired by 1440 Empire Boulevard Development Corporation in 2002. Passero Associates first investigated the Site in November and December, 2002. SVOCs and the PCB Aroclor 1254 were identified in fill soil on the western portion of the Site at concentrations that exceed the Soil Cleanup Objectives (SCOs) set forth in NYSDEC Part 375-6.8(a). These findings were confirmed by the Remedial Investigation completed in 2010, which detected exceedances of the SCOs for SVOCs, Aroclor 134 and metals including lead.

In 2003, the 10-acre western portion of the property was subdivided from 1440 Empire Boulevard and sold to Focus Property Management, LLC. In 2010, the site was acquired by Upstate Brownfield Partners LLC. In late 2012, the site was acquired by

Southpoint Cove, LLC, which is developing an apartment complex on the site and adjacent property in tandem with the site remediation under the BCP.

1.2.3 Geologic Conditions

The Monroe County Generalized Soil Map indicates that the site soils are, “soils formed in Lake-Laid-Deposits of silt and very fine sand.” The Passero Associates 2002 Phase II investigation revealed site soils to be silt, fine sand, and fill material consisting of C&D debris. The area soil classification is Sands, and Sands with Fine and Silty Sand. The Department of Agriculture, Natural Resources Conservation Services (NRCS) indicates that the hydraulic conductivity for these soil types typically ranges from 14-42 µm/sec. Bedrock underlying the Site is classified as shale and siltstone of the Upper Ordovician.

Queenston Formation (Geologic Map of New York, 1970, Finger Lakes Sheet). Groundwater flow direction is presumed to be in a westerly direction toward Irondequoit Bay, based on a review of surface topography evaluated on the United States Geological Survey (USGS) East Rochester Quadrangle Map and observations made at the Site. Groundwater elevation measurements collected in September 2010 confirm a westerly groundwater flow direction.

The east shore of Irondequoit Bay is approximately 700 feet west of the Site. The National Wetlands Inventory indicates that the shore of Irondequoit Bay is a mapped state and federal wetland. According to Mr. Costello, the NYSDEC has staked out the wetland boundaries.

There are no public water supply wells located within one-half mile of the Site (EPA/Office of Drinking Water). There are also no private wells, as the area is serviced by Monroe County Water Authority (MCWA).

A geologic section is shown in Figure 3.

A groundwater flow figure is shown in Figure 4.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the site. The results of the RI are described in detail in the following Remedial Investigation Report (RIR):

Passero Associates, Brownfield Cleanup Program (BCP) Final Remedial Investigation Report (December 2011).

Generally, the RI determined that Site soils had SVOCs, PCBs, pesticides and metals at concentrations greater than Part 375 Unrestricted and Restricted Use, Restricted Residential SCOs, but no significant contamination of groundwater, soil vapor or surface soils and no underground storage tanks.

A summary of site conditions when the RI was performed in 2009 and 2010 is included in Table 1

Table 1: 2009 - 2010 Remedial Investigation Contamination Summary

Sample ID	AOC	Tables	Samples Taken	Constituents Detected	Exceeds Part 375-6.8(a): Unrestricted Use SCOs	Exceeds Part 375-6.8(b): Restricted Use, Restricted Residential SCOs	Exceeds Part 375 6.8(b) Protection of Groundwater SCOs	Same Compounds Detected in Groundwater
BOREHOLES								
BH-1 (8'-10')	Native	7, 10, 13, 16, 19	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Metals	Metals			
BH-1 (28'-30')	Native	7, 10, 13, 16, 19	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, Metals	Metals			
BH-1 (63'-30')	Native	7, 10, 13, 16, 19	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Metals	Metals			
BH-2 (63'-65')	2	7, 10, 13, 16, 19	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Pesticides, Metals	VOCs (acetone only), Metals		VOCs (acetone only)	VOCs (acetone only)
BH-3 (4'-6')	1	7, 10, 13, 16, 19	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides,	Pesticides, Metals	Metals	Metals	Metals
BH-3 (59'-61')	1	7, 10, 13, 16, 19	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Metals	VOCs (acetone only),Metals		VOCs (acetone only)	VOCs (acetone only)
BH-4 (8'-10')	2	7, 10, 13, 16, 19	VOCs, SVOCs, Pesticides, PCBs, Metals	Pesticides, Metals	Metals			
BH-4 (28'-30')	2	7, 10, 13, 16, 19	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Metals	Metals			
BH-5 (8'-10')	2	7, 10, 13, 16, 19	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, PCBs, Metals	Pesticides, Metals			
BH-5 (34'-36')	2	7, 10, 13, 16, 19	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Pesticides, Metals	Metals			
GEOPROBE®								
GP-1 (4'-8')	Native	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Metals	VOCs (acetone only), Metals		VOCs (acetone only)	VOCs (acetone only)
GP-2 (0'-4')	2	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, PCBs,	VOCs, (acetone only), Pesticides, PCBs, Metals	Metals	VOCs (acetone only), Pesticides, Metals	VOCs (acetone only), Metals
GP-3 (4'-8')	2	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	Metals	Metals			
GP-4 (4'-8')	1	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, PCBs, Metals	SVOCs, PCBs,	SVOCs, Pesticides, metals	Pesticides, metals
GP-5 (4'-8')	1	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs (acetone only), SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, PCBS	VOCs (acetone only), SVOCs, Pesticides	VOCs (acetone only)
GP-6 (8'-12')	1	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, PCBs, Metals	VOCs (acetone only), PCBs, Metals	PCBS	VOCs (acetone only)	VOCs (acetone only)
GP-7 (0'-4')	1	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, PCBs, Metals	Pesticides, PCBs, Metals	Pesticides, PCBS, Metals	SVOCs, PCBs, Pesticides, Metals	Metals
GP-8 (0'-4')	1	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, Metals	SVOCs, Metals	SVOCs	SVOCs	
GP-9 (4'-8')	1	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, PCBs, Metals	SVOCs		
GP-10 (4'-8')	1	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Pesticides, Metals	Pesticides, Metals	Metals	Metals	Metals
GP-11 (4'-8')	2	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Pesticides, Metals	Pesticides, Metals			
GP-12 (0'-4')	2	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Metals	Metals			
GP-13 (4'-8')	2	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, Metals	VOCs(acetone only), Pesticides, Metals		VOCs (acetone only)	VOCs (acetone only)
GP-14 (0'-4')	Native	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Metals	Metals			
GP-15 (0'-4')	Native	8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Metals	Metals			
Field Duplicate		8,11,14,17,20	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, Metals	VOCs (acetone only), SVOCs, Metals	SVOCs, Metals	VOCs (acetone only), SVOCs, Metals	VOCs (acetone only), Metals
TEST PITS								
TP-1	Native		None					
TP-2	2		None					
TP-3	2		None					
TP-4	1		None					
TP-5	2		None					
TP-6	2		None					
TP-7	2	9,12,15,18,21	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, PCBs, Metals	SVOCs, PCBS	VOCs, Pesticides, PCBs	
TP-8			None					
TP-9	Native		None					
TP-10	1		None					
TP-11	1		None					
TP-12	1		None					
TP-13	2		None					
TP-14	2		None					
TP-15	Native		None					
TP-16	2		None					
TP-17	Native		None					
TP-18	2		None					

Table 1: 2009 - 2010 Remedial Investigation Contamination Summary

Sample ID	AOC	Tables	Samples Taken	Constituents Detected	Exceeds Part 375-6.8(a): Unrestricted Use SCOs	Exceeds Part 375-6.8(b): Restricted Use, Restricted Residential SCOs	Exceeds Part 375 6.8(b) Protection of Groundwater SCOs	Same Compounds Detected in Groundwater
TP-19	2		None					
TP-20	2		None					
TP-21	2		None					
TP-22	2		None					
TP-23	2		None					
SURFACE SOILS								
Surface-1	2	22, 23, 24, 25	SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, PCBs, Metals	Pesticides, Metals			
Surface-2	2	22, 23, 24, 25	SVOCs, Pesticides, PCBs, Metals	Pesticides, PCBs, Metals	Pesticides, Metals			
Surface-3	2	22, 23, 24, 25	SVOCs, Pesticides, PCBs, Metals	SVOCs, Metals	Metals			
Surface-4	Native	22, 23, 24, 25	SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, PCBs, Metals	Pesticides, PCBs, Metals			
Surface-5	1	22, 23, 24, 25	SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, PCBs, Metals	SVOCs	SVOCs, Metals	Metals
Surface-6	1	22, 23, 24, 25	SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, PCBs, Metals	SVOCs	Metals	Metals
Surface-7	1	22, 23, 24, 25	SVOCs, Pesticides, PCBs, Metals	SVOCs, Metals	Pesticides, Metals			
Surface-8	1	22, 23, 24, 25	SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, Metals	SVOCs, Pesticides, Metals	SVOCs	SVOCs	
Surface-9	2	22, 23, 24, 25	SVOCs, Pesticides, PCBs, Metals	Pesticides, PCBs, Metals	Pesticides, Metals			
Surface-10	2	22, 23, 24, 25	SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, Metals	Pesticides, Metals			
MONITORING WELLS							Exceeds 6NYCRR Part 703 Groundwater and/or Surface water Quality Standards (µg/L)	
MW-1 (1/28/10)	Native	26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Pesticides, Metals			Metals	
MW-1 (9/23/10)	Native	26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, Metals			VOCs, Pesticides, Metals	
MW-2 (1/29/10)	2	26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, Metals			Metals	
MW-2 (9/22/10)	2	26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Pesticides, Metals			Pesticides, Metals	
MW-3 (1/28/10)	1	26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, Metals			VOCs, Metals	
MW-3 (9/22/10)	1	26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, Metals			Pesticides, Metals	
MW-4 (1/28/10)	2	26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Metals			Metals	
MW-4 (9/23/10)	2	26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, Metals			Pesticides, Metals	
MW-5 (1/29/10)	2	26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Pesticides, Metals			Metals	
MW-5 (9/22/10)	2	26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Metals			Metals	
Field Duplicate (1/28/10)		26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, Metals			Metals	
Field Duplicate (9/22/10)		26, 27, 28, 29, 30	VOCs, SVOCs, Pesticides, PCBs, Metals	SVOCs, Pesticides, Metals			Pesticides, Metals	
SURFACE WATER								
Surface Water	2	31, 32, 33, 34, 35	VOCs, SVOCs, Pesticides, PCBs, Metals	VOCs, SVOCs, Pesticides, Metals			Metals	

Soil

The historical sand quarry was excavated to approximately 35 feet below the present ground level in the general area of BH-3, later filled with construction debris. This was surmised from well logs from location MW-3 in which brick, wood and rubber in the interval between 20 and 35 feet was observed. The fill material appears to have been covered with the native soils at various intervals. In sum, a total estimated volume of 109,230 cubic yards of fill and impacted fill is present at the Site.

Site soils in two concentric Areas of Concern, AOC-1 and AOC-2, were determined to have SVOCs, PCBs, pesticides and metals (including lead) present at concentrations greater than Part 375 Unrestricted and Restricted Use, Restricted Residential SCOs. During the RI and previous testing in 2002, several areas within the Site were identified as having a PCB contamination level of greater than 10 ppm. These included TP-2A (28.0 ppm), TP-5A (83.9 ppm), TP-7 (13.0 ppm) and GP-7 (18.1 ppm). Furthermore, the RIR identified three areas, BH-3 (3450 ppm), GP-2 (2140 ppm) (which is slightly off-site) and GP-10 (1060 ppm) as having lead concentrations exceeding the restricted residential SCOs (400 ppm or higher) set forth in 6 NYCRR Part 375-6.8(b). Figures 7 through 15 of the Remedial Investigation Report (Passero Associates, December 29, 2011) show the sample points and Part 375 SCO exceedances and Areas of Concern (AOC), and Table 1 summarizes the soil contamination data.

Site-Related Groundwater

The direction of groundwater flow has been measured to be toward Irondequoit Bay to the west. Groundwater samples collected from the Site contain chlorobenzene, alpha- and delta-BHC, and various metals at concentrations greater than the default, numeric Part 703 Groundwater Quality Standards. While chlorobenzene was reported at a concentration of 5.06 µg/L in MW-3 during the January 2010 sampling event and 5.35 µg/L in MW-1 in the September 2010 sampling event, which barely exceeded the Groundwater Quality Standard of 5 µg/L, and does not appear to indicate a significant release to groundwater.

Small amounts of pesticides alpha-BHC and delta-BHC, slightly greater than the Groundwater Quality Standards, were found in groundwater. Since historical aerial photographs indicate that the land upgradient to the east of the Site was historically utilized as orchards, these pesticides are interpreted as being due to historical pesticide application to the nearby orchards, and not as a release on the Site.

Metal concentrations were elevated in groundwater collected from all five monitoring wells when compared to Part 703 Groundwater Quality Standards, but these concentrations appear to be a natural occurrence, since elevated metals were found in both upgradient and downgradient monitoring wells.

The concentrations of any of these parameters at the assumed discharge point in Irondequoit Bay are presumably much lower than what was found on Site due to natural attenuation and dilution processes. The low contaminant concentrations found in the groundwater do not indicate a significant groundwater plume emanating from the Site. Figure 16 of the Remedial Investigation Report (Passero Associates, December 29, 2011) shows the sample points and Part 703 Groundwater exceedances, and Table 1 summarizes the groundwater contamination data.

1.4 SUMMARY OF REMEDIAL ACTIONS

The site was remediated in accordance with the remedy selected by the NYSDEC in the NYSDEC Decision Document dated December 2012. Soil Cleanup Objectives (SCOs) were designed to achieve a Track 4 Remediation allowing for Restricted Residential Use of the Site. The factors considered during the selection of the remedy are those listed in 6NYCRR 375-1.8 and NYSDEC Policy CP-51/Soil Cleanup Guidance.

The following is a summary of the Remedial Actions performed at the site:

1. Excavation of soil/fill exceeding Restricted Residential SCOs (400 ppm) for lead, as defined by 6 NYCRR Part 375-6.8 and soil containing polychlorinated biphenyls at concentrations exceeding 1 ppm in shallow soil (0-2 feet) and 10 ppm s in subsurface soil, based on NYSDEC Policy CP-51/Soil Cleanup Criteria;
2. Construction and maintenance of a soil cover system consisting of a minimum of two feet of clean soil cover, which meets the SCOs for cover materials, to prevent human exposure to remaining contaminated soil/fill remaining at the site (Figure 6)
3. Execution and recording of an Environmental Easement to restrict land and groundwater use and prevent future exposure to any contamination remaining at the site;

4. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) maintenance and (4) reporting;

Figure 9 shows the Remedial Action Work Plan; Figures 10 and 11 show the contamination remaining at the Site.

Remedial activities were completed at the site April 5, 2014.

1.4.1 Removal of Contaminated Materials from the Site

All soils with PCB levels at or above 10 ppm or lead levels at or above 400 ppm were removed and disposed of as solid or hazardous waste.

A list of the soil cleanup objectives (SCOs) for the primary contaminants of concern (COCs) and applicable land use for this site is provided in Table 2.

A figure showing areas where excavation was performed is shown in Figure 5.

Table 2: Site Specific Soil Cleanup Objectives	
6 NYCRR Part 375-6.8 (b): Restricted Use, Restricted Residential SCOs	
Lead	400 ppm
NYSDEC Policy CP-51/ Soil Cleanup Criteria	
PCBs (0-2 feet)	1 ppm
PCBs (subsurface)	10 ppm

1.4.2 Site-Related Treatment Systems

No long-term treatment systems were installed as part of the site remedy.

1.4.3 Remaining Contamination

Contamination remains under the cover system, which consists of either concrete slabs and asphalt paving systems (buildings, roadways, parking lots, etc.) at least six inches thick, or else a demarcation layer (orange snow fence) and two feet of clean soil. The principal remaining contaminants include PCBs in soil at levels below 10 ppm, and lead below 400 ppm. Table 3 and Figure 10 summarize the results of all soil samples remaining at the site after completion of Remedial Action that exceed the Track 1 (unrestricted) SCOs.

Table 3: Summary of Contamination Remaining at the Site		
Sample ID	Exceeds Part 375-6.8(a): Unrestricted Use SCOs	Exceeds Part 375-6.8(b): Restricted Use, Restricted Residential SCOs
Boreholes		
BH-1	Metals	
BH-2	Acetone, Metals	
BH-4	Metals	
BH-5 (8'-10')	Pesticides, Metals	
BH-5 (34'-36')	Metals	
Geoprobe		
GP-1	Acetone, Metals	
GP-3	Metals	
GP-4	SVOCs, Pesticides, PCBs, Metals	SVOCs, PCBs
GP-5	Acetone, PCBs, Metals	SVOCs, Pesticides, PCBs
GP-6	Acetone, PCBs, Metals	PCBs
GP-8	SVOCs, Metals	SVOCs
GP-9	SVOCs, Pesticides, PCBs, Metals	SVOCs
GP-11	Pesticides, Metals	
GP-12	Metals	
GP-13	Acetone, Pesticides, Metals	
GP-14	Metals	
GP-15	Metals	
Test Pits		

TP-3A	SVOCS, PCBs	SVOCs
TP-4A	SVOCS, PCBs	SVOCs
TP-3B	SVOCS	SVOCs
TP-4B	SVOCS, PCBs	SVOCs
TP-6B	SVOCS, PCBs	SVOCs
TP-8B	SVOCS	SVOCs
TP-9B	SVOCS, PCBs	SVOCs
TP-10B	SVOCS, PCBs	SVOCs
Surface Soils		
Surface-1	Pesticides, Metals	
Surface-2	Pesticides, Metals	
Surface-3	Metals	
Surface-4	Pesticides, PCBs, Metals	
Surface-5	SVOCs, Pesticides, PCBs, Metals	SVOCs
Surface-6	SVOCs, Pesticides, PCBs, Metals	SVOCs
Surface-8	SVOCs, Pesticides, Metals	SVOCs
Surface-9	Pesticides, Metals	
Surface-10	Pesticides, Metals	

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated soil exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

Exposure to remaining contamination in soil/fill at the site is prevented by a soil cover system placed over the site. This cover system is comprised of a minimum of 24 inches of clean soil, asphalt pavement, concrete-covered sidewalks, and concrete building slabs. The Excavation Work Plan that appears in Appendix A outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection and maintenance of this cover are provided in the Monitoring Plan included in Section 4 of this SMP. Figure 9 shows the Remedial Action Work Plan and the extent of the cover system.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

The cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls is required by the RAWP to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to **restricted residential** uses only. Adherence to these Institutional Controls on the site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns;
- All Engineering Controls must be operated and maintained as specified in this SMP;
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP;
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP.

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The property may only be used for **restricted residential** use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as unrestricted residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Vegetable gardens and farming on the property are prohibited;
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Work Plan

The site has been remediated for **restricted residential** use. Any future intrusive work that will penetrate the soil cover or cap, or encounter or disturb the remaining contamination, including any modifications or repairs to the existing cover system will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix A to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the site. A sample HASP is attached as Appendix D to this SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. A CAMP is included as Appendix E. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A-1 of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

The site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement; and
- If site records are complete and up to date;

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Brownfield Cleanup Agreement (BCA), 6 NYCRR Part 375, and/or Environmental Conservation Law.
- 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Brownfield Cleanup Agreement (BCA), and all approved work plans and reports, including this SMP
- Within 15 days after the transfer of all or part of the site, the new owner’s name, contact representative, and contact information will be confirmed in writing.

2.5 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner or Owner’s representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to Gary Passero, P.E. These emergency contact lists must be maintained in an easily accessible location at the site.

Table 4: Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480

	(3 day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Table 5: Other Contact Numbers

Gary Passero, P.E.	(585) 325-1000 (office) (585) 315-8159 (cell)
Robert Morgan	(585) 419-9630
Alan J. Knauf	(585) 546-8430 (office) (585) 370-9362 (cell)
NYSDEC Region 8 Division of Environmental Remediation	(585) 226-5349

* Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: 1440 Empire Boulevard, Webster, New York 14580

Nearest Hospital Name: Rochester General Hospital

Hospital Location: 1425 Portland Avenue | Rochester, NY 14621

Hospital Telephone: (585) 922-4000

Directions to the Hospital:

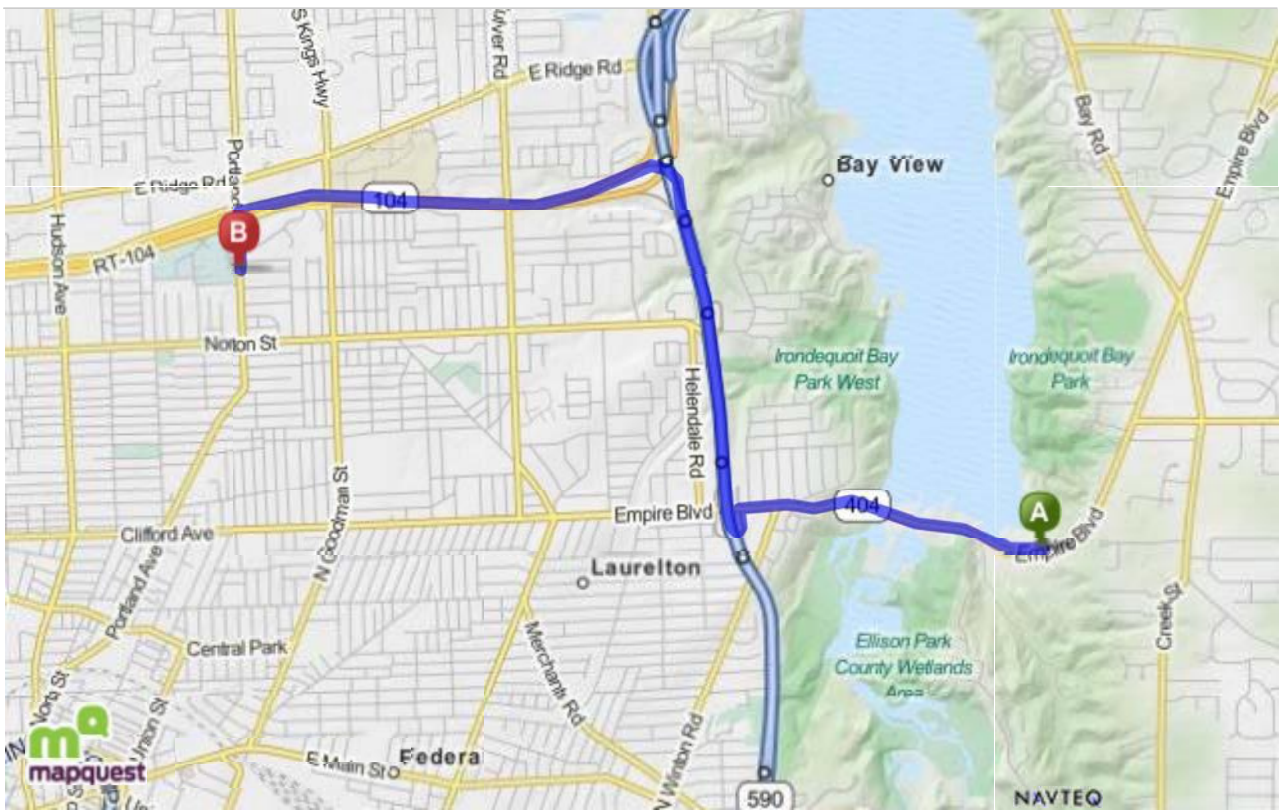
- 1. Turn right onto Empire Boulevard westbound
- 2. Turn left onto ramp onto Route 590 northbound
- 3. Bear right onto Route 104 westbound
- 4. Exit on right onto Portland Ave.
- 5. Turn left onto Portland Ave. southbound
- 6. Turn right into Rochester General Hospital at 1425 Portland Ave.

Total Distance: 5.28 miles

Total Estimated Time: 9 minutes

Figure 7

Map Showing Route from the site to the Hospital:



2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 4). The list will also be posted prominently at the site and made readily available to all personnel at all times.

Given the nature of the contaminants at the Site, neither spills, nor the need for evacuation, are anticipated. However, if a spill is detected, the NYSDEC Spill Hotline will be called for any reportable spill at (800) 457-7362, as well as the Environmental Professional, Gary Passero, P.E. or (585) 325-1000 (office) or (585) 315-8159 (cell).

Any amendments to this Contingency Plan will be submitted to NYSDEC, and attached to this Site Management Plan.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, the soil cover system, and all affected site media identified below. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Reporting requirements;
- Annual inspection and periodic certification.

Monitoring programs are summarized in Table 6 and outlined in detail in Sections 3.2 and 3.3 below.

Table 6: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Cover Inspection	Annual	Soils	Visual Inspection
Site-Wide Inspection	Annual	Entire Site	Visual Inspection

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH

3.2 SOIL COVER SYSTEM MONITORING

On an annual basis, the soil cover system, consisting of either asphalt, a concrete building slab, or a minimum of two feet of clean soil cover to prevent human exposure to remaining contaminated soil/fill remaining at the site, will be visually inspected by a Professional Engineer.

3.3 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (Appendix F). The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that site records are up to date.

3.4 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular inspections will be kept on file on-site. All forms, and other relevant reporting formats used during the inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the inspection program deliverables are summarized in Table 7 below.

Table 7: Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Cover Inspection	Annual
Site-Wide Inspection	Annual

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

4.0 OPERATION AND MAINTENANCE PLAN

The site remedy does not rely on any mechanical systems, such as sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP.

Information on non-mechanical Engineering Controls (i.e. soil cover system) is provided in Section 3 - Engineering and Institutional Control Plan.

5. INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate form contained in Appendix F. Additionally, a general site-wide inspection form will be completed during the site-wide inspection (see Appendix F). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and FER.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period, a Professional Engineer licensed to practice in New York State will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- Use of the site is compliant with the environmental easement;
- The engineering control systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices; and
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Gary Passero, P.E., of 100 Liberty Pole Way, Rochester, NY 14604, am certifying as Owner’s Designated Site Representative for the site.

The signed certification will be included in the Periodic Review Report described below.

Every five years the following certification will be added:

- The assumptions made in the qualitative exposure assessment remain valid.

The signed certification will be included in the Periodic Review Report described below.

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every **fifth** year, beginning eighteen months after the Certificate of Completion is issued. The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

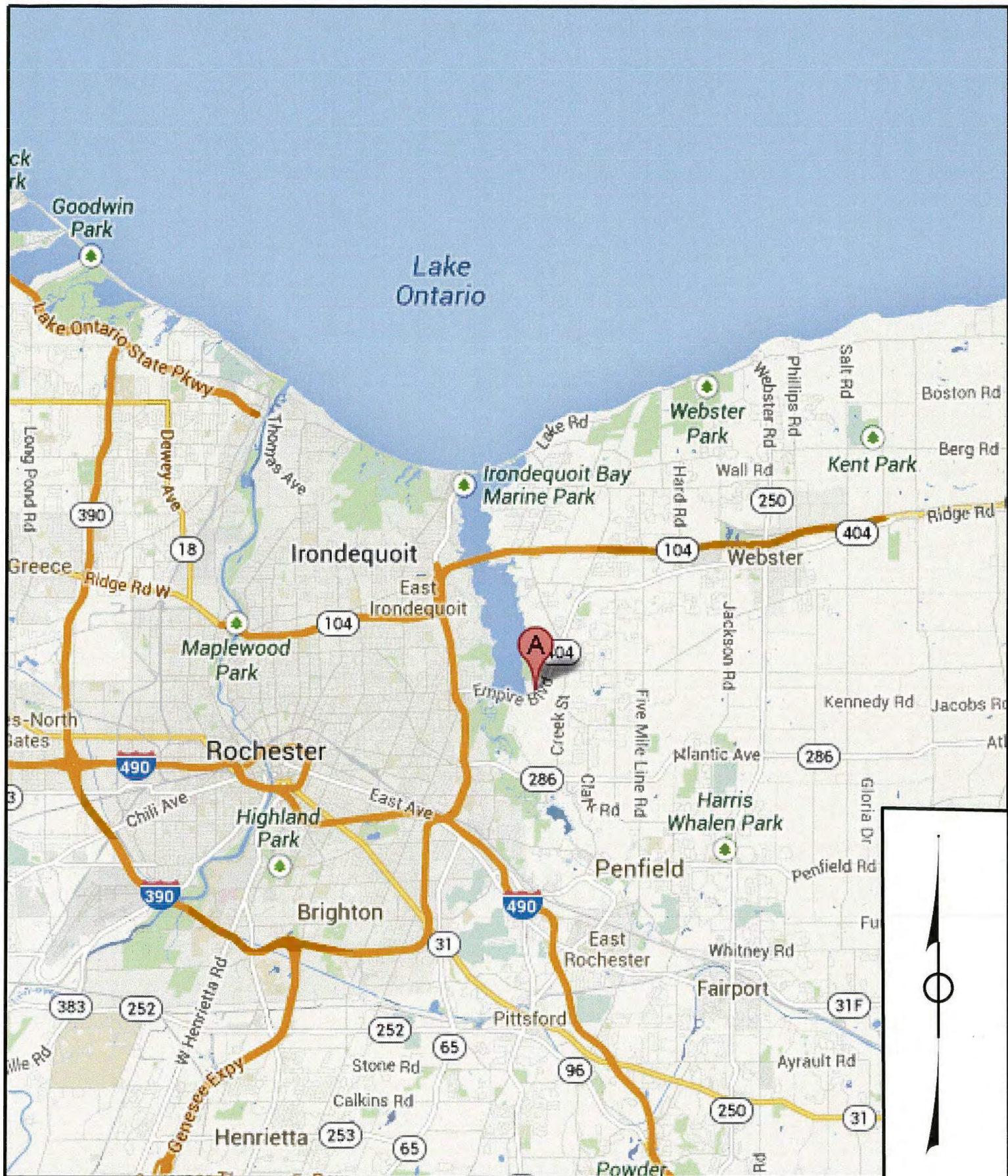
- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- A site evaluation, which includes the following:
 - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
 - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
 - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Central Office and Regional Office in which the site is located, and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

Figures



A - PROJECT LOCATION

TITLE:

FIGURE 1 - PROJECT SITE LOCATION MAP

1440 EMPIRE BOULEVARD
TOWN OF WEBSTER
STATE OF NEW YORK 14580

PROJECT ENGINEER:

RAVI ENGINEERING & LAND SURVEYING, P.C.
CONSULTING ENGINEERS & SURVEYORS
2110 SOUTH CLINTON AVENUE, SUITE 1
ROCHESTER, NEW YORK 14618
TL: (585) 223-3660 FX: (585) 223-4250

DRAWN:

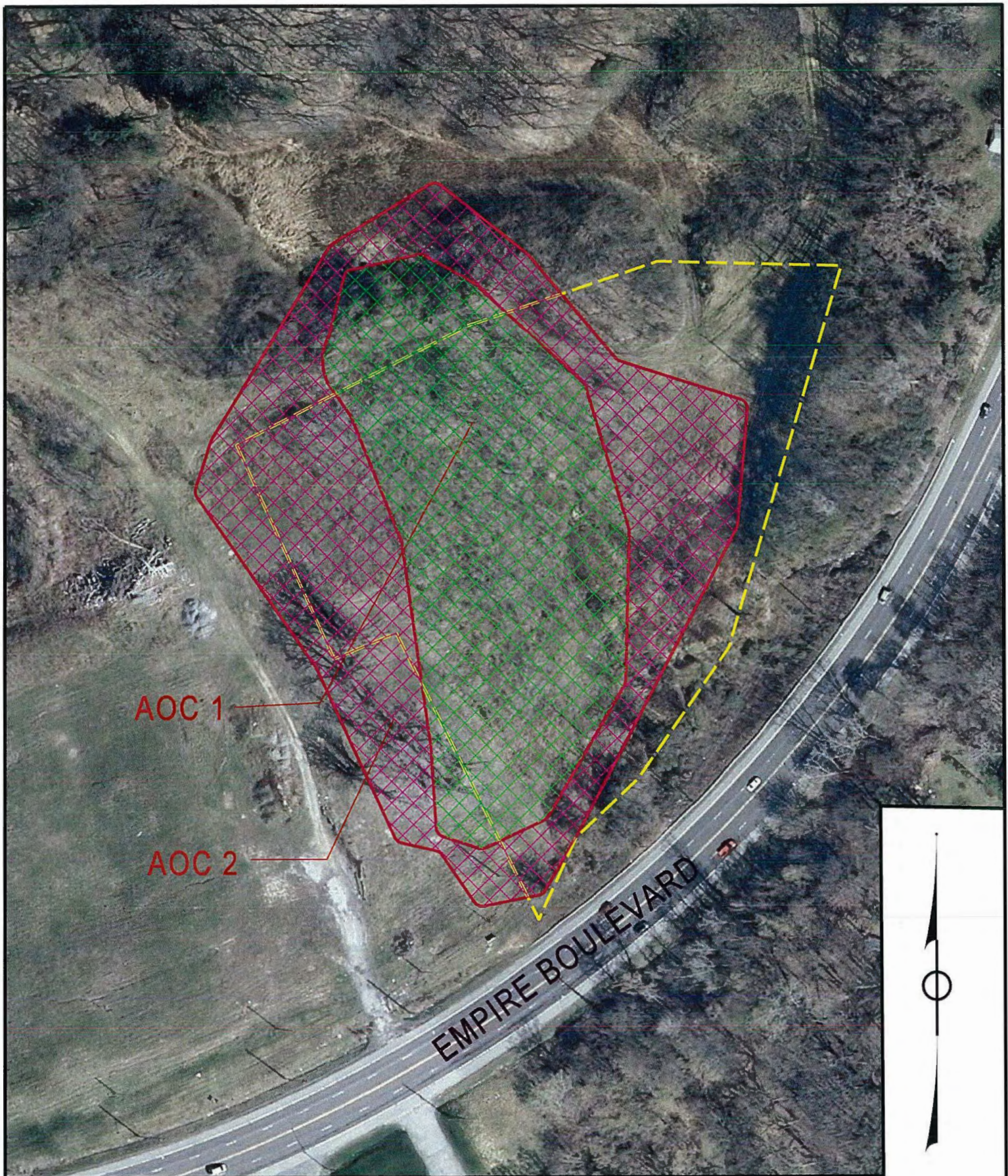
RJB
CHKD
PSM

DATE

12/5/13
SCALE
NTS

PROJECT NO.

45-13-002-00




--- BROWNFIELD PROJECT BOUNDARY LINE

TITLE:

FIGURE 2 - PROJECT SITE MAP

1440 EMPIRE BOULEVARD
TOWN OF WEBSTER
STATE OF NEW YORK 14580

PROJECT ENGINEER:

RAVI ENGINEERING & LAND SURVEYING, P.C. 
CONSULTING ENGINEERS & SURVEYORS
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DRAWN:

RJB
CHKD
PSM

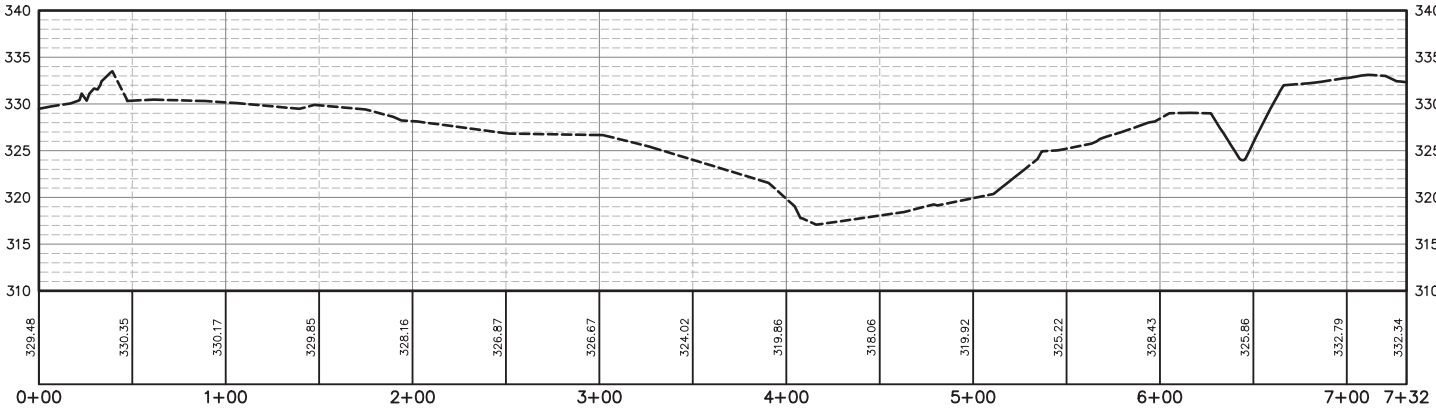
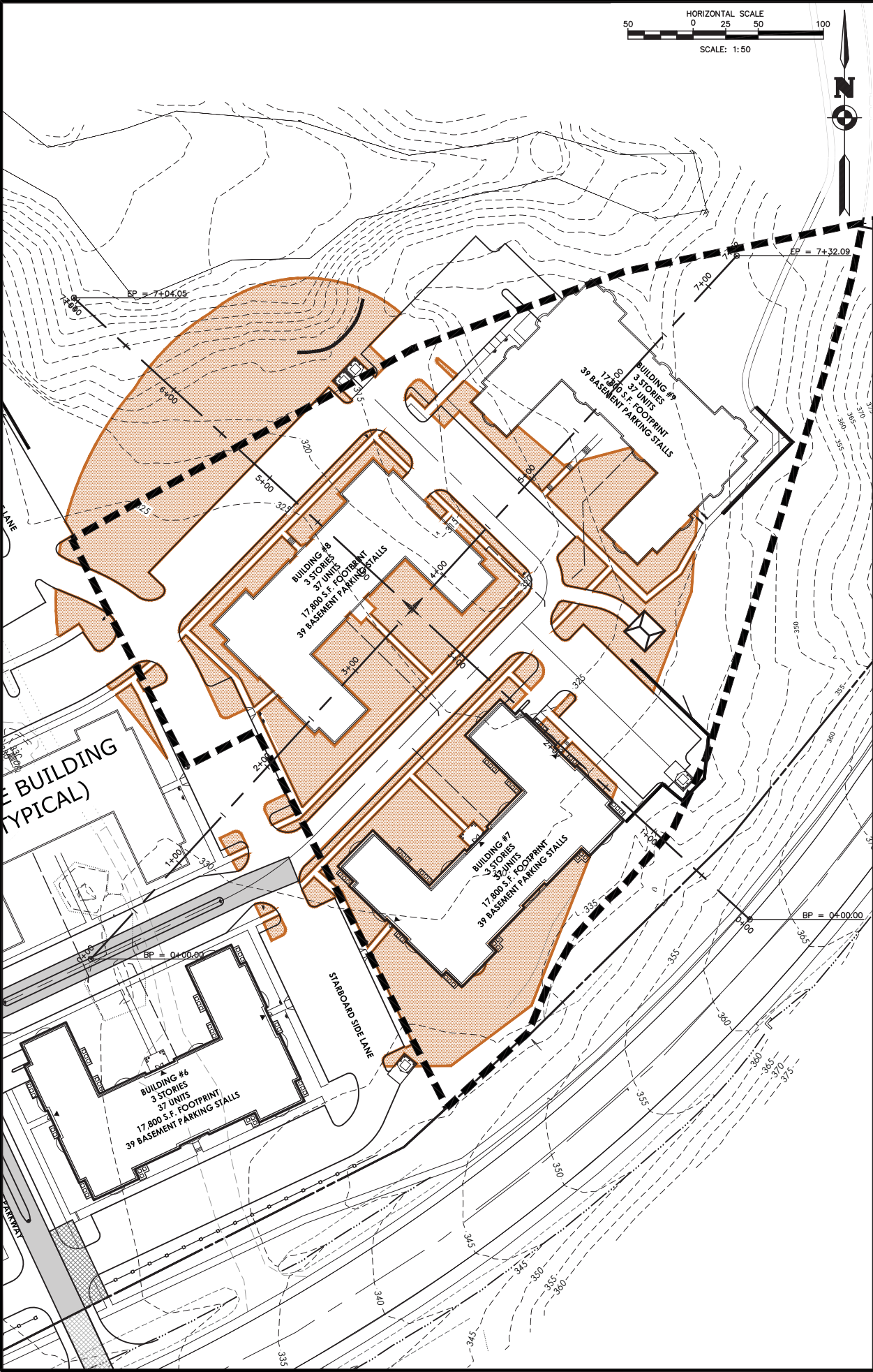
DATE

12/5/13
SCALE
NTS

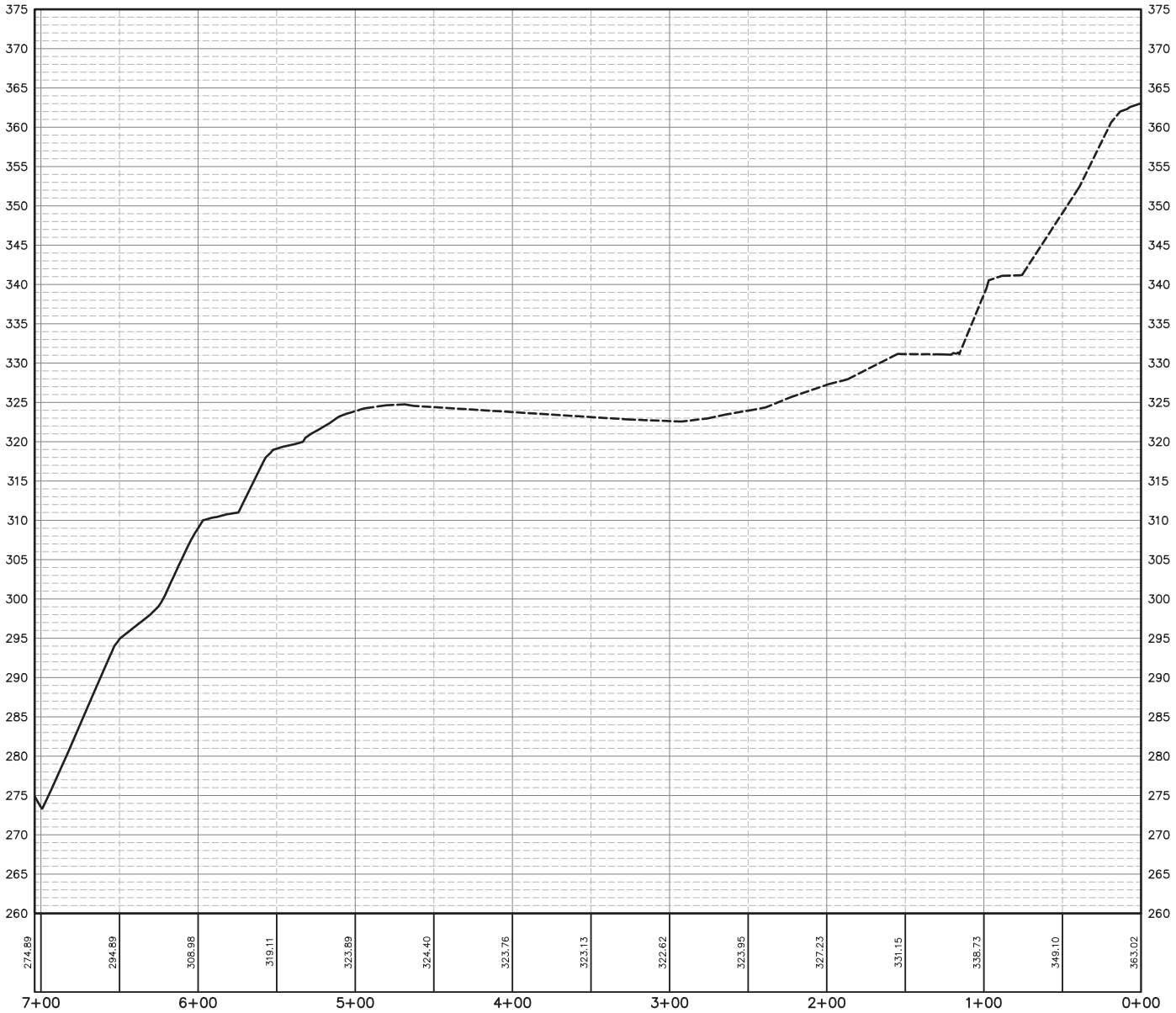
PROJECT NO.

45-13-002-00

FIGURE 3: GEOLOGIC CROSS SECTION

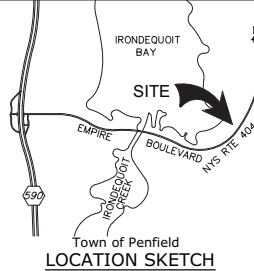


South West To North East
SCALE: HORIZONTAL - 1" = 50'
VERTICAL - 1" = 10'



South East to North West
SCALE: HORIZONTAL - 1" = 50'
VERTICAL - 1" = 10'

Passero Associates
Engineering Architecture
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Client:
Southpoint Cove LLC
1170 Pittsford-Victor Road
P.O.Box 1660
Pittsford, NY 14534
Robert Morgan (585)419-9630

Passero Associates
100 Liberty Pole Way
Rochester, New York 14604
(585) 325-1000
Fax: (585) 325-1691

Principal-in-Charge: John F. Caruso, P.E.
Project Manager: Jess D. Sudol, P.E.
Designed by: Carole G. Harvey

Revisions			
No.	Date	By	Description
1			

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS IN VIOLATION OF STATE EDUCATION LAW ARTICLE 145 SECTION 7209 AND ARTICLE 147 SECTION 7307. THESE PLANS ARE COPYRIGHT PROTECTED.

**EXISTING GRADE
CROSS SECTIONS**

**SOUTHPPOINT COVE
APARTMENTS**

Town/City: Penfield
County: Monroe State: New York

Project No.
20121461.01

Drawing No. Sheet No.
1 of 1

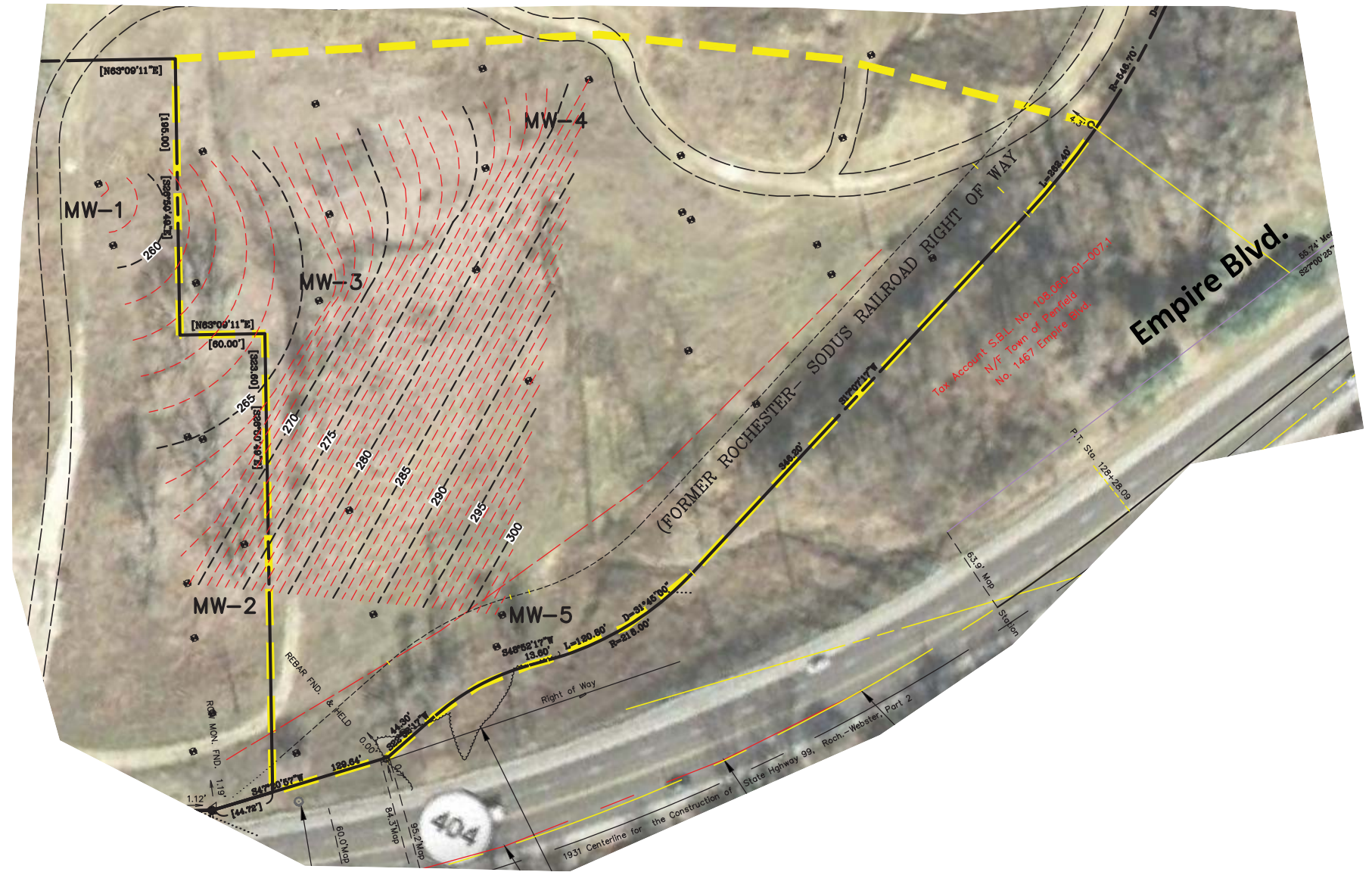
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1"=50'

Date
OCTOBER, 2012

FIGURE 4: GROUNDWATER FLOW

Z:\2009\20091064\20091064.000\DRAWINGS\ENVIRONMENTAL\20091064 0000 EMPIRE BLVD NO 1440 TS 01 26 10.DWG 12/28/2011 4:07 PM Jared Miller

LEGEND
Site Boundary
GP: Geoprobe®
BH: Borehole
TP: Test Pit



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**Engineering
Architecture**

**Surveying
Planning**

Project
1440 Empire Boulevard
Town of Penfield, New York

Drawing
September 2010 Groundwater
Potentiometric Surface

Client
1440 Empire Boulevard
Development Corporation

Principal-in-Charge
Gary Passero, P.E.

Project Manager
Peter Morton, C.P.G.

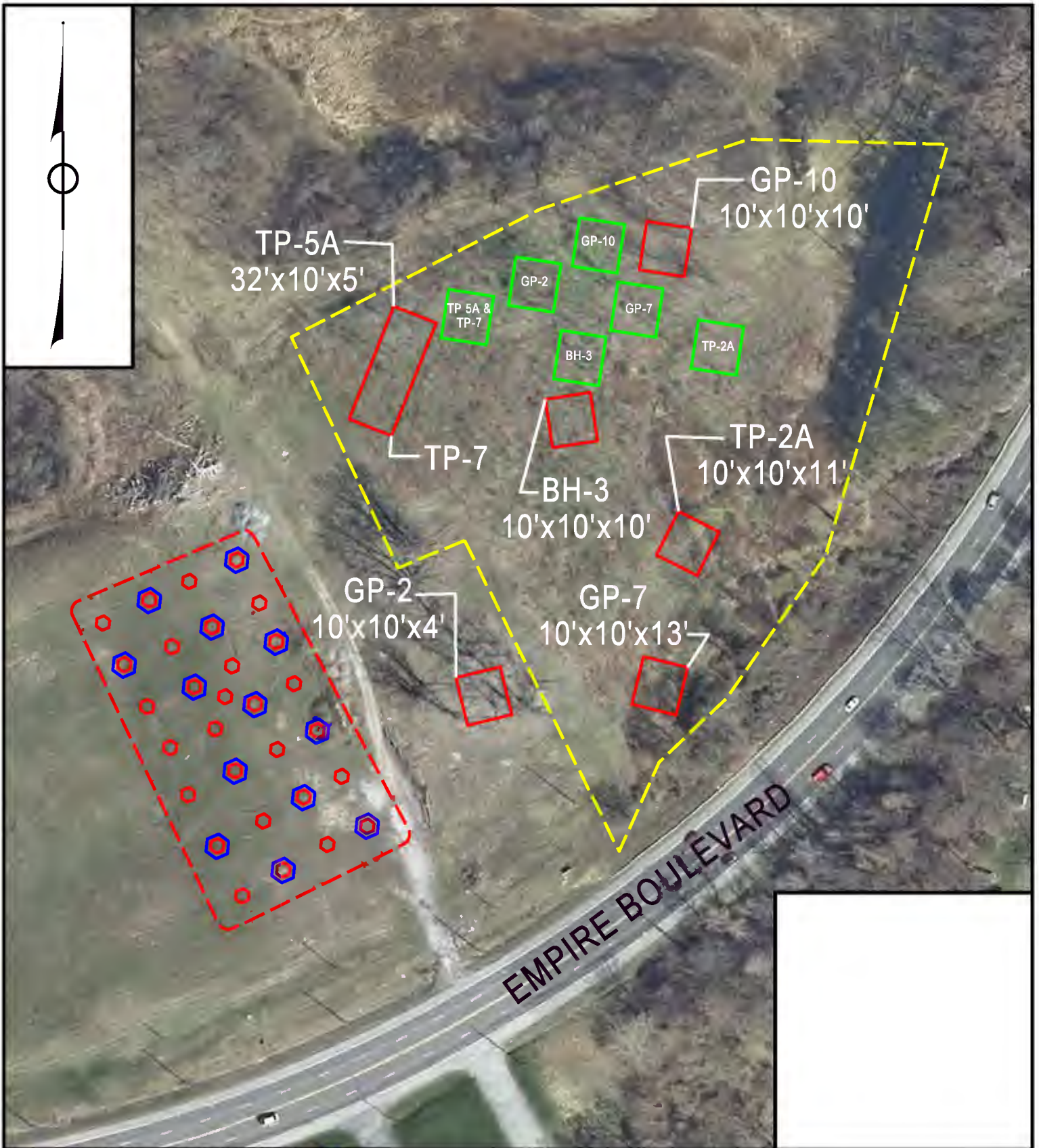
Designed by
Richard Celestino

Project No.
200229.16

Drawing No.

Scale:
1" = 100'

Date
NOV. 10, 2010



TITLE:

Figure 5: Extent of Excavation Performed & Borrow Pit

1440 EMPIRE BOULEVARD
TOWN OF WEBSTER
STATE OF NEW YORK 14580

PROJECT ENGINEER:

RAVI ENGINEERING & LAND SURVEYING, P.C.
CONSULTING ENGINEERS & SURVEYORS
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TL: (585) 223-3660 FX: (585) 223-4250

DRAWN:

RJB
CHKD
PSM


DATE:


12/5/13
SCALE
NTS


PROJECT NO.


45-13-002-00


LEGEND


 AOC-1 (AREA OF CONCERN)


 AOC-2 (AREA OF CONCERN)


 AREAS WITHIN BCP THAT REQUIRE CLEAN FILL SOIL CAP (UNPAVED)


 STOCK PILE AREA

 CONTAMINATED SOILS TO BE REMOVED

 CLEAN SOIL BORROW AREA

 **SF**
JS


 ——— 325 ———

 - - - 325 - - -

OG
324.80

AB
326.85

SILT FENCE

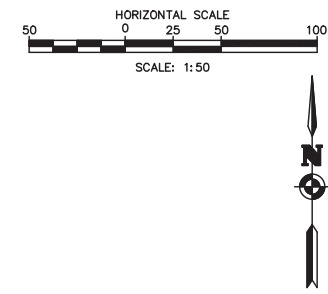
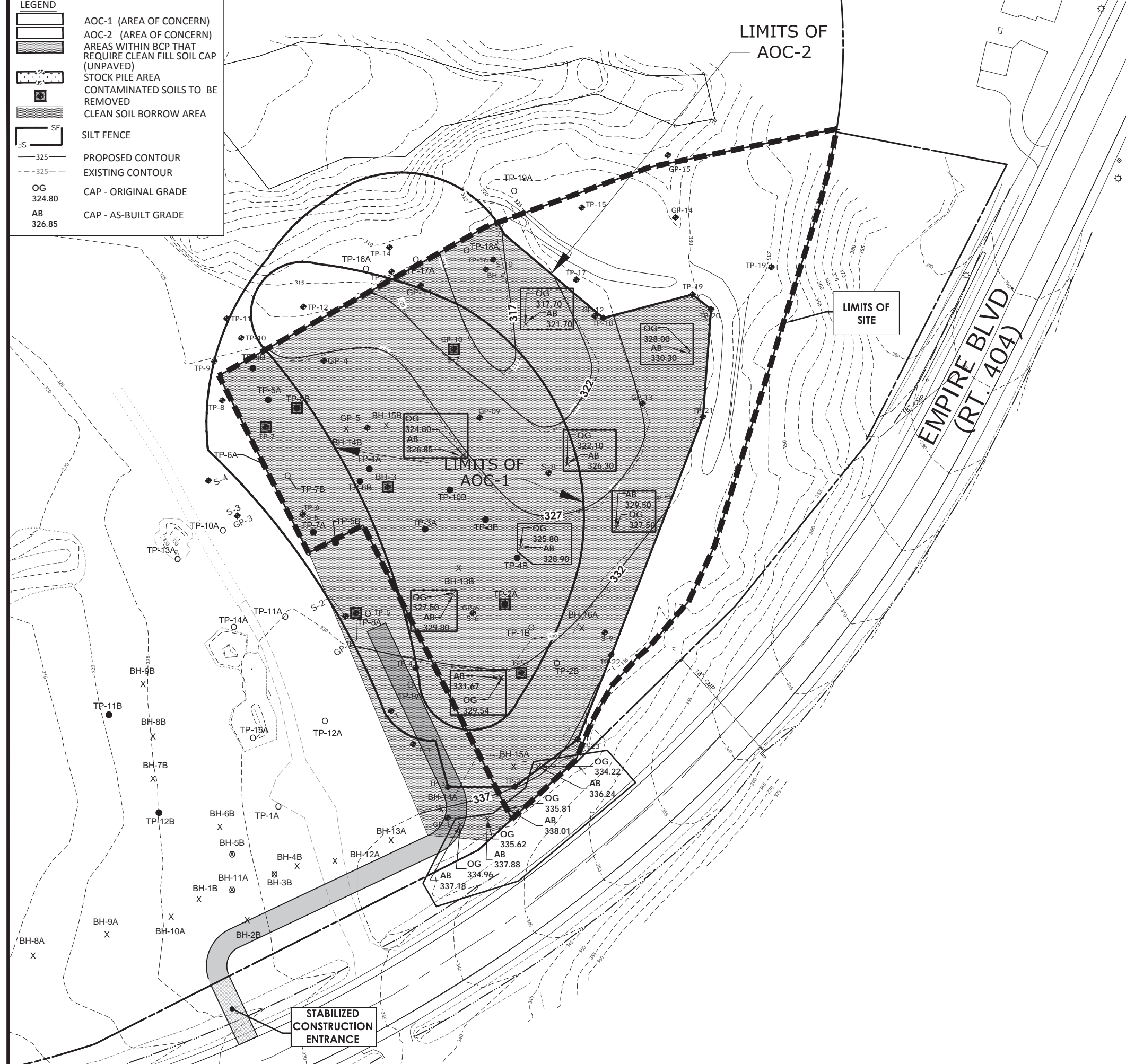
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PROPOSED CONTOUR

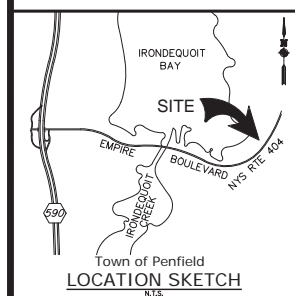
EXISTING CONTOUR

CAP - ORIGINAL GRADE

CAP - AS-BUILT GRADE



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Principal-in-Charge
Project Manager
Designed by

John F. Caruso, P.E.
Jess D. Sudol, P.E.
Carole G. Harvey



Revisions			
No.	Date	By	Description
1			

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REMEDIAL ACTION CAP CONSTRUCTION DETAILS

SOUTHPOINT COVE APARTMENTS

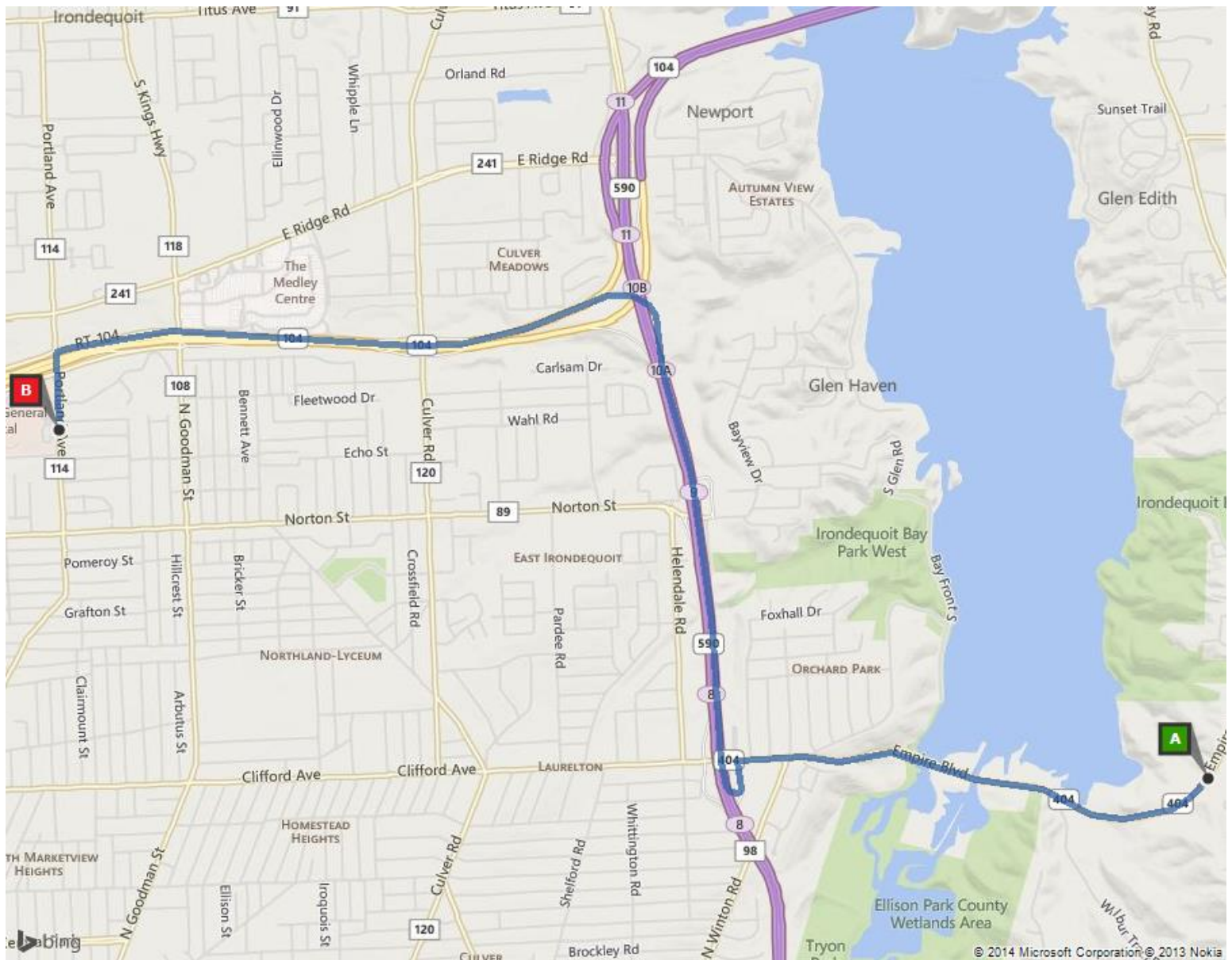
Town/City: Penfield
County: Monroe State: New York


Project No. 20121461.03

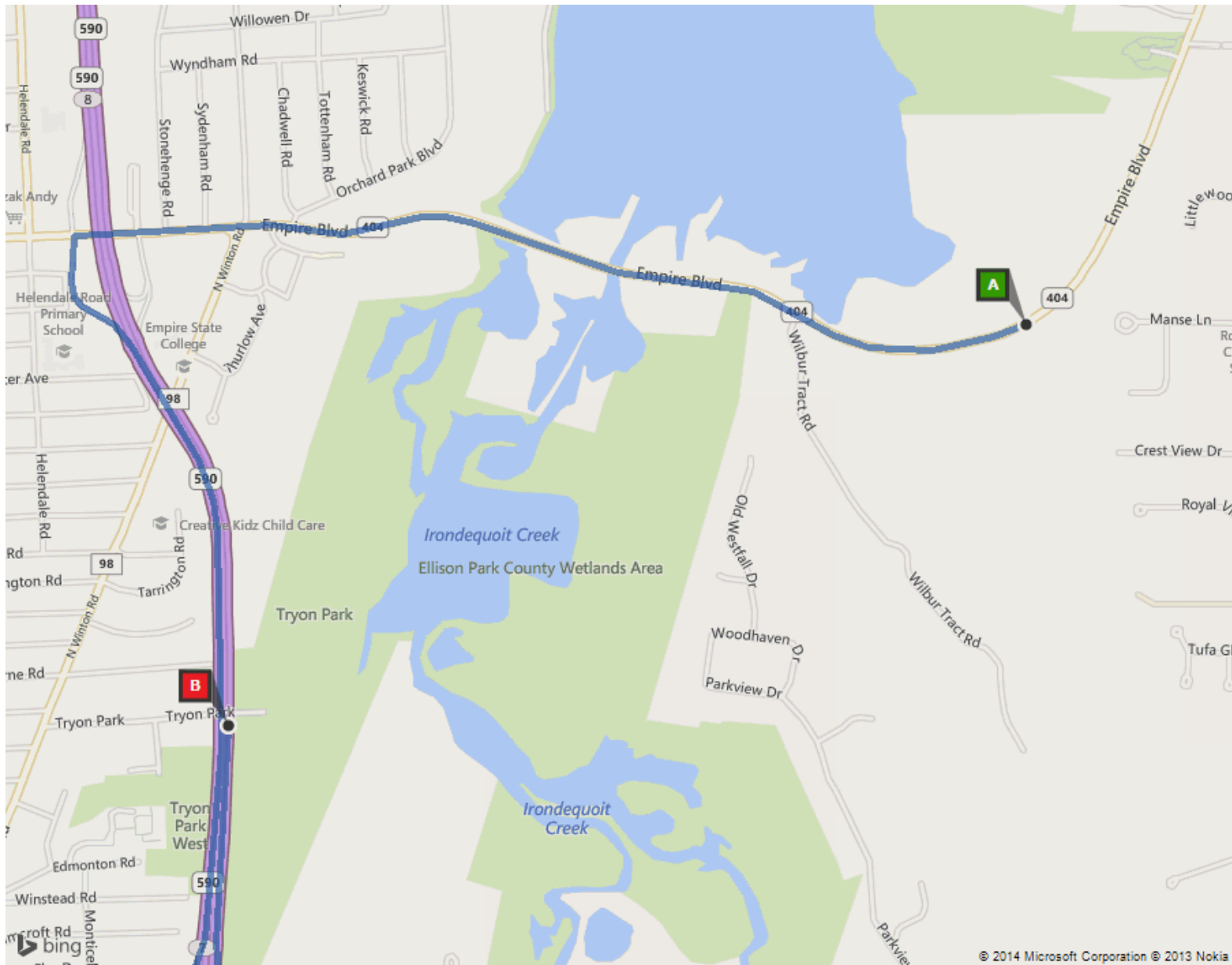
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Scale: $1" = 50'$

Date FEBRUARY, 2014

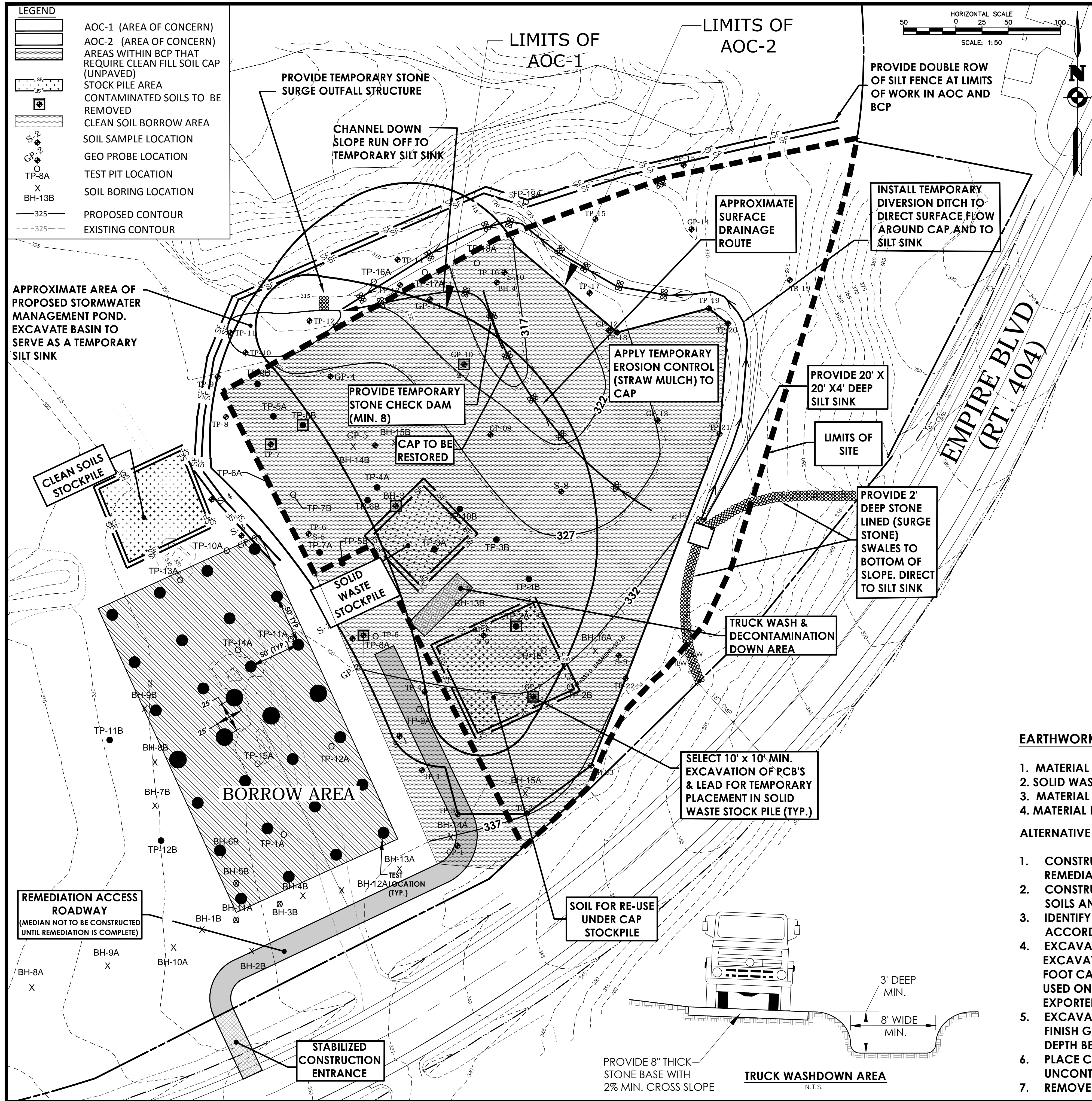


 RAVI ENGINEERING & LAND SURVEYING, P.C. 2110 S. CLINTON AVENUE, SUITE 1 ROCHESTER, NEW YORK 14618 TL: (585) 223-3660 FX (585) 223-4250	1440 Empire Boulevard Penfield, New York		PROJECT NO. 45-13-002-00	DATE: 5/23/14
	FIGURE 7: MAP OF ROUTE FROM SITE TO HOSPITAL		SCALE: NTS	DRAWING NO: 7



<p>RAVI ENGINEERING & LAND SURVEYING, P.C.</p> <p>2110 S. CLINTON AVENUE, SUITE 1 ROCHESTER, NEW YORK 14618 TL: (585) 223-3660 FX (585) 223-4250</p>	<p>1440 Empire Boulevard Penfield, New York</p>	<p>PROJECT NO. 45-13-002-00</p>	<p>DATE: 5/23/14</p>
	<p>FIGURE 8: TRUCK TRANSPORT ROUTE</p>	<p>SCALE: NTS</p>	<p>DRAWING NO: 8</p>

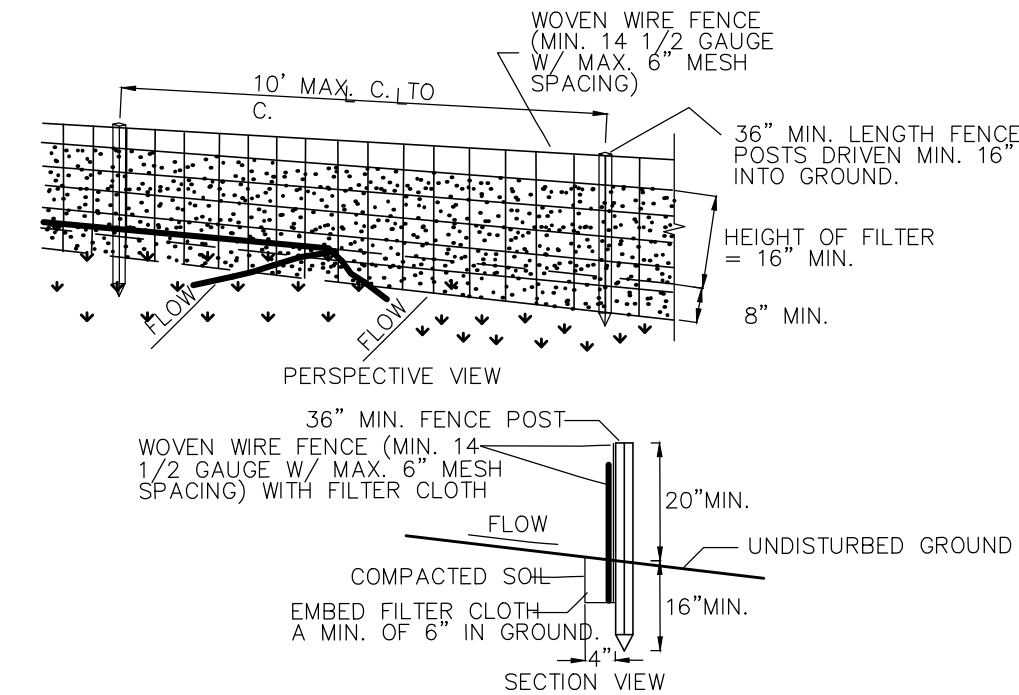
Figure 9: Remedial Action Work Plan Alternative 4



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN

STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



- CONSTRUCTION SPECIFICATIONS
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "I" OR "U" TYPE OR HARDWOOD.
 2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
 3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
 4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
 5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL
N.T.S.

EARTHWORK SUMMARY

1. MATERIAL TO BE EXCAVATED FROM BCP & PLACED IN BORROW AREA = 20,000 CYDS
2. SOLID WASTE MATERIAL (PCB & LEAD) TO BE EXPORTED OFF SITE= 1,500 CYDS
3. MATERIAL TO BE REMOVED FROM BORROW AREA FOR 2' CAP = 5,185 CYDS
4. MATERIAL FROM BORROW AREA TO BE USED IN OTHER PLACES OF SITE= 15,000 CYDS

ALTERNATIVE 4 - REMEDIAL ACTION WORK PLAN PROCEDURE

1. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE, TRUCK WASHDOWN AREA AND REMEDIATION ACCESS ROADWAY.
2. CONSTRUCT SILT FENCE ISOLATING AND DEFINING CONTAMINATED SOILS, HAZARDOUS SOILS AND CLEAN FILL.
3. IDENTIFY AND SELECTIVELY REMOVE PCB AND LEAD CONTAMINATED SOILS IN ACCORDANCE WITH RAWP. STOCKPILE IN "SOLID WASTE" PILE
4. EXCAVATE ENOUGH CLEAN SOIL FILL FROM BORROW AREA TO REPLACE SOIL EXCAVATED FROM CONTAMINATED AREA AS WELL AS ENOUGH TO PROVIDE A TWO FOOT CAP AFTER CONTAMINATED SOIL IS BURIED IN THE BORROW AREA. SOILS TO BE USED ON SITE OUTSIDE OF THE BCP SHALL BE SAMPLED IN ACCORDANCE WITH DER-10 AS EXPORTED SOILS.
5. EXCAVATE REMAINING SOILS IN CONTAMINATED AREA TO A DEPTH OF TWO FEET BELOW FINISH GRADE IN LAWN AREAS , ONE FOOT BELOW PAVEMENT, AND TO THE REQUIRED DEPTH BELOW BUILDING FOUNDATIONS.
6. PLACE CONTAMINATED SOIL INTO BORROW AREA. CAP WITH TWO FEET OF UNCONTAMINATED SOUL.
7. REMOVE SOLID WASTE TO EXTERNAL LANDFILL.

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Principal-in-Charge John F. Caruso, P.E.
Project Manager Jess D. Sudol, P.E.
Designed by Carole G. Harvey

Revisions			
No.	Date	By	Description
1	10/14/13	CGH	REV. BORROW AREA AND HAUL ROAD LOCATION
2	10/21/13	CGH	REV. PER DEC COMMENTS

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REMEDIAL ACTION WORK
PLAN ALTERNATIVE 4

**SOUTHPOINT COVE
APARTMENTS**

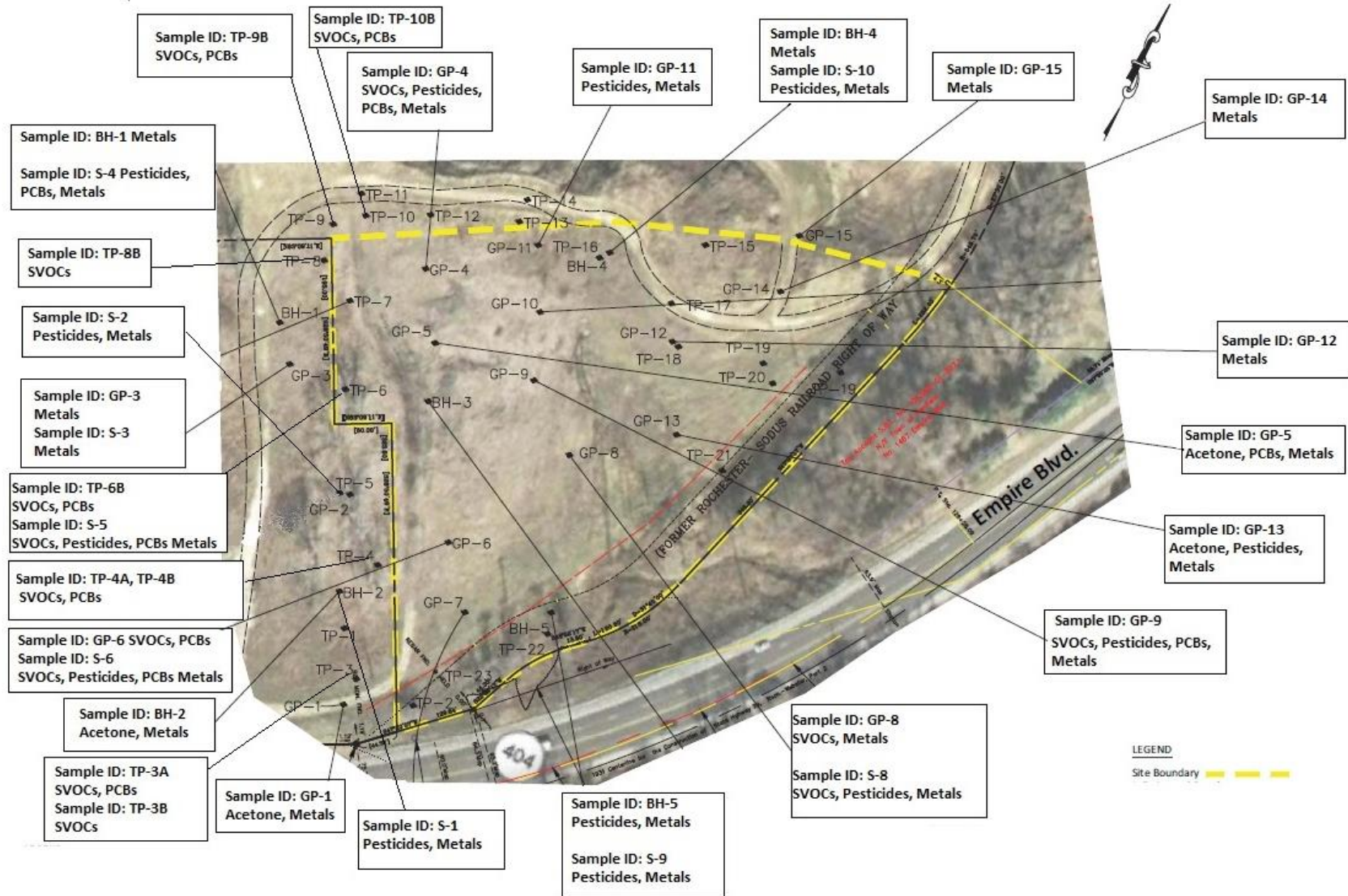
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County: Monroe State: New York

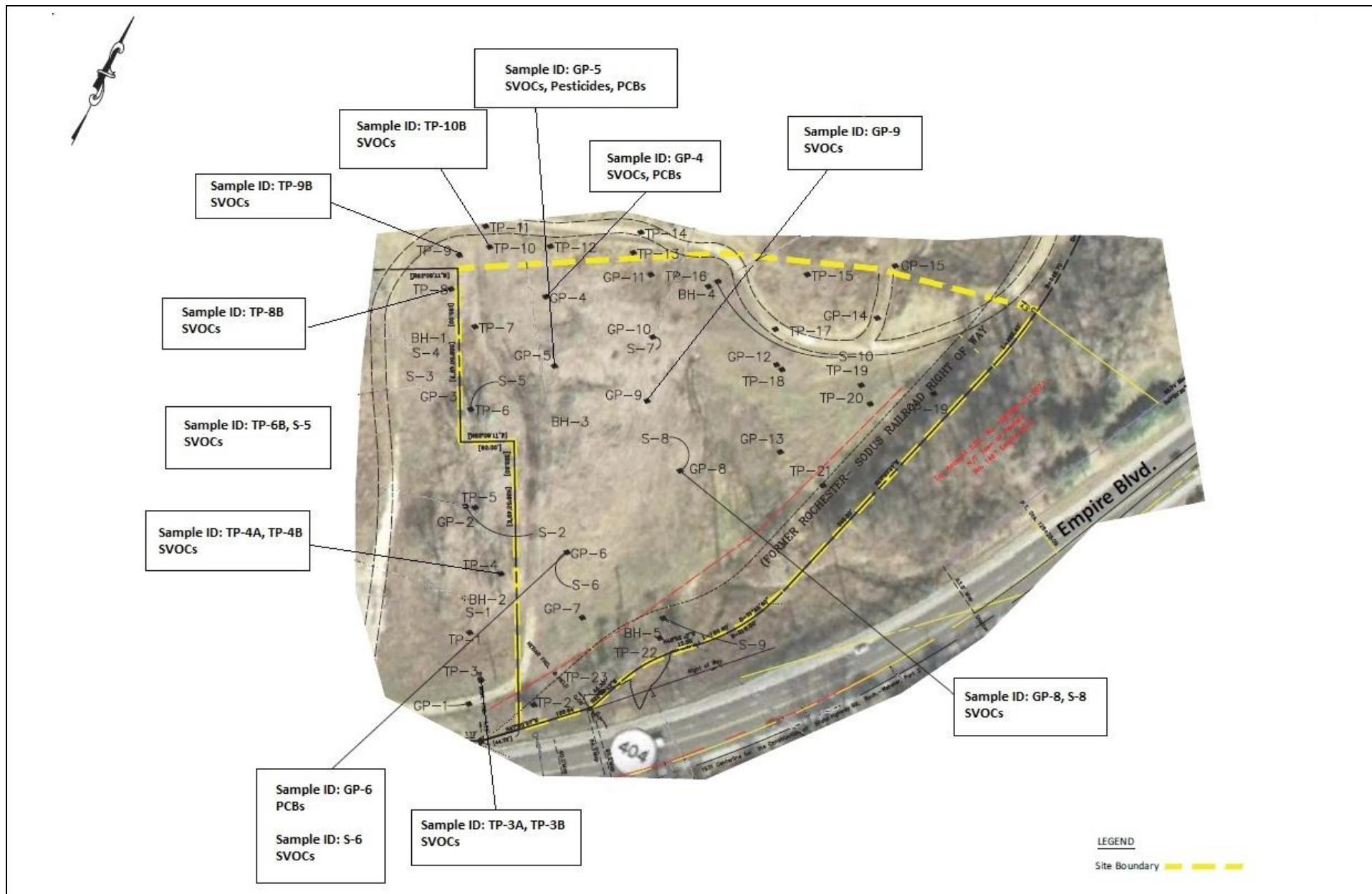
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20121461.01

Drawing No.	Sheet No.
	3 of 3

Scale:
1" = 50'

Date
OCTOBER, 2012





RAVI ENGINEERING & LAND SURVEYING, P.C. 2110 S. CLINTON AVENUE, SUITE 1 ROCHESTER, NEW YORK 14618 TL: (585) 223-3660 FX (585) 223-4250	1440 Empire Boulevard Penfield, New York		PROJECT NO. 45-12-043-OG	DATE: 5/23/14
	FIGURE 12: Remaining contamination that exceeds Part 375-6.8(b):Restricted Use, Restricted Residential SCOs		SCALE: NTS	DRAWING NO: 12

LIST OF APPENDICES:

- Appendix A: Excavation Work Plan
- Appendix B: Metes and Bounds
- Appendix C: Environmental Easement
- Appendix D: Health and Safety Plan
- Appendix E: Community Air Monitoring Plan
- Appendix F: Inspection Form
- Appendix G: Stormwater Pollution Plan

APPENDIX A: Excavation Work Plan

APPENDIX A – EXCAVATION WORK PLAN

A-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the Department. Currently, this notification will be made to:

Bart Putzig, P.E.

Regional Hazardous Waste Remediation Engineer

6274 East Avon-Lima Road, Avon, New York 14414

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control,
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work,
- A summary of the applicable components of this EWP¹,
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120,
- A copy of the contractor's health and safety plan, in electronic format, if it differs from the HASP provided in Appendix D of this document,
- Identification of disposal facilities for potential waste streams,

¹ Simple excavations may only require compliance with a portion of the EWP. For example, excavation of a small volume of soil from above the water table that is directly loaded for off-site disposal would not require the stockpiling or fluids management procedures set forth below.

- Identification of sources of any anticipated backfill, along with all required chemical testing results.

A-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil. Soils that are either part of the two-foot soil cover, or outside the Areas of Concern (AOCs) on the Site (see Figure 4), may be re-used off-site. Any identifiable solid waste and non-exempt construction and demolition debris (as defined by 6 NYCRR Part 360-7) would be segregated as solid waste for off-site disposal. All other excavated soils will be staged on polyethylene and tested. Reuse of soils on-site will be determined by following the procedures outlined in Section 5 of the NYSDEC DER-10 Guidance Document (DER-10). Table 5.4(e)4 of the DER-10 will be used to determine the acceptability of soils for reuse. Sampling of soils will be performed in accordance with Table 5.4(e)10 of DER-10.

A-3 STOCKPILE METHODS

Soils will be segregated into material that requires off-site disposal, and material that can be returned to the subsurface as determined by Table 5.4(e)4 of the DER-10.

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. There will be up to four stockpiles:

- **Clean Soil for Re-Use:** Soils that are from outside the AOCs which are not solid waste and soils from the two-foot cap can be reused on the Site, and for off-site export and reuse, without restrictions.
- **Soils for Re-Use Under Cap:** Soils that meet the Site-specific cleanup goals for subsurface soil can be used for placement below the soil cover within the SMP area.
- **Solid waste:** Soils that exceed the Site-specific cleanup goals for subsurface soil, identifiable solid waste, and non-exempt construction and demolition debris (as defined by 6 NYCRR Part 360-7), will not be re-used on-site.
- **Hazardous waste:** Any soils identified as having PCB contamination of 50 ppm or greater will be placed in a separate stockpile and managed as hazardous waste.

A-4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

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

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

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

A truck wash will be operated on-site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete.

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

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

A-5 MATERIALS TRANSPORT OFF-SITE

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

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

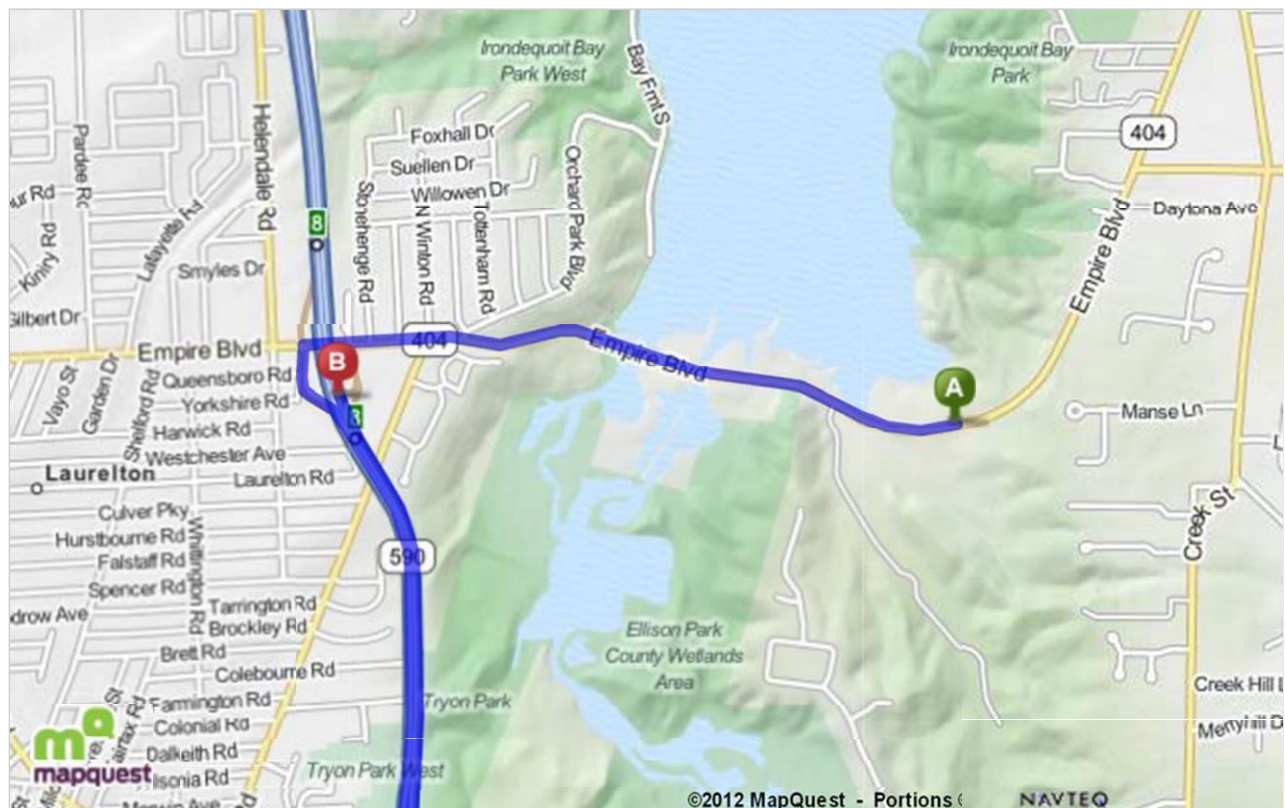
Truck transport routes are as follows: Trucks shall turn right onto Empire Boulevard, and proceed west to turn left onto the southbound ramp on Route 590 and proceed to their final destination, as shown on Figure 9. All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

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

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

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

Figure 9
Truck Transport Route



A-6 MATERIALS DISPOSAL OFF-SITE

Materials to be disposed off-site will be exported in accordance with Table 5.4(e)4 of DER-10. All soil/fill/solid waste excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all

local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

Soils will be staged on, and covered with polyethylene sheeting. Upon completion they will be sampled in accordance with Table 5.4(e)10 of the DER-10 for landfill characterization in conformance with Waste Management of New York, LLC (WM) or other landfill operator requirements. One sample will be collected from the first 500 tons of staged soil, and one additional sample will be collected from each 1000 ton aliquot after the initial samples. If required by WM or other operator, soils will be analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), PCBs, and Toxicity Characteristic Leaching Procedure (TCLP) Metals. Based on these results the soils will either be transported for disposal as solid waste at the WM High Acres or Mill Seat Landfill or another solid waste landfill, or as hazardous waste at their Model City Landfill or another hazardous waste landfill.

A-7 MATERIALS REUSE ON-SITE

Soils that have been placed in the “Clean Soil for Re-Use” stockpile as set forth above may be re-used in any location on the Site. These are soils that are from outside the AOCs which

are not solid waste, soils from the two-foot cap soil, and other soils that have been tested as set forth above, and determined to have < 1 ppm PCBs and (if lead testing is required) < 400 ppm lead.

Other soils in the “Soils for Re-Use Under Cap” stockpile, which consists of soils with < 10 ppm PCBs, may be re-used on-site under the soil cover system. These materials must be capped with concrete slabs and asphalt paving systems (buildings, roadways, parking lots, etc.) at least six inches thick, or else a demarcation layer (orange snow fence) and two feet of clean soil. The top six inches of the soil cover must be of sufficient quality to support vegetation.

Chemical criteria for on-site reuse of material have been approved by NYSDEC and are listed in Table 8. The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Table 8: Criteria for On-site Reuse of Excavated Material (Table 5.4(e)4 of DER-10)		
Soil on the Site Meets:	Reuse on the Site:	Off-site Export & Reuse:
Unrestricted Soil SCGs	Without restrictions	Without restrictions
Meets the applicable Use – based and Groundwater SCG and where appropriate Protection of Ecological Resources Soil SCGs for a Site w/ an IC and SMP	In the soil cover/cap or as backfill within the area of the site subject to the IC.	Not Allowed, unless going to a site with IC subject to a 6 NYCRR Part 360 Beneficial Use Determination (BUD).
Meets Site-Specific Background Soil Levels.	Without restrictions. (Does not apply to sites in the BCP.)	Not Allowed, unless going to a site with IC subject to a 6 NYCRR Part 360 BUD.
Site-specific cleanup goals for subsurface soil	Placement below the soil cover/cap within the area of the site subject to the IC.	Not Allowed, unless going to a site with IC subject to a 6 NYCRR Part 360 BUD.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

A-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

A-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the RAWP. The demarcation layer, consisting of orange snow fencing material or equivalent material will be replaced to provide a visual reference to the top of the ‘Remaining Contamination Zone’, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this Site Management Plan. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the ‘Remaining Contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

A-10 BACKFILL FROM OFF-SITE SOURCES

The importation and export of soils to the Site is subject to sampling requirements and restrictions detailed in Section 5.4 of DER-10. All materials proposed for import onto the site

will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards for imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

A-11 STORMWATER POLLUTION PREVENTION

The Stormwater Pollution Prevention Plan (SPPP) for the Site is included as Appendix G. All work will comply with the SPPP.

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall

be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

A-12 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the periodic reports prepared pursuant to Section 5 of the SMP.

A-13

A-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site. Odors problems are not anticipated. However, if nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility

of the property owner's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. If odors are encountered, at a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors on-site or in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

A-15 DUST CONTROL PLAN

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

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

APPENDIX B: Metes and Bounds

THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL EASEMENT HELD BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PURSUANT TO TITLE 36 OF ARTICLE 71 OF THE NEW YORK ENVIRONMENTAL CONSERVATION LAW.

THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THE EASEMENT ARE SET FORTH IN MORE DETAIL IN THE SITE MANAGEMENT PLAN ("SMP"). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH AN INTEREST IN THE PROPERTY. THE SMP MAY BE OBTAINED FROM THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NY 12233 OR AT DERWEB@GW.DEC.STATE.NY.US.

ENGINEERING / INSTITUTIONAL CONTROLS

- ALL ENGINEERING CONTROLS MUST BE OPERATED AND MAINTAINED AS SPECIFIED IN THE SITE MANAGEMENT PLAN.
- LAND USE - THE USE AND DEVELOPMENT OF THE SITE IS LIMITED TO RESTRICTED_RESIDENTIAL, COMMERCIAL AND INDUSTRIAL USES ONLY AS DESCRIBED IN 6 NYCRR PART 375-1.8(G)(2)(II),(III) & (IV).

ENVIRONMENTAL EASEMENT AREA ACCESS

THE DEC OR THEIR AGENT MAY ACCESS THE ENVIRONMENTAL EASEMENT AREA AS SHOWN HEREON THROUGH ANY EXISTING STREET ACCESS OR BUILDING INGRESS/EGRESS ACCESS POINT

D.E.C. EASEMENT
ON LOT 2 OF LIBER 317 OF MAPS PAGE 93
1440 EMPIRE BOULEVARD

ALL THAT TRACT OR PARCEL OF LAND SITUATED IN TOWN LOT 1, RANGE 7, TOWNSHIP 13 IN THE PHELPS AND GORHAM PURCHASE, TOWN OF PENFIELD, COUNTY OF MONROE, AND STATE OF NEW YORK AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING ON THE NORTHERLY RIGHT OF WAY OF EMPIRE BOULEVARD, AT THE SOUTHEAST CORNER OF LOT 1 OF THE 1440 EMPIRE BOULEVARD SUBDIVISION AS FILED IN THE MONROE COUNTY CLERK'S OFFICE AT LIBER 317 OF MAPS, PAGE 93; THENCE,

- NORTH 26°-50'-49" WEST, ALONG THE COMMON LINE BETWEEN LOT 1 AND LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 333.60 FEET TO A POINT; THENCE,
- SOUTH 63°-09'-11" WEST, ALONG THE COMMON LINE BETWEEN LOT 1 AND LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 60.00 FEET TO A POINT; THENCE,
- NORTH 26°-50'-49" WEST, ALONG THE COMMON LINE BETWEEN LOT 1 AND LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 195.00 FEET TO A POINT, BEING THE NORTH EAST CORNER OF LOT 1; THENCE,
- NORTH 60°-51'-03" EAST, ACROSS THE LANDS OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 299.74 FEET TO A POINT; THENCE,
- NORTH 69°-58'-07" EAST, ACROSS THE LANDS OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 172.29 FEET TO A POINT; THENCE,
- NORTH 78°-25'-55" EAST, ACROSS THE LANDS OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 186.97 FEET TO A POINT ON THE EASTERLY LINE OF LOT 2; THENCE,
- SOUTHERLY, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION AND ALONG A CURVE TO THE RIGHT, HAVING A CENTRAL ANGLE OF 08°-28'-03", A RADIUS OF 546.70 FEET AND AN ARC LENGTH OF 80.79 FEET TO A POINT OF TANGENCY; THENCE,
- SOUTH 17°-07'-17" WEST, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 346.20 FEET TO A POINT OF CURVATURE; THENCE,
- SOUTHEASTERLY, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION AND ALONG A CURVE TO THE RIGHT, HAVING A CENTRAL ANGLE OF 31°-45'-00", A RADIUS OF 218.00 FEET AND AN ARC LENGTH OF 120.80 FEET TO A POINT OF TANGENCY; THENCE,
- SOUTH 48°-52'-17" WEST, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 13.60 FEET TO A POINT OF CURVATURE; THENCE,
- SOUTHEASTERLY, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION AND ALONG A CURVE TO THE LEFT, HAVING A CENTRAL ANGLE OF 26°-00'-00", A RADIUS OF 168.00 FEET AND AN ARC LENGTH OF 78.24 FEET TO A POINT OF TANGENCY; THENCE,
- SOUTH 22°-52'-17" WEST, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 44.30 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY OF EMPIRE BOULEVARD; THENCE,
- SOUTH 47°-20'-57" WEST, ALONG THE NORTHERLY RIGHT OF WAY OF EMPIRE BOULEVARD A DISTANCE OF 84.92 FEET TO THE POINT OF BEGINNING, ENCOMPASSING 4.738+/- ACRES OF LAND.

SURVEY NOTES:

- THE BEARINGS SHOWN HEREON AND THE HORIZONTAL DATUM IS REFERENCED TO THE N.Y.S. PLANE COORDINATE SYSTEM, WEST ZONE, TRANSVERSE MERCATOR SYSTEM.
- DISTANCES SHOWN HEREON ARE GROUND DISTANCES. BEARINGS AND COORDINATES ARE REFERENCED TO GRID.
- SURVEY FIELD WORK ON THIS SURVEY WAS DONE TO AN ACCURACY GREATER THAN ONE PART IN 10,000, (1:10,000), USING ESTABLISHED CONTROL MONUMENTS REFERENCED HEREON.
- NYGS MONUMENT 152-1 NORTHING 1,169,830.83 EASTING 787,103.97 NAD 27
NYGS MONUMENT 152-2 NORTHING 1,169,813.09 EASTING 789,334.03 NAD 27
ELEVATION FACTOR 0.9999793
GRID FACTOR 1.0000317
- EASEMENT RESERVED BY ROCHESTER GAS & ELECTRIC CORP. IN A QUIT CLAIM DEED AT LIBER 2566 PAGE 231.
- EASEMENT TO ROCHESTER GAS & ELECTRIC CORP. AT LIBER 2566 OF DEEDS, PAGE 233.
- THE EXACT LOCATION OF THE EASEMENT TO ROCHESTER GAS & ELECTRIC CORP. FOR POLES AND WIRES ALONG SOUTHERLY SIDE OF ROAD AT LIBER 1123 OF DEEDS, PAGE 194 CANNOT BE DETERMINED FROM THE DESCRIPTION.
- THE EXACT LOCATION OF THE EASEMENT TO ROCHESTER TELEPHONE CORP. FOR POLES AND WIRES ALONG SOUTHERLY SIDE OF ROAD AT LIBER 1637 OF DEEDS, PAGE 43 CANNOT BE DETERMINED FROM THE DESCRIPTION.
- THE EXACT LOCATION OF THE EASEMENT TO ROCHESTER GAS & ELECTRIC CORP. FOR POLES AND WIRES ALONG SOUTHERLY SIDE OF ROAD AT LIBER 1928 OF DEEDS, PAGE 432 CANNOT BE DETERMINED FROM THE DESCRIPTION.

Approximate Location of 100' Wide Easement to Rochester Gas & Electric Corporation at Liber 2565 of Deeds, Page 208 for poles and wires across lands Now or Formerly of Joseph. Sudore at Liber 2526 of Deeds, Page 475. Exact location of easement indeterminate based on record description.

ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL INKED OR EMBOSSED SEAL AND INKED SIGNATURE SHALL BE CONSIDERED A TRUE AND VALID COPY.
CERTIFICATION INDICATED HEREON SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED, AND ON HIS BEHALF TO THE AGENCIES LISTED HEREON. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.



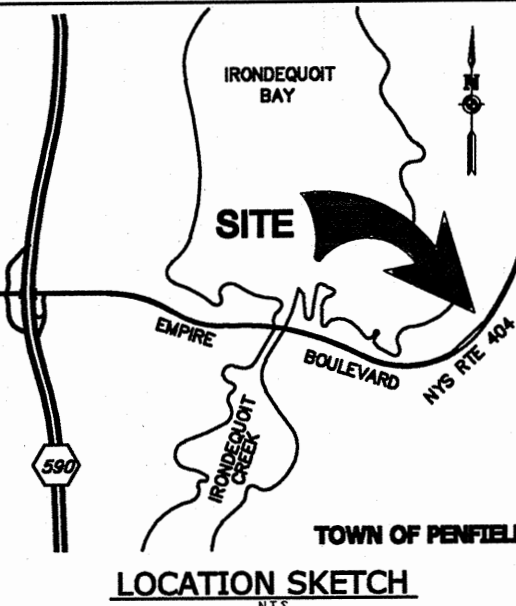
Passero Associates
Rochester, NY • Fernandina Beach, FL
www.passero.com

Legend	
CB	CAICHBASIN
C/O	CIFANOU (UNKNOWN 1"PH)
SOO	CIFANOU DRAINAGE SHWR
SOO	CIFANOU SANITARY SHWR
FND	SPC IION DRAINAGE PIPE
GV	GAS VALVE
HYD	H'DRANT
LP	LIGHTPOLE
MH	MANHOLE (UNKNOWN 1"PH)
MH	MANHOLE HFC IRC
MH	MANHOLE DRAINAGE INLET
MH	MANHOLE DRAINAGE SHWR
MH	MANHOLE SANITARY SHWR
SP	SIGN POST (SINGIF)
SP	IRAFHC IGH SPAN POLE
PP	UTILITY POLE
PP	UTILITY POLE ANCHOR WHF
PP	UTILITY POLE WITH LIGHT
CC	WATER SERVICE
WV	WATER VALVE

Revisions

No.	Date	By	Description
1	9-17-12	R.D.C.	REVISED PER COMMENTS

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS IN VIOLATION OF STATE EDUCATION LAW ARTICLE 145 SECTION 709 AND ARTICLE 147 SECTION 7307. THESE PLANS ARE COPYRIGHT PROTECTED ©



Passero Associates

100 Liberty Pole Way,
Rochester, NY 14604
Principal-in-Charge
Project Manager
Designed by
(585) 325-1000
Fax: (585) 325-1691
John F. Caruso, P.E.
Ed Freeman, P.L.S.
Richard Celestino

ALAN J. KNAUF
KNAUF SHAW LLP
1125 CROSSROADS BLDG.
2 STATE STREET
ROCHESTER NEW YORK 14614
(585) 546-8430

D.E.C. EASEMENT
C828135
1440 EMPIRE BLVD.
PENFIELD, NEW YORK

PORTION OF TOWN LOT 1, RANGE 7, TOWNSHIP 13 IN THE PHELPS AND GORHAM PURCHASE, TOWN OF PENFIELD, MONROE COUNTY, NEW YORK STATE

Project No.
20121461.0001

Drawing No.
ES-1
Sheet No.
1 of 1

Scale:
1" = 50'

Date
5-23-12

N/F
KEVIN C FADY
1467 EMPIRE BLVD.
TAX NO. 108.060-0001-007.2

N/F
TOWN OF PENFIELD
1463 EMPIRE BLVD.
TAX NO. 108.060-0001-007.1

P.T. Sta. 128+87.73

P.T. Sta. 128+28.09

Station 127+12.7

Station 127+12.7

Station 127+12.7

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Station 127+12.7

APPENDIX C: Environmental Easement

MONROE COUNTY CLERK'S OFFICE

ROCHESTER, NY

THIS IS NOT A BILL. THIS IS YOUR RECEIPT

Receipt # 1002334

Index DEEDS

Book 11334 Page 392

No. Pages : 11

Instrument EASEMENT AGREEMENT

Date : 12/02/2013

Time : 04:23:19PM

Control # 201312020910

TT # TT0000006571

Ref 1 #

Employee : JoanM

Return To:
BOX 35

UPSTATE BROWNFIELD PARTNERS LLC
PEOPLE OF THE STATE OF NEW YORK
COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION

PEOPLE OF THE STATE OF NEW YORK
UPSTATE BROWNFIELD PARTNERS LLC
COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION

COUNTY FEE TP584	\$	5.00
COUNTY FEE NUMBER PAGES	\$	50.00
RECORDING FEE	\$	45.00
STATE FEE TRANSFER TAX	\$	0.00

Total \$ 100.00

State of New York

MONROE COUNTY CLERK'S OFFICE

TRANSFER AMT

WARNING - THIS SHEET CONSTITUTES THE CLERKS
ENDORSEMENT, REQUIRED BY SECTION 317-a(5) &
SECTION 319 OF THE REAL PROPERTY LAW OF THE
STATE OF NEW YORK. DO NOT DETACH OR REMOVE.

TRANSFER AMT

\$1.00

CHERYL DINOLFO

MONROE COUNTY CLERK



**ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36
OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW**

THIS INDENTURE made this 26th day of November, 2013 between Owner(s) UPGATE BROWNFIELD PARTNERS, LLC, having an office at 1400 Crossroads Building, 2 State Street, Rochester, New York 14614, County of Monroe, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233.

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties (sites) that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 1440 Empire Boulevard in the Town of Penfield, County of Monroe and State of New York, known and designated on the tax map of the County Clerk of Monroe as tax map parcel numbers: Section 108.06 Block 1 Lot 8.2, being the same as that property conveyed to Grantor by deed dated May 8, 2013 and recorded in the Monroe County Clerk's Office in Liber 11251 at Page 335. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 4.738 +/- acres, and is hereinafter more fully described in the Land Title Survey dated May 23, 2012 and last revised October 16, 2013 prepared by Passero Associates, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

Return to File By 35

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2013 NOV 29 PM 4
COUNTY OF MONROE

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: B8-0721-06-06, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

**Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii),
Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial
as described in 6 NYCRR Part 375-1.8(g)(2)(iv)**

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP.

(4) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(5) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(6) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(7) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP.

(8) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP.

(9) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable
[6/11]

certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:
(i) are in-place;
(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to: Site Number: C828135
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to: Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

[6/11]

9. **Extinguishment.** This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Grantor: UPSTATE BROWNFIELD PARTNERS, LLC

By: [Signature]

Print Name: Robert C. Morgan

Title: Manager - Member Date: 10/15/13

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF *monroe*)

On the 15th day of November, in the year 20 13 before me, the undersigned, personally appeared Robert C. Morgan, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.


Notary Public - State of New York

Stephanie M Maryan

Notary Public
State of New York
License No. 01MA6258521
Monroe County
Commission Expires 03/26/2016

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner.

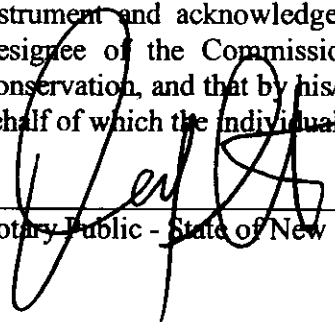
By:


Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 26th day of November, in the year 2013 before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.


Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2014

SCHEDULE "A" PROPERTY DESCRIPTION

Property Address: 1440 Empire Blvd., Penfield, New York, Monroe County
Tax Map: 108.06-1-8.2

P.N. 20121461.0001

R.D.C.

MAY 23, 2012

REV-1, REVISED 10-16-2013, R.D.C.

REFERENCE MAP REVISION 4, REVISION DATE 10-16-2013

ENVIRONMENTAL EASEMENT AREA
ON LOT 2 OF LIBER 317 OF MAPS PAGE 93
1440 EMPIRE BOULEVARD

ALL THAT TRACT OR PARCEL OF LAND SITUATED IN TOWN LOT 1, RANGE 7,
TOWNSHIP 13 IN THE PHELPS AND GORHAM PURCHASE, TOWN OF PENFIELD,
COUNTY OF MONROE, AND STATE OF NEW YORK AND BEING MORE
PARTICULARLY DESCRIBED AS FOLLOWS:

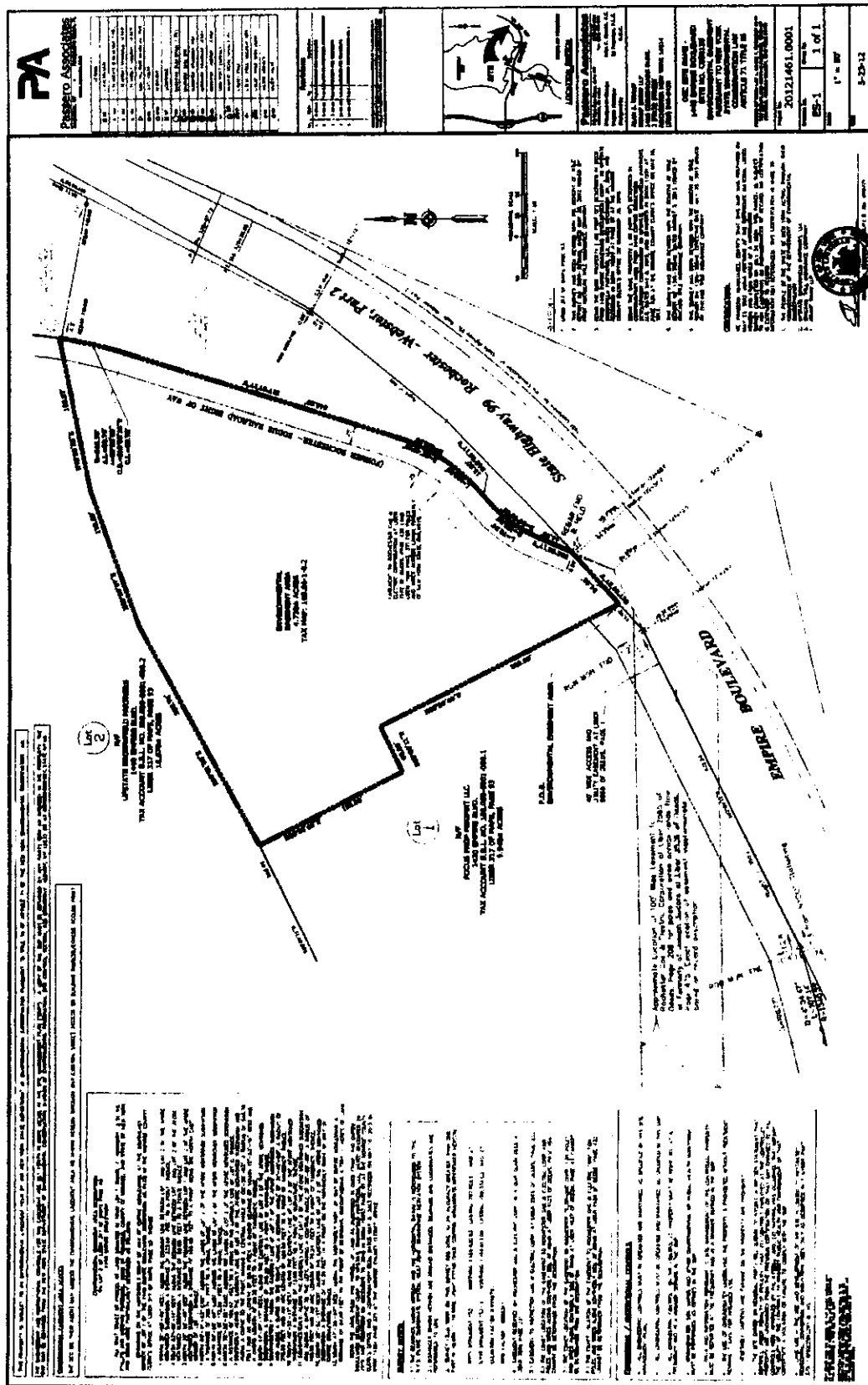
BEGINNING ON THE NORTHERLY RIGHT OF WAY OF EMPIRE BOULEVARD, AT
THE SOUTHEAST CORNER OF LOT 1 OF THE 1440 EMPIRE BOULEVARD
SUBDIVISION AS FILED IN THE MONROE COUNTY CLERK'S OFFICE AT LIBER 317
OF MAPS, PAGE 93; THENCE,

1. NORTH 26°-50'-49" WEST, ALONG THE COMMON LINE BETWEEN LOT 1 AND LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 323.60 FEET TO A POINT; THENCE,
2. SOUTH 63°-09'-11" WEST, ALONG THE COMMON LINE BETWEEN LOT 1 AND LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 60.00 FEET TO A POINT; THENCE,
3. NORTH 26°-50'-49" WEST, ALONG THE COMMON LINE BETWEEN LOT 1 AND LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 195.00 FEET TO A POINT, BEING THE NORTH EAST CORNER OF LOT 1; THENCE,
4. NORTH 60°-51'-03" EAST, ACROSS THE LANDS OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 299.74 FEET TO A POINT; THENCE,
5. NORTH 69°-58'-07" EAST, ACROSS THE LANDS OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 172.29 FEET TO A POINT; THENCE,
6. NORTH 78°-25'-55" EAST, ACROSS THE LANDS OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 186.97 FEET TO A POINT ON THE EASTERLY LINE OF LOT 2; THENCE,
7. SOUTHERLY, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION AND ALONG A CURVE TO THE RIGHT, HAVING A CENTRAL ANGLE OF 08°-28'-03", A RADIUS OF 546.70 FEET AND AN ARC

- LENGTH OF 80.79 FEET, A CHORD BEARING OF SOUTH 12°-53'16" WEST AND A CHORD LENGTH OF 80.72 FEET TO A POINT OF TANGENCY; THENCE,
8. SOUTH 17°-07'-17" WEST, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 346.20 FEET TO A POINT OF CURVATURE; THENCE,
 9. SOUTHEASTERLY, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION AND ALONG A CURVE TO THE RIGHT, HAVING A CENTRAL ANGLE OF 31°-45'-00", A RADIUS OF 218.00 FEET AND AN ARC LENGTH OF 120.80 FEET TO A POINT OF TANGENCY; THENCE,
 10. SOUTH 48°-52'-17" WEST, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 13.60 FEET TO A POINT OF CURVATURE; THENCE,
 11. SOUTHEASTERLY, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION AND ALONG A CURVE TO THE LEFT, HAVING A CENTRAL ANGLE OF 26°-00'-00", A RADIUS OF 168.00 FEET AND AN ARC LENGTH OF 76.24 FEET TO A POINT OF TANGENCY; THENCE,
 12. SOUTH 22°-52'-17" WEST, ALONG THE EASTERLY LINE OF LOT 2 OF THE AFORE MENTIONED SUBDIVISION A DISTANCE OF 44.30 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY OF EMPIRE BOULEVARD; THENCE,
 13. SOUTH 47°-20'-57" WEST, ALONG THE NORTHERLY RIGHT OF WAY OF EMPIRE BOULEVARD A DISTANCE OF 84.92 FEET TO THE POINT OF BEGINNING, ENCOMPASSING 4.738+/- ACRES OF LAND.

BEING THE SAME PIECE AND PARCEL OF LAND AS DESCRIBED IN DEED FROM 1440 EMPIRE BOULEVARD DEVELOPMENT CORP., TO UPSTATE BROWNFIELD PARTNERS, LLC, DATED DECEMBER 29, 2010, AND RECORDED ON DECEMBER 30, 2010 IN BOOK 10957 PAGE 97 AT THE MONROE COUNTY CLERK'S OFFICE AND A CONFIRMATORY DEED DATED MAY 8, 2013 RECORDED ON MAY 10, 2013 IN BOOK 11251 PAGE 335 AT THE MONROE COUNTY CLERK'S OFFICE.

SURVEY



APPENDIX D: Health and Safety Plan

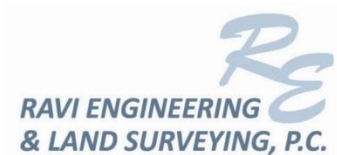
**Southpoint Cove LLC
1440 Empire Boulevard
Town of Penfield, New York**

HEALTH AND SAFETY PLAN

Remedial Action Work Plan

Prepared For:
Passero Associates
242 West Main Street, Suite 100
Rochester, NY 14614

Prepared By:



Ravi Engineering & Land Surveying
2110 S. Clinton Avenue, Suite 1
Rochester, New York 14526

January 2013

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APPENDICES

APPENDIX A	HEAT STRESS AND COLD EXPOSURE
APPENDIX B	ADDITIONAL POTENTIAL PHYSICAL AND CHEMICAL HAZARDS
APPENDIX C	HAZARD EVALUATION SHEETS / MSDS
APPENDIX D	EQUIPMENT CHECKLIST
APPENDIX E	LYME DISEASE PREVENTION AND CONTROL
APPENDIX F	WEST NILE VIRUS BROCHURE MOWER AND EDGER SAFETY

**RAVI ENGINEERING & LAND SURVEYING
SITE SAFETY PLAN**

A. GENERAL INFORMATION

Project Title: NYSDEC Site # C828135 Project No. 45-12-043-0G
1440 Empire Boulevard
Town of Penfield
Monroe County
New York, 14526

Project Manager: Peter S. Morton Project Director: Jess Sudol

Location: 1440 Empire Boulevard
Town of Penfield, Monroe County, New York 14526

Prepared by: Ryan J. Burke Date Prepared: December 20, 2012
Date Revised: January 7, 2013

Approved by: Christine M. Cregan Date Approved: January 7, 2013

Site Safety Officer Review: Ryan J. Burke Date Reviewed: January 7, 2013

Scope/Objective of Work:

- Soil Sampling
- Groundwater Sampling
- Air Monitoring
- Health and Safety
- Coordination with Contractors and Sub-Contractors
- Coordination with NYSDEC

Proposed Date of Field Activities: December 2012; January – May 2013

Background Information: ☒* Complete ☐ Preliminary (no analytical data available)
* Background information provided by Passero Associates, Inc.

Overall Chemical Hazard: ☐ Serious ☐ Moderate
☒ Low ☐ Unknown

Overall Physical Hazard: ☐ Serious ☐ Moderate
☒ Low ☐ Unknown

B. SITE/WASTE CHARACTERISTICS

Waste Type(s):

☒ Liquid ☒ Solid ☒ Sludge ☐ Gas/Vapor

Characteristic(s):

☒ Flammable/Ignitable ☐ Volatile ☐ Corrosive ☐ Acutely Toxic
☒ Explosive (moderate) ☐ Reactive ☒ Carcinogen ☐ Radioactive

Other: _____

Physical Hazards:

☒ Overhead ☐ Confined Space ☐ Below Grade ☒ Trip/Fall
☒ Puncture ☒ Burn ☒ Cut ☒ Splash
☒ Noise ☒ Other: Heat Stress/Cold Stress

Site History/Description and Unusual Features:

The Site is an approximately 4.4-acre portion of a larger 16.67-acre grass-, brush-, and tree-covered undeveloped parcel. The east shore of Irondequoit Bay is approximately 700 feet west of the Site. The Site is located approximately 0.5 miles south of the Empire Boulevard intersection with Plank Road in an area designated by the Town as the LaSalle's Landing District.

The Site slopes steeply downward to the east from its eastern boundary to a much more gradual slope which runs across the center of the Site. Steep slopes and small gullies are found along the northern and northwestern site boundaries. The southwestern part of the Site has a gentle northward slope. Passing southeast to northwest through the center of the Site there is a shallow, narrow, intermittent, fully vegetated stream. The ground surface is littered with potholes caused by the subsidence of the debris fill and the random nature of the debris placement. The potholes provide a conduit for storm water to infiltrate the ground surface.

The Site is a grass-, brush-, and tree-covered undeveloped parcel. The majority of the Site ground surface and sub-surface is influenced by historical fill materials deposited on the Site. A portion of the Site was used as a sand quarry and an unpermitted disposal area for construction and demolition (C&D) debris from the late 1940s to the early 1980s.

Locations of Chemicals/Wastes: Soil, sediment, surface water and/or groundwater.

Estimated Volume of Chemicals/Wastes: Due to the various locations of lead, semivolatile organic compounds (SVOCs) and polychlorinated biphenyls (PCB), the volume of contaminated material to be removed remains to be determined.

Site Currently in Operation: ☐ Yes ☒ No ☐ Not Applicable

C. HAZARD EVALUATION

PHYSICAL HAZARD EVALUATION:		
TASK	HAZARD(S)	HAZARD PREVENTION
Task 1	Contact with or inhalation of contaminants, potentially in high concentration in sampling media and/or fire and explosion.	To minimize exposure to chemical contaminants, a thorough review of suspected contaminants should be completed and implementation of an adequate protection program.
	Back strain and muscle fatigue due to lifting, and using equipment to cut brush.	Use proper lifting techniques to prevent back strain.
	Heat stress/ cold stress exposure.	Implement heat stress management techniques such as shifting work hours, increasing fluid intake, and monitoring employees. See Appendix A.
	Slip/ tripping/ overhead/ fall.	Observe terrain and drilling equipment while walking to minimize slips and falls. Steel-toed boots provide additional support and stability. Use adequate lighting. Wear hard hat. Inspect all lifting equipment prior to use.
	Native wildlife presents the possibility of insect bites and associated diseases. Wildlife of concern in this area includes the Deer tick and mosquito, which may carry lyme disease and the West Nile virus respectively. See Appendix E and F	Avoid wildlife when possible. Wear insect repellent and tick/chigger gators. Apply tick repellent to clothing. See Appendix E and F.
	Sunburn.	Apply sunscreen, wear appropriate clothing.
	Utility Lines.	Identify location(s) prior to work, maintain 25 foot minimum distance to overhead utilities.
	Weather Extremes.	Establish site-specific contingencies for severe weather situations. Discontinue work in severe weather.

Physical Hazard Evaluation: Basic health and safety protection (steel-toed boots, work clothes, and safety glasses or goggles) will be worn by all personnel at all times. Personnel should be made aware of area flora (poison ivy) and fauna (ticks). Snakes and other endemic wildlife should be avoided at all times. Any encounters that result in bites or scratches should be reported to the Site Safety Officer immediately. All allergies should be reported to the Site Safety Officer prior to the start of the project.

CHEMICAL HAZARD EVALUATION

Task Number	Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
		PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
1	Lead	0.05 mg/m ³	0.1 mg/m ³	0.05 mg/m ³	Y	Inhalation, Ingestion, Skin Contact	Poison, abdominal pain, spasms, nausea, vomiting, headache, irritation to eyes; skin, weakness, metallic taste, anorexia/loss of appetite, insomnia, facial pallor, colic, anemia, tremor, "lead line" in gums, constipation, abdominal pain, paralysis in wrists and ankles, encephalopathy (inflammation of brain)	Odorless	---	---

CHEMICAL HAZARD EVALUATION										
Task Number	Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
		PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
1	Polychlorinated Biphenyls (PCBs)	1.0 mg/m ³	0.1 mg/m ³	0.05 mg/m ³	Y	Inhalation, Ingestion, Eye, Skin Contact, Respiratory (vapor)	Eye contact may result in redness, dry skin and defatting based on human experience. A potential exists for developing chloracne. Respiratory tract irritation, coughing, choking and shortness of breath, vomiting	Odorless	---	---
1	Benzo (a) anthracene	0.1 mg/m ³	0.1 mg/m ³	0.05 mg/m ³	Y	Inhalation, Ingestion, Eye, Skin Contact	Cancer, urinary conditions, skin irritation	Faint aromatic odor	---	---
1	Benzo (a) pyrene	0.1 mg/m ³	0.2 mg/m ³	0.05 mg/m ³	Y	Inhalation, Ingestion, Eye, Skin Contact, Chronic	Impair fertility, cause eye, skin, and respiratory tract irritation	Faint aromatic odor	---	---

CHEMICAL HAZARD EVALUATION

Task Number	Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
		PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
1	Benzo (b) fluoranthene	---	---	---	Y	Inhalation, Ingestion, Eye, Skin Contact, Chronic	Impair fertility, cause eye, skin, and respiratory tract irritation	Faint aromatic odor	---	---
1	Benzo (k) fluoranthene	---	---	---	Y	Inhalation, Ingestion, Eye, Skin Contact, Chronic	May be fatal if swallowed, impair fertility, cause eye, skin, and respiratory tract irritation, cancer hazard	Odorless	---	---
1	Chrysene	---	0.2 mg/m ³	---	Y	Inhalation, Ingestion, Eye, Skin Contact, Chronic	May be fatal if swallowed, impair fertility, cause eye, skin, and respiratory tract irritation, cancer hazard	Odorless	---	---
1	Dibenz (a,h) anthracene	0.2 mg/m ³	0.2 mg/m ³	Not Listed	Y	Inhalation, Ingestion, Eye, Skin Contact	Impair fertility, cause eye, skin, and respiratory tract irritation, cancer hazard	Odorless	---	---

CHEMICAL HAZARD EVALUATION										
Task Number	Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
		PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
1	Indeno (1,2,3-cd) pyrene	---	---	---	Y	Inhalation, Ingestion, Eye, Skin Contact	Impair fertility, cause eye, skin, and respiratory tract irritation, cancer hazard	Odorless	---	---
1	Phenanthrene	---	---	---	Y	Inhalation, Ingestion, Eye, Skin Contact	Chronic, teratogenic, and mutagenic effects, Impair fertility, cause eye, skin, and respiratory tract irritation, cancer hazard	Odorless	---	---
1	Pyrene	---	---	---	Y	Inhalation, Ingestion, Eye, Skin Contact	Chronic, teratogenic, and mutagenic effects, Impair fertility, cause eye, skin, and respiratory tract irritation, cancer hazard	Odorless	---	---

¹There are over 100 different PAHs and the health effects of the individual PAHs are not exactly alike. A public health state and a fact sheet for PAHs from the U.S. Health and Human Services, public Health Service for Toxic Substances and disease Registry is provided in Appendix C.

KEY:

PEL = Permissible Exposure Limit

REL = Recommended Exposure Limit

--- = Information not available

mg/m³ = Milligrams per cubic meter

ppm = Parts per million

TLV = Threshold Limit Value(ACGIH)

D. SITE SAFETY WORK PLAN

Site Control:

Perimeter Identified? [Y] **Site Secured?** [N]

Work Areas Designated? [Y] **Zone(s) of contamination identified?** [Y]

Anticipated Level of Protection (cross-reference task numbers in Section C):

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
Task 1			Available	X

All site work will be performed at Level D (steel-toed boots, work clothes, eye protection, gloves and hard hats) unless monitoring indicates otherwise. Gloves will be worn if contact with site soil, sediment or water is anticipated, due to concerns of lead, semi-volatile organic compounds (SVOCs), and polychlorinated biphenyls (PCBs) contamination.

See Appendices A, B and C for Specific Site Safety Requirements.

Air Monitoring:

Despite the fact that volatile organic compounds (VOCs) are not considered contaminants of concern at the Site, air monitoring for VOCs will be conducted during all excavation activities conducted in Area of Concern (AOC)-1 and AOC-2. Upwind concentrations will be measured to establish background concentrations. VOCs will be continuously monitored at the downwind perimeter and at several locations along the perimeter of the Site where vapors would be expected to leave the Site. Air Monitoring will focus on downwind areas, and will be adjusted as wind directions vary.

The following actions will be taken based on organic vapor levels measured:

- If total organic vapor levels exceed 5 parts per million (ppm) above background at the perimeter, work activities will be temporarily halted and monitoring continued. If levels decrease below 5 ppm above background, work activities will resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter persist at levels in excess of 5 ppm above background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the hot zone or half the distance to the nearest potential receptor or residential/commercial structure, is below 5 ppm.

- If the total organic vapor level is above 25 ppm at the perimeter, Site activities will be shutdown.

All Emergency contacts will go into effect as appropriate.

In the event that dust exceeds Community Air Monitoring Plan (CAMP) guidelines, dust control measures will be implemented. A temporary supply water line will be installed from the municipal water supply on-site or dewatering trucks will be on site. Hoses will be connected and water sprayed on the various areas as needed. Water will be applied to minimize dust and not create any unnecessary run-off from the Site.

Action Level:

For PID/FID readings of 25 ppm above ambient air and/or greater than .15 mg/m³ for particulate levels, Level C protection will be donned. O₂ readings must remain between 19.5% and 22.0%. Explosivity must be above 10% LEL. The area must be evacuated and ignition sources eliminated if levels are not within their standard.

Decontamination Solutions and Procedures for Equipment, Sampling Gear, etc.:

Disposable sampling equipment will be used where possible. If decon is necessary, distilled or deionized water and alconox will be used. A 10% nitric acid rinse will be added if metals sampling is to be conducted.

Decon pads will consist of either timber (2 x 4's) or rubber mats, and lined with polyethylene sheeting prior to excavation activities. All heavy equipment will be pressure-washed prior to leaving the Site, as well as when moving from contaminated areas to uncontaminated areas, to prevent cross contamination.

Rinse water will be collected and drummed to prevent runoff. The decontamination water generated within the decontamination pad will be containerized and characterized for disposal purposes.

Personnel Decon Protocol:

Soap, water and paper towels will be available for all personnel and will be used before eating, drinking or leaving the Site. Personnel will shower upon return to home. Disposable PPE will be double bagged and disposed of as non-hazardous waste, unless PCBs are detected. If PCBs are detected, the PPE will be disposed of appropriately by RE&LS.

Decon Solution Monitoring Procedures, if Applicable:

Decon solution will be disposed of on the Site with owner's permission.

Special Site Equipment, Facilities or Procedures

(Sanitary Facilities and Lighting Must Meet 29CFR 1910.120):

A portable toilet and potable water will be available on Site, by others.

Site Entry Procedures and Special Considerations:

All parties will be required to attend an on-site briefing, which will identify the roles of each organization's personnel and will integrate emergency procedures for all Site participants.

Level D will be used based on the results of previous investigations. Level C will be available, and used when indicated by PID/FID readings of 5 ppm or greater, and/or 0.15mg/m³ for particulate readings, above ambient air.

Work Limitations (time of day, weather conditions, etc.) and Heat/Cold Stress Requirements:

All work will be completed during daylight hours. Heavy equipment will not be used during electrical storms.

General Spill Control, if Applicable:

N/A

Investigation Derived Material (i.e., Expendables, Decon Waste, Cuttings) Disposal:

N/A

Sampling Handling Procedures Including Protective Wear:

N/A

Team Member*	Responsibility
<u>Peter Morton (RE&LS)</u>	<u>Project Manager</u>
<u>Geoff Bijak (RE&LS)</u>	<u>Site Safety Officer</u>
<u>Dale Gramza (Nature's Way)</u>	<u>Team Member</u>
<u>Jon Fitzsimmons (Spoleta)</u>	<u>Team Member</u>
<u> </u>	<u>Team Member</u>
<u> </u>	<u>Team Member</u>

* All entries into the work zone require "Buddy System" use. All Ravi Engineering & Land Surveying field staff participate in a medical monitoring program and have completed applicable training per 29CFR 1910.120. Respiratory protection program meets requirements of 29CFR 1910.134.

E. EMERGENCY INFORMATION

LOCAL RESOURCES

Ambulance:	<u>911</u>
Hospital Emergency Room:	<u>Rochester General Hospital (585) 922-4000</u> <u>1425 Portland Ave, Rochester, NY 14621</u>
Poison Control Center:	<u>911</u>
Police (include local, county sheriff, state):	<u>911</u>
Fire Department:	<u>911</u>
Airport:	<u>N/A</u>
Local Laboratory:	<u>N/A</u>
UPS/Federal Express:	<u>N/A</u>

SITE RESOURCES

Site Emergency Evaluation Alarm Method:	<u>Sound vehicle horn.</u>
Water Supply Source:	<u>Gallons of water will be available in vehicles.</u>
Telephone Location, Number:	<u>None available</u>
Cellular Phone, if Available:	<u></u>
Radio:	<u>TBD</u>
Other:	<u>TBD</u>

EMERGENCY CONTACTS

1. Fire/Police: 911
2. Ravi Engineering & Land Surveying, Safety Director: Geoff Bijak
(585) 223-3660, Ext. 329 (office)

EMERGENCY ROUTES

(Note: Field team must know route(s) prior to start of work.)

Directions from the site to the hospital (include map):

Head **southwest** on Empire Boulevard. Take a left onto NY 590 North ramp. Take exit 10A.

Take exit towards Carter St/Hudson Ave. Merge onto NY 104 Service Road West

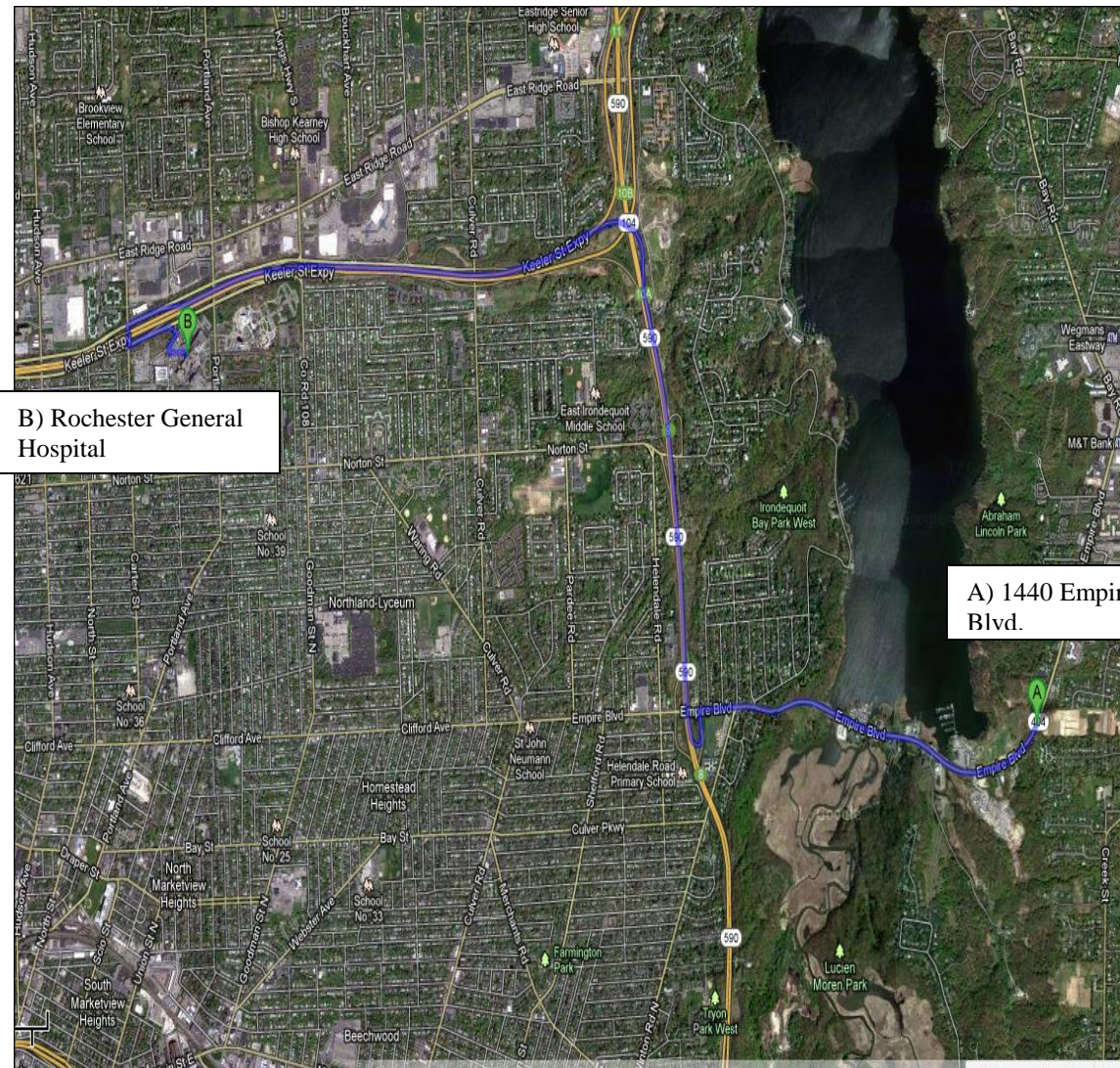
Take left onto Carter St. The hospital is at 1425 Portland Ave.

On-site Assembly Area: At Site entry point.

Off site Assembly Area: The intersection of the site access road and Empire Boulevard.

Emergency egress routes to get off site: N/A.

Directions from the site to the Rochester General Hospital



B) Rochester General Hospital

A) 1440 Empire Blvd.

APPENDIX A

HEAT STRESS AND COLD EXPOSURE

OSHA[®] FactSheet

Protecting Workers from the Effects of Heat

At times, workers may be required to work in hot environments for long periods. When the human body's unable to maintain a normal temperature, heat-related illnesses can occur and may result in death. This fact sheet provides information to employers on measures they should take to prevent worker illnesses and death caused by heat stress.

Factors that May Cause Heat-related Illness

- High temperature and humidity
- Low fluid consumption
- Direct sun exposure (with no shade) or extreme heat
- Limited air movement (no breeze or wind)
- Physical exertion
- Use of bulky protective clothing and equipment
- Poor physical condition or ongoing health problems
- Some medications
- Pregnancy
- Lack of previous exposure to hot workplaces
- Previous heat-related illness

Health Problems Caused by Hot Work Environments

Heat Stroke is the most serious heat-related health problem. Heat stroke occurs when the body's temperature regulating system fails and body temperature rises to critical levels (greater than 104°F). ***This is a medical emergency that may result in death!*** The signs of heat stroke are confusion, loss of consciousness and seizures. Workers experiencing heat stroke have a very high body temperature and may stop sweating. If a worker shows signs of possible heat stroke, ***get medical help immediately***, and call 911. Until medical help arrives, move the worker to a shady, cool area and remove as much clothing as possible. Wet the worker with cool water and circulate the air to speed cooling. Place cold wet cloths, wet towels or ice all over the body or soak the worker's clothing with cold water.

Heat Exhaustion is the next most serious heat-related health problem. The signs and symptoms of heat exhaustion are headache, nausea, dizziness, weakness, irritability, confusion, thirst, heavy sweating and a body temperature greater than 100.4°F. Workers with heat exhaustion should be removed from the hot area and given liquids to drink. Remove unnecessary clothing including shoes and socks.

Cool the worker with cold compresses to the head, neck, and face or have the worker wash his or her head, face and neck with cold water. Encourage frequent sips of cool water. Workers with signs or symptoms of heat exhaustion should be taken to a clinic or emergency room for medical evaluation and treatment. Make sure that someone stays with the worker until help arrives. If symptoms worsen, call 911 and get help immediately.

Heat Cramps are muscle pains usually caused by physical labor in a hot work environment. Heat cramps are caused by the loss of body salts and fluid during sweating. Workers with heat cramps should replace fluid loss by drinking water and/or carbohydrate-electrolyte replacement liquids (e.g., sports drinks) every 15 to 20 minutes.

Heat Rash is the most common problem in hot work environments. Heat rash is caused by sweating and looks like a red cluster of pimples or small blisters. Heat rash usually appears on the neck, upper chest, in the groin, under the breasts and in elbow creases. The best treatment for heat rash is to provide a cooler, less humid work environment. The rash area should be kept dry. Powder may be applied to increase comfort. Ointments and creams should not be used on a heat rash. Anything that makes the skin warm or moist may make the rash worse.

Engineering Controls to Prevent Heat-related Health Effects

The best way to prevent heat illness is to make the work environment cooler. In outdoor situations, this may be done by scheduling activities during the cooler times of the day. However, very early starting times may result in increased fatigue. Also, humidity tends to be higher in the early morning hours. Provide air conditioned or shaded areas close to the work area and allow frequent rest breaks.

Indoor workplaces may be cooled by using air conditioning or increased ventilation, assuming that cooler air is available from the outside. Other methods to reduce indoor temperature include: providing reflec-

tive shields to redirect radiant heat, insulating hot surfaces, and decreasing water vapor pressure, e.g., by sealing steam leaks and keeping floors dry. The use of fans to increase the air speed over the worker will improve heat exchange between the skin surface and the air, unless the air temperature is higher than the skin temperature. However, increasing air speeds above 300 ft. per min. may actually have a warming effect. Industrial hygiene personnel can assess the degree of heat stress caused by the work environment and make recommendations for reducing heat exposure.

Work Practices to Prevent Heat-related Health Effects

- Train workers and supervisors about the hazards leading to heat stress and ways to prevent them.
- Allow workers to get used to hot environments by gradually increasing exposure over a 5-day work period. Begin with 50% of the normal workload and time spent in the hot environment and then gradually build up to 100% by the fifth day. New workers and those returning from an absence of two weeks or more should have a 5-day adjustment period.
- Provide workers with plenty of cool water in convenient, visible locations close to the work area. Water should have a palatable (pleasant and odor-free) taste and water temperature should be 50–60°F if possible.
- Remind workers to frequently drink small amounts of water before they become thirsty to maintain good hydration. Simply telling them to drink plenty of fluids is not sufficient. During moderate activity, in moderately hot conditions, at least one pint of water per hour is needed. Workers should drink about 6 ounces or a medium-sized glass-full every 15 minutes. Instruct workers that urine should be

clear or lightly colored.

- Be aware that it is harmful to drink extreme amounts of water. Workers should generally not drink more than a total of 12 quarts of fluid in 24 hours.
- Reduce the physical demands of the job, such as excessive lifting, climbing, or digging with heavy objects. Use mechanical devices or assign extra workers.
- Monitor weather reports daily and reschedule jobs with high heat exposure to cooler times of the day. When possible, routine maintenance and repair projects should be scheduled for the cooler seasons of the year.
- Schedule frequent rest periods with water breaks in shaded or air-conditioned recovery areas.
- Workers are at an increased risk of heat stress from personal protective equipment (PPE), especially from wearing semi-permeable (penetrable) or impermeable clothing (such as Tyvek or rubber), when the outside temperature exceeds 70°F, or while working at high energy levels. These types of clothing materials trap heat close to a worker's body. Workers should be monitored by establishing a routine to periodically check them for signs and symptoms of overexposure.

Specialized Personal Protective Equipment to Reduce Heat Exposure

- For more information on this, and other health-related issues affecting workers, visit OSHA's website at www.osha.gov.

Additional Information

- For more information on this and other health-related issues affecting workers, visit the following OSHA web pages:
www.osha.gov/SLTC/heatstress/recognition.html
www.osha.gov/dts/osta/otm/otm_iii/otm_iii_4.html

This document is advisory in nature and informational in content. It is not a standard or regulation, and it neither creates new legal obligations nor alters existing obligations created by OSHA standards or the Occupational Safety and Health Act. Pursuant to the OSH Act, employers must comply with safety and health standards and regulations issued and enforced either by OSHA or by an OSHA-approved State Plan. In addition, the Act's General Duty Clause, Section 5(a)(1), requires employers to provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm.

For more complete information:



U.S. Department of Labor

www.osha.gov

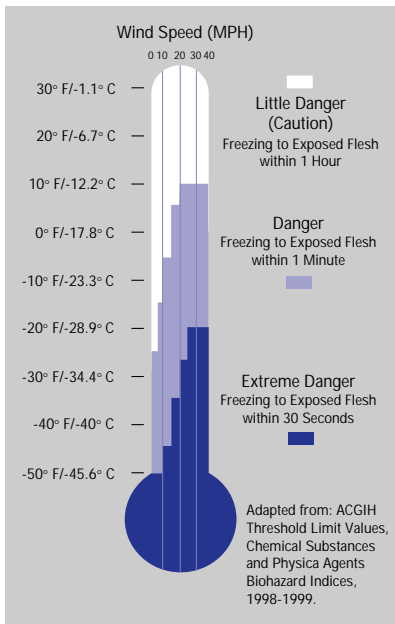
(800) 321-OSHA

THE COLD STRESS EQUATION

LOW TEMPERATURE + WIND SPEED + WETNESS = INJURIES & ILLNESS

When the body is unable to warm itself, serious cold-related illnesses and injuries may occur, and permanent tissue damage and death may result.

Hypothermia can occur when *land temperatures* are **above** freezing or *water temperatures* are below 98.6°F/ 37°C. Cold-related illnesses can slowly overcome a person who has been chilled by low temperatures, brisk winds, or wet clothing.



FROST BITE

What Happens to the Body:

FREEZING IN DEEP LAYERS OF SKIN AND TISSUE; PALE, WAXY-WHITE SKIN COLOR; SKIN BECOMES HARD and NUMB; USUALLY AFFECTS THE FINGERS, HANDS, TOES, FEET, EARS, and NOSE.

What Should Be Done: (and temperatures)

- Move the person to a warm dry area. Don't leave the person alone.
- Remove any wet or tight clothing that may cut off blood flow to the affected area.
- **DO NOT** rub the affected area, because rubbing causes damage to the skin and tissue.
- **Gently** place the affected area in a warm (105°F) water bath and monitor the water temperature to **slowly** warm the tissue. Don't pour warm water directly on the affected area because it will warm the tissue too fast causing tissue damage. Warming takes about 25-40 minutes.
- After the affected area has been warmed, it may become puffy and blister. The affected area may have a burning feeling or numbness. When normal feeling, movement, and skin color have returned, the affected area should be dried and wrapped to keep it warm. **NOTE:** If there is a chance the affected area may get cold again, do not warm the skin. If the skin is warmed and then becomes cold again, it will cause severe tissue damage.
- Seek medical attention as soon as possible.

HYPOTHERMIA - (Medical Emergency)

What Happens to the Body:

NORMAL BODY TEMPERATURE (98.6°F/37°C) DROPS TO OR BELOW 95°F (35°C); FATIGUE OR DROWSINESS; UNCONTROLLED SHIVERING; COOL BLUISH SKIN; SLURRED SPEECH; CLUMSY MOVEMENTS; IRRITABLE, IRRATIONAL OR CONFUSED BEHAVIOR.

What Should Be Done: (land temperatures)

- Call for emergency help (i.e., Ambulance or Call 911).
- Move the person to a warm, dry area. Don't leave the person alone. Remove any wet clothing and replace with warm, dry clothing or wrap the person in blankets.
- Have the person drink warm, sweet drinks (sugar water or sports-type drinks) if they are alert. **Avoid drinks with caffeine** (coffee, tea, or hot chocolate) or alcohol.
- Have the person move their arms and legs to create muscle heat. If they are unable to do this, place warm bottles or hot packs in the arm pits, groin, neck, and head areas. **DO NOT** rub the person's body or place them in warm water bath. This may stop their heart.

What Should Be Done: (water temperatures)

- Call for emergency help (Ambulance or Call 911). Body heat is lost up to 25 times faster in water.
- **DO NOT** remove any clothing. Button, buckle, zip, and tighten any collars, cuffs, shoes, and hoods because the layer of trapped water closest to the body provides a layer of insulation that slows the loss of heat. Keep the head out of the water and put on a hat or hood.
- Get out of the water as quickly as possible or climb on anything floating. **DO NOT** attempt to swim unless a floating object or another person can be reached because swimming or other physical activity uses the body's heat and reduces survival time by about 50 percent.
- If getting out of the water is not possible, wait quietly and conserve body heat by folding arms across the chest, keeping thighs together, bending knees, and crossing ankles. If another person is in the water, huddle together with chests held closely.

How to Protect Workers

- Recognize the environmental and workplace conditions that lead to potential cold-induced illnesses and injuries.
- Learn the signs and symptoms of cold-induced illnesses/injuries and what to do to help the worker.
- Train the workforce about cold-induced illnesses and injuries.
- Select proper clothing for cold, wet, and windy conditions. Layer clothing to adjust to changing environmental temperatures. Wear a hat and gloves, in addition to underwear that will keep water away from the skin (polypropylene).
- Take frequent short breaks in warm dry shelters to allow the body to warm up.
- Perform work during the warmest part of the day.
- Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
- Use the buddy system (work in pairs).
- Drink warm, sweet beverages (sugar water, sports-type drinks). Avoid drinks with caffeine (coffee, tea, or hot chocolate) or alcohol.
- Eat warm, high-calorie foods like hot pasta dishes.

Workers Are at Increased Risk When...

- They have predisposing health conditions such as cardiovascular disease, diabetes, and hypertension.
- They take certain medication (check with your doctor, nurse, or pharmacy and ask if any medicines you are taking affect you while working in cold environments).
- They are in poor physical condition, have a poor diet, or are older.

APPENDIX B

ADDITIONAL POTENTIAL PHYSICAL AND CHEMICAL HAZARDS

ADDITIONAL POTENTIAL PHYSICAL AND CHEMICAL HAZARDS	
POTENTIAL PHYSICAL HAZARDS	CONTROL METHODS
Overhead Hazards/Falling Objects	Overhead hazards will be identified prior to each task (i.e., inspecting drill rig mast, building structure). Hard hats will be required for each task that poses an overhead hazard.
Contact with Utilities (To be handled by Ecology and Environment)	Prior to initiating site activities, all utilities will be located by the appropriate utility company and will be marked and/or barricaded to minimize the potential of accidental contact. A minimum distance of 25 feet between the derrick and overhead power lines must be maintained at all times.
Noise Exposure	Areas of potentially high sound pressure levels (>85 dBA) will be restricted to authorized personnel only. Engineering controls will be used to the extent possible. Hearing protection will be made available to all workers on site. Exposure to time-weighted average levels in excess of 85 dBA is not anticipated.
POTENTIAL CHEMICAL HAZARDS	GENERAL CONTROL METHODS
Contaminant Inhalation	Direct reading instruments will be used to monitor airborne contaminants. Established Ravi Engineering & Land Surveying' action levels will limit exposure to safe levels. Respiratory protection will be used as appropriate.
Contaminant Ingestion	Standard safety procedures such as restricting eating, drinking, and smoking to the support zone and utilizing proper personal decontamination procedures will minimize ingestion as a potential route of exposure.
Dermal Contaminant Contact	The proper selection and use of personal protective clothing and decontamination procedures will minimize dermal contaminant contact.
Potential contact with lower concentration waste and naturally occurring contaminants (i.e., methane)	Dermal contact with contaminants will be minimized by proper use of the following PPE: <ul style="list-style-type: none"> • Tyvex coveralls • Neoprene gloves • Booties (latex) or over-boots.

APPENDIX C

HAZARD EVALUATION SHEETS/ MSDS

MATERIAL SAFETY DATA SHEET**EM SCIENCE****1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Manufacturer.....:

EM SCIENCE
A Division of EM Industries
P.O. Box 70
480 Democrat Road
Gibbstown, N.J. 08027

Preparation Date.: 10/25/96**Information Phone Number.:** 856-423-6300**Hours:** Mon. to Fri. 8:30-5**Chemtrec Emergency Number:** 800-424-9300**Hours:** 24 hrs a day**Catalog Number(s):**

BX0207

Product Name:

1,2-Benzanthracene

Synonyms:

Benzo (A) Anthracene

Chemical Family:

Aromatic Hydrocarbon

Formula: $C_{18}H_{12}$ **Molecular Weight.:**

228.29

2. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS #	Appr %
1,2-Benzanthracene	56-55-3	100%

|3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

SUSPECT CANCER HAZARD. MAY CAUSE CANCER.

HARMFUL IF INHALED, SWALLOWED OR ABSORBED THROUGH SKIN.

IRRITATING TO SKIN, EYES AND MUCOUS MEMBRANES.

MAY CAUSE DAMAGE TO KIDNEY, URETER, BLADDER.

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Appearance:

Light yellow powder

POTENTIAL HEALTH EFFECTS (ACUTE AND CHRONIC)

Symptoms of Exposure:

Harmful if inhaled, swallowed, or absorbed through the skin. Irritating on contact with skin, eyes or mucous membranes. May cause damage to kidney, ureter, bladder. Chronic exposure may cause alteration of genetic material.

Medical Cond. Aggravated by Exposure:

Urinary conditions

Routes of Entry:

Inhalation, ingestion or skin contact.

Carcinogenicity:

Suspected human carcinogenic substance. Suspect Cancer Hazard.

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

4. FIRST AID MEASURES

Emergency First Aid:

GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE.

Skin: Immediately flush thoroughly with large amounts of water.

Eyes: Immediately flush thoroughly with water for at least 15 minutes.

Inhalation: Remove to fresh air; give artificial respiration if breathing has stopped.

Ingestion: If conscious, drink water and induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Remove contaminated clothing and wash before reuse.

5. FIRE FIGHTING MEASURES

Flash Point (F): Noncombustible
Flammable Limits LEL (%): N/A
Flammable Limits UEL (%): N/A
Extinguishing Media:
Foam, Carbon dioxide, Water spray

Fire Fighting Procedures:

Wear self-contained breathing apparatus and protective clothing.

Fire & Explosion Hazards:

Thermal decomposition produces highly toxic fumes.

6. ACCIDENTAL RELEASE MEASURES

Spill Response:

Evacuate the area of all unnecessary personnel. Wear suitable protective equipment listed under Exposure / Personal Protection. Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards. Contain the release and eliminate its source, if this can be done without risk. Take up and containerize for proper disposal as described under Disposal. Comply with Federal, State, and local regulations on reporting releases. Refer to Regulatory Information for reportable quantity and other regulatory data.

7. HANDLING AND STORAGE

Handling & Storage:

Keep container tightly closed. Store in a cool, dry, well-ventilated area. Do not breathe vapor or dust. Do not get in eyes, on skin, or on clothing.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT:

Ventilation, Respiratory Protection, Protective Clothing, Eye Protection:

Respiratory Protection: If workplace exposure limit(s) of product or any component is exceeded (see TLV/PEL), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your safety equipment supplier). Engineering and/or administrative controls should be implemented to reduce exposure. Material must be handled or transferred in an approved fume hood or with equivalent ventilation. Protective gloves must be worn to prevent skin contact (Viton or equivalent) Safety glasses with side shields must be worn at all times. Impervious protective clothing should be worn to prevent skin contact.

Work/Hygenic Practices:

Wash thoroughly after handling. Do not take internally. Eye wash and safety equipment should be readily available.

EXPOSURE GUIDELINES

OSHA - PEL:

Component	TWA		STEL		CL		Skin
	PPM	MG/M3	PPM	MG/M3	PPM	MG/M3	
1,2-Benzanthracene							

ACGIH - TLV:

Component	TWA		STEL		CL		Skin
	PPM	MG/M3	PPM	MG/M3	PPM	MG/M3	
1,2-Benzanthracene							

If there are no exposure limit numbers listed in the Exposure Guidelines chart, this indicates that no OSHA or ACGIH exposure limits have been established.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (C 760 mmHg) : 435C Sublimes
Melting Point (C) : 160C
Specific Gravity (H₂O = 1) : N/A
Vapor Pressure (mm Hg) : N/A
Percent Volatile by vol (%) : N/A
Vapor Density (Air = 1) : N/A
Evaporation Rate (BuAc = 1) : N/A
Solubility in Water (%) : Insoluble
Appearance :
Light yellow powder

10. STABILITY AND REACTIVITY

Stability: Yes

Hazardous Polymerization:
Does not occur

Hazardous Decomposition:
CO_x

Conditions to Avoid:
None indicated

Materials To Avoid:

- () Water
- (X) Acids
- (X) Bases
- () Corrosives
- (X) Oxidizers
- () Other:

11. TOXICOLOGICAL INFORMATION

Toxicity Data

ivn-mus LDLo: 10 mg/kg

Toxicological Findings:

Tests on laboratory animals indicate material may produce adverse mutagenic effects and cause tumors.
Cited in Registry of Toxic Effects of Chemical Substances (RTECS)

12. DISPOSAL CONSIDERATIONS

EPA Waste Numbers: U018

Treatment:

Specified Technology - Incineration to a level below TCA (Total Constituent Analyses) levels. Contact your local permitted waste disposal company (TSD) for permissible treatment site.
ALWAYS CONTACT A PERMITTED WASTE DISPOSER (TSD) TO ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

13. TRANSPORT INFORMATION

DOT Proper Shipping Name:

Environmentally Hazardous Substance, Solid, n.o.s. (1,2-Benzanthracene)

DOT ID Number :

UN3077

14. REGULATORY INFORMATION

TSCA Statement:

The CAS number of this product is listed on the TSCA Inventory.

Component	SARA EHS (302)	SARA EHS TPQ (lbs)	CERCLA RQ (lbs)
1,2-Benzanthracene			10

Component	OSHA Floor List	SARA 313	DeMinimis for SARA 313 (%)
1,2-Benzanthracene	Y	Y	0.1

If there is no information listed on the regulatory information chart, this indicates that the chemical is not covered by the specific regulation listed.

15. OTHER INFORMATION

Comments:
None

NFPA Hazard Ratings:

Health : 3
 Flammability : 0
 Reactivity : 0
 Special Hazards :

Revision History: 1/1/84 7/18/87 1/24/91 3/1/91
 11/19/93 3/10/95

| = Revised Section

N/A = Not Available

N/E = None Established

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skill and at their own discretion and risk. Since conditions and manner of use are outside our control, we make NO WARRANTY, EXPRESS OR IMPLIED, OR MERCHANTABILITY, FITNESS OR OTHERWISE.

Material Safety Data Sheet

Benzo[a]pyrene, 98%

ACC# 37175

Section 1 - Chemical Product and Company Identification

MSDS Name: Benzo[a]pyrene, 98%

Catalog Numbers: AC105600000, AC105600010, AC105601000, AC377200000, AC377200010, AC377201000 AC377201000

Synonyms: 3,4-Benzopyrene; 3,4-Benzpyrene; Benzo[def]chrysene.

Company Identification:

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01

For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
50-32-8	Benzo[a]pyrene	>96	200-028-5

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: yellow to brown powder.

Danger! May cause harm to the unborn child. May impair fertility. May cause eye, skin, and respiratory tract irritation. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Cancer hazard. May cause allergic skin reaction. May cause heritable genetic damage.

Target Organs: Reproductive system, skin.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause skin irritation. May be harmful if absorbed through the skin. May cause an allergic reaction in certain individuals.

Ingestion: May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated. May be harmful if swallowed.

Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. May be harmful if inhaled.

Chronic: May cause cancer in humans. May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: Not available.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Benzo[a]pyrene	0.2 mg/m ³ TWA (as benzene soluble aerosol) (listed under Coal tar pitches).	0.1 mg/m ³ TWA (cyclohexane-extractable fraction) (listed under Coal tar pitches).80 mg/m ³ IDLH (listed under Coal tar pitches).	0.2 mg/m ³ TWA (as benzene soluble fraction) (listed under Coal tar pitches).

OSHA Vacated PELs: Benzo[a]pyrene: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Powder

Appearance: yellow to brown

Odor: faint aromatic odor

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate:Not available.

Viscosity: Not available.

Boiling Point: 495 deg C @ 760 mm Hg

Freezing/Melting Point:175 - 179 deg C

Decomposition Temperature:Not available.

Solubility: 1.60×10^{-3} mg/l @25 °C

Specific Gravity/Density:Not available.

Molecular Formula:C₂₀H₁₂

Molecular Weight:252.31

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Dust generation.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 50-32-8: DJ3675000

LD50/LC50:

Not available.

Carcinogenicity:

CAS# 50-32-8:

- **ACGIH:** A2 - Suspected Human Carcinogen
- **California:** carcinogen, initial date 7/1/87
- **NTP:** Suspect carcinogen
- **IARC:** Group 1 carcinogen (listed as Coal tar pitches).

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.

Mutagenicity: Mutagenic effects have occurred in humans. Mutagenic effects have occurred in experimental animals.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series:

CAS# 50-32-8: waste number U022.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	NOT REGULATED FOR DOMESTIC TRANSPORT	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOL (Benzo{a} pyrene)
Hazard Class:		9
UN Number:		UN3077
Packing Group:		III

Section 15 - Regulatory Information**US FEDERAL****TSCA**

CAS# 50-32-8 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 50-32-8: 1 lb final RQ; 0.454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 50-32-8: immediate, delayed.

Section 313

This material contains Benzo[a]pyrene (CAS# 50-32-8, >96%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. CAS# 50-32-8 is listed as a Priority Pollutant under the Clean Water Act.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 50-32-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Benzo[a]pyrene, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: CAS# 50-32-8: 0.06 罈/day NSRL

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T N

Risk Phrases:

R 43 May cause sensitization by skin contact.

R 45 May cause cancer.

R 46 May cause heritable genetic damage.

R 60 May impair fertility.

R 61 May cause harm to the unborn child.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.

S 60 This material and its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 50-32-8: No information available.

Canada - DSL/NDSL

CAS# 50-32-8 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D2A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 50-32-8 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 9/02/1997

Revision #7 Date: 6/30/2006

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Worldwide Helpline :+1.347.960.3608
For further enquiries :info@clearsynth.com
For an online quote : [click here](#)



- MATERIAL SAFETY DATA SHEET -

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name : Benzo[b]fluoranthene-d12
Company Identification : Clearsynth Labs Pvt. Ltd.
413 Laxmi Mall, New Link Road, Andheri (W),
Mumbai-400 053, INDIA
For information call : ++91-22-26355700
For emergencies call : ++91-22-26355699
For further enquiries : info@clearsynth.com

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	%	EINECS#	Haz Symbols	RISK PHRASES
93951-98-5	Benzo[b]fluoranthene-d12	>95%	-	-	-

Hazard Symbols: XN

Risk Phrases: 22

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Harmful if swallowed.

Potential Health Effects

The toxicological properties of this material have not been investigated. Use appropriate procedures to prevent opportunities for direct contact with the skin or eyes and to prevent inhalation. Compound is Non-hazardous, Non-Toxic/Non-Flammable.

SECTION 4 - FIRST AID MEASURES

Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.

Skin:

Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion:

Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation:

Remove from exposure and move to fresh air immediately.

Notes to Physician:

SECTION 5 - FIRE FIGHTING MEASURES

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or

combustion.

Extinguishing Media:

In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal.

SECTION 7 - HANDLING and STORAGE

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

Storage:

Store in a well closed container.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

Personal Protective Equipment

Eyes:

Wear safety glasses and chemical goggles if splashing is possible.

Skin:

Wear appropriate protective gloves and clothing to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to minimize contact with skin.

Respirators:

Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: _____

Molecular Formula: _____

NA

Molecular Weight: _____

264.39

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials, strong oxidants.

Incompatibilities with Other Materials:

Strong oxidizing agents, strong bases.

Hazardous Decomposition Products:

Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.

Hazardous Polymerization: Has not been reported.

SECTION 11 - TOXICOLOGICAL INFORMATION

RTECS#:

CAS#: LD50/LC50:

CAS#: Draize test, rabbit, eye: 100 mg/24H Moderate; Oral,
mouse: LD50 = 300 mg/kg; Oral, rabbit: LD50 = 3200 mg/kg; Oral, rat:
LD50 = 980 mg/kg.

Carcinogenicity:

Salicylamide -

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

See actual entry in RTECS for complete information.

SECTION 12 - ECOLOGICAL INFORMATION

SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

SECTION 14 - TRANSPORT INFORMATION

IATA No information available.

IMO No information available.

ID/ADR No information available.

SECTION 15 - REGULATORY INFORMATION

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 22 Harmful if swallowed.

Safety Phrases:

WGK (Water Danger/Protection)

CAS# United Kingdom Occupational Exposure Limits

United Kingdom Maximum Exposure Limits

Canada

CAS# is listed on Canada's DSL List.

CAS# is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

US FEDERAL

TSCA

CAS# is listed on the TSCA inventory.

SECTION 16 - ADDITIONAL INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.



Material Safety Data Sheet

Benzo[k]fluoranthene, 99+% (tlc)

MSDS# 54641

Section 1 - Chemical Product and Company Identification

MSDS Name: Benzo[k]fluoranthene, 99+% (tlc)

Catalog Numbers: AC279730000, AC279732500

Synonyms: 8,9-Benzofluoranthene.

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticaaan 3a
2440 Geel, Belgium

Company Identification: (USA) Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01

For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99

Emergency Number US: 201-796-7100

CHEMTREC Phone Number, US: 800-424-9300

CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#: 207-08-9
Chemical Name: Benzo[k]fluoranthene, 99+% (TLC)
%: 99%
EINECS#: 205-916-6

Hazard Symbols: T



Risk Phrases: 45

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Danger! May be fatal if swallowed. May be fatal if absorbed through the skin. Toxic. Carcinogen. May cause lung damage.

Causes eye and skin irritation. Causes digestive and respiratory tract irritation. Cancer hazard. May be fatal if inhaled.

Target Organs: Lungs, respiratory system.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation. May be fatal if absorbed through the skin.

Ingestion: May be fatal if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation: May be fatal if inhaled. Causes respiratory tract irritation.

Chronic: May cause cancer according to animal studies.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower

	eyelids. Get medical aid immediately.
Skin:	Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion:	Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation:	Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Notes to Physician:	

Section 5 - Fire Fighting Measures

General Information:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media:	Use water spray, dry chemical, carbon dioxide, or chemical foam.
Autoignition Temperature:	Not available
Flash Point:	Not available
Explosion Limits: Lower:	Not available
Explosion Limits: Upper:	Not available
NFPA Rating:	Not published

Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:	Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section.

Section 7 - Handling and Storage

Handling:	Wash thoroughly after handling. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Do not breathe dust, mist, or vapor. Do not get on skin or in eyes. Do not ingest or inhale.
Storage:	Store in a cool, dry place. Store in a tightly closed container.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Benzo[k]fluoranthene, 99+% (TLC)	none listed	none listed	none listed

OSHA Vacated PELs: Benzo[k]fluoranthene, 99+% (TLC): None listed

Engineering Controls:	Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
-----------------------	---

Exposure Limits

Personal Protective Equipment

Eyes:	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin:	Wear appropriate protective gloves to prevent skin exposure.
Clothing:	Wear appropriate protective clothing to prevent skin exposure.
Respirators:	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Color: yellow

Odor: Not available

pH: Not available

Vapor Pressure: Not available

Vapor Density: Not available

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: 480 deg C @ 760.00mm Hg (896.00°F)

Freezing/Melting Point: 216 - 218 deg C

Decomposition Temperature: Not available

Solubility in water: Not available

Specific Gravity/Density:

Molecular Formula: C20H12

Molecular Weight: 252.32

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation.

Incompatibilities with Other Materials: Not available

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 207-08-9: DF6350000

LD50/LC50: RTECS: Not available.

Carcinogenicity: Benzo[k]fluoranthene, 99+% (TLC) - California: carcinogen, initial date 7/1/87 NTP: Suspect carcinogen
IARC: Group 2B carcinogen

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Not available

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: Not regulated as a hazardous material

Hazard Class:

UN Number:

Packing Group:

Canada TDG

Shipping Name: Not available

Hazard Class:

UN Number:

Packing Group:

USA RQ: CAS# 207-08-9: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T

Risk Phrases:

R 45 May cause cancer.

Safety Phrases:

S 53 Avoid exposure - obtain special instructions before use.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 207-08-9: Not available

Canada

Canadian WHMIS Classifications: Not available

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 207-08-9 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 207-08-9 is not listed on the TSCA Inventory. It is for research and development use only.

Section 16 - Other Information

MSDS Creation Date: 9/02/1997

Revision #6 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

Chrysene

sc-239555

Material Safety Data Sheet



The Power to Question

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

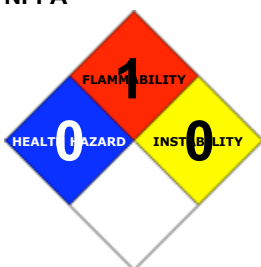
PRODUCT NAME

Chrysene

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY:

ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS

C18-H12, benz[a]phenanthrene, benz-(alpha)-phenanthrene, "1, 2-benzophenanthrene", "1, 2-benzphenanthrene", "1, 2, 5, 6-dibenzonaphthalene", PAH, "polycyclic aromatic hydrocarbon"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

		Min	Max
Flammability:	1		
Toxicity:	2		
Body Contact:	2		
Reactivity:	1		
Chronic:	3		

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

May cause CANCER.

Possible risk of irreversible effects.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Strong evidence exists that the substance may cause irreversible but non-lethal mutagenic effects following a single exposure.

■ The material has NOT been classified as "harmful by ingestion".

This is because of the lack of corroborating animal or human evidence.

EYE

■ Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn).

Slight abrasive damage may also result.

SKIN

■ The material is not thought to be a skin irritant (as classified using animal models).

Abrasive damage however, may result from prolonged exposures.

■ Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.

Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

■ The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified using animal models).

Nevertheless, adverse effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS

■ There is ample evidence that this material can be regarded as being able to cause cancer in humans based on experiments and other information.

Exposure to the material may result in a possible risk of irreversible effects. The material may produce mutagenic effects in man. This concern is raised, generally, on the basis of

appropriate studies using mammalian somatic cells in vivo. Such findings are often supported by positive results from in vitro mutagenicity studies.

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

Polycyclic aromatic hydrocarbons are found in a number of materials such as coal tar, tobacco smoke, petroleum and air pollution. Some substituted derivatives have been identified as extremely liable to cause cancer, especially that of the lung and genito-urinary tract.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
chrysene	218-01-9	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

· Immediately give a glass of water. · First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

INHALED

· If dust is inhaled, remove from contaminated area. · Encourage patient to blow nose to ensure clear passage of breathing. · If irritation or discomfort persists seek medical attention.

NOTES TO PHYSICIAN

■ Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not available
Specific Gravity (water=1):	1.274
Lower Explosive Limit (%):	Not available

EXTINGUISHING MEDIA

· Foam.
· Dry chemical powder.

FIRE FIGHTING

· Alert Emergency Responders and tell them location and nature of hazard.
· Wear breathing apparatus plus protective gloves.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 100 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

· Combustible solid which burns but propagates flame with difficulty.
· Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
Combustion products include: carbon monoxide (CO), carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:
Chemical goggles.
Gloves:
Respirator:
Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

· Clean up waste regularly and abnormal spills immediately.
· Avoid breathing dust and contact with skin and eyes.
· Wear protective clothing, gloves, safety glasses and dust respirator.
· Use dry clean up procedures and avoid generating dust.
· Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
· Dampen with water to prevent dusting before sweeping.
· Place in suitable containers for disposal.

Environmental hazard - contain spillage.

MAJOR SPILLS

· Clear area of personnel and move upwind.
· Alert Emergency Responders and tell them location and nature of hazard.
Environmental hazard - contain spillage.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of exposure occurs.

Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.

- Do NOT cut, drill, grind or weld such containers.
- In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

RECOMMENDED STORAGE METHODS

- Glass container.
- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

STORAGE REQUIREMENTS

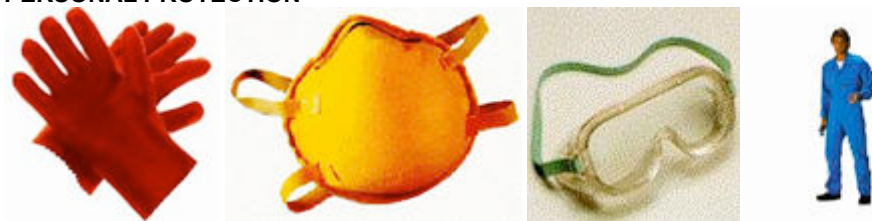
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
Canada - British Columbia Occupational Exposure Limits	chrysene (Chrysene Revised 2006)	(L)							2B
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	chrysene (Coal tar pitch volatiles (benzene soluble fraction), anthracene, BaP, phenanthrene, acridine, chrysene, pyrene)		0.2						
US - Alaska Limits for Air Contaminants	chrysene (Coal tar Pitch volatiles (benzene soluble fraction), chrysene)		0.2						
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	chrysene (Coal tar pitch volatiles (benzene soluble fraction), anthracene, BaP, phenanthrene, acridine, chrysene, pyrene)		0.2						
Canada - Alberta Occupational Exposure Limits	chrysene (Kerosene/Jet fuels, as total hydrocarbon vapour)		200						
Canada - Alberta Occupational Exposure Limits	chrysene (Diesel fuel, as total hydrocarbons)		100						
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	chrysene (Diesel fuel as total hydrocarbons, (vapour))		100		150				Skin
Canada - Northwest Territories Occupational Exposure Limits (English)	chrysene (Particulate polycyclic aromatic hydrocarbons (PPAH) as benzene solubles)		0.2		0.6				
Canada - Yukon Permissible Concentrations for Airborne Contaminant	chrysene (K Particulate polycyclic aromatic hydrocarbons (PPAH) (as benzene solubles))		(See Table 14)						

PERSONAL PROTECTION



RESPIRATOR

- particulate.

EYE

- Safety glasses with side shields
- Chemical goggles.

HANDS/FEET

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocarbon
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

OTHER

- Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area.
- Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted.
- Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely.
- Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood.
- Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.
- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

ENGINEERING CONTROLS

- Employees exposed to confirmed human carcinogens should be authorized to do so by the employer, and work in a regulated area.
- Work should be undertaken in an isolated system such as a "glove-box". Employees should wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.
- Within regulated areas, the carcinogen should be stored in sealed containers, or enclosed in a closed system, including piping systems, with any sample ports or openings closed while the carcinogens are contained within.
- Open-vessel systems are prohibited.
- Each operation should be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to

the operation.

- Exhaust air should not be discharged to regulated areas, non-regulated areas or the external environment unless decontaminated. Clean make-up air should be introduced in sufficient volume to maintain correct operation of the local exhaust system.
- For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.
- Except for outdoor systems, regulated areas should be maintained under negative pressure (with respect to non-regulated areas).
- Local exhaust ventilation requires make-up air be supplied in equal volumes to replaced air.
- Laboratory hoods must be designed and maintained so as to draw air inward at an average linear face velocity of 150 feet/ min. with a minimum of 125 feet/ min. Design and construction of the fume hood requires that insertion of any portion of the employees body, other than hands and arms, be disallowed.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.

Does not mix with water.

Sinks in water.

State	Divided solid	Molecular Weight	228.28
Melting Range (°F)	486- 489	Viscosity	Not Applicable
Boiling Range (°F)	838	Solubility in water (g/L)	Immiscible
Flash Point (°F)	Not available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	1.274
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	Not applicable
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

chrysene

log Kow (Prager 1995): 5.61-5.91

log Kow (Sangster 1997): 5.86

APPEARANCE

Off-white powder; does not mix with water. Sublimes in vacuo. Exhibits strong fluorescence under UV light. Generally only slightly soluble in cold organic solvents; solubility improves markedly when heated.

log Kow 5.01-6.01

Material	Value
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Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

STORAGE INCOMPATIBILITY

- Avoid reaction with oxidizing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

chrysene

TOXICITY AND IRRITATION

CHRYSENE:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Intraperitoneal (rat) LD50: >320 mg/kg	Nil Reported

- The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.
NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.
Target organs in include skin (tumours at site of application).

CARCINOGEN

chrysene	US - Rhode Island Hazardous Substance List	IARC	
CHRYSENE	US Environmental Defense Scorecard Recognized Carcinogens	Reference(s)	P65
CHRYSENE	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65
CHRYSENE/TRIPHENYLENE	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65-MC
POLYCYCLIC ORGANIC MATTER (POM)	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	EPA-HEN, P65-MC
Chrysene(BaP) (inhalation)	US Air Toxics Hot Spots TSD for Describing Available Cancer Potency Factors	IARC Class	3
Chrysene(BaP) (oral)	US Air Toxics Hot Spots TSD for Describing Available Cancer Potency Factors	IARC Class	
PBIT_(PERS~	US - Maine Chemicals of High Concern List	Carcinogen	CA Prop 65; IRIS
PBIT_(PERS~	US - Maine Chemicals of High Concern List	Carcinogen	

SKIN

chrysene	Canada - Alberta Occupational Exposure Limits - Skin	Substance Interaction	1
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Section 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
This material and its container must be disposed of as hazardous waste.
Avoid release to the environment.
Refer to special instructions/ safety data sheets.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
chrysene	LOW	LOW	HIGH	LOW

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 C3 D1 D2 D3 E1 E2 E3 Cas No / RTECS No _____

Poly(2+)c 224 574 4 4 4 NR (4) NI (1) (1) (2) (1) (1) CM S 3 ycllc 6 aromatics / CAS:218- 01-9 /

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships)
NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acuteaquatic toxicity LC/ECIC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard.

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

B. Component Waste Numbers

When chrysene is present as a solid waste as a discarded commercial chemical product, off-specification species, as a container residue, or a spill residue, use EPA waste number U050 (waste code T).

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

! Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION



DOT:

Symbols: G Hazard class or Division: 9

Identification Numbers: UN3077 PG: III

Label Codes: 9 Special provisions: 8, 146,

335, B54,

IB8, IP3,

N20, T1,

TP33

Packaging: Exceptions: 155 Packaging: Non- bulk: 213

Packaging: Exceptions: 155 Quantity limitations: No limit

Passenger aircraft/rail:

Quantity Limitations: Cargo No limit Vessel stowage: Location: A

aircraft only:

Vessel stowage: Other: None

Hazardous materials descriptions and proper shipping names:

Environmentally hazardous substance, solid, n.o.s

Air Transport IATA:

ICAO/IATA Class: 9 ICAO/IATA Subrisk: None

UN/ID Number: 3077 Packing Group: III

Special provisions: A97

Cargo Only

Packing Instructions: 400 kg Maximum Qty/Pack: 956

Passenger and Cargo Passenger and Cargo

Packing Instructions: 400 kg Maximum Qty/Pack: 956

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: 30 kg G Maximum Qty/Pack: Y956

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. *(CONTAINS CHRYSENE)

Maritime Transport IMDG:

IMDG Class: 9 IMDG Subrisk: None

UN Number: 3077 Packing Group: III

EMS Number: F-A, S-F Special provisions: 179 274 335 909
Limited Quantities: 5 kg Marine Pollutant: Yes
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(contains chrysene)

Section 15 - REGULATORY INFORMATION

chrysene (CAS: 218-01-9) is found on the following regulatory lists;

"Canada - British Columbia Occupational Exposure Limits", "Canada - Nova Scotia Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens", "Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)", "Canada ARET (Accelerated Reduction / Elimination of Toxics) Substance List", "Canada Domestic Substances List (DSL)", "Canada Ingredient Disclosure List (SOR/88-64)", "Canada National Pollutant Release Inventory (NPRI)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "International Chemical Secretariat (ChemSec) REACH SIN* List (*Substitute It Now!) 1.0", "OSPAR List of Substances of Possible Concern", "US - Alaska Limits for Air Contaminants", "US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified", "US - California Proposition 65 - Carcinogens", "US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens", "US - California Toxic Air Contaminant List Category II", "US - Connecticut Hazardous Air Pollutants", "US - Idaho - Limits for Air Contaminants", "US - Maine Chemicals of High Concern List", "US - Massachusetts Oil & Hazardous Material List", "US - Minnesota Hazardous Substance List", "US - New Jersey Right to Know Hazardous Substances", "US - Pennsylvania - Hazardous Substance List", "US - Rhode Island Hazardous Substance List", "US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants", "US - Vermont Hazardous Constituents", "US - Vermont Hazardous wastes which are Discarded Commercial Chemical Products or Off-Specification Batches of Commercial Chemical Products or Spill Residues of Either", "US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants", "US - Washington Dangerous waste constituents list", "US - Washington Discarded Chemical Products List - ""U"" Chemical Products", "US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants", "US ACGIH Threshold Limit Values (TLV)", "US ACGIH Threshold Limit Values (TLV) - Carcinogens", "US CAA (Clean Air Act) - HON Rule - Organic HAPs (Hazardous Air Pollutants)", "US CERCLA Priority List of Hazardous Substances", "US CWA (Clean Water Act) - Priority Pollutants", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US EPA Carcinogens Listing", "US EPA National Priorities List - Superfund Chemical Data Matrix (SCDM) - Hazard Ranking System - Hazardous Substance Benchmarks", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act", "US RCRA (Resource Conservation & Recovery Act) - Appendix IX to Part 264 Ground-Water Monitoring List 1", "US RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261", "US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Inorganic and Organic Constituents 1", "US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Wastes", "US RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards", "US -Texas Air Monitoring Comparison Values for Evaluating PAHs", "US Toxic Substances Control Act (TSCA) - Inventory"

Section 16 - OTHER INFORMATION

Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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Issue Date: Jan-5-2009

Print Date: May-24-2011

MATERIAL SAFETY DATA SHEET

COAL TAR ROOFING PITCH

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: COAL TAR ROOFING PITCH

OTHER/GENERIC NAMES: Roofing Pitch

PRODUCT USE: Commercial/Industrial Roofing

MANUFACTURER: Durapax LLC
Commercial Roofing Systems
400 Old Reading Pike, Suite 304
Pottstown PA 19464

FOR MORE INFORMATION CALL:
(Monday-Friday, 8:00am-4:30pm EST)
1-610-579-9075

IN CASE OF EMERGENCY CALL:
(24 Hours/Day, 7 Days/Week)
1-610-579-9075
Chemtrec 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Coal Tar Pitch*	65996-93-2	100

* Mixture of organic compounds, primarily 3 to 40 ringed polynuclear aromatic hydrocarbons, including some substituted compounds. It is estimated that as many as 4500+ compounds may be present.

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Vapor can cause moderate to severe irritation of eyes, nose, throat and respiratory tract. Can cause burning and itching with reddening of the skin, which is accentuated by sunlight. Burning may emit hazardous fumes, which can form flammable or explosive mixtures.

POTENTIAL HEALTH HAZARDS

SKIN: Contact with skin can result in irritation, which when not washed off or when accentuated by sunlight, can result in minor burns. Contact with heated or molten material can cause severe thermal burns.

MATERIAL SAFETY DATA SHEET

Coal Tar Roofing Pitch

EYES: Overexposure to product fumes, vapors or dust can result in irritation and burning. Eye contact with product will result in irritation, which in the absence of recommended first aid can result in effects ranging from minor burns to severe corneal injury, including keratitis, conjunctivitis and corneal abrasion. Contact with heated material may cause thermal burns.

INHALATION: Overexposure to fumes, vapor or dust may result in irritation to respiratory tract. Prolonged exposure in significant excess of permissible air concentrations can result in acute toxic effects, such as coughing, sneezing, headache, dizziness, respiratory difficulty and convulsions.

INGESTION: Irritation of the gastrointestinal tract followed by nausea and vomiting, abdominal discomfort, rapid pulse, etc.

OTHER: Individuals with chronic respiratory disorders, a history of central nervous system (CNS) functional illness or preexisting skin disorders may be more susceptible to the effects of exposure when working with this material.

DELAYED EFFECTS: Prolonged and repeated skin exposure over many months to years, in the absence of recommended hygiene practices, may lead to changes in skin pigmentation and benign skin growths. In some cases, skin cancer may occur after many years of exposure. These effects appear to be exacerbated by simultaneous exposure to ultraviolet light (sunlight). Long term exposure to coal tar pitch volatiles has been associated with the development of skin, kidney, bladder, scrotum and lung cancer.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
Coal Tar Pitch	Known Carcinogen	1 – Known	Carcinogen

4. FIRST AID MEASURES

SKIN: For contact with **MOLTEN** product, do not remove contaminated clothing. Immediately flush skin with large amounts of cold water. If possible, submerge area in cold water. Pack with ice and seek immediate medical attention. For other contact, remove contaminated clothing and wash thoroughly with waterless hand cleaners, olive oil or nonabrasive soap and water. Avoid solvents.

EYES: Flush eyes immediately with large amounts of water or olive oil for at least 15 minutes. Call a physician.

INHALATION: Remove immediately to fresh air. If not breathing, give artificial respiration; preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

INGESTION: If conscious, first induce vomiting, then take 2 tablespoons of activated charcoal (USP-drug grade) in water. Do not give anything by mouth to an unconscious person. Get immediate medical attention.

ADVICE TO PHYSICIAN: None

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: 190 °C (374 °F) [minimum]

FLASH POINT METHOD: Pensky-Martens Closed Cup

AUTOIGNITION TEMPERATURE: >399 °C (750 °F)

MATERIAL SAFETY DATA SHEET

Coal Tar Roofing Pitch

UPPER FLAME LIMIT (volume % in air): Not Determined
LOWER FLAME LIMIT (volume % in air): Not Determined
FLAME PROPAGATION RATE (solids): Not Applicable
OSHA FLAMMABILITY CLASS: Not Determined

EXTINGUISHING MEDIA: Water fog, carbon dioxide, foam, dry chemicals, sand or steam

UNUSUAL FIRE AND EXPLOSION HAZARDS: Sensitive to static discharge. Burning may emit hazardous fumes/vapors which may be in concentrations greater than PEL/TLV's. Coal tar pitch at elevated temperatures may generate vapors that can form flammable/explosive mixtures in the presence of air and a source of ignition. Airborne pitch dust may form explosive mixtures with air. Cloud ignition temperature is 710 °C (1310 °F) minimum. Explosive concentration (dust) is 0.035 ounces/ft³ (1000 mg/0.03m³). Closed containers may explode when exposed to extreme heat. Liquid (molten) pitch at elevated temperatures will sustain combustion.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS: Wear complete fire service protection equipment, including full-face NIOSH/MSHA approved self-contained breathing apparatus. Use water or water spray to cool fire-exposed containers and structures and to protect personnel. Water/fog can control unconfined pitch fires, but may cause frothing or eruption in closed tanks.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (Always wear recommended personal protective equipment.)

Avoid breathing vapors and contact with skin and eyes. Avoid contact with hot liquid/fumes/vapors. Avoid sources of ignition (sparks or open flame). Try to stop the source of the leak, if possible, without hazard. Ventilate the area if spill occurs indoors. If hot liquid is spilled, contain by diking/berming with absorbent solids, such as sand, earth, or other inert material. Use of water spray will aid in solidifying molten material and minimize vapor emissions. Release or spillage of solid pitch can be managed as a coal spillage and recovery made avoiding skin and eye contact. Shovel material into dry, labeled containers and secure cover. Contain runoff of fire control water. Do not allow to enter into sewers, waterways or open bodies of water.

Provide cleanup personnel with appropriate protective clothing. Contaminated materials may need to be handled and managed as RCRA Hazardous Waste and treated before disposal in approved facilities (see Section 13). In cases involving release to the environment in the U.S., report releases to Federal, State and Local authorities, as required. Due to the concentration of Benzo(a)pyrene in coal tar pitch and a reportable quantity (RQ) of one (1) pound for this compound, CERCLA (Superfund) release of approximately 18 gallons (200 pounds) of coal tar pitch requires National Response Center notification.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (Always wear recommended personal protective equipment.)

Avoid prolonged and repeated contact with skin or breathing of dust/fumes/vapors. Avoid creating aerosols. Avoid contact with molten materials. Wear clothing closed at the neck, long sleeves and cotton, leather or non-porous type gloves, [e.g. neoprene, butyl rubber, nitrile, polyvinyl alcohol (PVA), polyvinyl chloride (PVC)].

STORAGE RECOMMENDATIONS:

Recommended temperature for storage is 50 °C (122 °F) above the softening point.

MATERIAL SAFETY DATA SHEET

Coal Tar Roofing Pitch

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use in areas with adequate natural ventilation or provide sufficient general/local exhaust ventilation in pattern/volume to maintain concentrations below the recommended PEL/TLV and to maintain areas below flammable vapor or explosive dust concentrations.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION: Avoid skin contact, whenever possible by using gloves. For exposed skin, use protective creams (for example; MSA's Fend AE-2, Kerodex 51, Jergens SBS-46). Protect exposed skin from direct sunlight. For outdoor work use approved waterproof sunscreens with a SPF 25 or greater; reapply every 90 minutes while in direct sun.

EYE PROTECTION: Safety glasses (with side shields), goggles and/or face shield. Chemical splash goggles or face shield are highly recommended when handling molten material. Do not wear contact lenses when handling this material.

RESPIRATORY PROTECTION: Use a NIOSH/MSHA approved respirator with suitable cartridge (organic vapor/high efficiency particulate air filter) as necessary to control exposures to levels below the TLV or PEL. Not required for properly ventilated areas.

ADDITIONAL RECOMMENDATIONS: Work clothing should be laundered separately from other household clothing. Wash exposed areas thoroughly before eating, drinking, using tobacco products or using a restroom. It is recommended that a complete soap and water shower and/or steam bath be taken at the end of each working day.

EXPOSURE GUIDELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
Coal Tar Pitch Volatiles, CTPV	0.2mg/m ³	0.2mg/m ³	- - -

* = Workplace Environmental Exposure Level (AIHA).

** = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS: None

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Black solid (at 70 °F) or black viscous liquid	
MOLECULAR WEIGHT:	700 – 900	
CHEMICAL FORMULA:	Mixture of organic compounds	
ODOR:	Aromatic	
SPECIFIC GRAVITY (water = 1.0):	1.3 ± 0.04 @ 15.5 °C (60 °F)	
SOLUBILITY IN WATER (weight %):	Negligible	
pH:	Not Applicable	
BOILING POINT:	>240 °C (464 °F)	
MELTING POINT:	41 – 64 °C (106 – 147 °F)	
VAPOR PRESSURE:	None at 20 °C (68 °F)	
VAPOR DENSITY (air = 1.0):	>1	
EVAPORATION RATE:	<1	COMPARED TO: Butyl Acetate = 1
% VOLATILES:	Not Determined	
FLASH POINT:	190 °C (374 °F) [minimum]	
(Flash point method and additional flammability data are found in Section 5.)		

MATERIAL SAFETY DATA SHEET

Coal Tar Roofing Pitch

10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID): Product stable under normal conditions. Avoid loading or unloading near open flame.

INCOMPATIBILITIES: Avoid contact with water when confined and in a molten state. Avoid contact with strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose under normal conditions of use. Upon excessive heating or burning, the material decomposes, and may emit hazardous fumes/vapors of lower molecular weight compounds, CO₂, CO, NO_x, and SO₂.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS: Refer to Section 3.

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS: Long term exposure to Coal Tar Pitch Volatiles (CTPV), above the recommended exposure limit, has been associated with the development of skin, kidney, lung, bladder, and scrotum cancer.

OTHER DATA: IARC Group 1 – Sufficient evidence of carcinogenicity in humans. No scientific study supports an association between coal tar pitch exposure and human reproductive hazards. Available data characterizes coal tar pitch as a mutagen.

12. ECOLOGICAL INFORMATION

Not determined.

13. DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? NO

If yes, the RCRA ID number is: Not Applicable

OTHER DISPOSAL CONSIDERATIONS:

In the U.S., dispose of the material as required by applicable federal, state and local regulations. In Canada, dispose of the material in accordance with provincial regulations.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

MATERIAL SAFETY DATA SHEET

Coal Tar Roofing Pitch

14. TRANSPORT INFORMATION

SOLID:

US DOT HAZARD CLASS: UN 3077

US DOT ID NUMBER: RQ, Environmentally Hazardous Substance, Solid, N.O.S., (Benzo(a)pyrene, Dibenz(a,h)anthracene), 9, UN 3077, III

RQ, Other Regulated Substance, Solid, N.O.S., (Benzo(a)pyrene, Dibenz(a,h)anthracene), 9, NA 3077, III

For Domestic Shipments: either shipping name

For Marine Shipments: Use UN 3077, Environmentally Hazardous Substance shipping name

LIQUID (Transported above flash point):

US DOT HAZARD CLASS: UN 3256

US DOT ID NUMBER: RQ, Elevated Temperature Liquid, Flammable, N.O.S., (Benzo(a)pyrene, Dibenz(a,h)anthracene), 3, UN 3256, III

LIQUID (Transported below flash point):

US DOT HAZARD CLASS: UN 3257

US DOT ID NUMBER: RQ, Elevated Temperature Liquid, Flammable, N.O.S., (Benzo(a)pyrene, Dibenz(a,h)anthracene), 9, UN 3257, III

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: Listed on EPA's TSCA Inventory

OTHER TSCA ISSUES: Substance of unknown or variable composition

SARA TITLE III/CERCLA

The following substances are considered hazardous by one or more regulatory agencies and were identified in "typical" coal tar pitch samples at concentrations greater than 0.01 percent by weight.

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>CAS #</u>	<u>SARA/CERCLA RQ (lb)</u>	<u>SARA EHS TPQ (lb)</u>
Acenaphthene	83-32-9	100	
Anthracene	120-12-7	5000	
Benzo(a)anthracene	56-55-3	10	
Benzo(c)acridine	225-51-4	100	
Benzo(b)fluoranthene	205-99-2	1	
Benzo(k)fluoranthene	207-08-9	5000	
Benzo(j)fluoranthene	205-82-3	- - -	
Benzo(g,h,i)perylene	191-24-2	5000	
Benzo(a)pyrene	50-32-8	1	
Benzo(e)pyrene	192-97-2	- - -	
Chrysene	218-01-9	100	

MATERIAL SAFETY DATA SHEET

Coal Tar Roofing Pitch

Dibenz(a,h)anthracene	53-70-3	1	
Dibenzofuran	132-64-9	100	
Fluoranthene	206-44-0	100	
Fluorene	86-73-7	5000	
Indeno(1,2,3-cd)pyrene	193-39-5	100	
2-Methylnaphthalene	91-57-6	- - -	
Naphthalene	91-20-3	100	
Phenanthrene	85-01-8	5000	
Pyrene	129-00-0	5000	1000/10,000*

* See 40 CFR 355.30(2)(i)

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate, Delayed, Fire

SARA 313 TOXIC CHEMICALS:

The following ingredients are SARA 313 "Toxic Chemicals". Also see Section 2.

<u>INGREDIENT NAME</u>	<u>CAS #</u>	<u>WEIGHT %</u>
*Benzo(a)anthracene	56-55-3	0.7
*Benzo(a)pyrene	50-32-8	0.4
*Benzo(b)fluoranthene	205-99-2	0.8 (includes (k))
*Benzo(k)fluoranthene	207-08-9	included above
*Benzo(j)fluoranthene	205-82-3	0.2
*Benzo(g,h,i)perylene	191-24-2	0.2
*Chrysene	218-01-9	0.2
*Indeno(1,2,3-cd)pyrene	193-39-5	0.2
Phenanthrene	85-01-8	1.8
Polycyclic Aromatic Compounds (20 compounds)	-	3.2

* Also included in "polycyclic aromatic compound" category

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

<u>INGREDIENT NAME</u>	<u>WEIGHT %</u>	<u>COMMENT</u>
No ingredients listed in this section		

ADDITIONAL REGULATORY INFORMATION: California Proposition 65 material - Contains chemicals known to the State of California to cause cancer, birth defects, & other reproductive harm.

WHMIS CLASSIFICATION (CANADA): Class D, Division 2, Subdivision A
Class D, Division 2, Subdivision B

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

MATERIAL SAFETY DATA SHEET

Coal Tar Roofing Pitch

FOREIGN INVENTORY STATUS: Listed on the EINECS Inventory – ID# 2660282
Listed on Canadian Inventory Domestic Substance List (DSL)

16. OTHER INFORMATION

CURRENT ISSUE DATE: April 2005
PREVIOUS ISSUE DATE:

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:
None

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Synthesis

Catalog of Custom Synthesis Organic Synthesis Bio-synthesis Companies Supplier
Manufacturer And Distributor, Material Safety Data Sheets, Chemical Substance Property
Information, Raw Material Laboratory Reagent Equipment Solution Intermediate Specialty
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AdChoices

Indeno[1,2,3-cd]pyrene

Indeno[1,2,3-cd]pyrene

- 2,3-Phylenepyrene
- o-Phylenepyrene

Formula	C ₂₂ H ₁₂ (C22H12)
Description	Yellow crystals.
Uses	Research chemical.

Registry Numbers and Inventories.

CAS	193-39-5
EC (EINECS/ELINCS)	205-893-2
RTECS	NK9300000
RTECS class	Tumorigen (C); Mutagen (M)
RCRA	U137
UN (DOT)	1325
Beilstein ref.	4-05-00-02765

Listed on the Toxic Substances Control Act (TSCA).

Listed on Canadian Non-Domestic Substances List (NDSL).

Properties.

Formula mass	276.34
Melting point, °C	163 - 164
Boiling point, °C	536
Solubility in water	Insoluble

Hazards and Protection.

Storage	Storage should be close to laboratory where material is to be used, so that only small amounts need to be carried. Carcinogens should be kept in only one section of storage area, explosion-proof refrigerator or freezer as required. The area should be appropriately labeled. An inventory should be kept showing the quantity of carcinogen and date it was acquired. Facilities for dispensing should be contiguous to storage area.
Handling	All chemicals should be considered hazardous. Avoid direct physical contact. Use appropriate, approved safety equipment. Untrained individuals should not handle this chemical or its container. Handling should occur in a chemical fume hood.
Protection	Wear appropriate protective gloves, clothing and goggles.
Respirators	Wear a NIOSH-approved half face respirator equipped with a combination filter cartridge, i.e. organic vapor/acid gas/HEPA (specific for organic vapors, HCl, acid gas, SO2 and a high efficiency particulate filter).
Small spills/leaks	If you spill this chemical, use absorbent paper to pick up all liquid spill material. Your contaminated clothing and absorbent paper should be sealed in a vapor-tight plastic bag for eventual disposal. Solvent wash all contaminated surfaces with alcohol followed by washing with a strong soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.
Stability	No data.
Incompatibilities	Can react exothermically with bases and with diazo compounds.
Decomposition	When heated to decomposition it emits acrid smoke and irritating fumes.

Fire.

Fire fighting	A fire in your laboratory involving this chemical should be extinguished with a dry chemical, carbon dioxide or halon extinguisher.
Fire potential	Flammable/combustible material. May be ignited by friction, heat, sparks or flames.
Combustion products	Fire may produce irritating and/or toxic gases.

Health.

Exposure effects	In experimental animal studies, PAHs and metabolites cross the placenta. Female offspring of experimental animals exposed to PAHs during pregnancy have a decrease in the number of functional oocytes, sometimes such that they are infertile. PAHs are lipophilic and are excreted in breast milk, allowing for secondary exposure of nursing infants, although the potential significance of such exposure has not been determined.
Ingestion	Leukoplakia and cancers of the lip and oral cavity can develop with chronic exposure.
Inhalation	Irritation, chronic cough, bronchitis, and bronchogenic cancer can occur with chronic exposure.
Skin	Coal tar warts (precancerous lesions enhanced by uv light exposure), erythema, dermal burns, acneiform lesions, photosensitization and cancer may develop following chronic exposure.
First aid	
Ingestion	DO NOT INDUCE VOMITING. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. Be prepared to transport the victim to a hospital if advised by a physician. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital. IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. IMMEDIATELY call a physician and be prepared to transport the victim to a hospital even if no symptoms (such as wheezing, coughing, shortness of

Inhalation	breath, or burning in the mouth, throat, or chest) develop. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used.
Skin	IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.

UN number 1325

Response guide

Hazard class 4.1 

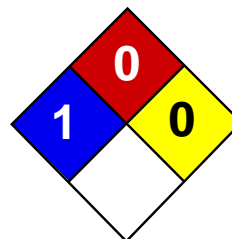
Packing Group II; III

USCG CHRIS Code PPY

[USCG Compatatibility Group](#)

Chemexper Information Net [Chemexper.net](#)
[Group A](#) [B](#)

Last modified:



Health	1
Fire	0
Reactivity	0
Personal Protection	E

Material Safety Data Sheet

Lead MSDS

Section 1: Chemical Product and Company Identification

Product Name: Lead

Catalog Codes: SLL1291, SLL1669, SLL1081, SLL1459, SLL1834

CAS#: 7439-92-1

RTECS: OF7525000

TSCA: TSCA 8(b) inventory: Lead

CI#: Not available.

Synonym: Lead Metal, granular; Lead Metal, foil; Lead Metal, sheet; Lead Metal, shot

Chemical Name: Lead

Chemical Formula: Pb

Contact Information:

Sciencelab.com, Inc.

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Lead	7439-92-1	100

Toxicological Data on Ingredients: Lead LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:

Slightly hazardous in case of skin contact (permeator). CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH, 2B (Possible for human.) by IARC. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances: Non-flammable in presence of open flames and sparks, of shocks, of heat.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: When heated to decomposition it emits highly toxic fumes of lead.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep locked up.. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable

protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 0.05 (mg/m³) from ACGIH (TLV) [United States] TWA: 0.05 (mg/m³) from OSHA (PEL) [United States] TWA: 0.03 (mg/m³) from NIOSH [United States] TWA: 0.05 (mg/m³) [Canada] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Metal solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 207.21 g/mole

Color: Bluish-white. Silvery. Gray

pH (1% soln/water): Not applicable.

Boiling Point: 1740°C (3164°F)

Melting Point: 327.43°C (621.4°F)

Critical Temperature: Not available.

Specific Gravity: 11.3 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, excess heat

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Can react vigorously with oxidizing materials. Incompatible with sodium carbide, chlorine trifluoride, trioxane + hydrogen peroxide, ammonium nitrate, sodium azide, disodium acetylide, sodium acetylide, hot concentrated nitric acid, hot concentrated hydrochloric acid, hot concentrated sulfuric acid, zirconium.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Inhalation. Ingestion.

Toxicity to Animals:

LD50: Not available. LC50: Not available.

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH, 2B (Possible for human.) by IARC. May cause damage to the following organs: blood, kidneys, central nervous system (CNS).

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:

Acute Potential: Skin: Lead metal granules or dust: May cause skin irritation by mechanical action. Lead metal foil, shot or sheets: Not likely to cause skin irritation Eyes: Lead metal granules or dust: Can irritate eyes by mechanical action. Lead metal foil, shot or sheets: No hazard. Will not cause eye irritation. Inhalation: In an industrial setting, exposure to lead mainly occurs from inhalation of dust or fumes. Lead dust or fumes: Can irritate the upper respiratory tract (nose, throat) as well as the bronchi and lungs by mechanical action. Lead dust can be absorbed through the respiratory system. However, inhaled lead does not accumulate in the lungs. All of an inhaled dose is eventually absorbed or transferred to the gastrointestinal tract. Inhalation effects of exposure to fumes or dust of inorganic lead may not develop quickly. Symptoms may include metallic taste, chest pain, decreased physical fitness, fatigue, sleep disturbance, headache, irritability, reduces memory, mood and personality changes, aching bones and muscles, constipation, abdominal pains, decreasing appetite. Inhalation of large amounts may lead to ataxia, delirium, convulsions/seizures, coma, and death. Lead metal foil, shot, or sheets: Not an inhalation hazard unless metal is heated. If metal is heated, fumes will be released. Inhalation of these fumes may cause "fume metal fever", which is characterized by flu-like symptoms. Symptoms may include metallic taste, fever, nausea, vomiting, chills, cough, weakness, chest pain, generalized muscle pain/aches, and increased white blood cell count. Ingestion: Lead metal granules or dust: The symptoms of lead poisoning include abdominal pain or cramps (lead colic), spasms, nausea, vomiting, headache, muscle weakness, hallucinations, distorted perceptions, "lead line" on the gums, metallic taste, loss of appetite, insomnia, dizziness and other symptoms similar to that of inhalation. Acute poisoning may result in high lead levels in the blood and urine, shock, coma and death in extreme cases. Lead metal foil, shot or sheets: Not an ingestion hazard for usual industrial handling.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information**Federal and State Regulations:**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Lead California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (female) which would require a warning under the statute: Lead California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (male) which would require a warning under the statute: Lead California prop. 65 (no significant risk level): Lead: 0.0005 mg/day (value) California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Lead California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Lead Connecticut hazardous material survey.: Lead Illinois toxic substances disclosure to employee act: Lead Illinois chemical safety act: Lead New York release reporting list: Lead Rhode Island RTK hazardous substances: Lead Pennsylvania RTK: Lead

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):

R20/22- Harmful by inhalation and if swallowed. R33- Danger of cumulative effects. R61- May cause harm to the unborn child. R62- Possible risk of impaired fertility. S36/37- Wear suitable protective clothing and gloves. S44- If you feel unwell, seek medical advice (show the label when possible). S53- Avoid exposure - obtain special instructions before use.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:21 PM

Last Updated: 06/09/2012 12:00 PM

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Monsanto

Material Safety Data

POLYCHLORINATED BIPHENYLS (PCBs)

Emergency Phone No.
(Call Collect)
314-694-1000

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: POLYCHLORINATED BIPHENYLS (PCBs)
Aroclor® Series 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262, 1268
Therminol® FR Series

MSDS Number: M00018515

Date: 12/95

Chemical Family: Chlorinated Hydrocarbons
Chemical Name: Polychlorinated biphenyls
Synonyms: PCBs, Chlorodiphenyls, Chlorinated biphenyls

Trade Names/Common Names:

PYRANOL® and INERTEEN® are trade names for commonly used dielectric fluids that may have contained varying amounts of PCBs as well as other components including chlorinated benzenes.

ASKAREL is the generic name for a broad class of fire resistant synthetic chlorinated hydrocarbons and mixtures used as dielectric fluids that commonly contained about 30 - 70% PCBs. Some ASKAREL fluids contained 99% or greater PCBs and some contained no PCBs.

PYDRAUL® is the trade name for hydraulic fluids that, prior to 1972, may have contained varying amounts of PCBs and other components including phosphate esters.

The product names/trade names are representative of several commonly used Monsanto products (or products formulated with Monsanto products). Other trademarked PCB products were marketed by Monsanto and other manufacturers. PCBs were also manufactured and sold by several European and Japanese companies. Contact the manufacturer of the trademarked product, if not in this listing, to determine if the formulation contained PCBs.

In 1972, Monsanto restricted sales of PCBs to applications involving only closed electrical systems, (transformers and capacitors). In 1977, all manufacturing and sales were voluntarily terminated. In 1979, EPA restricted the manufacture, processing, use, and distribution of PCBs to specifically exempted and authorized activities.

MONSANTO COMPANY, 800 N. LINDBERGH BLVD., ST. LOUIS, MO 63167

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT
Call CHEMTREC - Day or Night - 1-800-424-9300 Toll free in the continental U.S., Hawaii, Puerto Rico, Canada, Alaska, or Virgin Islands. For calls originating elsewhere: 202-483-7616 (collect calls accepted)

For additional nonemergency information, call: 314-694-3344.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemically, commercial PCBs are defined as a series of technical mixtures, consisting of many isomers and compounds that vary from mobile, oily liquids to white crystalline solids and hard noncrystalline resins. Technical products vary in composition, in the degree of chlorination, and possibly according to batch.

The mixtures generally used contain an average of 3 atoms of chlorine per molecule (42% chlorine) to 5 atoms of chlorine per molecule (54% chlorine). They were used as components of dielectric fluids in transformers and capacitors. Prior to 1972, PCB applications included heat transfer media, hydraulic, and other industrial fluids, plasticizers, carbonless copy paper, paints, inks, and adhesives.

<u>Component</u>	<u>CAS No.</u>
chlorinated biphenyl	1336-36-3
Aroclor 1016	12674-11-2
Aroclor 1221	11104-28-2
Aroclor 1232	11141-16-5
Aroclor 1242	53469-21-9
Aroclor 1248	12672-29-6
Aroclor 1254	11097-69-1
Aroclor 1260	11096-82-5
Aroclor 1262	37324-23-5
Aroclor 1268	11100-14-4

There are also CAS Numbers for individual PCB congeners and for mixtures of Aroclor® products.

PCBs are identified as hazardous chemicals under criteria of the OSHA Hazard Communication Standard (29 CFR Part 1910.1200). PCBs have been listed in the International Agency for Research on Cancer (IARC) Monographs (1987)-Group 2A and in the National Toxicology Program (NTP) Annual Report on Carcinogens (Seventh).

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance and Odor: PCB mixtures range in form and color from clear to amber liquids to white crystalline solids. They have a mild, distinctive odor and are not volatile at room temperature. Refer to Section 9 for details.

WARNING!
CAUSES EYE IRRITATION
MAY CAUSE SKIN IRRITATION

PROCESSING AT ELEVATED TEMPERATURES MAY RELEASE VAPORS OR FUMES WHICH MAY CAUSE RESPIRATORY TRACT IRRITATION

POTENTIAL HEALTH EFFECTS

Likely Routes

of Exposure: Skin contact and inhalation of heated vapors

Eye Contact: Causes moderate irritation based on worker experience.

Skin Contact: Prolonged or repeated contact may result in redness, dry skin and defatting based on human experience. A potential exists for developing chloracne. PCBs can be absorbed through intact skin.

Inhalation: Due to the low volatility of PCBs, exposure to this material in ambient conditions is not expected to produce adverse health effects. However, at elevated processing temperatures, PCBs may produce a vapor that may cause respiratory tract irritation if inhaled based on human experience.

Ingestion: No more than slightly toxic based on acute animal toxicity studies. Coughing, choking and shortness of breath may occur if liquid material is accidentally drawn into the lungs during swallowing or vomiting.

Other: Numerous epidemiological studies of humans, both occupationally exposed and nonworker environmentally exposed populations, have not demonstrated any causal relationship between PCB exposure and chronic human illnesses such as cancer or neurological or cardiovascular effects. PCBs at high dosage can cause skin symptoms; however, these subside upon removal of the exposure source.

Refer to Section 11 for toxicological information.

4. FIRST AID MEASURES

IF IN EYES, immediately flush with plenty of water for at least 15 minutes. If easy to do, remove any contact lenses. Get medical attention. Remove material from skin and clothing.

IF ON SKIN, immediately flush the area with plenty of water. Wash skin gently with soap as soon as it is available. Get medical attention if irritation persists.

IF INHALED, remove person to fresh air. If breathing is difficult, get medical attention.

IF SWALLOWED, do NOT induce vomiting. Rinse mouth with water. Get medical attention. Contact a Poison Control Center. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

NOTE TO PHYSICIANS: Hot PCBs may cause thermal burn. If electrical equipment arcs between conductors, PCBs or other chlorinated hydrocarbon dielectric fluids may decompose to produce hydrochloric acid (HCl), a respiratory irritant. If large amounts are swallowed, gastric lavage may be considered.

5. FIRE FIGHTING MEASURES

Flash Point: 284 degrees F (140 degrees C) or higher depending on the chlorination level of the Aroclor product

Fire Point: 349 degrees F (176 degrees C) or higher depending on the chlorination level of the Aroclor product

NOTE: Refer to Section 9 for individual flash points and fire points.

Extinguishing

Media: Extinguish fire using agent suitable for surrounding fire. Use dry chemical, foam, carbon dioxide or water spray. Water may be ineffective. Use water spray to keep fire-exposed containers or transformer cool.

PCBs are fire-resistant compounds. They may decompose to form CO, CO₂, HCl, phenolics, aldehydes, and other toxic combustion products under severe conditions such as exposure to flame or hot surfaces.

Dielectric fluids having PCBs and chlorinated benzenes as components have been reported to produce polychlorinated dibenzo-p-dioxins (PCDDs) and furans (PCDFs) during fire situations involving electrical equipment. At temperatures in the range of 600-650 degrees C in the presence of excess oxygen, PCBs may form polychlorinated dibenzofurans (PCDFs). Laboratory studies under similar conditions have demonstrated that PCBs do not produce polychlorinated dibenzo-p-dioxins (PCDDs).

Federal regulations require all PCB transformers to be registered with fire response personnel.

If a PCB transformer is involved in a fire-related incident, the owner of the transformer may be required to report the incident. Consult and follow appropriate federal, state and local regulations.

Fire Fighting Equipment: Fire fighters and others exposed to products of combustion should wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

Cleanup and disposal of liquid PCBs and other PCB items are strictly regulated by the federal government. The regulations are found at 40 CFR Part 761. Consult these regulations as well as applicable state and local regulations prior to any cleanup or disposal of PCBs, PCB items, or PCB contaminated items.

If PCBs leak or are spilled, the following steps should be taken immediately:

All nonessential personnel should leave the leak or spill area.

The area should be adequately ventilated to prevent the accumulation of vapors.

The spill/leak should be contained. Loss to sewer systems, navigable waterways, and streams should be prevented. Spills/leaks should be removed promptly by means of absorptive material, such as sawdust, vermiculite, dry sand, clay, dirt or other similar materials, or trapped and removed by pumping or other suitable means (traps, drip-pans, trays, etc.).

Personnel entering the spill or leak area should be furnished with appropriate personal protective equipment and clothing as needed. Refer to Section 8 for personal protection equipment and clothing.

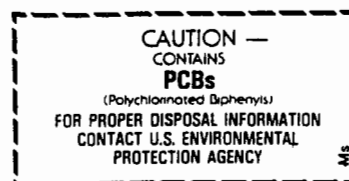
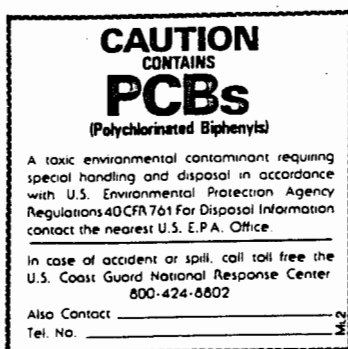
Personnel trained in emergency procedures and protected against attendant hazards should shut off sources of PCBs, clean up spills, control and repair leaks, and fight fires in PCB areas.

Refer to Section 13 for disposal information and Sections 14 and 15 for information regarding reportable quantity, and Section 7 for marking information.

7. HANDLING AND STORAGE

Care should be taken to prevent entry into the environment through spills, leakage, use vaporization, or disposal of liquid or containers. Avoid prolonged breathing of vapors or mists. Avoid contact with eyes or prolonged contact with skin. If skin contact occurs, remove by washing with soap and water. Following eye contact, flush with water. In case of spillage onto clothing, the clothing should be removed as soon as practical, skin washed, and clothing laundered. Comply with all federal, state, and local regulations.

Federal regulations under the Toxic Substances Control Act require PCBs, PCB items, storage areas, transformer vaults, and transport vehicles to be marked (check regulations, 40 CFR 761, for details).



Storage: The storage of PCB items or equipment (those containing 50 ppm or greater PCBs) and PCB waste is strictly regulated by 40 CFR Part 761. The storage time is limited, the storage area must meet physical requirements, and the area must be labeled.

Avoid contact with eyes.
Wash thoroughly after handling.
Avoid breathing processing fumes or vapors.
Process using adequate ventilation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye

Protection: Wear chemical splash goggles and have eye baths available where there is significant potential for eye contact.

Skin

Protection: Wear appropriate protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine the appropriate type glove for a given application. Wear chemical goggles, face shield, and chemical resistant clothing such as a rubber apron when splashing is likely. Wash immediately if skin is contacted. Remove contaminated clothing promptly and launder before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

ATTENTION! Repeated or prolonged skin contact may cause chloracne in some people.

Respiratory

Protection: Avoid breathing vapor, mist, or dust. Use NIOSH/MSHA approved equipment when airborne exposure limits are exceeded. Full facepiece equipment is recommended when airborne exposure limits are exceeded and, if used, replaces the need for face shield and/or chemical splash goggles. Consult respirator manufacturer to determine the type of equipment for a given application. The respirator use limitations specified by NIOSH/MSHA or the manufacturer must be observed. High airborne concentrations may require use of self-contained breathing apparatus or supplied air respirator. Respiratory protection programs must be in compliance with 29 CFR Part 1910.134.

ATTENTION! Repeated or prolonged inhalation may cause chloracne in some people.

Ventilation: Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of vapor or mist, such as open process equipment.

Airborne Exposure Limits:

Product: Chlorodiphenyl (42% chlorine)

OSHA PEL: 1 mg/m³ 8-hour time-weighted average - Skin*
ACGIH TLV: 1 mg/m³ 8-hour time-weighted average - Skin*

Product: Chlorodiphenyl (54% chlorine)

OSHA PEL: 0.5 mg/m³ 8-hour time-weighted average - Skin*
ACGIH TLV: 0.5 mg/m³ 8-hour time-weighted average - Skin*

*For Skin notation see Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Government Industrial Hygienists, 1995-1996.

9. PHYSICAL AND CHEMICAL PROPERTIES

PROPERTIES OF SELECTED AROCLORS [†]							
PROPERTY	1016	1221	1232	1242	1248	1254	1260
Color (APHA)	40	100	100	100	100	100	150
Physical state	mobile oil	mobile oil	mobile oil	mobile oil	mobile oil	viscous liquid	sticky resin
Stability	inert	inert	inert	inert	inert	inert	inert
Density (lb/gal 25°C)	11.40	9.85	10.55	11.50	12.04	12.82	13.50
Specific gravity x/15.5°C	1.36-1.37 x-25°	1.18-1.19 x-25°	1.27-1.28 x-25°	1.30-1.39 x-25°	1.40-1.41 x-65°	1.49-1.50 x-65°	1.55-1.56 x-90°
Distillation range (°C)	323-356	275-320	290-325	325-366	340-375	365-390	385-420
Acidity mg KOH/g, maximum	.010	.014	.014	.015	.010	.010	.014
Fire point (°C)	none to boiling point	176	238	none to boiling point	none to boiling point	none to boiling point	none to boiling point
Flash point (°C)	170	141-150	152-154	176-180	193-196	none	none
Vapor pressure (mm Hg @ 100°F)	NA	NA	0.005	0.001	0.00037	0.00006	NA
Viscosity (Saybolt Univ. Sec. @ 100°F) (centistokes)	71-81 13-16	38-41 3.6-4.6	44-51 5.5-7.7	82-92 16-19	185-240 42-52	1800-2500 390-540	— —

NA—Not Available

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

10. STABILITY AND REACTIVITY

Stability: PCBs are very stable, fire-resistant compounds.

Materials to Avoid: None

Hazardous Decomposition

Products: PCBs may decompose to form CO, CO₂, HCl, phenolics, aldehydes, and other toxic combustion products under severe conditions such as exposure to flame or hot surface.

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Data from laboratory studies conducted by Monsanto and from the available scientific literature are summarized below.

Single exposure (acute) studies indicate:

Oral - Slightly Toxic (Rat LD50 - 8.65 g/kg for 42% chlorinated; 11.9 g/kg for 54% chlorinated)

The liquid products and their vapors are moderately irritating to eye tissues. Animal experiments of varying duration and at different air concentrations show that for similar exposure conditions, the 54% chlorinated material produces more liver injury than the 42% chlorinated material.

There are literature reports that PCBs can impair reproductive functions in monkeys. The National Cancer Institute (NCI) performed a study in 1977 using Aroclor 1254 with both sexes of rats. NCI stated that the PCB, Aroclor 1254, was not carcinogenic under the conditions of their bioassay. There is sufficient evidence in the scientific literature to conclude that Aroclor 1260 can cause liver cancer when fed to rodents at high doses. Similar experiments with less chlorinated PCB products have produced negative or equivocal results.

The consistent finding in animal studies is that PCBs produce liver injury following prolonged and repeated exposure by any route, if the exposure is of sufficient degree and duration. Liver injury is produced first, and by exposures that are less than those reported to cause cancer in rodents. Therefore, exposure by all routes should be kept sufficiently low to prevent liver injury.

Numerous epidemiological studies of humans, both occupationally exposed and nonworker environmentally exposed population, have not demonstrated any causal relationship between PCB exposure and chronic human illnesses such as cancer or neurological or cardiovascular effects. PCBs at high dosage can cause skin symptoms; however, these subside upon removal of the exposure source.

PCBs have been listed in the International Agency for Research on Cancer (IARC) Monographs (1987)-Group 2A and in the National Toxicology Program (NTP) Seventh Annual Report on Carcinogens.

12. ECOLOGICAL INFORMATION

Care should be taken to prevent entry of PCBs into the environment through spills, leakage, use, vaporization or disposal of liquid or solids. PCBs can accumulate in the environment and can adversely affect some animals and aquatic life. In general, PCBs have low solubility in water, are strongly bound to soils and sediments, and are slowly degraded by natural processes in the environment.

13. DISPOSAL CONSIDERATIONS

The disposal of PCB items or equipment (those containing 50 ppm or greater PCBs) and PCB wastes is strictly regulated by 40 CFR Part 761. For example, all wastes and residues containing PCBs (wiping cloths, absorbent material, used disposable protective gloves and clothing, etc.) should be collected, placed in proper containers, marked and disposed of in the manner prescribed by EPA regulations (40 CFR Part 761) and applicable state and local regulations.

14. TRANSPORT INFORMATION

The data provided in this section are for information only. Please apply the appropriate regulations to properly classify a shipment for transportation.

DOT Classification:	IF WEIGHT OF PCBs TO BE SHIPPED IS OVER ONE POUND, THE FOLLOWING CLASSIFICATION AND LABEL APPLY.
DOT Label:	LIQUID: Environmentally Hazardous Substance, liquid, n.o.s. (Contains PCB), 9, UN 3082, III
	SOLID: Environmentally Hazardous Substance, solid, n.o.s. (Contains PCB), 9, UN 3077, III
DOT Label:	Class: 9
DOT Reportable Quantity:	One Pound
IMO Classification:	Polychlorinated Biphenyls, IMO Class 9, UN 2315, II
	IMO Page 9034, EMS 6.1-02
IATA/ICAO Classification:	Polychlorinated Biphenyls, 9, UN2315, II

15. REGULATORY INFORMATION

For regulatory purposes, under the Toxic Substances Control Act, the term "PCBs" refers to a chemical substance limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contain such a substance (40 CFR Part 761).

TSCA Inventory: not listed.

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370): Immediate, Delayed.
SARA Section 313 Toxic Chemical(s): Listed-1993 (De Minimis concentration 0.1%.)

Reportable Quantity (RQ) under DOT (49 CFR) and CERCLA Regulations: 1 lb. (polychlorinated biphenyls) PCBs.

Release of more than 1 (one) pound of PCBs to the environment requires notification to the National Response Center (800-424-8802 or 202-426-2675).

Various state and local regulations may require immediate reporting of PCB spills and may also define spill cleanup levels. Consult your attorney or appropriate regulatory officials for information relating to spill reporting and spill cleanup.

16. OTHER INFORMATION

Reason for revision: Conversion to the 16 section format. Supersedes MSDS dated 10/88.

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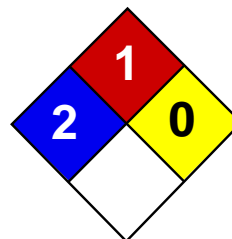
FOR ADDITIONAL NONEMERGENCY INFORMATION, CONTACT:

Gary W. Mappes
Manager, Product & Environmental Safety

Robert G. Kaley, II
Director, Environmental Affairs

Monsanto Company
800 North Lindbergh Boulevard
St. Louis, MO 63167
(314) 694-3344

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Health	2
Fire	1
Reactivity	0
Personal Protection	E

Material Safety Data Sheet

Phenanthrene MSDS

Section 1: Chemical Product and Company Identification

Product Name: Phenanthrene

Catalog Codes: SLP1318

CAS#: 85-01-8

RTECS: SF7175000

TSCA: TSCA 8(b) inventory: Phenanthrene

CI#: Not available.

Synonym:

Chemical Name: Not available.

Chemical Formula: C₁₄H₁₀

Contact Information:

Sciencelab.com, Inc.

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:

1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Phenanthrene	85-01-8	100

Toxicological Data on Ingredients: Phenanthrene: ORAL (LD50): Acute: 700 mg/kg [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:

Hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:

After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation: Not available.

Ingestion:

Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: OPEN CUP: 171°C (339.8°F).

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO₂).

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In

case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

Storage:

Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 178.22 g/mole

Color: Not available.

pH (1% soln/water): Not available.

Boiling Point: 340°C (644°F)

Melting Point: 101°C (213.8°F)

Critical Temperature: Not available.

Specific Gravity: 1.179 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: 6.14 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Very slightly soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Eye contact. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 700 mg/kg [Mouse].

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans:

Hazardous in case of skin contact (irritant, sensitizer), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Phenanthrene

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):

R36/38- Irritating to eyes and skin. R43- May cause sensitization by skin contact.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Splash goggles.

Section 16: Other Information

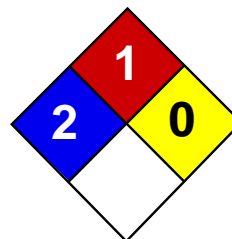
References: Not available.

Other Special Considerations: Not available.

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Health	2
Fire	1
Reactivity	0
Personal Protection	C

Material Safety Data Sheet

Pyrene MSDS

Section 1: Chemical Product and Company Identification

Product Name: Pyrene

Catalog Codes: SLP3868

CAS#: 129-00-00

RTECS: UR2450000

TSCA: TSCA 8(b) inventory: Pyrene

CI#: Not available.

Synonym: Benzo(D,E,F)phenanthrene

Chemical Name: Pyrene

Chemical Formula: C₁₆H₁₀

Contact Information:

Sciencelab.com, Inc.

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:

1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Pyrene	129-00-00	100

Toxicological Data on Ingredients: Pyrene: ORAL (LD50): Acute: 2700 mg/kg [Rat]. 800 mg/kg [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:

Hazardous in case of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant, permeator).

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Not available.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO₂).

Fire Hazards in Presence of Various Substances:

Slightly flammable to flammable in presence of heat, of combustible materials. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Slightly explosive in presence of heat. Non-explosive in presence of open flames and sparks.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:

Keep locked up.. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested,

seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage:

Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24°C (75.2°F). Preferably refrigerate.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Synthetic apron. Gloves (impervious).

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Crystalline solid. Powdered solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 202.26 g/mole

Color: Yellow.

pH (1% soln/water): Not applicable.

Boiling Point: 404°C (759.2°F)

Melting Point: 151.2°C (304.2°F)

Critical Temperature: Not available.

Specific Gravity: 1.271 @ 23 C (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 4.9

Ionicity (in Water): Not available.

Dispersion Properties:

Is not dispersed in cold water, hot water. See solubility in diethyl ether.

Solubility:

Soluble in diethyl ether. Insoluble in cold water, hot water. Pyrene is fairly soluble in organic solvents. It is soluble in alcohol, benzene, carbon disulfide, ether, petroleum ether, and toluene

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Not available.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 800 mg/kg [Mouse].

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.

Other Toxic Effects on Humans:

Hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant, permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

May affect genetic material (mutagenic). May cause cancer (tumorigenic) according to animal data.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: May cause skin irritation. May be absorbed through skin. Eyes: May cause eye irritation. Conjunctival irritation may be noted. Inhalation: May cause respiratory tract irritation. Ingestion: May cause gastrointestinal tract irritation. May affect behavior/Central Nervous System (excitation and muscle spasticity), liver and urinary system, and immune system, and blood.

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 1.8 mg/l 48 hours [Water flea].

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:

Connecticut carcinogen reporting list.: Pyrene Illinois chemical safety act: Pyrene New York release reporting list: Pyrene Pennsylvania RTK: Pyrene Massachusetts RTK: Pyrene Massachusetts spill list: Pyrene New Jersey: Pyrene New Jersey spill list: Pyrene Louisiana RTK reporting list: Pyrene Louisiana spill reporting: Pyrene California Director's list of Hazardous Substances: Pyrene TSCA 8(b) inventory: Pyrene TSCA 8(a) CAIR: Pyrene TSCA 8(d) H and S data reporting: Pyrene: June 1, 1987-June 1, 1997 SARA 302/304/311/312 extremely hazardous substances: Pyrene CERCLA: Hazardous substances.: Pyrene: 5000 lbs. (2268 kg)

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):

R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. S2- Keep out of the reach of children. S36/37- Wear suitable protective clothing and gloves. S46- If swallowed, seek medical advice immediately and show this container or label.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: C

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves (impervious). Synthetic apron. Not applicable. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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APPENDIX D

EQUIPMENT CHECKLIST

EQUIPMENT CHECKLIST

PROTECTIVE GEAR			
LEVEL A	N/A	LEVEL B	N/A
SCBA		SCBA	
SPARE AIR TANKS		SPARE AIR TANKS	
ENCAPSULATING SUITE (Type)		PROTECTIVE COVERALL (Type)	
SURGICAL GLOVES		RAIN SUIT	
NEOPRENE SAFETY BOOTS		BUTYL APRON	
BOOTIES		SURGICAL GLOVES	
GLOVES (Type)		GLOVES (Type)	
OUTER WORK GLOVES		OUTER WORK GLOVES	
HARD HAT		NEOPRENE SAFETY BOOTS	
CASCADE SYSTEM		BOOTIES	
5-MINUTE COOLING VEST		HARD HAT WITH FACE SHIELD	
		CASCADE SYSTEM	
		MANIFOLD SYSTEM	
LEVEL C		LEVEL D	
ULTRA-TWIN RESPIRATOR		ULTRA-TWIN RESPIRATOR (available)	X
POWER AIR PURIFYING RESPIRATOR		CARTRIDGES (Type GMC-H)(available)	X
CARTRIDGES (Type GMC-H)		5-MINUTE ESCAPE MASK (available)	
5-MINUTE ESCAPE MASK		PROTECTIVE COVERALL (Type Tyvek/Saranax)	X
PROTECTIVE COVERALL (Type Tyvek/Saranax)		RAIN SUIT (available)	X
RAIN SUIT		NEOPRENE SAFETY BOOTS	
BUTYL APRON		BOOTIES (available)	X
SURGICAL GLOVES		NITRILE	
GLOVES (Type: Nitrite/Neoprene)		HARD HAT WITH FACE SHIELD (available)	X
OUTER WORK GLOVES		SAFETY GLASSES	X
NEOPRENE SAFETY BOOTS		GLOVES (Type: Surgical)	X
HARD HAT WITH FACE SHIELD		WORK GLOVES (Type: Neoprene/Nitrile)(available)	X
BOOTIES		SAFETY BOOTS	X
HARD HAT		BLAZE ORANGE VEST	X
		TICK/CHIGGER GATORS	X

EQUIPMENT CHECKLIST

INSTRUMENTATION	NO.	FIRST AID EQUIPMENT	NO.
OVA		FIRST AID KIT	X
THERMAL DESORBER		OXYGEN ADMINISTRATOR	
O ₂ /EXPLOMETER W/CAL.KIT (Drilling)		STRETCHER	
PHOTOVAC TIP		PORTABLE EYE WASH	
HNu (Probe 10.2)		BLOOD PRESSURE MONITOR	
MAGNETOMETER		FIRE EXTINGUISHER	X
PIPE LOCATOR			
WEATHER STATION		DECON EQUIPMENT	
DRAEGER PUMP, TUBES ()		WASH TUBS	
BRUNTON COMPASS		BUCKETS	X
MONITOX CYANIDE		SCRUB BRUSHES	X
HEAT STRESS MONITOR		PRESSURIZED SPRAYER	
NOISE EQUIPMENT		DETERGENT (Type: Alconox) = TSP	X
PERSONAL SAMPLING PUMPS		SOLVENT (HEXANE)	
MINI-RAM (Particulates) (Drilling)		PLASTIC SHEETING	
		TARPS AND POLES	
		TRASH BAGS	X
RADIATION EQUIPMENT		TRASH CANS	
DOCUMENTATION FORMS		MASKING TAPE	
PORTABLE RATEMETER		DUCT TAPE	X
SCALER/RATEMETER		PAPER TOWELS	X
NaI Probe		FACE MASK	
ZnS Probe		FACE MASK SANITIZER	
GM Pancake Probe		FOLDING CHAIRS	
GM Side Window Probe		STEP LADDERS	
MICRO R METER		DISTILLED WATER	X
ION CHAMBER			
ALERT DOSIMETER			
MINI-RAD			

EQUIPMENT CHECKLIST

SAMPLING EQUIPMENT	NO.	MISCELLANEOUS (cont.)	NO.
4-OZ BOTTLES		BUNG WRENCH	
1 LITER AMBER BOTTLES		SOIL AUGER	
VOA BOTTLES		PICK	
SOIL SAMPLING (CORING) TOOL		SHOVEL	X
SOIL VAPOR PROBE		CATALYTIC HEATER	
THIEVING RODS WITH BULBS		PROPANE GAS	
SPOONS		BANNER TAPE	X
GENERAL TOOL KIT		SURVEYING METER STICK	
FILTER PAPER		CHAINING PINS AND RING	
PERSONAL SAMPLING PUMP SUPPLIES		INSECT REPELLENT	X
4-OZ JARS		WEATHER RADIO	
		BINOCULARS	
VAN EQUIPMENT		MEGAPHONE	
TOOL KIT		PORTABLE RADIOS (2)	
HYDRAULIC JACK		CELL PHONE	X
LUG WRENCH		CAMERA	X
TOW CHAIN		HEARING PROTECTION	X
VAN CHECK OUT			
GAS		SHIPPING EQUIPMENT	
OIL		COOLERS	
ANTIFREEZE		PAINT CANS WITH LIDS, 7 CMIPS EACH	
BATTERY		VERMICULITE	
WINDSHIELD WASH		SHIPPING LABELS	
TIRE PRESSURE		DOT LABELS: "DANGER", "UP";	
		"INSIDE CONTAINER COMPLIES...";	
MISCELLANEOUS		"HAZARD GROUP"	
PITCHER PUMP		STRAPPING TAPE	
SURVEYOR'S TAPE	X	BOTTLE LABELS	
100 FIBERGLASS TAPE	X	BAGGIES	
300 NYLON ROPE		CUSTODY SEALS	
NYLON STRING		CHAIN-OF-CUSTODY FORMS	
SURVEYING FLAGS	X	FEDERAL EXPRESS FORMS	
FILM	X	CLEAR PACKING TAPE	
WHEEL BARROW			

APPENDIX E

LYME DISEASE PREVENTION AND CONTROL

Lyme Disease

facts



U.S. Department of Labor
Occupational Safety and Health Administration

OSHA has published a hazard information bulletin (HIB) to provide guidance to people who reside in high or moderate risk areas in the United States and who are exposed to ticks during the course of their work and thus at risk of contracting Lyme disease.* Examples of outdoor work which may be associated with increased risk of exposure to infected ticks include: construction work, landscaping, forestry, brush clearing, land surveying, farming, railroad work, oil field work, utility line work, and park/wildlife management.

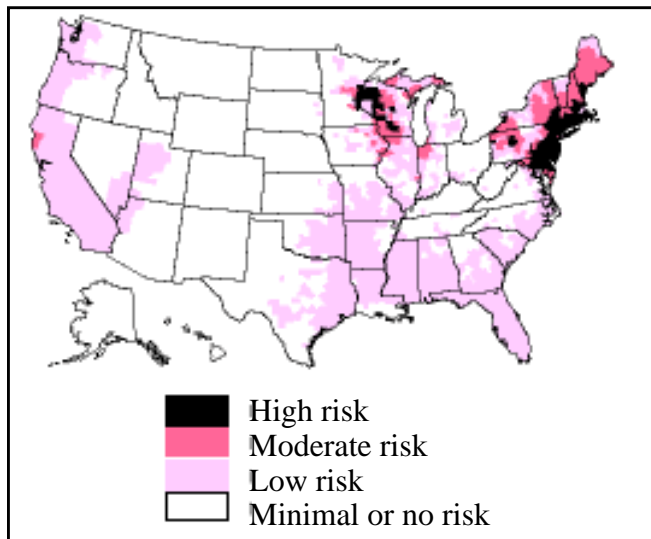
The Centers for Disease Control and Prevention (CDC) has developed a national Lyme disease risk map¹ in which CDC identified areas of the U.S. as minimal or no risk, low risk, moderate risk, or high risk for predicted Lyme disease. Areas at high or moderate risk include many counties in the Northeast U.S., some areas around the Great Lakes, and an area in Northern California. It is important that state and local health department authorities be consulted to determine risk in any given area, since risk can vary even within a county, and perhaps from year to year.

Lyme disease is caused by *Borrelia burgdorferi*, a bacterium carried in the gut of certain ticks. When these infected ticks attach to the human body (often in armpits, groin, scalp, or other hairy, hidden body areas), they slowly feed, and within 36-48 hours they may transmit *B. burgdorferi* to their human host. Young ticks are especially abundant and are seeking hosts in late spring and early summer, although adult ticks can transmit infection as well.

* See OSHA HIB 00-04 online at www.osha.gov or by calling your nearest OSHA office listed in the blue pages of your telephone directory.

¹ "Recommendations for the Use of Lyme Disease Vaccine; Recommendations of the Advisory Committee on Immunization Practices (ACIP)." *MMWR* 6/4/1999, 48 (RR-7). www.cdc.gov.

National Lyme disease risk map with four categories of risk



Note: This map demonstrates an approximate distribution of predicted Lyme disease risk in the United States. The true relative risk in any given county compared with other counties might differ from that shown here and might change from year to year.¹

Although a majority of people with Lyme disease develop a "bull's-eye" rash, 20-40% of persons who have the disease do not have a rash. Other signs and symptoms may be non-specific and similar to flu symptoms (e.g., fever, lymph node swelling, neck stiffness, generalized fatigue, headaches, migrating joint aches, or muscle aches). Diagnosis is based on a history of known exposure and development of clinical signs and symptoms, with blood testing providing valuable supportive information. Most cases of Lyme disease can be successfully treated with antibiotics. It is very important that Lyme disease be diagnosed and treated with antibiotics, since untreated Lyme disease may result in symptoms (i.e., arthritis, muscle pain, heart disease, brain and nerve disorders) that are severe, chronic, and disabling.

Prevention of Lyme Disease

First line of defense is decreasing the probability of tick bites.¹ Ticks can be vectors of other infections, in addition to Lyme disease.

- Avoidance of tick habitat (brushy, overgrown grassy, and woody areas) particularly in spring and early summer when young ticks feed.
- Removal of leaves, tall grass, and brush from areas around work areas or residential areas to decrease tick as well as host (deer and rodent) habitat.
- Application of tick-toxic chemicals to surrounding work or residential areas in accordance with federal, state, and local regulations and community standards.

Personal Protection

- Wearing light-colored clothing (to more easily see ticks).
- Wearing long-sleeved shirts, tucking pant legs into socks or boots (delays ticks from reaching skin so they can be more easily found before attaching).
- Wearing high boots or closed shoes covering entire foot.
- Wearing a hat.
- Using appropriate insect repellants on non-facial skin and permethrin on clothes (kills ticks) in accordance with Environmental Protection Agency guidelines.
- Showering and washing/drying clothes at high temperature after outdoor exposure.
- Doing a careful body check for ticks, prompt removal with tweezers and skin cleansing with antiseptic.

Workers at risk should be advised of the signs and symptoms of Lyme disease, as well as the primary and secondary preventive measures for this disease. Those who are at increased risk for Lyme disease should obtain medical advice regarding the applicability of the Lyme disease vaccine; those who have symptoms of suspected tick-borne infection should seek medical attention early. More detailed information regarding various aspects of Lyme disease prevention can be found on the CDC web site (www.cdc.gov).

The Directorate of Technical Support issues Hazard Information Bulletins (HIBs) in accordance with OSHA Instruction CPL 2.65 to provide relevant information regarding unrecognized or misunderstood health and safety hazards, as well as potential hazards associated with particular materials, devices, techniques, and engineering controls. An HIB is not a new standard or regulation, and it creates no legal obligations. It is advisory in nature, informational in content, and is intended for use by employers seeking to provide a safe and healthful workplace. The *Occupational Safety and Health Act* requires employers to comply with hazard-specific safety and health standards. In addition, employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm under Section 5(a)(1), the General Duty Clause of the Act. Employers can be cited for violating the General Duty Clause if there is a recognized hazard and they do not take steps to prevent or abate the hazard. However, failure to implement HIB recommendations is not, in itself, a violation of the General Duty Clause. Citations can only be based on standards, regulations, and the General Duty Clause.

APPENDIX F

WEST NILE VIRUS BROCHURE

OSHA[®] FactSheet

West Nile Virus

West Nile Virus (WNV) infection is an illness transmitted to humans primarily by mosquitoes. The pathogen that causes WNV infection is a virus that is known to infect birds and other animals as well as humans. Outdoor workers are at risk, particularly in warmer weather (when mosquitoes are more likely to be present). The following information below is designed to educate employers and workers on the virus and also offer ways to reduce the risks of infection.

What are the signs and symptoms of West Nile Virus?

In most cases, persons infected with WNV either show no symptoms or have very mild flu-like symptoms, called West Nile fever. These mild cases of West Nile fever normally last only a few days and are not believed to cause any long-term effects. The typical time from infection to the onset of signs and symptoms is 3 to 14 days. Signs and symptoms of the milder illness, West Nile fever, include tiredness, headache, fever, body aches, swollen lymph nodes, and/or a skin rash.

According to the Centers for Disease Control and Prevention (CDC), severe illness is reported to occur in about 1 of every 150 persons infected with WNV. Symptoms of severe disease may last several weeks and may have permanent neurological effects. The signs and symptoms of more severe infection (West Nile encephalitis or meningitis) include nausea/vomiting, headache, high fever, stiffness in the neck, disorientation (in very severe cases, coma), tremors and convulsions, and muscle weakness (in very severe cases, paralysis). Severe WNV infection is a medical emergency and persons who develop symptoms should seek immediate medical assistance.

How can workers become exposed?

Flooded areas, particularly in warm climates, provide the opportunity for mosquitoes to breed in stagnant water. Bites from infected mosquitoes may result in WNV.

What can employers do to reduce the risk to workers?

Employers should keep in mind that eliminating mosquito breeding grounds is a highly effective way of reducing mosquito populations and the number of mosquito bites. Mosquitoes lay eggs in standing water. Employers with workers who work outside, and in and around areas of stagnant water should:

- Be aware of working conditions, i.e., the presence of equipment or areas where water accumulates.
- Advise workers to inspect work areas and, where possible, get rid of sources of stagnant or standing water to remove a potential breeding ground of mosquitoes.
- Reduce or eliminate mosquito populations by disrupting mosquito breeding grounds (i.e., whenever possible, drain ditches, gutters, etc., to get rid of sources of stagnant or standing water).
- Advise workers to protect themselves from skin contact with dead birds. CDC recommends using gloves or an inverted plastic bag when handling dead birds.

What can workers do to protect themselves?

It may not always be possible to eliminate all potential mosquito breeding grounds. Knowing the key steps to take to minimize the risk of mosquito bites is important in reducing the risk of WNV infection. Workers who work outdoors should be aware that the use of personal protective equipment

and techniques is essential to preventing mosquito bites. Workers should:

- Cover as much of the skin as possible by wearing shirts with long sleeves, long pants and socks whenever possible. Use light weight clothing to minimize the potential for heat-induced illnesses.
- Use insect repellent containing an EPA-registered active ingredient (e.g., DEET, Picaridin) on exposed skin according to instructions on packaging. All of the EPA-registered active ingredients have demonstrated repellency however some provide more long-lasting protection than others.
- Avoid the use of perfumes and colognes when working outdoors; mosquitoes may be more attracted to individuals wearing perfumes or colognes.
- Choose a repellent that provides protection for the amount of time that you will be outdoors/in areas of concern. The more DEET a repellent contains, the longer time it can protect one from mosquito bites, with protection times ranging from 1 hour (4.75% DEET) to 5 hours (23.8% DEET).
- Spray insect repellent on the outside of one's clothing, as it is possible for mosquitoes to bite through thin clothing.
- Do NOT spray insect repellent on skin that is under clothing.
- Never apply insect repellents over open wounds or irritated skin.
- Do NOT spray aerosol or pump products in enclosed areas. Do NOT spray a pump or aerosol product directly on one's face. First spray on hands and carefully rub on face (do not allow insect repellent to contact one's eyes and mouth).
- After working in areas where mosquitoes are a concern, use soap and water to wash skin that has been treated with insect repellent.
- Be extra vigilant at dusk and dawn when mosquitoes are most active.

Additional Resources:

CDC West Nile Virus Home Page at <http://www.cdc.gov/ncidod/dvbid/westnile/>

CDC information on the use of insect repellents at http://www.cdc.gov/ncidod/dvbid/westnile/qa/insect_repellent.htm

OSHA at <http://www.osha.gov/dts/shib/shib082903b.html>

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For more complete information:



APPENDIX E: Community Air Monitoring Plan

APPENDIX E

COMMUNITY AIR MONITORING PLAN

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area may be necessary. VOCs and radiological contamination are not concerns at this Site, but heavy metals will require particulate monitoring. However, VOC monitoring will also be conducted as a precaution.

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. 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.

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.

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.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. All 15-minute readings must be recorded and be available for State (DEC and DOH) 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.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m³) 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/m³ above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m³ 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/m³ of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

Air sampling stations will be placed based on the location of excavation and generally prevailing wind conditions. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

APPENDIX F: Inspection Form

SITE-WIDE INSPECTION FORM

NAME OF INSPECTOR: _____

COMPANY OF INSPECTOR: _____

DATE OF INSPECTION: _____

CURRENT USE OF SITE: _____

HAS A CHANGE OF USE OCCURRED SINCE THE LAST CERTIFICATION?

_____ YES _____ NO IF YES, THEN

EXPLAIN: _____

GENERAL DESCRIPTION OF COVER: _____

HAS THE COVER BEEN PENETRATED? _____ YES _____ NO IF YES,
THEN EXPLAIN: _____

HAVE ANY STRUCTURES BEEN CONSTRUCTED ON THE SITE SINCE THE
LAST INSPECTION? _____ YES _____ NO IF YES, THEN

EXPLAIN: _____

HAVE COVER CONDITIONS CHANGED SINCE THE LAST INSPECTION?

_____ YES _____ NO IF YES, THEN

EXPLAIN: _____

APPENDIX G: Stormwater Pollution Control Plan

Stormwater Pollution Prevention Plan

Southpoint Cove Apartment Homes Penfield, NY

March 2012
Revised: May 2014

Prepared for:
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PASSERO ASSOCIATES
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Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

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10. Existing, Developed and Time of Concentration Hydrographs
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13. Construction Site Inspection and Maintenance Log Sheets.
14. MS4 Acceptance Form (blank)
15. Notice of Intent
16. Notice of Termination (blank)
17. Erosion Control Details

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

I. INTRODUCTION

The site is located on the north side of Empire Blvd. in the Town of Penfield approximately 0.5 miles south of the boulevard's intersection with Plank Road in an area designated by the Town as the LaSalle's Landing District. The "Site" consists of properties currently identified as 1420, 1440 and 1463 Empire Boulevard with the west side of the development area containing a portion of 1384 Empire Boulevard.

The proposed development includes the construction of 358 Apartment Units in 9 3-Story buildings. Additional improvements include a community center, pool, pedestrian access, extensive landscaping and upgrades to Empire Blvd. including a two-way left turn lane.

This plan will outline the erosion and sediment control practices and procedures, which will be implemented both during and after construction along with the supporting calculations for the stormwater management areas (SMA's).

A copy of this plan will be kept on site in the job trailer or in a designated mailbox at all times.

II. EXISTING CONDITIONS

A. Topography/ Drainage

The development area is composed mostly of successional field vegetation with some pronounced pockets of sapling to pole stand tree species. The general herbaceous layer of vegetation is exceptionally dense and profuse in its extent, and offers little habitat value. The majority of the development area has been previously disturbed. 1420 Empire Boulevard was mass graded several years ago in order to increase sight distance from Bazils restaurant. 1440 Empire Boulevard was historically a dump site and is now part of the NYSDEC's Brownfield Cleanup Program.

The site slopes from east to west and from south to north with drainage flowing towards Irondequoit Bay and towards a federal wetland at the center of the property. The site's slope drops steeply from its eastern boundary to a much more gradual slope with runs across the center of the site. Steep slopes and small gullies are also found along the north and southwest site boundary. There are also two storm sewers which discharge drainage onto the site from Empire Boulevard. As part of the projects improvements, these pipes will be routed through the development so that they discharge directly to the existing wetland.

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B. Soils

According to the USDA Soils survey, the majority of soils are within the Arkport, Dunkirk and Colonie series, which is in the hydrologic soil class B (see appendix for soils map). The soils in the development area are moderately drained with the water table and bedrock greater than 15' deep. The soils were previously disturbed several years ago when the owners of 1420 Empire Boulevard engaged in an earth moving project to improve sight distance from Bazils restaurant. At that time, the sandy loam nature of the soils was confirmed.

C. Wetlands

Based upon a field delineation performed by Environmental Resources, the site contains a federal wetland. Additionally, the shoreline of Irondequoit Bay is a NYSDEC Wetland. Neither of the wetlands is proposed to be disturbed as part of the development project. Their boundaries will be clearly delineated where adjacent to construction activities.

D. Floodplain

According to FEMA map No. 36055C0217G, dated August 28, 2008 there are floodplains located on the proposed site. There is a floodplain along Irondequoit Bay which is adjacent to the project. There will be no proposed development or fill located within the floodplain. (See appendix for FEMA map)

E. Archeological Sensitive Areas

The New York State Parks, Recreation and Historic Preservation circle and square map of archaeological sensitive areas identifies the proposed site as within the sensitive area. A phase 1 cultural resource investigation will be performed and the information sent to SHPO for evaluation prior to construction. (See appendix for Archeological Sensitive Areas map)

F. Environmental Resources

The NYSDEC has an Environmental Resource Mapper on its website. The Environmental Resource Mapper is an interactive mapping application that can be used to identify some of New York State's natural resources and environmental features that are state protected, or of conservation concern. It displays the following:

- Animals and plants that are rare in New York, including those listed as Endangered or Threatened (generalized locations). [Updated May 2008]
- Significant natural communities, such as rare or high-quality forests, wetlands, and other habitat types.
- New York's streams, rivers, lakes, and ponds; water quality classifications are also displayed.

According to this resource there are rare animals or plants located in the vicinity of the project. A bald eagle nesting has been confirmed within 1,000 feet of the site, and Irondequoit Bay is an appropriate feeding area for this specie. Federal and state regulations will be followed during construction. Proper landscaped buffers will be maintained. There are no significant natural communities located

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

within the project boundary. Irondequoit Bay is a Class A water body, as mentioned above there will be no disturbance or filling to the bay. (See appendix for the NYSDEC Environmental Resource Maps)

The Town of Penfield has Environmental Protection Overlay Districts (EPOD). A permit was sought for any work or disturbance located within any EPOD. The subject parcel has Steep slope EPOD, Woodlot EPOD, Wetland Buffer EPOD, Floodplain EPOD, and watercourse EPOD. The EPOD's will be avoided as part of the proposed construction.

III. DEVELOPED CONDITIONS

As of January 29, 2010, all proposed projects must adhere to the newly adopted changes and additions to the State Pollutant Discharge Elimination System (SPDES) General Permit (GP-0-10-01). This project has been designed to meet these regulations. The guidelines specified by the *New York State Stormwater Management Design Manual, August 2010* were used to analyze the proposed stormwater management facility for this project.

In order to satisfy the aforementioned regulations under developed conditions, stormwater runoff from the proposed site will be collected by a new private storm sewer system where it will be conveyed to one of the proposed private stormwater management area's (SMA). The SMA's will be designed to meet the NYSDEC requirements for Water Quality Volume (Wqv). Channel Protection Volume, Overbank Volume Control, and Extreme Flood Control measures are not required since the discharge from the site is to Irondequoit Bay. Therefore, downstream flooding is not a concern.

The parcel will maintain the existing drainage patterns with the western portion of the site draining from east to west toward Bazils. The eastern half of the site will continue to drain from west to east towards the federal wetland. Each of these two analysis points will have a stormwater management area.

The western drainage basin will have a Bio Retention facility located adjacent to the western entrance into the project. The basin will provide water quality treatment for the western portion of the project. Larger flows from the 10, 25 and 100 year storm events will be diverted around the Bio Retention area. The discharge will be constructed through the NYSDEC 100' Wetland Buffer so that it discharges directly to Irondequoit Bay after being treated for Water Quality. Discharging the runoff prior to the buffer would result in an erosion concern as it would not be controlled through the buffer to the Bay.

The eastern portion of the project will drain to one of two proposed organic filters. The filters are proposed adjacent to the existing federal wetland in an area designed to treat runoff for Water Quality prior to discharge to the wetland. Larger flows from the 10, 25 and 100 year storm events will be diverted around the filters. The discharges from the filters and the storm sewer system will be

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

hard piped to the toe of the slope adjacent to the wetland. This was done in an effort to minimize erosion which could develop if the discharge pipes were daylighted on top of the slope.

In order to determine pre and post runoff conditions the site will be modeled using the TR-55 methodology and the Hydraflow Hydrographs Extension to AutoCAD 2012 software. Calculations for CN values, Time of Concentration and resulting hydrographs are provided in the appendix of this report.

IV. GREEN INFRASTRUCTURE

Due to the sensitivity of the project area which is directly attributed to its adjacency to Irondequoit Bay, the project proposal incorporates several Green Infrastructure (GI) practices. The intent of this approach is to recognize the development as being in an environmentally sensitive area and to minimize the impact the proposal will have on the local habitat. Additionally, the GI practices are designed based upon the methodology in Chapter 5 of the recently revised NYSDEC Stormwater Design Manual and in accordance with Better Site Design Practices.

1. Preservation of Buffers – Existing vegetation along the northern property line (100' wide buffer) will remain undisturbed during and after construction. These areas will be delineated with orange construction fencing during site work. The buffer area contains vegetation and steep slopes which make it part of the Town of Penfield's Environmental Protection Overlay District (EPOD).
2. Reduction of Clearing and Grading – Clearing and grading will be minimized to the maximum extent practicable during construction. This is accomplished by designing the site to fit the existing topography of the development area. For example, the proposed buildings were specifically designed with a "walk out" approach to allow them to be "tiered" and stepped up the slope. This is opposed to a flat pad site which would require more extensive grading and land disturbance. Additionally, as mentioned above, several areas have been delineated to remain natural throughout construction with no clearing or grading.
3. Open Space Design – A large portion of the parcel contains steep slopes and woodlots. These areas are primarily along the northern portion of the site. In order to achieve the required density to develop the project, tall buildings with a smaller footprint are proposed to "cluster" the development to the previously disturbed areas. This way, the steep slopes and mature vegetation may remain intact.
4. Parking Reduction – The zoning code requires a minimum of two parking spaces per unit. Based on the proposed 358 units, 716 spaces are required. In order to reduce the amount of impervious area typically associated with parking lots, half of the proposed parking will be providing in the basements

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

of the proposed buildings. This approach greatly reduces the amount of required pavement for the project and decreases the amount of runoff and potential stormwater pollution.

5. Bio-retention – Two organic filters and a large Bio-Retention Area are proposed as part of the project to treat stormwater runoff for Water Quality. These areas serve as both a means for filtering stormwater and also for incorporating landscaping elements into the design. Organic filters are a design which is similar to a “Rain Garden” except that they serve larger drainage areas. This approach provides both an aesthetic and stormwater treatment benefit to the project.

All three of the stormwater management areas will have a similar composition. The runoff from the site will be collected in an enclosed storm sewer and then discharged on the surface of the stormwater practice. From there, it will infiltrate through 6” of topsoil and 24” of a clean sand which will filter pollutants out of the runoff. The bottom of the bio retention areas have a minimum of 12” deep drainage stone with perforated pipes to collect the runoff after it is filtered.

The stone will be undercut 6” below the outlet from the perforated pipes. This will allow the runoff the potential to infiltrate the native soils and to provide groundwater recharge. Once the inflow rate of the stormwater exceeds the rate of infiltration, the drainage pipes will act as an overflow and discharge the water to either the Bay or Federal wetland. Even under the overflow condition, stormwater is still filtered through the soil media.

6. Tree Planting – Shade trees, garden areas and foundation plantings are provided throughout the proposed project. While providing obvious aesthetic benefits, the proposed vegetation also aids in stormwater management and protection of the existing habitat. First, all proposed and existing vegetation extract nutrients from within the soils and stormwater runoff for growth and photosynthesis. These include phosphorous and nitrogen which, if allowed to infiltrate the stormwater runoff, are considered a pollutant. Second, the trees along the roadway provide shade for impervious surfaces and reduce the heat island effect from the asphalt. If left unshaded, these surfaces experience elevated temperatures which can elevate the temperature of runoff.

The practices listed above demonstrate an effort in practicing responsible design and development. This is especially important when considering the location of the project and its adjacency to Irondequoit Bay.

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

V. CONSTRUCTION EROSION CONTROL PRACTICES & INSPECTIONS

The Owner is responsible for having yearly inspections of the storm water management facility completed. The inspections shall review and document the following at a minimum: visual inspection of the outlet structure, check of the forebay for excessive sediment accumulation, visual inspection of the outlet structure, visual inspection of the earthen berm for signs of erosion, burrowing, vegetation degradation or any other issues of concern. A certified copy of the annual inspection will be provided to the Town Engineering Department by July 1st of each calendar year.

Several erosion control practices will be utilized during construction by the contractor under direct supervision by the owner and a qualified SWPPP inspector (S.W.T.). These practices are explained below and shown in detail in the appendix of this report and the construction plans.

- **Silt Fence →** Silt fencing shall be installed at the toe of all slopes along the perimeter of the disturbed areas and at the toe of slope for any soil stock pile areas. Also, a row of silt fence will be installed around the perimeter of the wetland in an effort to delineate its boundary. The fencing will be installed in accordance with the NYSDEC construction standards and at the instruction of this plan. The silt fencing shall be buried in the ground at least 6". The contractor shall provide continued monitoring to ensure the silt fencing remains intact and shall repair as needed. When the silt accumulates to greater than 1/3 the height of the fence the contractor shall remove and dispose of the silt.
- **Stabilized Construction Entrance →** The eastern project entrance shall serve as the construction entrance to the project and shall be installed according to the details of this plan. The contractor shall ensure that mud is not tracked onto Empire Boulevard and that the stone entrance properly removes mud and debris from construction vehicles.
- **Sediment Basin →** The proposed stormwater management area shall serve as a temporary sediment basin during construction. A temporary outlet pipe will be installed to allow runoff to exit the basin. The SMA area shall be undercut a minimum of 5 ft. below the temporary pipe to provide a settling area for the runoff. Prior to final site stabilization, the sediment shall be removed from the basins.
- **Catch Basin Protection →** All field inlets and catch basins shall be undercut in accordance with the detail the Appendix to allow stormwater runoff ample time to settle prior to entering the proposed drainage system. Catch basin protection can be removed from catch basins in the roadway when the sub base is installed and

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

from the field inlets when the adjacent area is brought to final grade and stabilized.

- Seeding and Stabilization → The contractor shall seed and stabilize all disturbed areas not to be worked for 7 days within 7 days of the last disturbance. Stabilization measures may include but are not limited to straw mulching, wood chip mulching and hydroseeding. The SMA and adjacent areas shall be stabilized immediately following their shaping and installation.
- Check Dam → 24" High stone check dams will be installed in temporary and permanent diversion swales. The check dams will be installed every 2' vertical feet. Once the site is stabilized, these check dams will be removed.
- Truck Washdown area → A truck washdown area will be provided adjacent to the construction entrance. This area will be constructed such that it drains to a sediment basin immediately adjacent prior to discharging to any storm sewer system.

Additional measures may be required during construction at the guidance of the owner or certified SWPPP Inspector. The contractor shall begin to make all adjustments to the erosion control within 24 hours of receipt of any deficiencies.

The owner will be responsible for providing weekly reports by a qualified inspector, in accordance with the GP-0-10-001, during construction to the Town Engineering Department.

Any modifications to the SWPPP will be reported to the MS4 in writing prior to implementation.

The owner is responsible for having a qualified operator on site at all times who has at least 4 hours of erosion control training in accordance with the GP-0-10-001.

Once the site has achieved 80% stabilization and ground cover, the Town Engineering Department shall be required to sign off on the Notice of Termination prior to submission to the NYSDEC.

If greater than 5 acres of disturbance is proposed at any time a waiver from the Town will be required.

VI. POST CONSTRUCTION PRACTICES

The owner of the subject project and will be responsible for all post construction practices. The contact information for the owner is illustrated on the cover of this plan as well as the design plans for the project. The post construction practices include performing annual inspections of the SMA's to ensure silt build up is

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

below the limits of the forebays and ensuring continual stabilized cover of all project areas to 80% cover minimum. All applicable inspection and maintenance activities shall continue until the 80% cover is met. Any silt removal will be disposed either off site or on site and immediately stabilized in accordance with the practices of this plan. Additionally, annual monitoring of the storm sewer structures will be provided by the owner to ensure that they are functioning properly. These inspections will be certified by a Professional Engineer and a copy of the inspection report will be furnished to the Town Engineering Department.

VII. SUMMARY

The Southpoint Cove Apartment Homes project is directly tributary to Irondequoit Bay. The project proposal includes many practices including source control, Better Site Design (BSD), and the implementation of Organic Filters and Bio Retention to ensure the effluent stormwater is treated for Water Quality.

Continued monitoring of the practices set forth in this plan will be provided by the owner, a designated SWPPP inspector and the local MS4 which is the Town of Penfield. Once the site has been stabilized, the final closeout inspection and the Notice of Termination (N.O.T.) shall be sent to the Town of Penfield Engineering Department. The Town of Penfield shall sign the NOT prior to submission to the NYSDEC and closeout of the general permit.

The appendices of this report illustrate additional requirements and specifications for stormwater pollution prevention. These include standard practices, certification documents, and the General Discharge Permit and inspection forms.

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 1: SWPPP PRACTICES, PROCEDURES AND CERTIFICATIONS.

STORMWATER POLLUTION PREVENTION PLAN
Southpoint Cove Apartment Homes

SITE DESCRIPTION			
Project Name and Location: (Latitude, Longitude, or Address)	Southpoint Cove Apartments Penfield, NY 14526 N. 4783585 E. 295762	Owner Name and Address:	Southpoint Cove LLC 1080 Pittsford – Victor Rd P.O. Box 1660 Pittsford, NY 14534
Description: (Purpose and Types of Soil Disturbing Activities)	Proposed development of a 358 Apartment Units in 9 buildings. Improvements also include a clubhouse and pool		
Runoff Coefficient/Soils Conditions:	The runoff coefficient impervious area is 0.9 and 0.2 for the grass areas. The soils on-site consist of loams with hydrologic soil Class "B".		
Site Area:	± 31.4 Acres- total development area (19.4 Acres to be disturbed)		
Sequence of Major Activities			
<p>The order of activities will be as follows:</p> <ol style="list-style-type: none"> 1. Install silt fences, stabilized construction entrance and other erosion control measures. 2. Protect vegetation to remain. 3. Construct temporary sediment basins including grading, and stabilization. 4. Strip and stockpile topsoil as necessary. 5. Conduct mass earth moving activities. 6. Install utilities including storm sewers. 7. Box parking lot or road ways. 8. Install parking or road Subbase and continue monitoring of erosion control. 9. Stabilize disturbed areas and stockpiles within 7 days of last construction activity in all areas. 10. Construct Organic Filter and Bio Retention areas 11. Final grading, seeding, and mulching of all disturbed areas. 12. When all work areas are complete and the entire areas are stabilized, remove the erosion control measures. 			
Name of Receiving Waters:	Irondequoit Bay		

CONTROLS

Erosion and Sediment Control

Stabilization Practices

Temporary Stabilization - Topsoil will be replaced onsite or removed from the site. Disturbed portions of the site where construction activity temporarily ceases for at least 7 days will be stabilized with temporary seed and mulch no later than 7 days from the last construction activity in that area. The temporary seed shall be Rye (grain) applied at the rate of 120 pounds per acre. Prior to seeding, 2,000 pounds per acre of ground agricultural limestone and 1,000 pounds per acre of 10-10-10 fertilizer shall be applied. If applicable, areas of the site which are to be paved will be temporarily stabilized by applying geotextile and stone sub-base until bituminous pavement can be applied.

Permanent Stabilization - Disturbed portions of the site where construction activities permanently cease shall be stabilized with permanent seed no later than 7 days after the last construction activity. The permanent seed mix shall be as indicated on the plans and specifications.

Structural Practices

Light stone fill (check dams) will be installed along flow lines and at the discharge side of the culvert excavations to act as a runoff "filter" as per the plans and specifications.

Stormwater Management

The proposed Bio Retention Area and Organic Filters will provide stormwater quality and siltation control post construction. The areas which are not graded as part of this project will remain untouched. When construction has been completed all surfaces will be restored and erosion control measures removed after all turf areas are established. After construction has been completed the siltation basins will be cleaned of all construction debris, then filled and stabilized.

Post Construction Stormwater Management Maintenance Procedures

Once the stormwater management areas are permanently stabilized and operating properly, an annual inspection is required. This shall consist of:

- A visual inspection of the outlet structure and removal of any debris that may affect its performance.
- Checking the facilities forebay for excess sediment accumulation, and removing the sediment if necessary.
- A visual inspection of the earthen berm. Signs of erosion or areas lacking vegetation should be identified and corrected.
- Provide a report summarizing the above to the Town in a format acceptable to their office.
- See attached GP-01-10-001 for additional inspection requirements
- Sediment removal from forebay every five to six years or when 50% full.
- Stormwater management areas shall be maintained a minimum of 3 times per growing season.

OTHER CONTROLS

Waste Disposal

Waste Material - All waste material will be collected and stored in a metal dumpster rented from a NYSDEC approved hauler, which is a licensed solid waste management company. The dumpster will meet 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 once per week or more often if necessary, and the trash will be hauled to a NYSDEC approved dump. No construction waste material will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal. Notices stating these practices will be posted in the office trailer and the individual who manages the day-to-day operations will be responsible for seeing that these procedures are followed.

Hazardous Waste - All hazardous waste materials will be disposed of in a manner specified by local and state regulations or by the manufacturer. Site personnel will be instructed in these practices and the individual who manages the day-to-day operations will be responsible for seeing that these practices are followed.

Sanitary Waste - If portable units are used, all sanitary waste will be collected from the portable units a minimum of three times per week by a licensed sanitary waste management contractor, as required by local regulation.

Offsite Vehicle Tracking

The paved streets adjacent to the site will be swept daily to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

TIMING OF CONTROLS/MEASURES

As indicated in the Sequence of Major Activities, the erosion and sedimentation control measures, including silt fence, will be constructed prior to clearing or grading of any other portions of the site. Areas where construction activity temporarily ceases for more than 7 days will be stabilized with a temporary seed and mulch within 7 days of the last disturbance. Once construction activity ceases permanently in an area, that area will be stabilized with permanent seed and mulch.

CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The stormwater collection and discharge complies with the NYSDEC requirements of the New York State Stormwater Management Design Manual.

MAINTENANCE INSPECTION PROCEDURES

Erosion and Sediment Control Inspection and Maintenance Practices

These are the inspection and maintenance practices that will be used to maintain erosion and sediment controls:

- All control measures will be inspected at least once each week if there is 5 acres or less of disturbance. Twice a week if more than 5 acres is disturbed.
- All measures will be maintained in good working order; if a repair is necessary; it will be initiated within 24 hours or report.
- Built-up sediment will be removed from silt fence when it has reached one-third the height of the fence.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and health of growth.
- A maintenance inspection report will be made after each inspection. A copy of the report form to be completed by the inspector is attached.
- The site superintendent will select individuals who will be responsible for inspections, maintenance and repair activities, and filling out the inspection and maintenance report.
- Personnel selected for inspection and maintenance responsibilities will receive training from the site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used on-site in good working order.

Non-Stormwater Discharges

No non-stormwater discharges will occur from the site during the period, except the following:

It is expected that the following non-storm water discharges will occur from the site during the construction period:

- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
- Uncontaminated groundwater (from dewatering excavation).

INVENTORY FOR POLLUTION PREVENTION PLAN

The materials or substances listed below are expected to be present on-site during construction:

Select Granular Fill	Topsoil	HDPE Pipe
Precast Concrete	Mulch	Construction Signs
Concrete	Joint Sealant	Sign Panels & Sign Supports
Seed	Electric Cable	Metal Frames & Grates
Steel Conduit	Asphalt Tack Coat	SDR-35 PVC Pipe
Subbase Course	Asphalt Concrete	

SPILL PREVENTION

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.

Good Housekeeping

The following good housekeeping practices will be followed on-site during the construction project:

- An effort will be made to store only enough product required to do the job.
- All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposing of the container.
- Manufacturers' recommendations for proper use and disposal will be followed.
- The site superintendent will inspect daily to ensure proper use and disposal of materials on-site.

Hazardous Products

These practices are used to reduce the risks associated with hazardous materials:

- Products will be kept in original containers unless they are not re-sealable.
- Original labels and material safety data will be retained; they contain important product information.
- If surplus product must be disposed of, manufacturers' or local and state recommended methods of proper disposal will be followed.

SPILL PREVENTION (Continued)

Product Specific Practices

The following product specific practices will be followed on-site:

Petroleum Products

All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Fuel oil for construction machinery will be stored in an above-ground tank with a suitable containment system. Material safety data sheets will be filed in the site superintendent's trailer. Any asphalt substances used on-site will be applied according to the manufacturer's recommendations.

Fertilizers

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

Paints

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system, but will be properly disposed of according to manufacturers' instructions or state and local regulations.

Concrete Trucks

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on site.

Spill Control Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with hazardous substance.
- Reportable spills of any petroleum-based material will be reported to the appropriate state or local government agency.
- The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
- The site superintendent responsible for the day-to-day operations will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the office trailer on-site.

POLLUTION PREVENTION PLAN CERTIFICATION

I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms and conditions 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.

Signed: _____
Owner

Date: _____

CONTRACTOR'S CERTIFICATION

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Signature	For	Responsible for
Trained Contractor _____ Date: _____ _____ Date: _____ _____ Date: _____ _____ Date: _____ _____ Date: _____		

Signature	For	Responsible for
<hr/> Date: <hr/>		
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Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

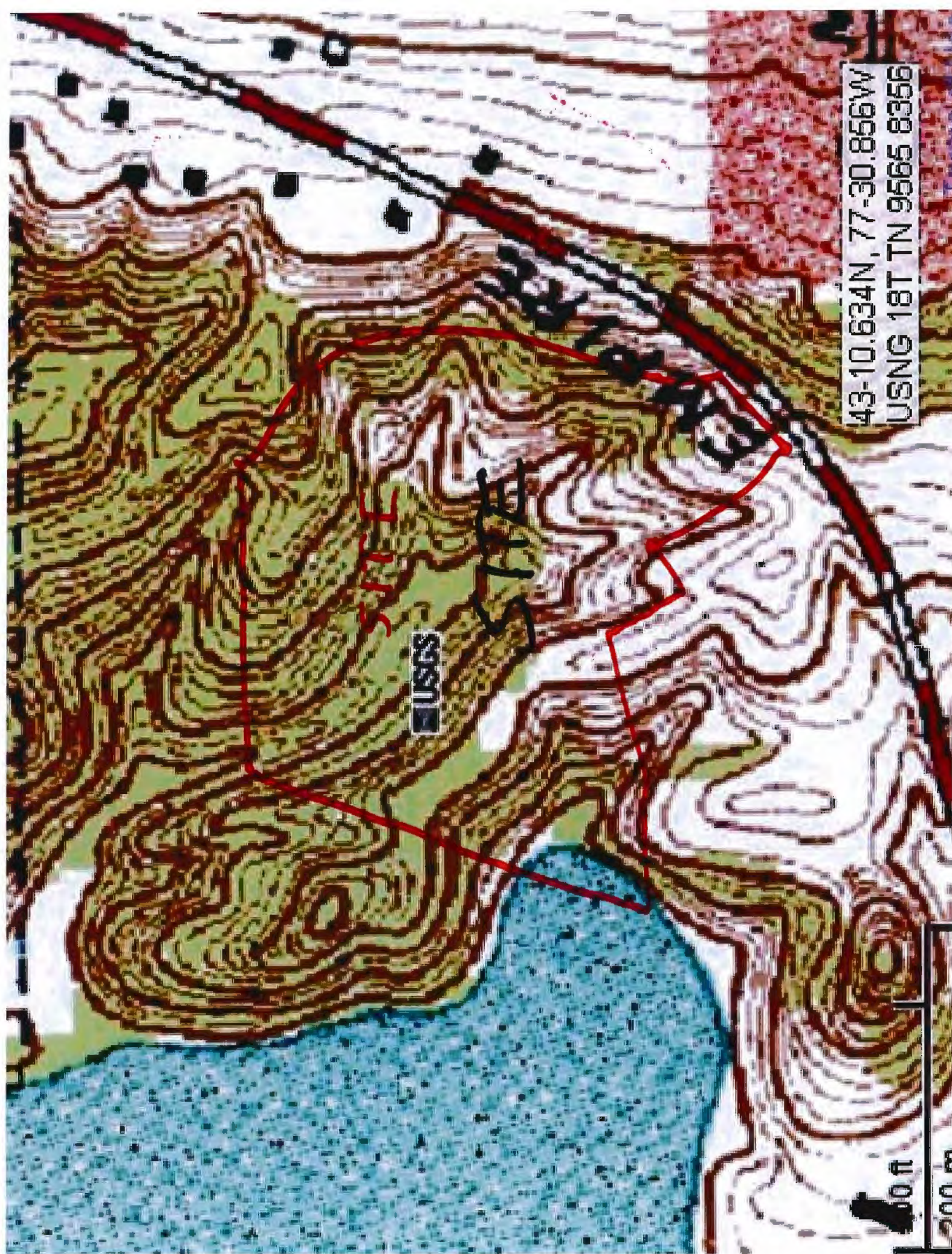
APPENDIX 2: AERIAL PHOTOGRAPH

**SOUTHPOINT COVE
APARTMENT HOMES
OVERALL AERIAL**



Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 3: SITE AS DEPICTED BY THE USGS QUADRANGLE MAP



43-10.634N, 77-30.856W
USNG 18T TN 9565 8356

USGS

0 ft

0 1000 m

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 4: ENVIRONMENTAL RESOURCE MAPPING



Search

Layers & Legend

Tell Me More...

Need a Permit?

Contacts

Help



Map Layers & Legend

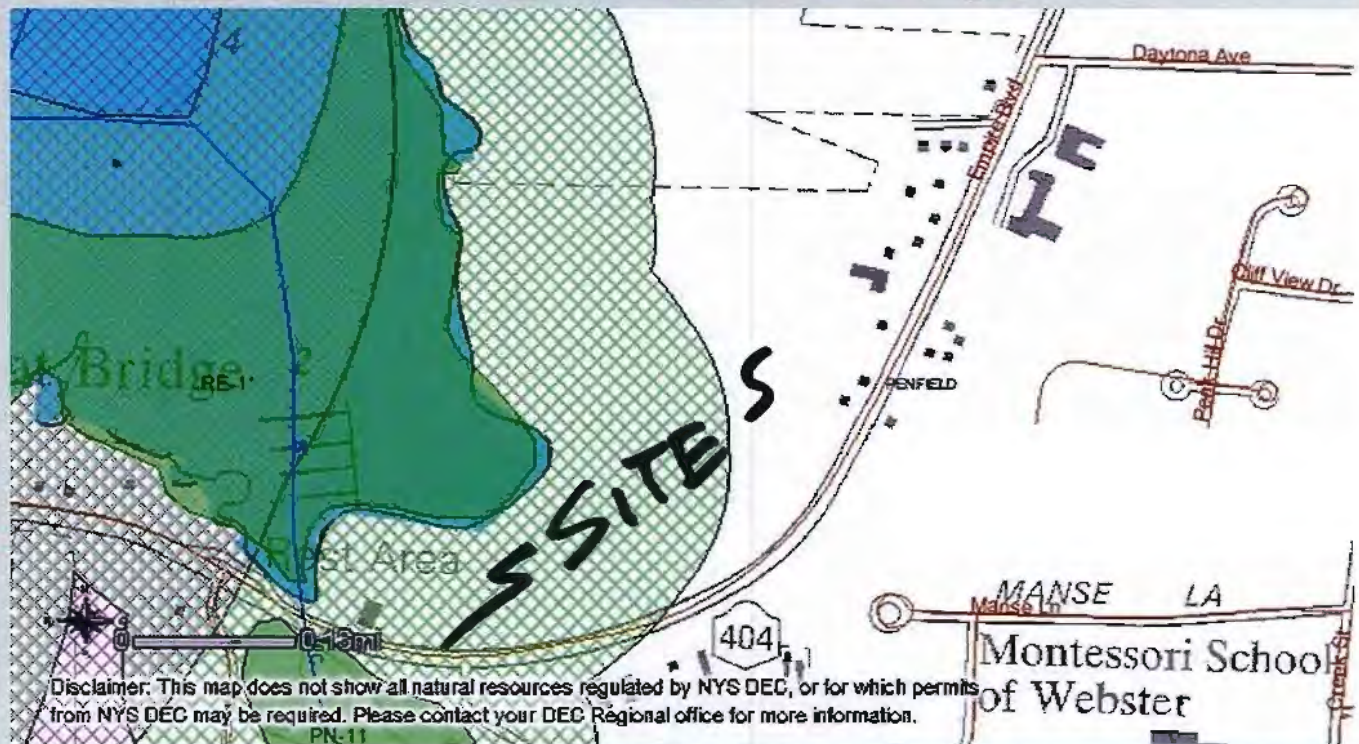
More layers appear as you zoom in.

- ☒ Classified Water Bodies
- ☒ Classified Water Bodies
- ☒ State-Regulated Freshwater Wetlands
- ☒ Wetland Checkzone ?
- ☐ Rare Plants and Rare Animals
- ☒ Significant Natural Communities
- ☐ Natural Communities Vicinity ?
- ☒ Background Map
- ☒ Adirondack Park Boundary
- ☒ Counties

Click "Refresh Layers" to activate and deactivate layers.

Refresh Layers

Locations of old and potential records of rare



Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 5: FEDERAL WETLAND MAPPING



U.S. Fish and Wildlife Service

National Wetlands Inventory

Feb 21, 2011



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Status

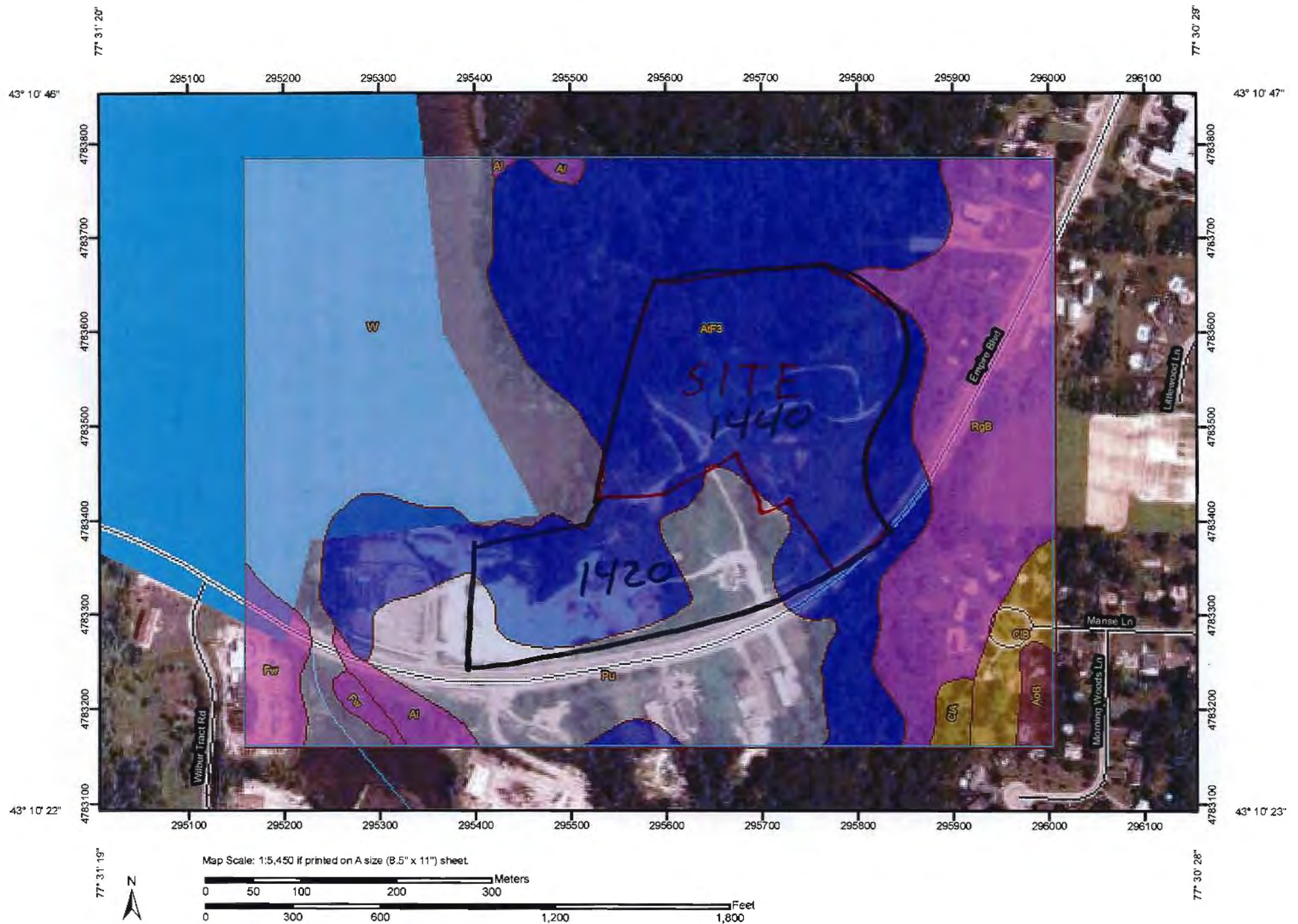
- Digital
- Scan
- Non-Digital
- No Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:


Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 6: SOILS MAP



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

 A

 A/D

 B

 B/D

 C

 C/D

 D

Not rated or not available

Political Features

 Cities

Water Features

 Oceans

 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:5,450 if printed on A size (8.5" x 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:15,840.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Monroe County, New York
Survey Area Data: Version 8, Feb 18, 2010

Date(s) aerial images were photographed: 7/7/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Monroe County, New York				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Al	Alluvial land	D	1.7	1.3%
AoB	Alton gravelly loam, 3 to 8 percent slopes	A	1.0	0.8%
AtF3	Arkport, Dunkirk, and Colonie soils, 20 to 60 percent slopes, eroded	B	53.2	40.8%
CIA	Collamer silt loam, 0 to 2 percent slopes	C	0.7	0.5%
CIB	Collamer silt loam, 2 to 6 percent slopes	C	2.6	2.0%
Fw	Fresh water marsh	D	3.1	2.3%
Pu	Pits and quarries		17.9	13.7%
RgB	Riga silt loam, 2 to 8 percent slopes	D	19.1	14.6%
W	Water		31.2	23.9%
Totals for Area of Interest			130.5	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

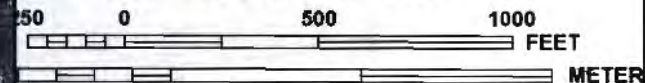
Tie-break Rule: Lower

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 7: FEMA MAPPING



MAP SCALE 1" = 500'



NFP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0217G

FIRM

FLOOD INSURANCE RATE MAP

for MONROE COUNTY, NEW YORK
(ALL JURISDICTIONS)

CONTAINS:

COMMUNITY	NUMBER
BRIGHTON, TOWN OF	360410
IRONDEQUOIT, TOWN OF	360422
PENFIELD, TOWN OF	360426

PANEL 217 OF 528

MAP SUFFIX: G

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
36055C0217G

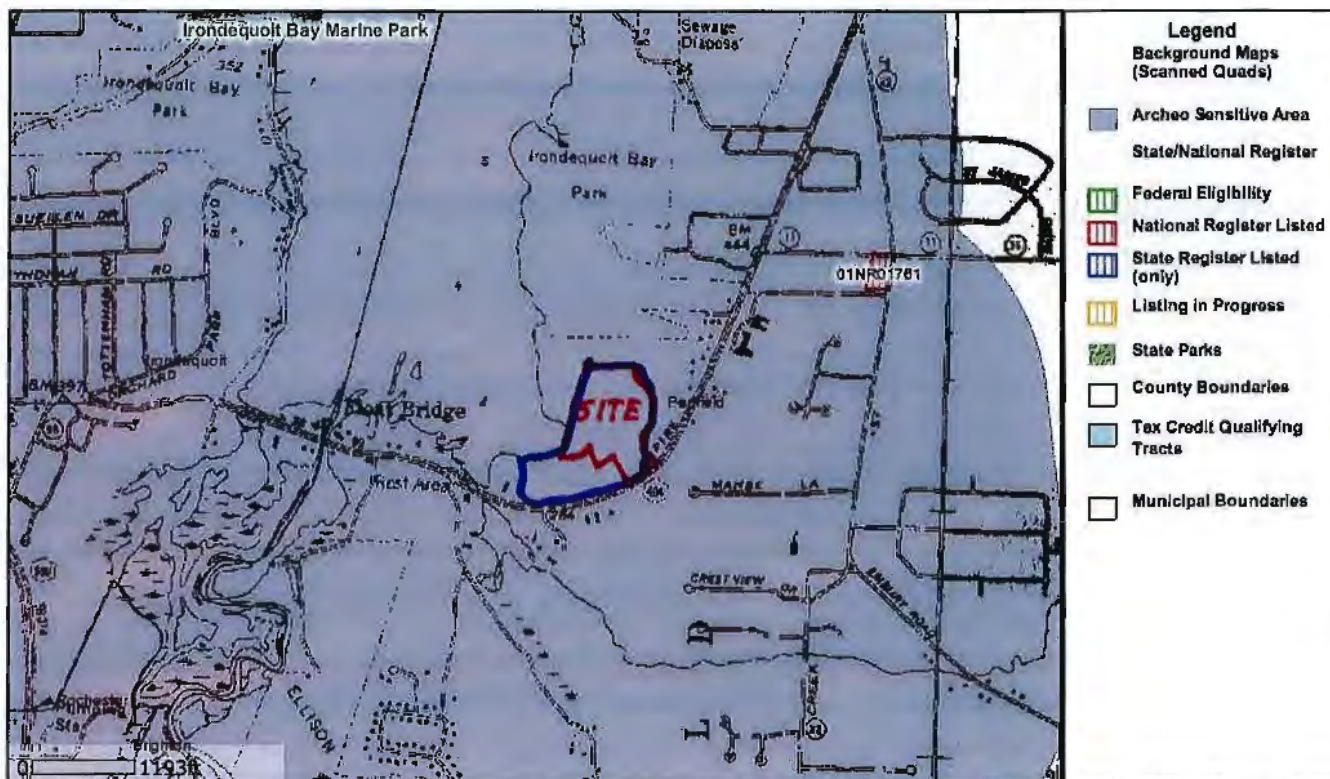
EFFECTIVE DATE
AUGUST 28, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 8: ARCHEOLOGICAL SENSITIVE AREA'S MAP

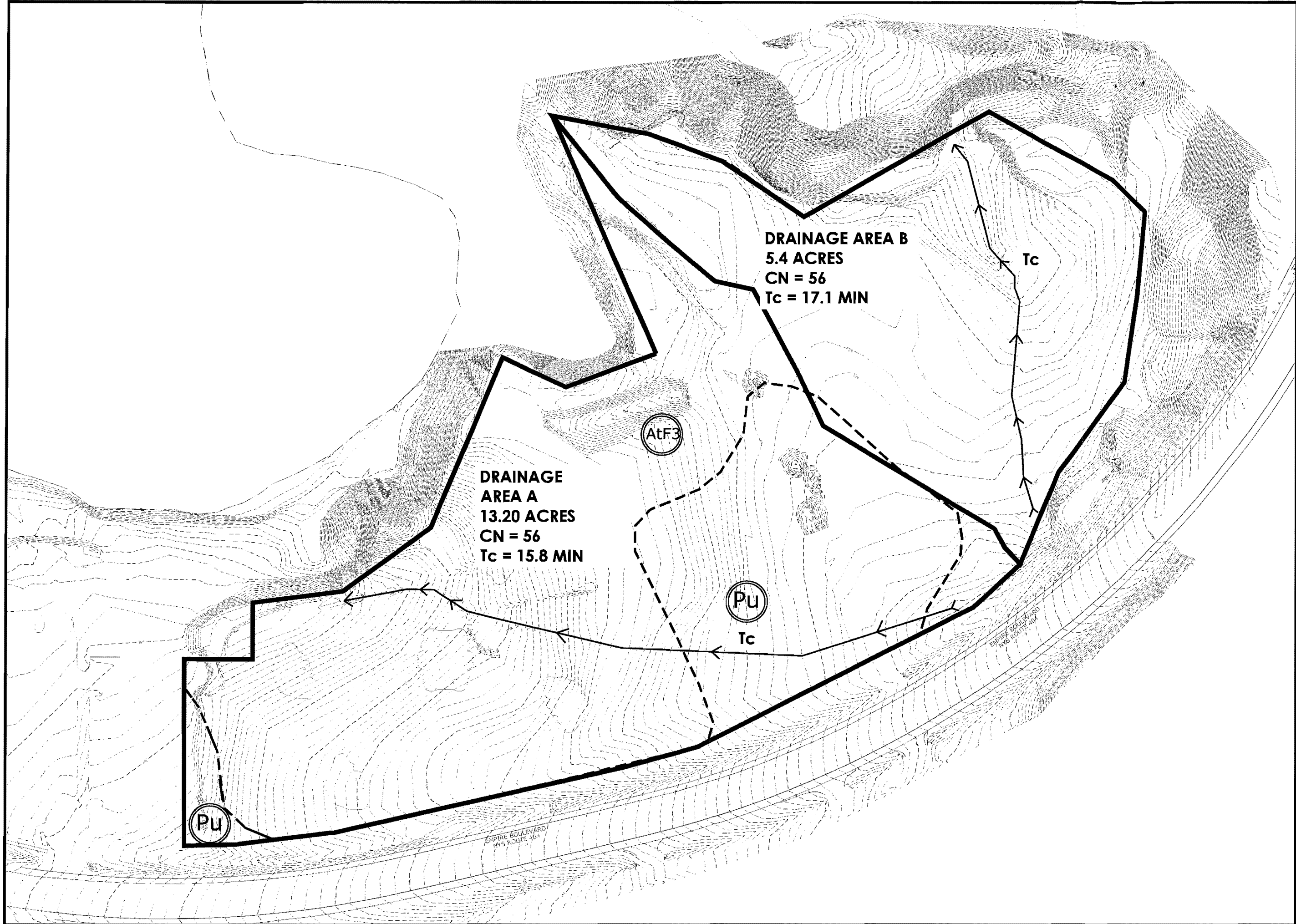


February 14, 2011

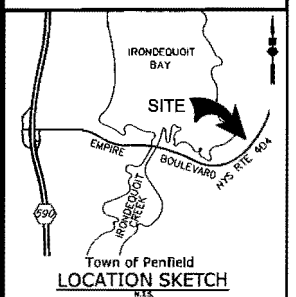
Disclaimer: This map was prepared by the New York State Parks, Recreation and Historic Preservation National Register Listing Internet Application. The information was compiled using the most current data available. It is deemed accurate, but is not guaranteed.

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 9: DRAINAGE AREA MAPS



Passero Associates
Engineering • Architecture
www.passero.com



Client:
Empire Blvd. Partnership
1170 Pittsford-Victor Road
P.O.Box 1660
Pittsford, NY 14534
Robert Morgan (585)419-9630

Passero Associates
100 Liberty Park Way
Rochester, New York 14604
(585) 325-1800
Fax: (585) 325-1801
Principal-in-Charge: John F. Caruso, P.E.
Project Manager: Jess D. Sudol, P.E.
Designed by: Carole G. Harvey

Revisions			
No.	Date	By	Description
1			

EXISTING CONDITIONS

SOUTHPOINT COVE APARTMENTS

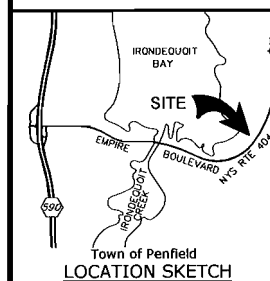
Town/City: Penfield
County: Monroe State: New York

Project No. **20121461.01**

Drawing No.	Sheet No.
-------------	-----------

Scale: **1" = 100'**

Date: **March, 2012**



Client:

Southpoint Cove LLC
1170 Pittsford-Victor Road
P.O.Box 1660
Pittsford, NY 14534
Robert Morgan (585)419-9630

Passero Associates

100 Liberty Pole Way
Rochester, New York 14604

(585) 325-1000
FAX: (585) 325-1699

Principal-in-Charge John F. Caruso, P.E.
Project Manager Jess D. Sudol, P.E.
Designed by Carole G. Harvey

Revisions			
No.	Date	By	Description
1			

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS IN VIOLATION OF STATE EDUCATION LAW ARTICLE 145 SECTION 7209 AND ARTICLE 147 SECTION 7307. THESE PLANS ARE COPYRIGHT PROTECTED

PROPOSED CONDITIONS

SOUTHPOINT COVE APARTMENTS

Town/City: Penfield
County: Monroe State: New York

Project No. 20121461.01

Drawing No.	Sheet No.
-------------	-----------

Scale:

$$1'' = 100'$$

Date March, 2013

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 10: EXISTING, DEVELOPED AND TIME OF CONCENTRATION HYDROGRAPHS

Project No:	20121461
Location:	Penfield, NY
Date:	19/Jun/12
By:	KMW
Sheet	1 of 5

Runoff curve number

Existing Conditions				Subarea A		
Soil name and hydrologic group (appendix A)	Cover description (cover type & hydrologic condition)	CN			Area <input checked="" type="checkbox"/> acre <input type="checkbox"/> mi2 <input type="checkbox"/> %	Product of CN x Area
		Table 2-2	Figure 2-3	Figure 2-4		
Pu - Pits and Quaries B	Brush - Fair	56			3.10	173.85
AtF3 - AtF3—Arkport, Dunkirk, and Colonie soils, 20 to 60 percent slopes, eroded B	Brush - Fair	56			10.10	565.45
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
Totals =					13.20	739.31

CN (Weighted) = $\frac{\text{Total product}}{\text{Total area}}$ = $\frac{739.3064}{13.2019}$ = 56.00 Use CN **56.0**

Project No:	20121461
Location:	Penfield, NY
Date:	19/Jun/12
By:	KMW
Sheet	2 of 5

Runoff curve number

Proposed Conditions		Subarea A				
Soil name and hydrologic group (appendix A)	Cover description (cover type & hydrologic condition)	CN			Area <input checked="" type="checkbox"/> acre <input type="checkbox"/> mi ² <input type="checkbox"/> %	Product of CN x Area
		Table 2-2	Figure 2-3	Figure 2-4		
Pu - Pits and Quaries B	Open Space - Good	61			1.40	85.40
AtF3 - AtF3—Arkport, Dunkirk, and Colonie soils, 20 to 60 percent slopes, eroded B	Open Space - Good	61			2.27	138.73
Pu - Pits and Quaries B	Impervious	98			1.83	179.34
AtF3 - AtF3—Arkport, Dunkirk, and Colonie soils, 20 to 60 percent slopes, eroded B	Impervious	98			1.20	117.60
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
Totals =					6.70	521.07

$$\text{CN (Weighted)} = \frac{\text{Total product}}{\text{Total area}} = \frac{521.0723}{6.7043} = 77.72 \quad \text{Use CN } \boxed{77.8}$$

Project No:	20121461
Location:	Penfield, NY
Date:	6/19/2012
By:	KMW
Sheet	3 of 5

Runoff curve number

Existing Conditions		Subarea B				
Soil name and hydrologic group (appendix A)	Cover description (cover type & hydrologic condition)	CN			Area <input checked="" type="checkbox"/> acre <input type="checkbox"/> mi2 <input type="checkbox"/> %	Product of CN x Area
		Table 2-2	Figure 2-3	Figure 2-4		
Pu - Pits and Quarries B	Brush - Fair	56			0.06	3.36
AtF3 - AtF3—Arkport, Dunkirk, and Colonie soils, 20 to 60 percent slopes, eroded B	Brush - Fair	56			5.17	289.52
RgB—Riga silt loam, 2 to 8 percent slopes D	Brush - Fair	77			0.17	13.43
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
Totals =					5.40	306.31

$$\text{CN (Weighted)} = \frac{\text{Total product}}{\text{Total area}} = \frac{306.3088}{5.4044} = 56.68 \quad \text{Use CN} \quad \boxed{56.7}$$

Project No:	20121461
Location:	Penfield, NY
Date:	6/19/2012
By:	KMW
Sheet	4 of 5

Runoff curve number

Proposed Conditions			Subarea B			
Soil name and hydrologic group (appendix A)	Cover description (cover type & hydrologic condition)	CN			Area	Product of CN x Area
		Table 2-2	Figure 2-3	Figure 2-4	<input checked="" type="checkbox"/> acre <input type="checkbox"/> mi2 <input type="checkbox"/> %	
Pu - Pits and Quarries B	Open Space - Good Condition	61			0.06	3.66
Pu - Pits and Quarries B	Impervious	98			0.31	30.63
AtF3 - AtF3—Arkport, Dunkirk, and Colonie soils, 20 to 60 percent slopes, eroded B	Open Space - Good	61			1.28	78.08
AtF3 - AtF3—Arkport, Dunkirk, and Colonie soils, 20 to 60 percent slopes, eroded B	Impervious	98			1.14	111.72
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
Totals =					2.79	224.09

$$\text{CN (Weighted)} = \frac{\text{Total product}}{\text{Total area}} = \frac{224.085}{2.7925} = 80.25 \quad \text{Use CN} \quad \boxed{80.3}$$

Project No: 20121461
 Location: Penfield, NY
 Date: 6/19/2012
 By: KMW
 Sheet 5 of 5

Runoff curve number

<input type="checkbox"/> Present Conditions		<input checked="" type="checkbox"/> Proposed Conditions			Subarea C	
Soil name and hydrologic group (appendix A)	Cover description (cover type & hydrologic condition)	CN			Area <input checked="" type="checkbox"/> acre <input type="checkbox"/> mi ² <input type="checkbox"/> %	Product of CN x Area
		Table 2-2	Figure 2-3	Figure 2-4		
AtF3 - AtF3—Arkport, Dunkirk, and Colonie soils, 20 to 60 percent slopes, eroded B	Open Space - Good	61			0.96	58.56
AtF3 - AtF3—Arkport, Dunkirk, and Colonie soils, 20 to 60 percent slopes, eroded B	Impervious	98			1.22	119.56
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
Totals =					2.18	178.12

CN (Weighted) = $\frac{\text{Total product}}{\text{Total area}} = \frac{178.12}{2.18} = 81.71$ Use CN **81.8**

TR55 Tc Worksheet

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Hyd. No. 1

Ex Sub A

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
Sheet Flow				
Manning's n-value	= 0.150	0.011	0.011	
Flow length (ft)	= 100.0	0.0	0.0	
Two-year 24-hr precip. (in)	= 2.50	0.00	0.00	
Land slope (%)	= 6.50	0.00	0.00	
Travel Time (min)	= 6.92	+	0.00	+
Shallow Concentrated Flow				
Flow length (ft)	= 675.00	0.00	0.00	
Watercourse slope (%)	= 8.00	0.00	0.00	
Surface description	= Unpaved	Paved	Paved	
Average velocity (ft/s)	=4.56	0.00	0.00	
Travel Time (min)	= 2.47	+	0.00	+
Channel Flow				
X sectional flow area (sqft)	= 0.00	0.00	0.00	
Wetted perimeter (ft)	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	=0.00	0.00	0.00	
Flow length (ft)	0.0	0.0	0.0	
Travel Time (min)	= 0.00	+	0.00	+
Total Travel Time, Tc				9.38 min

TR55 Tc Worksheet

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Hyd. No. 2

Ex Sub B

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
Sheet Flow				
Manning's n-value	= 0.150	0.011	0.011	
Flow length (ft)	= 100.0	0.0	0.0	
Two-year 24-hr precip. (in)	= 2.50	0.00	0.00	
Land slope (%)	= 3.00	0.00	0.00	
Travel Time (min)	= 9.43	+	0.00	+
Shallow Concentrated Flow				
Flow length (ft)	= 650.00	0.00	0.00	
Watercourse slope (%)	= 6.00	0.00	0.00	
Surface description	= Unpaved	Paved	Paved	
Average velocity (ft/s)	=3.95	0.00	0.00	
Travel Time (min)	= 2.74	+	0.00	+
Channel Flow				
X sectional flow area (sqft)	= 0.00	0.00	0.00	
Wetted perimeter (ft)	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	=0.00	0.00	0.00	
Flow length (ft)	(0)0.0	0.0	0.0	
Travel Time (min)	= 0.00	+	0.00	+
Total Travel Time, Tc				12.17 min

TR55 Tc Worksheet

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Hyd. No. 3

Prop Sub A

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
Sheet Flow				
Manning's n-value	= 0.150	0.011	0.011	
Flow length (ft)	= 80.0	0.0	0.0	
Two-year 24-hr precip. (in)	= 2.50	0.00	0.00	
Land slope (%)	= 1.00	0.00	0.00	
Travel Time (min)	= 12.24	+	0.00	+
			0.00	= 12.24
Shallow Concentrated Flow				
Flow length (ft)	= 10.00	0.00	0.00	
Watercourse slope (%)	= 4.00	0.00	0.00	
Surface description	= Unpaved	Paved	Paved	
Average velocity (ft/s)	=3.23	0.00	0.00	
Travel Time (min)	= 0.05	+	0.00	+
			0.00	= 0.05
Channel Flow				
X sectional flow area (sqft)	= 1.00	0.00	0.00	
Wetted perimeter (ft)	= 2.50	0.00	0.00	
Channel slope (%)	= 5.00	0.00	0.00	
Manning's n-value	= 0.011	0.015	0.015	
Velocity (ft/s)	=16.39	0.00	0.00	
Flow length (ft)	1200.0	0.0	0.0	
Travel Time (min)	= 1.22	+	0.00	+
			0.00	= 1.22
Total Travel Time, Tc				13.51 min

TR55 Tc Worksheet

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Hyd. No. 4

Prop Sub B

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
Sheet Flow				
Manning's n-value	= 0.150	0.011	0.011	
Flow length (ft)	= 60.0	0.0	0.0	
Two-year 24-hr precip. (in)	= 2.50	0.00	0.00	
Land slope (%)	= 2.00	0.00	0.00	
Travel Time (min)	= 7.37	+	0.00	+
Shallow Concentrated Flow				
Flow length (ft)	= 15.00	0.00	0.00	
Watercourse slope (%)	= 2.00	0.00	0.00	
Surface description	= Unpaved	Paved	Paved	
Average velocity (ft/s)	=2.28	0.00	0.00	
Travel Time (min)	= 0.11	+	0.00	+
Channel Flow				
X sectional flow area (sqft)	= 0.79	0.00	0.00	
Wetted perimeter (ft)	= 3.14	0.00	0.00	
Channel slope (%)	= 6.00	0.00	0.00	
Manning's n-value	= 0.012	0.015	0.015	
Velocity (ft/s)	=12.01	0.00	0.00	
Flow length (ft)	{0}600.0	0.0	0.0	
Travel Time (min)	= 0.83	+	0.00	+
Total Travel Time, Tc				8.31 min

TR55 Tc Worksheet

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Hyd. No. 5

Prop Sub C

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
Sheet Flow				
Manning's n-value	= 0.150	0.011	0.011	
Flow length (ft)	= 50.0	0.0	0.0	
Two-year 24-hr precip. (in)	= 2.70	0.00	0.00	
Land slope (%)	= 1.00	0.00	0.00	
Travel Time (min)	= 8.08	+	0.00	+
Shallow Concentrated Flow				
Flow length (ft)	= 15.00	0.00	0.00	
Watercourse slope (%)	= 2.00	0.00	0.00	
Surface description	= Unpaved	Unpaved	Paved	
Average velocity (ft/s)	=2.28	0.00	0.00	
Travel Time (min)	= 0.11	+	0.00	+
Channel Flow				
X sectional flow area (sqft)	= 0.78	0.00	0.00	
Wetted perimeter (ft)	= 3.14	0.00	0.00	
Channel slope (%)	= 2.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	=5.53	0.00	0.00	
Flow length (ft)	{0}600.0	0.0	0.0	
Travel Time (min)	= 1.81	+	0.00	+
Total Travel Time, Tc				10.00 min

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	-----	0.065	0.226	-----	-----	5.731	10.26	-----	18.79	Ex Sub A
2	SCS Runoff	-----	0.034	0.119	-----	-----	2.222	3.873	-----	7.090	Ex Sub B
3	SCS Runoff	-----	4.639	6.266	-----	-----	13.07	16.46	-----	22.08	Prop Sub A
4	SCS Runoff	-----	3.067	3.988	-----	-----	7.691	9.511	-----	12.50	Prop Sub B
5	SCS Runoff	-----	2.384	3.067	-----	-----	5.823	7.150	-----	9.318	Prop Sub C
6	Reservoir	3	1.299	1.526	-----	-----	1.900	2.023	-----	2.908	Runoff to Bio Retentio
7	Reservoir	4	3.077	4.005	-----	-----	7.703	9.481	-----	12.49	Stm MH Da-2
8	Diversion1	7	3.077	3.995	-----	-----	5.133	5.437	-----	5.910	12in to Organic Filter #1
9	Diversion2	7	0.000	0.009	-----	-----	2.570	4.044	-----	6.578	18in By pass
10	Reservoir	8	0.585	0.692	-----	-----	3.316	4.520	-----	5.478	Organic Filter #1
11	Reservoir	5	2.375	3.079	-----	-----	5.805	7.162	-----	9.295	Stm MH DB-1
12	Diversion1	11	1.227	1.269	-----	-----	1.385	1.430	-----	1.486	6 in to Organic Filter #1
13	Diversion2	11	1.148	1.810	-----	-----	4.420	5.732	-----	7.809	24 in By pass
14	Reservoir	12	0.647	0.690	-----	-----	0.853	0.909	-----	1.120	Organic Filter #2
15	Combine	9, 10, 13, 14	2.153	2.975	-----	-----	8.353	12.62	-----	19.93	Propo Sub Area B Total
16	Combine	1, 2,	0.097	0.343	-----	-----	7.906	13.76	-----	25.50	COMBINED EXISTING
17	Combine	6, 15,	3.040	4.045	-----	-----	9.899	14.38	-----	21.74	COMBINED PROPOSED
18	SCS Runoff	-----	1.333	2.257	-----	-----	7.174	9.947	-----	14.84	NYSDOT Area to Culverts 1,2,3
19	SCS Runoff	-----	1.766	2.990	-----	-----	9.503	13.18	-----	19.65	NSYDOT Area to Culvert 4
20	SCS Runoff	-----	1.439	1.886	-----	-----	3.708	4.601	-----	6.071	NYSDOT ROW 1
21	SCS Runoff	-----	2.235	2.930	-----	-----	5.759	7.147	-----	9.430	NYSDOT ROW 2
Proj. file: Southpoint Hydraflow.gpw										Thursday, 05 / 1 / 2014	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.065	2	894	2,231	-----	-----	-----	Ex Sub A
2	SCS Runoff	0.034	2	808	1,101	-----	-----	-----	Ex Sub B
3	SCS Runoff	4.639	2	724	14,042	-----	-----	-----	Prop Sub A
4	SCS Runoff	3.067	2	720	7,109	-----	-----	-----	Prop Sub B
5	SCS Runoff	2.384	2	722	6,316	-----	-----	-----	Prop Sub C
6	Reservoir	1.299	2	740	14,036	3	268.43	4,010	Runoff to Bio Retentio
7	Reservoir	3.077	2	720	7,109	4	318.69	23.3	Stm MH Da-2
8	Diversion1	3.077	2	720	7,109	7	-----	-----	12in to Organic Filter #1
9	Diversion2	0.000	2	714	0	7	-----	-----	18in By pass
10	Reservoir	0.585	2	732	7,104	8	315.32	2,323	Organic Filter #1
11	Reservoir	2.375	2	720	6,315	5	312.99	38.7	Stm MH DB-1
12	Diversion1	1.227	2	720	5,575	11	-----	-----	6 in to Organic Filter #1
13	Diversion2	1.148	2	720	740	11	-----	-----	24 in By pass
14	Reservoir	0.647	2	736	5,573	12	305.79	1,125	Organic Filter #2
15	Combine	2.153	2	722	13,417	9, 10, 13, 14	-----	-----	Propo Sub Area B Total
16	Combine	0.097	2	892	3,332	1, 2,	-----	-----	COMBINED EXISTING
17	Combine	3.040	2	724	27,453	6, 15,	-----	-----	COMBINED PROPOSED
18	SCS Runoff	1.333	2	760	14,851	-----	-----	-----	NYSDOT Area to Culverts 1,2,3
19	SCS Runoff	1.766	2	760	19,673	-----	-----	-----	NSYDOT Area to Culvert 4
20	SCS Runoff	1.439	2	722	3,864	-----	-----	-----	NYSDOT ROW 1
21	SCS Runoff	2.235	2	722	6,002	-----	-----	-----	NYSDOT ROW 2
Southpoint Hydraflow.gpw					Return Period: 1 Year			Thursday, 05 / 1 / 2014	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.226	2	742	4,697	-----	-----	-----	Ex Sub A
2	SCS Runoff	0.119	2	736	2,221	-----	-----	-----	Ex Sub B
3	SCS Runoff	6.266	2	724	18,455	-----	-----	-----	Prop Sub A
4	SCS Runoff	3.988	2	720	9,163	-----	-----	-----	Prop Sub B
5	SCS Runoff	3.067	2	722	8,052	-----	-----	-----	Prop Sub C
6	Reservoir	1.526	2	740	18,448	3	269.20	5,798	Runoff to Bio Retentio
7	Reservoir	4.005	2	720	9,163	4	319.17	32.3	Stm MH Da-2
8	Diversion1	3.995	2	720	9,162	7	-----	-----	12in to Organic Filter #1
9	Diversion2	0.009	2	720	1	7	-----	-----	18in By pass
10	Reservoir	0.692	2	734	9,156	8	316.13	3,199	Organic Filter #1
11	Reservoir	3.079	2	722	8,052	5	313.09	41.1	Stm MH DB-1
12	Diversion1	1.269	2	722	6,726	11	-----	-----	6 in to Organic Filter #1
13	Diversion2	1.810	2	722	1,326	11	-----	-----	24 in By pass
14	Reservoir	0.690	2	736	6,724	12	306.12	1,277	Organic Filter #2
15	Combine	2.975	2	722	17,208	9, 10, 13, 14	-----	-----	Propo Sub Area B Total
16	Combine	0.343	2	744	6,918	1, 2,	-----	-----	COMBINED EXISTING
17	Combine	4.045	2	722	35,656	6, 15,	-----	-----	COMBINED PROPOSED
18	SCS Runoff	2.257	2	754	21,683	-----	-----	-----	NYSDOT Area to Culverts 1,2,3
19	SCS Runoff	2.990	2	754	28,723	-----	-----	-----	NSYDOT Area to Culvert 4
20	SCS Runoff	1.886	2	722	4,991	-----	-----	-----	NYSDOT ROW 1
21	SCS Runoff	2.930	2	722	7,753	-----	-----	-----	NYSDOT ROW 2
Southpoint Hydraflow.gpw					Return Period: 2 Year			Thursday, 05 / 1 / 2014	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	5.731	2	722	19,943	-----	-----	-----	Ex Sub A
2	SCS Runoff	2.222	2	724	8,943	-----	-----	-----	Ex Sub B
3	SCS Runoff	13.07	2	722	36,990	-----	-----	-----	Prop Sub A
4	SCS Runoff	7.691	2	718	17,602	-----	-----	-----	Prop Sub B
5	SCS Runoff	5.823	2	720	15,099	-----	-----	-----	Prop Sub C
6	Reservoir	1.900	2	752	36,984	3	270.72	14,573	Runoff to Bio Retentio
7	Reservoir	7.703	2	718	17,602	4	319.88	46.9	Stm MH Da-2
8	Diversion1	5.133	2	718	16,369	7	-----	-----	12in to Organic Filter #1
9	Diversion2	2.570	2	718	1,233	7	-----	-----	18in By pass
10	Reservoir	3.316	2	726	16,364	8	317.22	5,017	Organic Filter #1
11	Reservoir	5.805	2	720	15,099	5	313.45	48.0	Stm MH DB-1
12	Diversion1	1.385	2	720	10,964	11	-----	-----	6 in to Organic Filter #1
13	Diversion2	4.420	2	720	4,135	11	-----	-----	24 in By pass
14	Reservoir	0.853	2	746	10,962	12	307.63	1,748	Organic Filter #2
15	Combine	8.353	2	720	32,694	9, 10, 13, 14	-----	-----	Propo Sub Area B Total
16	Combine	7.906	2	722	28,886	1, 2,	-----	-----	COMBINED EXISTING
17	Combine	9.899	2	720	69,678	6, 15,	-----	-----	COMBINED PROPOSED
18	SCS Runoff	7.174	2	752	53,660	-----	-----	-----	NYSDOT Area to Culverts 1,2,3
19	SCS Runoff	9.503	2	752	71,082	-----	-----	-----	NSYDOT Area to Culvert 4
20	SCS Runoff	3.708	2	720	9,636	-----	-----	-----	NYSDOT ROW 1
21	SCS Runoff	5.759	2	720	14,968	-----	-----	-----	NYSDOT ROW 2
Southpoint Hydraflow.gpw					Return Period: 10 Year			Thursday, 05 / 1 / 2014	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	10.26	2	720	29,492	-----	-----	-----	Ex Sub A
2	SCS Runoff	3.873	2	722	13,104	-----	-----	-----	Ex Sub B
3	SCS Runoff	16.46	2	722	46,276	-----	-----	-----	Prop Sub A
4	SCS Runoff	9.511	2	718	21,762	-----	-----	-----	Prop Sub B
5	SCS Runoff	7.150	2	720	18,541	-----	-----	-----	Prop Sub C
6	Reservoir	2.023	2	756	46,269	3	271.28	19,351	Runoff to Bio Retentio
7	Reservoir	9.481	2	718	21,762	4	320.16	51.4	Stm MH Da-2
8	Diversion1	5.437	2	718	19,513	7	-----	-----	12in to Organic Filter #1
9	Diversion2	4.044	2	718	2,249	7	-----	-----	18in By pass
10	Reservoir	4.520	2	726	19,508	8	317.28	5,174	Organic Filter #1
11	Reservoir	7.162	2	720	18,541	5	313.58	50.8	Stm MH DB-1
12	Diversion1	1.430	2	720	12,893	11	-----	-----	6 in to Organic Filter #1
13	Diversion2	5.732	2	720	5,648	11	-----	-----	24 in By pass
14	Reservoir	0.909	2	750	12,891	12	308.16	1,905	Organic Filter #2
15	Combine	12.62	2	722	40,296	9, 10, 13, 14	-----	-----	Propo Sub Area B Total
16	Combine	13.76	2	720	42,596	1, 2,	-----	-----	COMBINED EXISTING
17	Combine	14.38	2	722	86,565	6, 15,	-----	-----	COMBINED PROPOSED
18	SCS Runoff	9.947	2	752	70,924	-----	-----	-----	NYSDOT Area to Culverts 1,2,3
19	SCS Runoff	13.18	2	752	93,952	-----	-----	-----	NSYDOT Area to Culvert 4
20	SCS Runoff	4.601	2	720	11,930	-----	-----	-----	NYSDOT ROW 1
21	SCS Runoff	7.147	2	720	18,531	-----	-----	-----	NYSDOT ROW 2
Southpoint Hydraflow.gpw					Return Period: 25 Year			Thursday, 05 / 1 / 2014	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	18.79	2	720	47,460	-----	-----	-----	Ex Sub A
2	SCS Runoff	7.090	2	722	20,884	-----	-----	-----	Ex Sub B
3	SCS Runoff	22.08	2	722	61,877	-----	-----	-----	Prop Sub A
4	SCS Runoff	12.50	2	718	28,692	-----	-----	-----	Prop Sub B
5	SCS Runoff	9.318	2	720	24,247	-----	-----	-----	Prop Sub C
6	Reservoir	2.908	2	752	61,871	3	272.09	27,024	Runoff to Bio Retentio
7	Reservoir	12.49	2	718	28,692	4	320.47	58.9	Stm MH Da-2
8	Diversion1	5.910	2	718	24,482	7	-----	-----	12in to Organic Filter #1
9	Diversion2	6.578	2	718	4,211	7	-----	-----	18in By pass
10	Reservoir	5.478	2	722	24,476	8	317.33	5,295	Organic Filter #1
11	Reservoir	9.295	2	720	24,247	5	313.81	54.9	Stm MH DB-1
12	Diversion1	1.486	2	720	15,936	11	-----	-----	6 in to Organic Filter #1
13	Diversion2	7.809	2	720	8,310	11	-----	-----	24 in By pass
14	Reservoir	1.120	2	744	15,934	12	308.27	1,996	Organic Filter #2
15	Combine	19.93	2	720	52,932	9, 10, 13, 14	-----	-----	Propo Sub Area B Total
16	Combine	25.50	2	720	68,345	1, 2,	-----	-----	COMBINED EXISTING
17	Combine	21.74	2	720	114,802	6, 15,	-----	-----	COMBINED PROPOSED
18	SCS Runoff	14.84	2	750	101,113	-----	-----	-----	NYSDOT Area to Culverts 1,2,3
19	SCS Runoff	19.65	2	750	133,942	-----	-----	-----	NSYDOT Area to Culvert 4
20	SCS Runoff	6.071	2	720	15,755	-----	-----	-----	NYSDOT ROW 1
21	SCS Runoff	9.430	2	720	24,473	-----	-----	-----	NYSDOT ROW 2
Southpoint Hydraflow.gpw					Return Period: 100 Year			Thursday, 05 / 1 / 2014	

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Wednesday, 00 28, 2012

Pond No. 1 - Bioretention

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 266.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	266.00	1,500	0	0
1.00	267.00	1,500	1,500	1,500
2.00	268.00	1,500	1,500	3,000
3.00	269.00	1,500	1,500	4,500
4.00	270.00	3,300	2,400	6,900
5.00	271.00	4,200	3,750	10,650
6.00	272.00	5,100	4,650	15,300
7.00	273.00	6,000	5,550	20,850

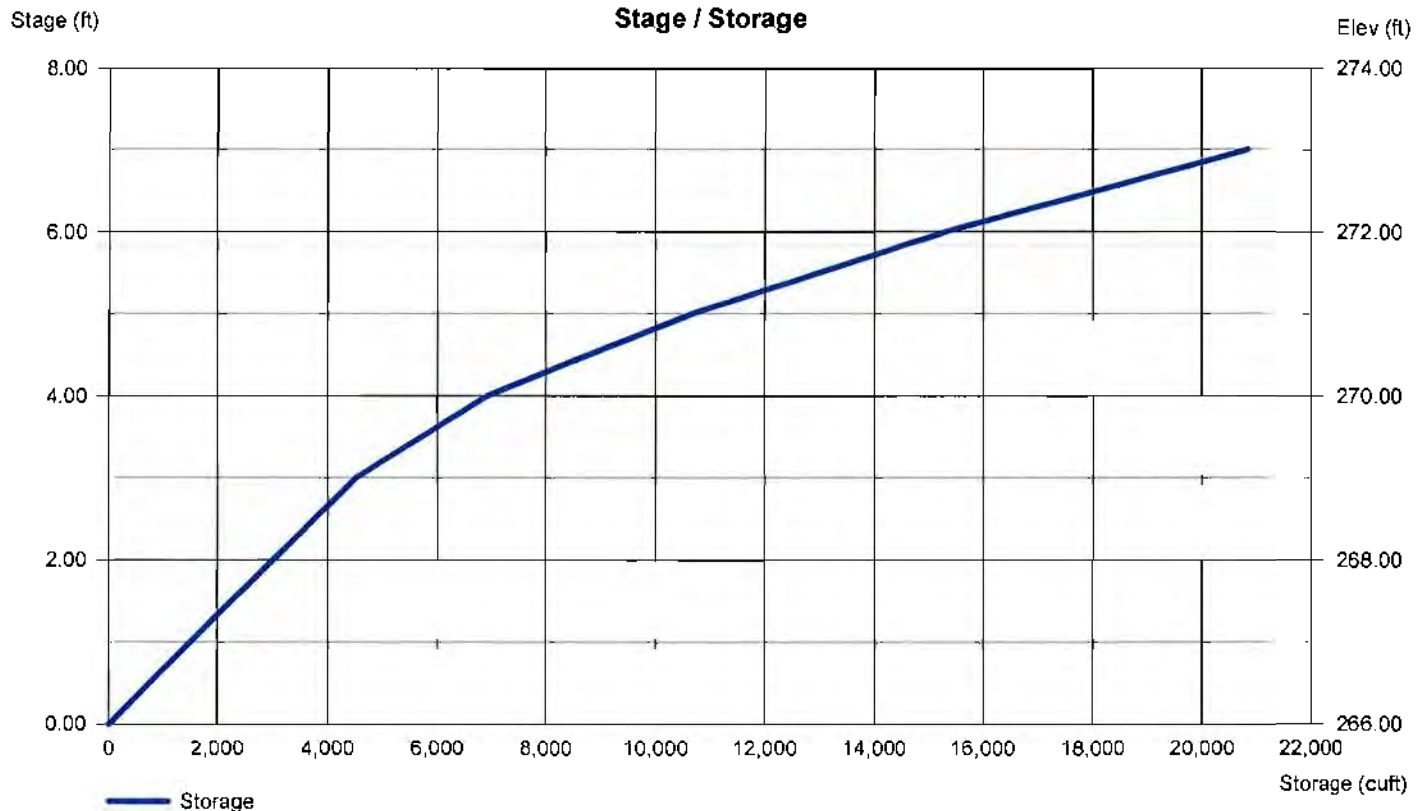
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	4.00	0.00	0.00
Span (in)	= 15.00	4.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 266.00	266.00	0.00	0.00
Length (ft)	= 40.00	5.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 8.00	10.00	0.00	0.00
Crest El. (ft)	= 271.10	272.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Ciplti	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Wednesday, 00 28, 2012

Pond No. 2 - Organic Filter #1

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 313.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	313.00	1,000	0	0
1.00	314.00	1,000	1,000	1,000
2.00	315.00	1,000	1,000	2,000
3.00	316.00	1,000	1,000	3,000
4.00	317.00	2,000	1,500	4,500
5.00	318.00	2,900	2,450	6,950
6.00	319.00	3,700	3,300	10,250
7.00	320.00	4,600	4,150	14,400

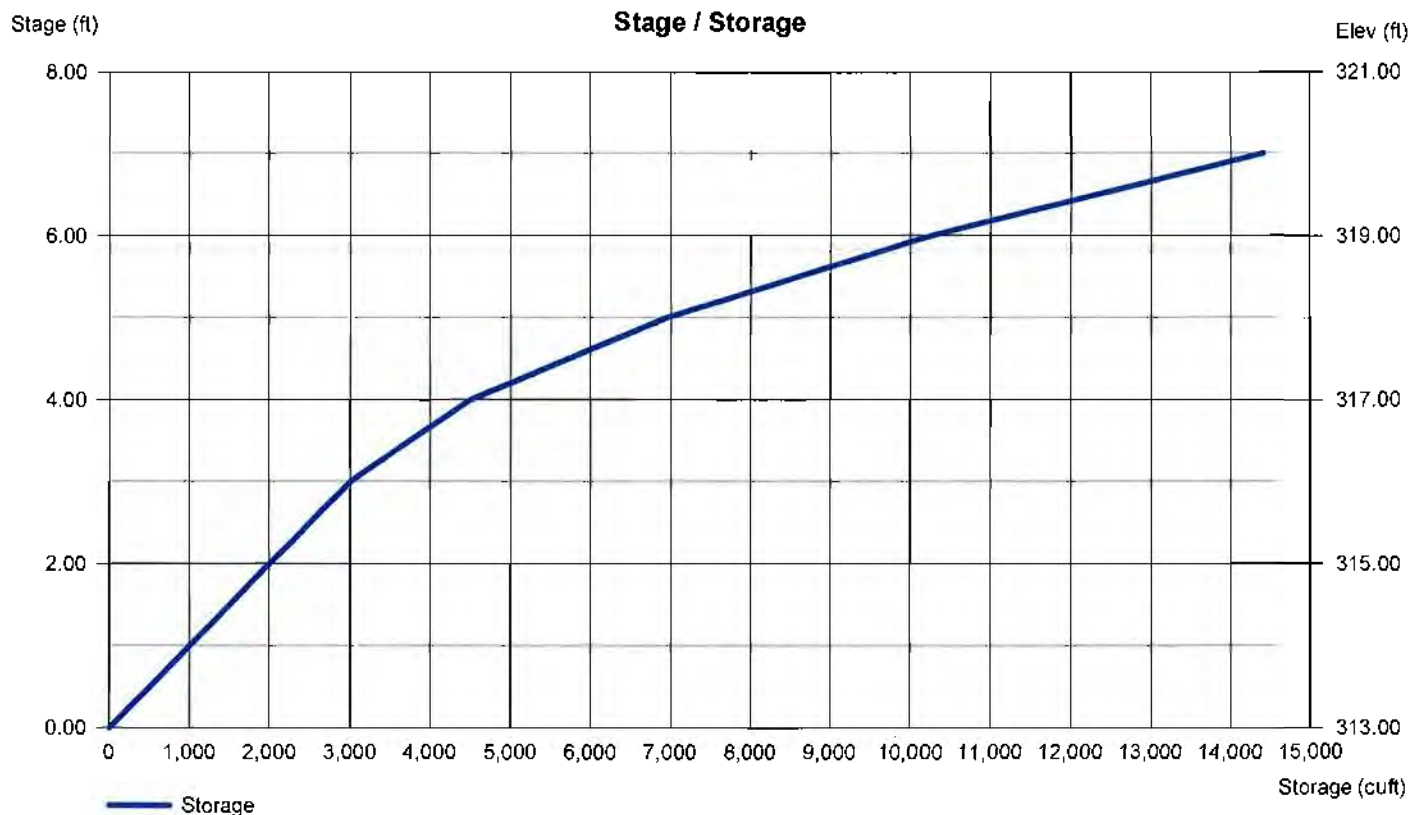
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	4.00	0.00	0.00
Span (in)	= 12.00	4.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 313.00	313.00	0.00	0.00
Length (ft)	= 48.00	0.00	0.00	0.00
Slope (%)	= 5.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 8.00	10.00	0.00	0.00
Crest El. (ft)	= 317.00	318.50	0.00	0.00
Weir Coeff.	= 3.33	2.70	3.33	3.33
Weir Type	= 1	Cipolti	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Wednesday, 00 28, 2012

Pond No. 3 - Organic Filter #2

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 303.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	303.00	405	0	0
1.00	304.00	405	405	405
2.00	305.00	405	405	810
3.00	306.00	405	405	1,215
4.00	308.00	700	553	1,768
5.00	309.00	1,000	850	2,618
6.00	310.00	1,500	1,250	3,868

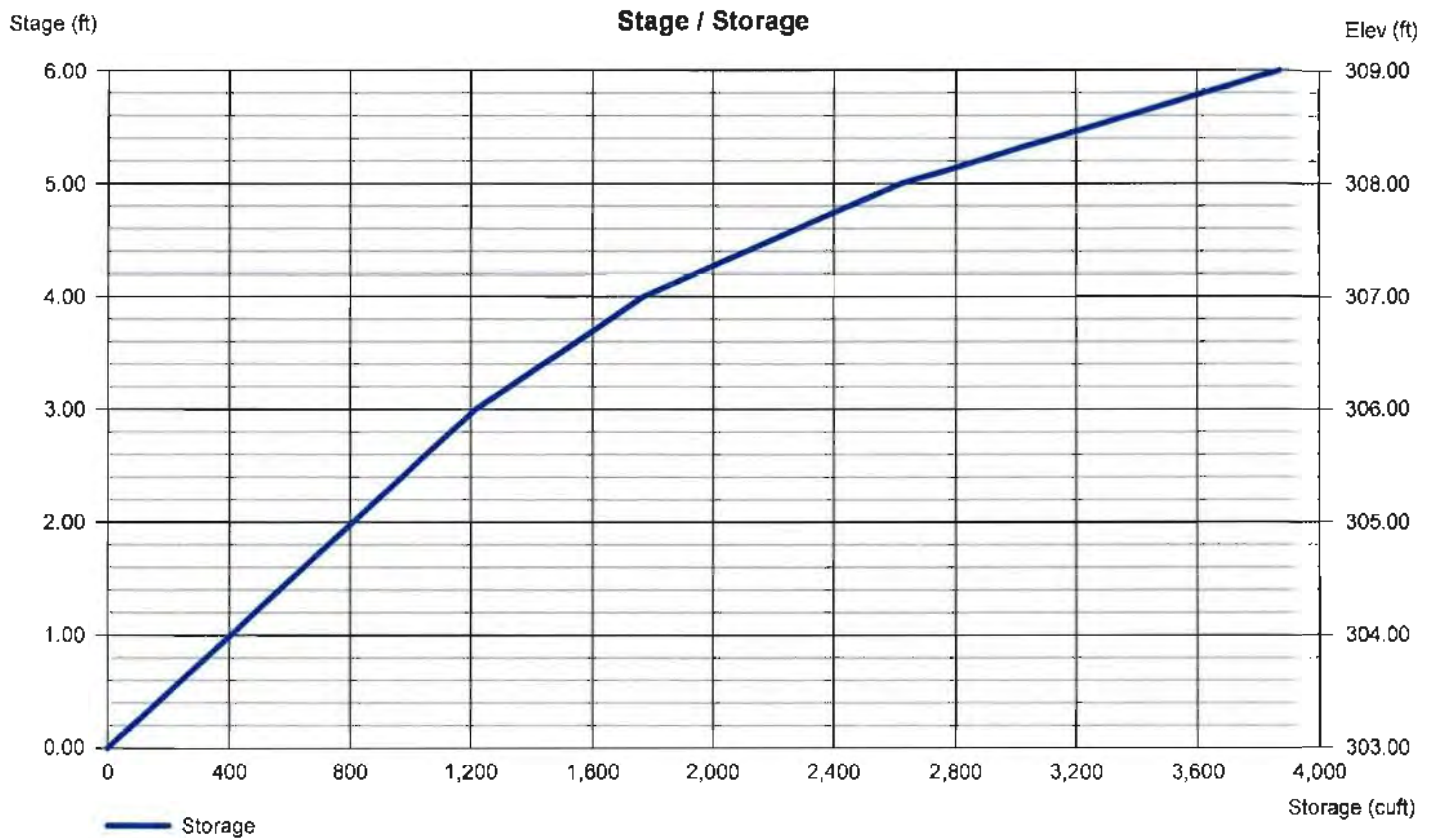
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	4.00	0.00	0.00
Span (in)	= 12.00	4.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 303.00	303.00	0.00	0.00
Length (ft)	= 20.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 8.00	6.00	0.00	0.00
Crest El. (ft)	= 308.25	309.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Cipiti	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Wednesday, 00 28, 2012

Pond No. 4 - Stm MH D-2 - DIVERSION MH

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 277.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	277.00	20	0	0
1.00	278.00	20	20	20
2.00	279.00	20	20	40
3.00	280.00	20	20	60
4.00	281.00	20	20	80
5.00	282.00	20	20	100
6.00	283.00	20	20	120
7.00	284.00	20	20	140
8.00	285.00	20	20	160
9.00	286.00	20	20	180
10.00	287.00	20	20	200

Culvert / Orifice Structures

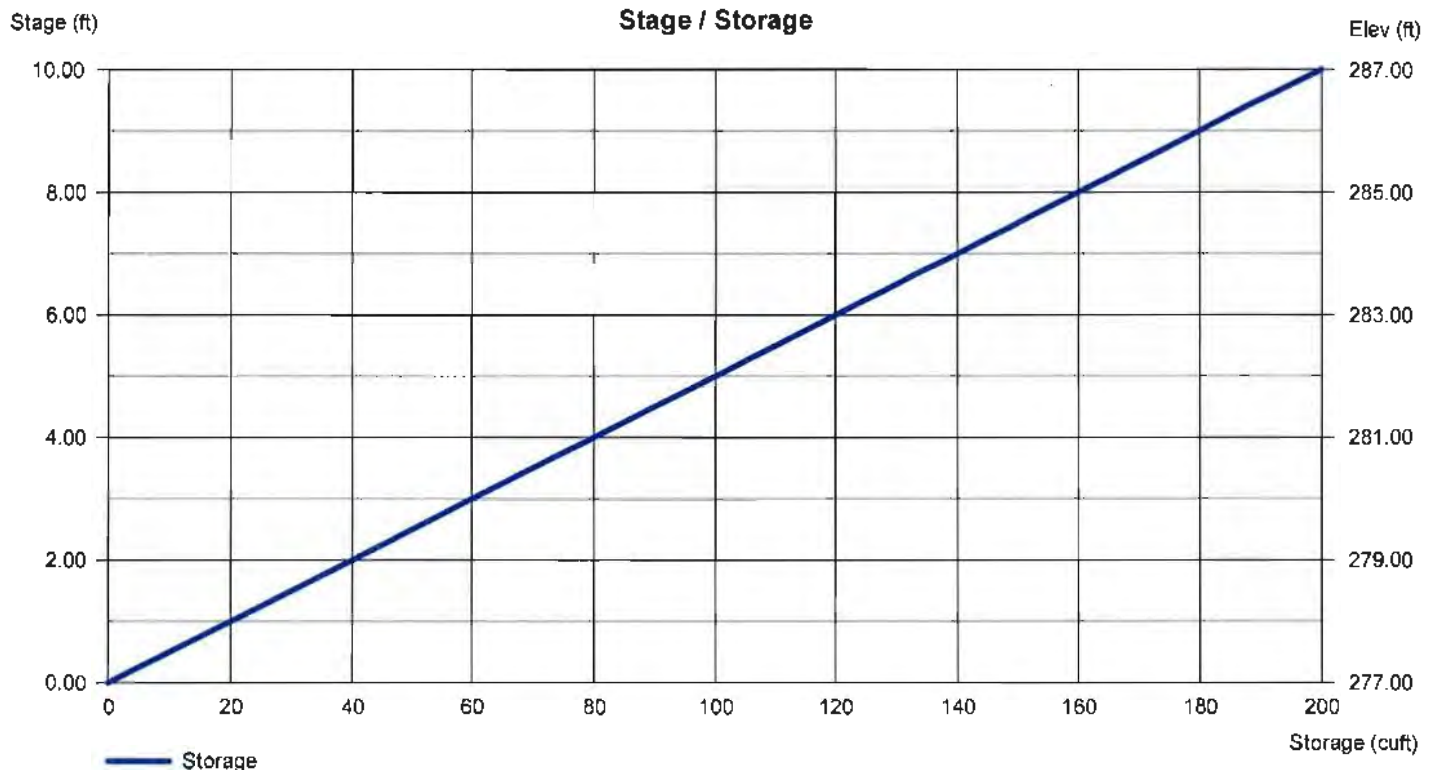
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	24.00	0.00	0.00
Span (in)	= 15.00	24.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 277.00	279.41	0.00	0.00
Length (ft)	= 158.00	98.00	0.00	0.00
Slope (%)	= 4.30	12.48	0.00	n/a
N-Value	= .011	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

WQV ↑
BYPASS



Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Wednesday, 00 28, 2012

Pond No. 5 - Stm MH DA-2 *DIVERSION MH*

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 317.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	317.50	20	0	0
1.00	318.50	20	20	20
2.00	319.50	20	20	40
3.00	320.50	20	20	60
4.00	321.50	20	20	80
5.00	322.50	20	20	100

Culvert / Orifice Structures

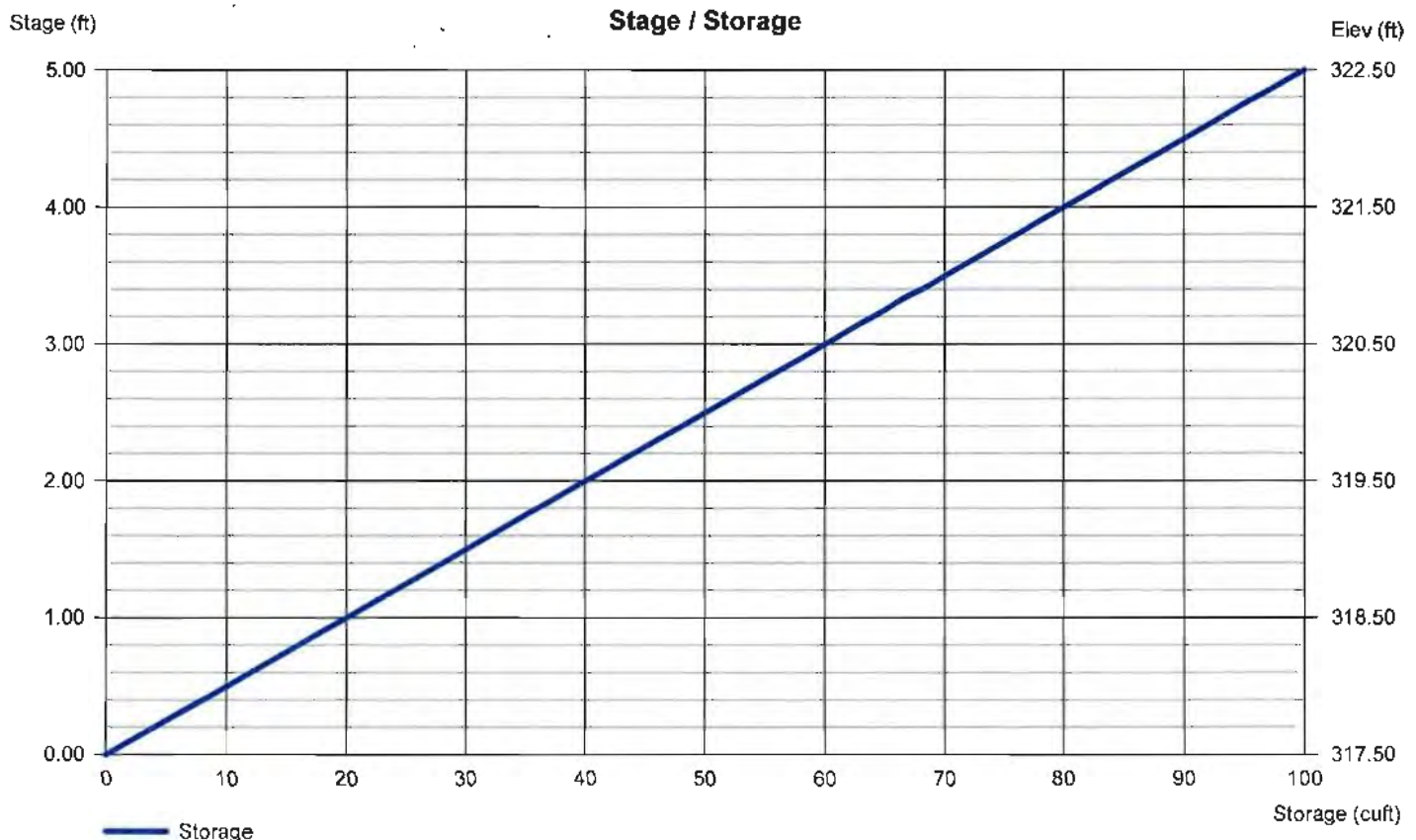
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	18.00	0.00	0.00
Span (in)	= 12.00	18.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 317.50	319.10	0.00	0.00
Length (ft)	= 34.00	55.00	0.00	0.00
Slope (%)	= 1.48	2.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

WQV *BYPASS*



Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Wednesday, 00 28, 2012

Pond No. 6 - Stm MH DB-1 *DIVERSION M/L*

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 311.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	311.00	20	0	0
1.00	312.00	20	20	20
2.00	313.00	20	20	40
3.00	314.00	20	20	60
4.00	315.00	20	20	80
5.00	316.00	20	20	100
6.00	317.00	20	20	120
7.00	318.00	20	20	140
8.00	319.00	20	20	160

Culvert / Orifice Structures

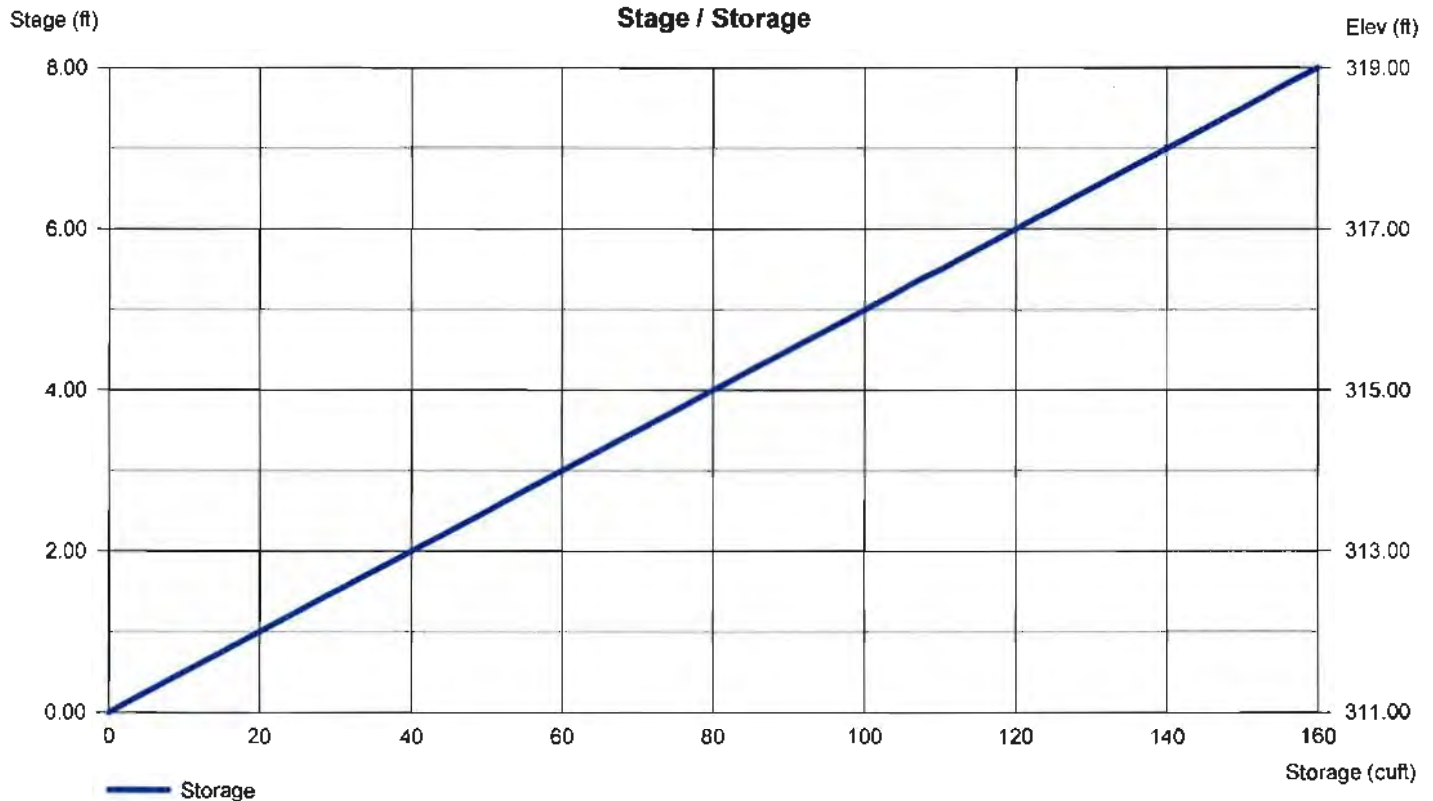
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	24.00	0.00	0.00
Span (in)	= 6.00	24.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 311.00	312.50	0.00	0.00
Length (ft)	= 47.00	122.00	0.00	0.00
Slope (%)	= 5.00	5.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

WAV *BYPASS*



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

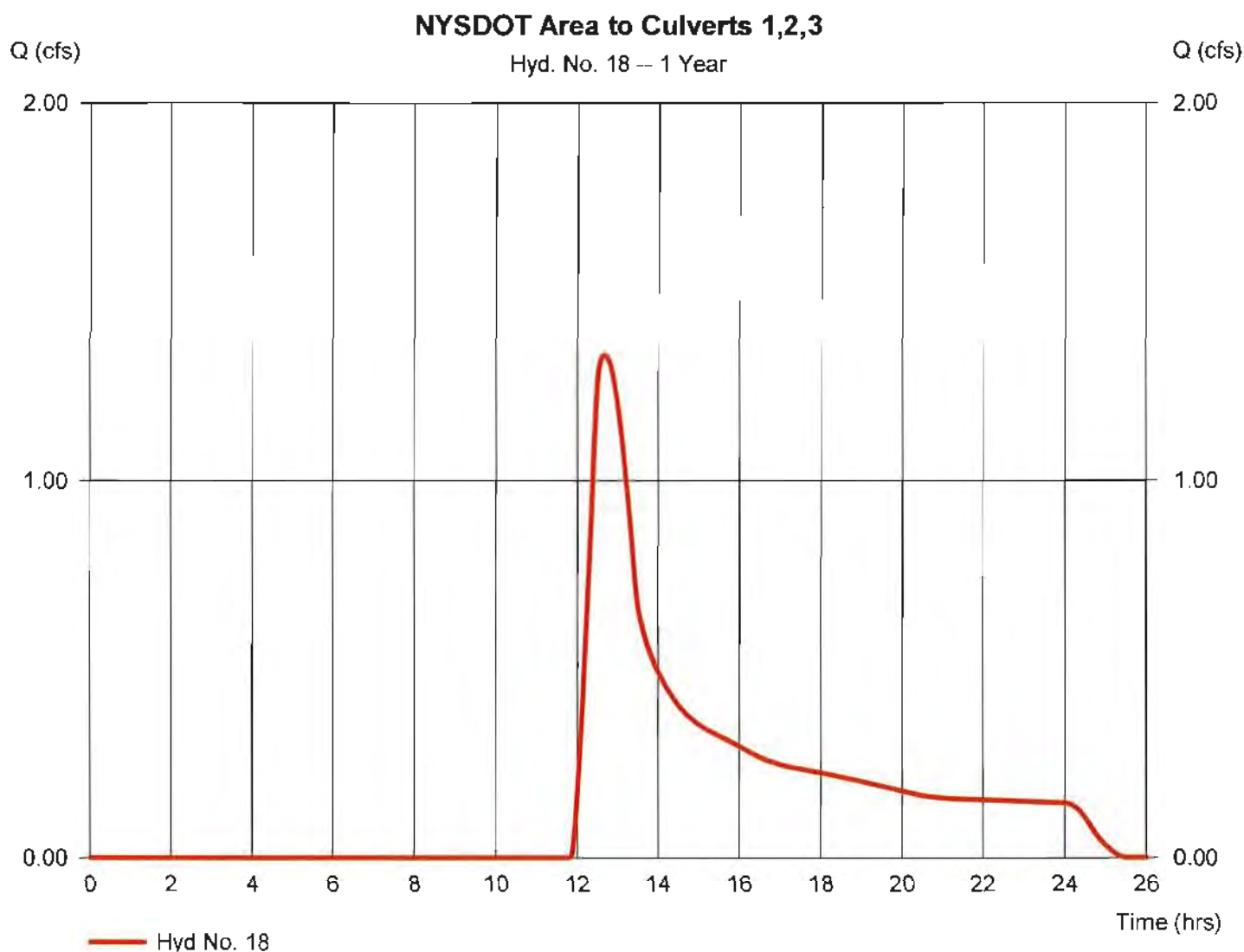
Thursday, 05 / 1 / 2014

Hyd. No. 18

NYSDOT Area to Culverts 1,2,3

Hydrograph type = SCS Runoff
Storm frequency = 1 yrs
Time interval = 2 min
Drainage area = 15.400 ac
Basin Slope = 0.0 %
Tc method = TR55
Total precip. = 2.20 in
Storm duration = 24 hrs

Peak discharge = 1.333 cfs
Time to peak = 12.67 hrs
Hyd. volume = 14,851 cuft
Curve number = 68
Hydraulic length = 0 ft
Time of conc. (Tc) = 58.10 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

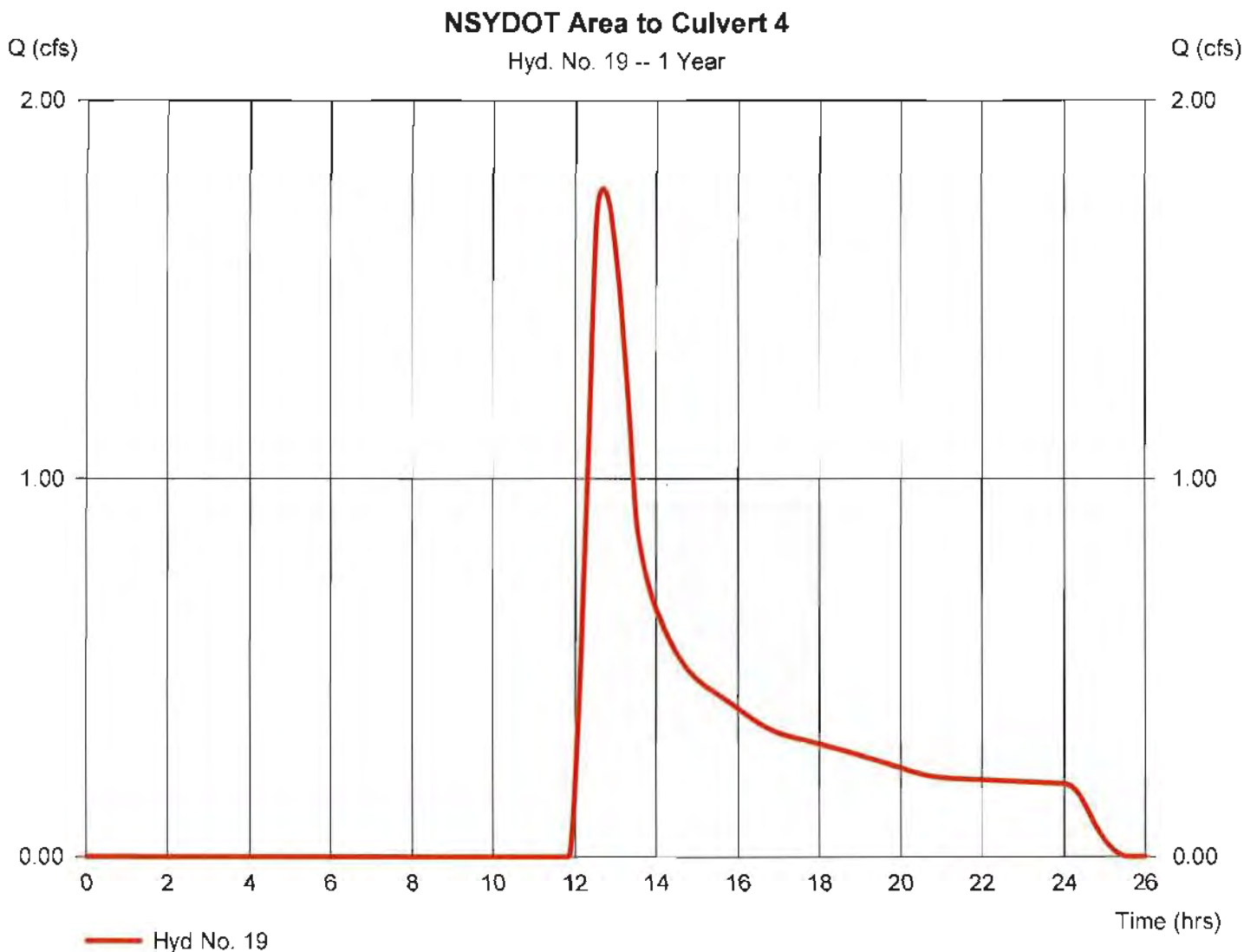
Thursday, 05 / 1 / 2014

Hyd. No. 19

NSYDOT Area to Culvert 4

Hydrograph type = SCS Runoff
Storm frequency = 1 yrs
Time interval = 2 min
Drainage area = 20.400 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 2.20 in
Storm duration = 24 hrs

Peak discharge = 1.766 cfs
Time to peak = 12.67 hrs
Hyd. volume = 19,673 cuft
Curve number = 68
Hydraulic length = 0 ft
Time of conc. (Tc) = 60.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

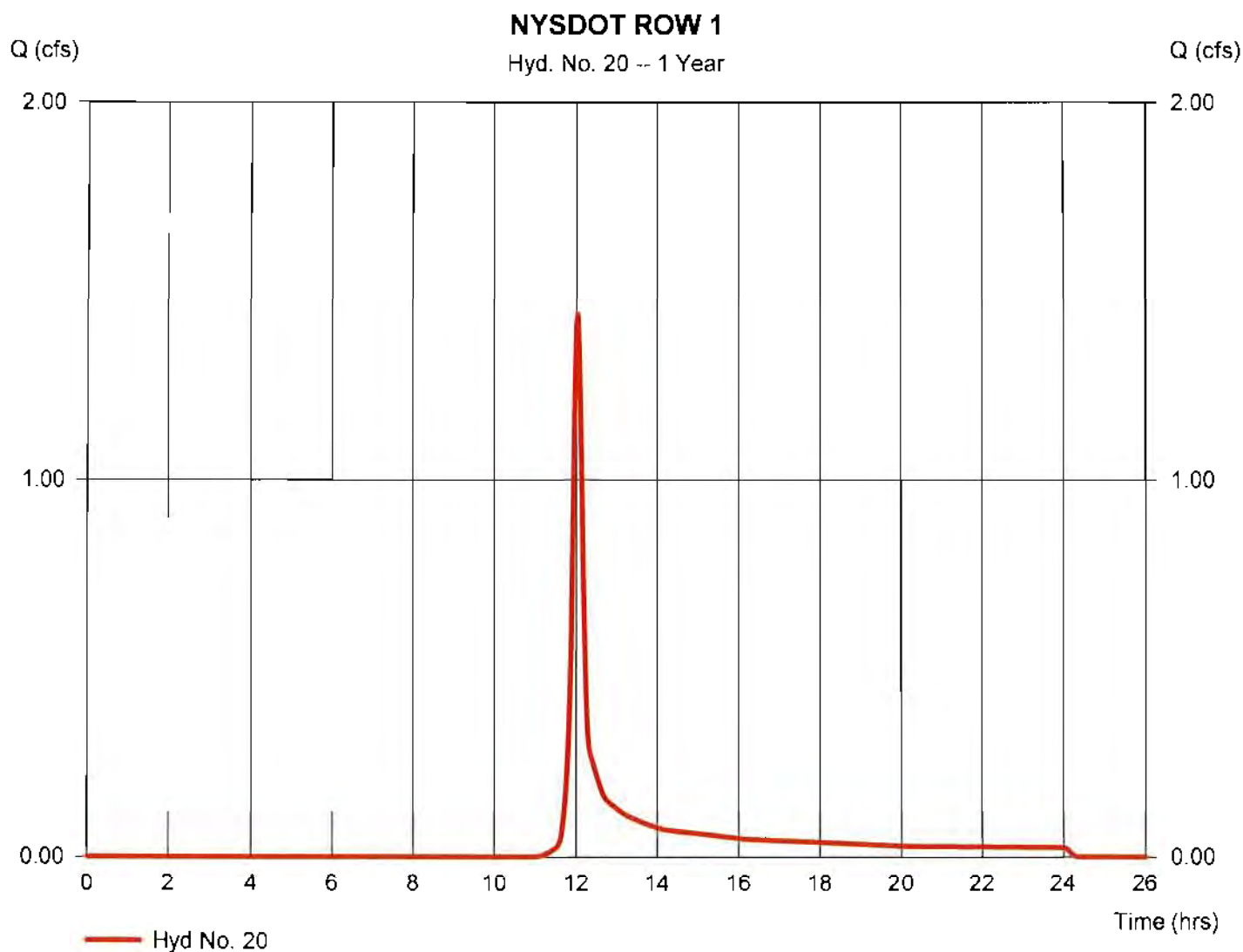
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 05 / 1 / 2014

Hyd. No. 20

NYSDOT ROW 1

Hydrograph type	= SCS Runoff	Peak discharge	= 1.439 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 3,864 cuft
Drainage area	= 1.500 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.00 min
Total precip.	= 2.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

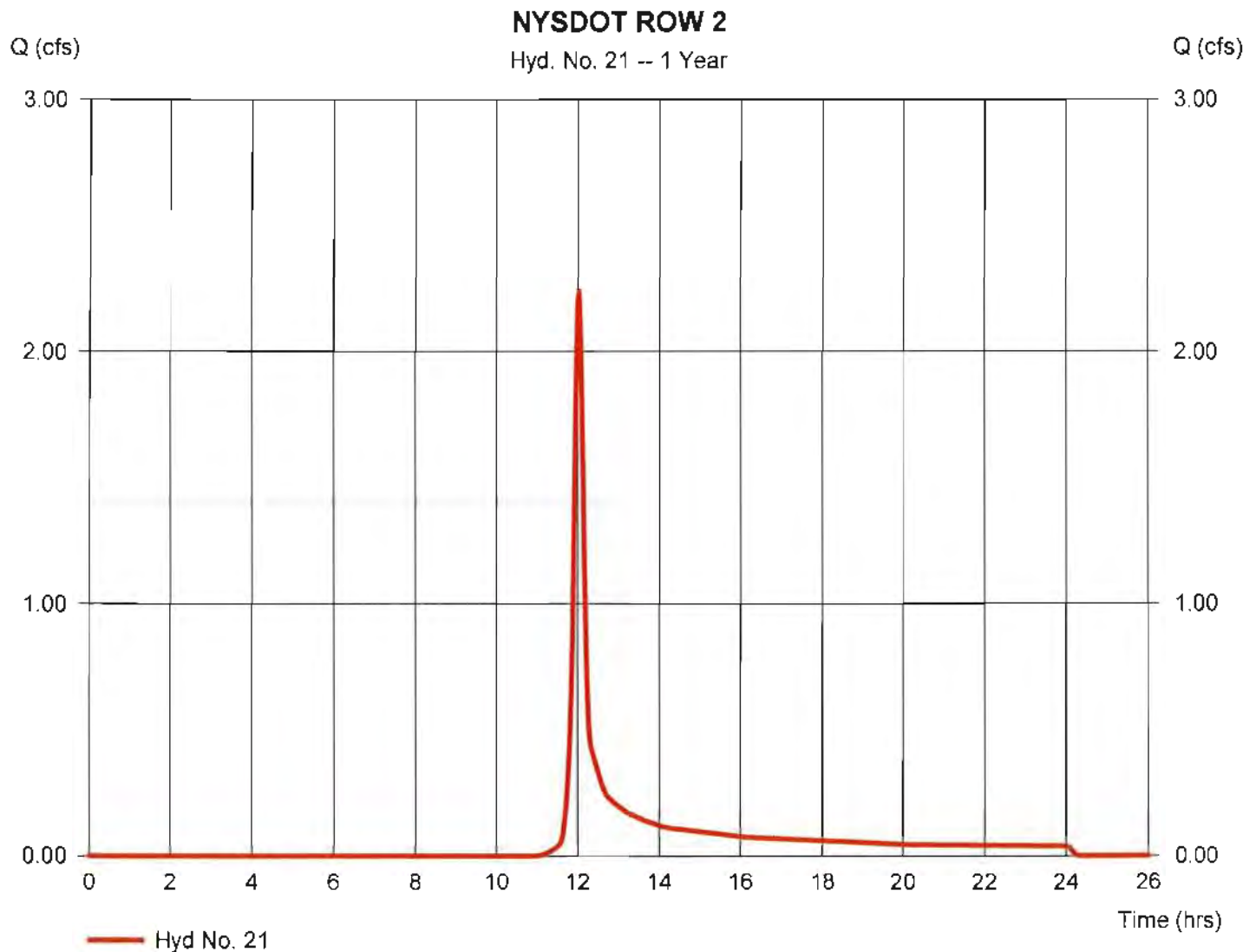
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 05 / 1 / 2014

Hyd. No. 21

NYSDOT ROW 2

Hydrograph type	= SCS Runoff	Peak discharge	= 2.235 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 6,002 cuft
Drainage area	= 2.330 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.00 min
Total precip.	= 2.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 11: WATER QUALITY CALCULATIONS

Stormwater Management Calculations

Project Name:	Southpoint Cove Apartments
Project Number:	20121461
Date:	Mar-12
Completed By:	JS
Revised	

Design Storms:	1-YEAR (in)	2.2	100-YR (in)	4.9
	2-YEAR (in)	2.5		
	10-YEAR (in)	3.6		

WATER QUALITY

1. COMPUTE WATER QUALITY VOLUME (WQv) & RUNOFF REDUCTION VOLUME (RRv)

RUNOFF COEFFICIENT (Rv)= .05+(I)(.009)
I VALUE = 61 (% IMPERVIOUS COVER)

Rv= 0.599

WQv = ((P)(Rv)(A))/12 P VALUE= 0.9 (FROM FIG 4.1 OF NYSDEC MANUAL)

Rv VALUE= 0.599 (FROM CALCULATION ABOVE-
0.2 MINIMUM VALUE)

A VALUE= 15.50 (DISTURBED AREA IN ACRES)
Impervious 9.46 AC

WQv= 0.696 ACRE-FT OF STORAGE REQUIRED FOR WATER QUALITY
30332 CUBIC-FT OF STORAGE REQUIRED FOR WATER QUALITY

2. COMPUTE NEW WATER QUALITY VOLUME (WQv)

BIO RETENTION AREA

BIO RETENTION SURFACE (Sa) (SF) =
DEPTH OF SOIL MEADIA (Ds) (FT)=
DEPTH OF DRAINAGE LAYER (Dd) (FT) =
POROSITY OF SOIL MEDIA (Ps) =
POROSITY OF DRAINAGE LAYER (Pd) =
PONDING DEPTH (FT)
VSM = VOLUME OF SOIL MEDIA
VDL = VOLUME OF OF DRAINAGE LAYER

VSM = (Sa*Ds*Ps) CF
Vdl = (Sa*Dd*Pd) CF
PONDING VOLUME = (Sa*Ponding Depth) CF
WQv PROVIDED CF

6,200
2
0.5
0.2
0.4
3

2,480
1240
18,600
22,320

ORGANIC FILTER #1

ORGANIC FILTER SURFACE (Sa) (SF) =
DEPTH OF SOIL MEADIA (Ds) (FT)=
DEPTH OF DRAINAGE LAYER (Dd) (FT) =
POROSITY OF SOIL MEDIA (Ps) =
POROSITY OF DRAINAGE LAYER (Pd) =
PONDING DEPTH (FT)
VSM = VOLUME OF SOIL MEDIA
VDL = VOLUME OF OF DRAINAGE LAYER

2,300
3
0.5
0.2
0.4
1.5

VSM = (Sa*Ds*Ps) CF
Vdl = (Sa*Dd*Pd) CF
PONDING VOLUME = (Sa*Depth) CF
WQv PROVIDED CF

1,380
460
3,450
5,290

Stormwater Management Calculations (Con't)

Project Name:

Southpoint Cove Apartments

Project Number:

20121461

Date:

Mar-12

Completed By:

JS

Revised

ORGANIC FILTER #2

ORGANIC FILTER SURFACE (Sa) (SF) =

1,400

DEPTH OF SOIL MEDIA (Ds) (FT)=

2

DEPTH OF DRAINAGE LAYER (Dd) (FT) =

0.5

POROSITY OF SOIL MEDIA (Ps) =

0.2

POROSITY OF DRAINAGE LAYER (Pd) =

0.4

PONDING DEPTH (FT)

1.5

VSM = VOLUME OF SOIL MEDIA

VDL = VOLUME OF OF DRAINAGE LAYER

VSM = (Sa*Ds*Ps) CF

560

Vdl = (Sa*Dd*Pd) CF

280

PONDING VOLUME = (Sa*Depth) CF

2,100

WQv PROVIDED CF

2,940

TOTAL COMBINED WQv PROVIDED

30,550 CF

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....

Design Point:	1	
P=	0.90	inch

Breakdown of Subcatchments						
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft ³)	Description
1	4.02	1.55	39%	0.40	5,214	New Impervious
2						
3						
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	4.02	1.55	39%	0.40	5,214	Subtotal 1
Total	4.02	1.55	39%	0.40	5,214	Initial WQv

Identify Runoff Reduction Techniques By Area			
Technique	Total Contributing Area	Contributing Impervious Area	Notes
	(Acre)	(Acre)	
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"	4.02	1.55	39%	0.40	5,214
Subtract Area	0.00	0.00			
WQv adjusted after Area Reductions	4.02	1.55	39%	0.40	5,214
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	4.02	1.55	39%	0.40	5,214
WQv reduced by Area Reduction techniques					0

Vegetated Swale

Design Point:	1						
Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft ³)	Precipitation (in)	Description
	4.02	1.55	0.39	0.40	5214.13	0.90	New Impervious
Enter Soil Infiltration Rate							
Soil Infiltration Rate	1.00	in/hour	Okay				
Calculate Peak WQv							
Modified CN	93	Note: Value is modified curve number using Appendix B.2 - Water Quality Peak Flow Calculation of the New York State Stormwater Management Design Manual					
Ia	0.159						
Ia/P	0.177						
Tc (hours)	0.10	Note: Tc is a direct entry using the flow path for the catchment draining to the practice					
qu	180	Note: qu value is taken from TR-55 (either Exhibit 4-II (Type II Rainfall Distribution) or Exhibit 4-III (Type III Rainfall Distribution) depending on the location in the State					
Qp	0.40	cfs					
Q10	5.8	cfs	From TR-55				
Enter Swale Dimensions							
Bottom Width	4	ft	Minimum of 2 ft but no greater than 6 ft				
Side Slopes	4	:1					
Channel Height	4	ft					
Flow Depth	0.30	ft					
Longitudinal Slope	6.0%						
Swale Length	4130.00	ft					
Mannings Coef.	0.04		Use variable n values corresponding to flow depths				
Calculated Swale Dimensions							
Top Width	6.40		Q	6.3			
Area	1.56	ft ²	Velocity	4.04	fps		
Wetted Perimeter	6.47	ft	Detention Time	17.05	minutes		
Determine Required Length Of Channel							
Required Length	4130.00	ft					
Length Provided	4130.00	ft					
Q10 Velocity	6.30	fps					
Q10 flow depth	0.30	inches					
Q10 freeboard	24.00	inches					
Determine Runoff Reduction							
Soil Group	B	Percent Reduction	0.40				
Is the Vegetated Swale contributing flow to another practice?			No	Select Practice			
Runoff Reduction			2,086	ft ³			
Portion of WQv not reduced that must be			3,128	ft ³			

Minimum RRv

Enter the Soils Data for the site

Soil Group	Acres	S
A		55%
B	4.02	40%
C		30%
D		20%
Total Area	4.02	

Calculate the Minimum RRv

S =	0.40	
Impervious =	1.55	acre
Precipitation	0.90	in
Rv	0.95	
Minimum RRv	1,924	ft ³
	0.04	af

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	5214	0.120
30	Total RRV Provided	2086	0.048
31	Is RRV Provided \geq WQv Required?	No	
32	Minimum RRV	1924	0.044
32a	Is RRV Provided \geq Minimum RRV Required?	Yes	
33a	Total WQv Treated	3128	0.072
34	Sum of Volume Reduced & Treated	5214	0.120
35	Is Sum RRV Provided and WQv Provided \geq WQv Required?	Yes	

Apply Peak Flow Attenuation			
36	Channel Protection	C_{pv}	N/A
37	Overbank	Q_p	N/A
37	Extreme Flood Control	Q_f	N/A
	Are Quantity Control requirements met?		N/A

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 12: NYSDEC SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY (PERMIT NO. GP-0-10-001)



NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

from

CONSTRUCTION ACTIVITY

Permit No. GP-0-10-001

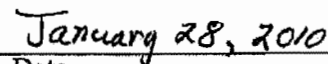
Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2010

Expiration Date: January 28, 2015

William R. Adriance
Chief Permit Administrator


Authorized Signature


Date

Address: NYS DEC
Div. 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

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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 (5000) square feet and one (1) acre of land.

B. Maintaining Water Quality - It shall be a violation of this permit and 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.

C. 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 D. of this Part.
2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater discharges from *construction activities*.

(Part I. C)

3. Notwithstanding paragraphs C.1 and C.2 above, the following non-stormwater *discharges* may be authorized by this permit: discharges from fire fighting 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 fire fighting 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.B.

D. Activities Which Are Ineligible for Coverage Under This General Permit - All of the following are **not** authorized by this permit:

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 C.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, subparagraph K of this permit;
4. *Discharges from construction activities* that adversely affect a listed, or proposed to be listed, endangered or threatened species, or its critical habitat;
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 that:
 - a. are tributary to waters of the state classified as AA or AA-s; and

(Part I. D. 6)

- b. disturb one or more acres of land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey for the County in which the disturbance will occur.
- 7. *Construction activities* for linear transportation projects and linear utility projects that:
 - a. are tributary to waters of the state classified as AA or AA-s; and
 - b. disturb two or more acres of land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey for the County in which the disturbance will occur.
- 8. *Construction activities* that adversely affect a property that is listed or is eligible for listing on the State or National Register of Historic Places (Note: includes Archeological sites), unless there are written agreements in place with the NYS Office of Parks, Recreation and Historic Preservation (OPRHP) or other governmental agencies to mitigate the effects, or there are local land use approvals evidencing the same.

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 develop a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the address below in order to be authorized to *discharge* under this permit. The NOI form shall be one which is associated with this permit, signed in accordance with Part VII.H. of this permit.

**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 develop a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the *MS4* prior to submitting the NOI to the Department. The owner or operator shall have the "MS4 SWPPP Acceptance" form 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, and then submit that form along with the NOI to the address referenced under "Notice of Intent (NOI) Submittal".

(Part II. A.2)

This requirement 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).

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,
 - 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 Regional Office 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. an 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 will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

(Part II. B. 3)

- 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 NOI for *construction activities* with a SWPPP that has been prepared in conformance with the technical standards referenced in Parts III.B.1, 2 and/or 3, or
 - ii. Sixty (60) business days from the date the Department receives a complete NOI for *construction activities* with a SWPPP that has not been prepared in conformance with the technical standards referenced in Parts III.B.1, 2 or 3.
- 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 a complete 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.
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.

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.
2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-10-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form and inspection reports at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department.

(Part II. C. 2)

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 MS4 (provided the 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. 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 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 technical standard, New York State Standards and Specifications for Erosion and Sediment Control.
 - 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. 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.

(Part II. C)

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 *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 *MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *MS4* prior to commencing construction of the post-construction stormwater management practice.

D. Permit Coverage for Discharges Authorized Under GP-0-08-001

1. Upon renewal of SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-08-001), an *owner or operator* of *construction activity* with coverage under GP-0-08-001, as of the effective date of GP-0-10-001, shall be authorized to *discharge* in accordance with GP-0-10-001 unless otherwise notified by the Department.

E. Change of Owner or Operator

1. 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.. 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. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. 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*.

(Part III. A)

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 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.
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.

(Part III. A. 6)

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 that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

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.
8. The SWPPP must include documentation supporting the determination of permit eligibility with regard to Part I.D.8. (Historic Places or Archeological Resource). At a minimum, the supporting documentation shall include the following:

(Part III. A. 8)

- a. Information on whether the stormwater discharge or *construction activities* would have an effect on a property (historic or archeological resource) that is listed or eligible for listing on the State or National Register of Historic Places;
- b. Results of historic resources screening determinations conducted. Information regarding the location of historic places listed, or eligible for listing, on the State or National Registers of Historic Places and areas of archeological sensitivity that may indicate the need for a survey can be obtained online by viewing the New York State Office of Parks, Recreation and Historic Places (OPRHP) online resources located on their web site at: <http://nysparks.state.ny.us/shpo/online-tools/> (using The Geographic Information System for Archeology and National Register). OPRHP can also be contacted at: NYS OPRHP, State Historic Preservation Office, Peebles Island Resources Center, P.O. Box 189, Waterford, NY 12188-0189, phone: 518-237-8643;
- c. A description of measures necessary to avoid or minimize adverse impacts on places listed, or eligible for listing, on the State or National Register of Historic Places. If the *owner or operator* fails to describe and implement such measures, the stormwater *discharge* is ineligible for coverage under this permit; and
- d. Where adverse effects may occur, any written agreements in place with OPRHP or other governmental agency to mitigate those effects, or local land use approvals evidencing the same.

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 most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control. Where erosion and sediment control practices are not designed in conformance with this 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;

(Part III. B. 1)

- 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), wetlands and drainage patterns that could be affected by the construction activity; existing and final slopes; 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 the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, 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;

(Part III. B. 1)

- i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6., 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 most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control;
 - 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 requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control. 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 standards.
2. Post-construction stormwater management practice component - All construction projects 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 most current version of the technical standard, New York State Stormwater Management Design Manual ("Design Manual"). If the Design Manual is revised during the term of this permit, an *owner or operator* must begin using the revised version of the Design Manual to prepare their SWPPP six (6) months from the final revision date of the Design Manual.

Where post-construction stormwater management practices are not designed in conformance with this technical standard, the *owner or operator* must demonstrate equivalence to the technical standard.

At a minimum, 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;

(Part III. B. 2)

- b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;
 - c. The dimensions, material specifications and installation details for each post-construction stormwater management practice;
 - d. Identification of any elements of the design that are not in conformance with the Design Manual. 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 standards;
 - e. A hydrologic and hydraulic analysis for all structural components of the stormwater management control system;
 - f. A detailed summary (including calculations) of the sizing criteria that was used to design all post-construction stormwater management practices. At a minimum, the summary shall address the required design criteria from the applicable chapter of the Design Manual; including the identification of and justification for any deviations from the Design Manual, and identification of any design criteria that are not required based on the design criteria or waiver criteria included in the Design Manual; and
 - g. 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 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.g. above.

(Part III. C)

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. *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.

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 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. 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.

(Part IV. C)

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. **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 (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.

(Part IV. C. 2)

- 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 Regional Office stormwater contact person (see contact information in Appendix F) 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 (see contact information in Appendix F) 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..

(Part IV. C. 3)

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;

(Part IV. C 4)

- 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. 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., 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. The NOT form shall be one which is associated with this general permit, signed in accordance with Part VII.H.
2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

(Part V. A. 2)

- 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.
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 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.
 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 also have the MS4 sign the “MS4 Acceptance” statement on the NOT. The *owner or operator* shall have the principal executive officer, ranking elected official, or duly authorized representative from the *regulated, traditional land use control MS4*, sign the “MS4 Acceptance” statement. The 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 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.3.
 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:

(Part V. A. 5)

- 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 modified their deed of record to include a deed covenant that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan,
- d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, 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 site achieves *final stabilization*. This period may be extended by the Department, in its sole discretion, at any time upon written notification.

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), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate Department Regional Office listed in Appendix F.

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.

(Part VII. A)

The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

B. Continuation of the Expired General Permit - This permit expires five (5) years from the effective date. However, coverage may be obtained under the expired general permit, which will continue in force and effect, until a new general permit is issued. Unless otherwise notified by the Department in writing, an *owner or operator* seeking authorization under the new general permit must submit a new NOI in accordance with the terms of such new general permit.

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.

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 make available to the Department for review and copying or furnish to the Department within five (5) business days of receipt of a Department request for such information, any information requested for the purpose of determining compliance with this permit. This can include, but is not limited to, the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form, executed maintenance agreement, and inspection reports. Failure to provide information requested by the Department within the request timeframe shall be a violation 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 the NOI, SWPPP or inspection reports. 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 other report, 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)

(Part VII. G)

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. 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

(Part VII. H. 1. c)

- 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. 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.;
 - 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.

(Part VII. K)

K. Denial of Coverage Under This Permit

1. At its sole discretion, 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 Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Regional Water Engineer, 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. Any *owner or operator* authorized by this permit may request to be excluded from the coverage under this permit by applying for an individual permit or another general permit. In such cases, the *owner or operator* shall submit an individual application or an alternative general permit application in accordance with the requirements of this general permit, 40 CFR 122.26(c)(1)(ii) and 6 NYCRR Part 621, with reasons supporting the request, to the Department at the address for the appropriate Department Office (see addresses in Appendix F). The request may be granted by issuance of an individual permit or another general permit at the discretion of the Department.
3. 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 the Department or an authorized representative of EPA, the State, 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:

(Part VII. M)

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).

N. Permit Actions - At the Department's sole discretion, this permit may, at any time, be modified, suspended, revoked, or renewed. 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. 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 – Article 17 of the ECL provides for a civil penalty of \$37,500 per day per violation of this permit. Articles 175 and 210 of the New York State Penal Law provide for a criminal penalty of a fine and/or imprisonment for falsifying forms and reports required by this permit.

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.

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 authorizing a category of discharges.

Groundwater - 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.

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.

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) application, 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.

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).

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.

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 Parts 700 et seq of this Title.

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 in order to prepare a SWPPP that conforms to the Department's technical standard. 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.

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.

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.

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 or underground 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.

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* will be 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

<p>The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:</p> <ul style="list-style-type: none"> • Single family home <u>not</u> located in one of the watersheds listed in Appendix C and <u>not directly discharging</u> 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 <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> 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.
<p>The following construction activities that involve soil disturbances of one (1) or more acres of land:</p> <ul style="list-style-type: none"> • 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 <i>alter hydrology from pre to post development</i> conditions • Athletic fields (natural grass) that do not include the construction or reconstruction of <i>impervious area</i> <u>and</u> do not <i>alter hydrology from pre to post development</i> 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 <i>impervious cover</i> • 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
<p>The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:</p> <ul style="list-style-type: none"> • All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5000) 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 or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* and *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”).

- | |
|---|
| <ul style="list-style-type: none">• 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 |
|---|

Figure 1 - New York City Watershed East of the Hudson

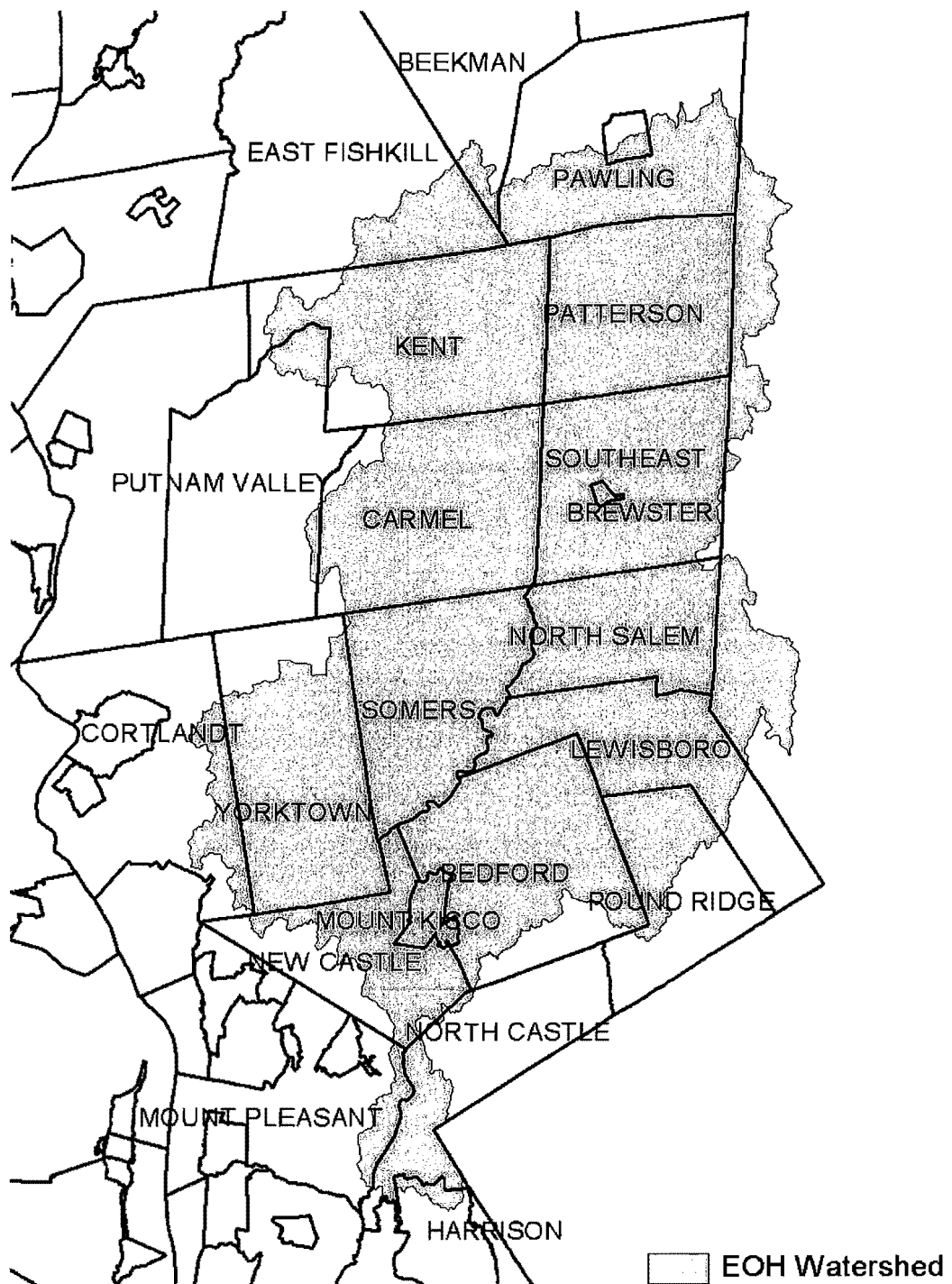


Figure 2 - Onondaga Lake Watershed

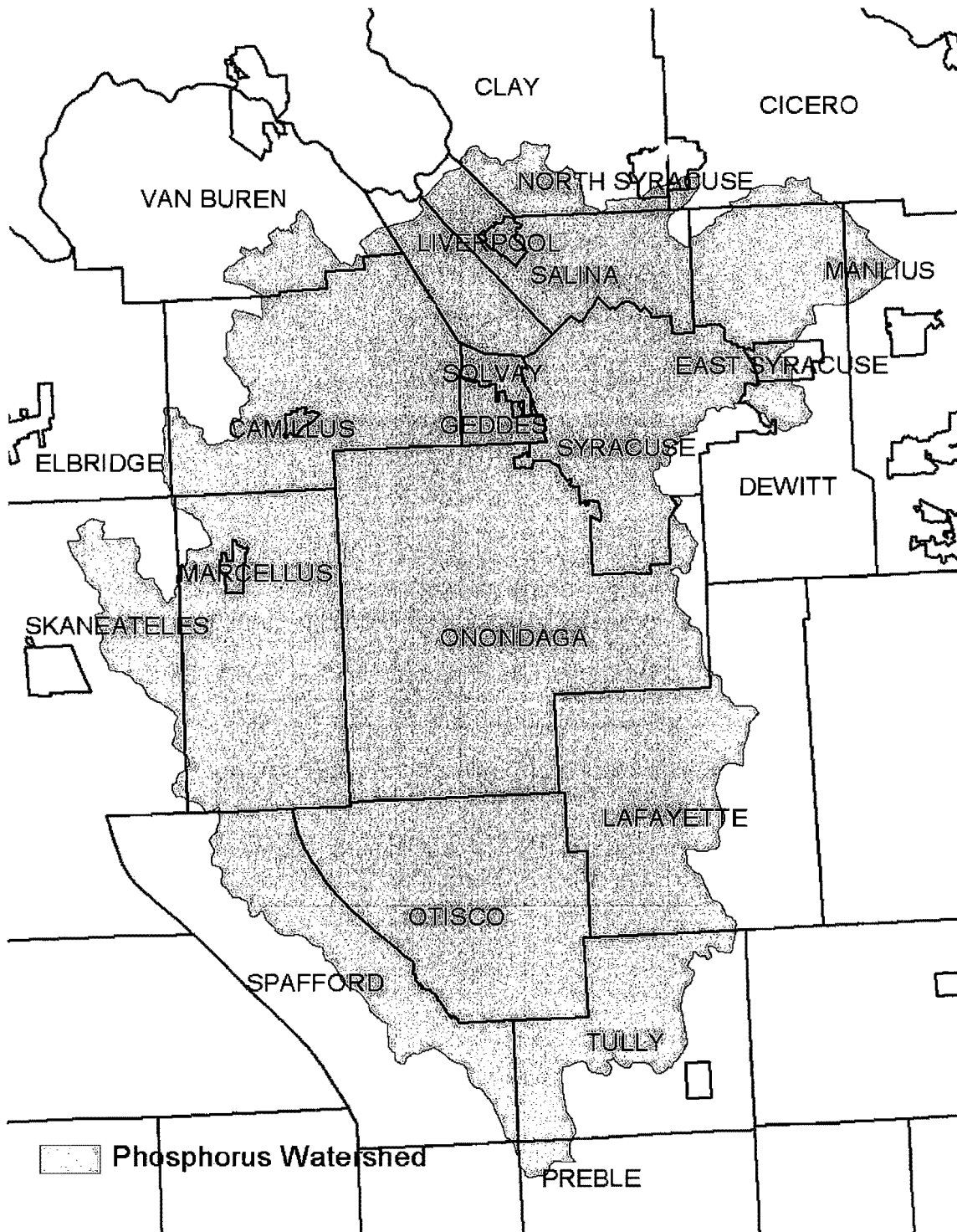
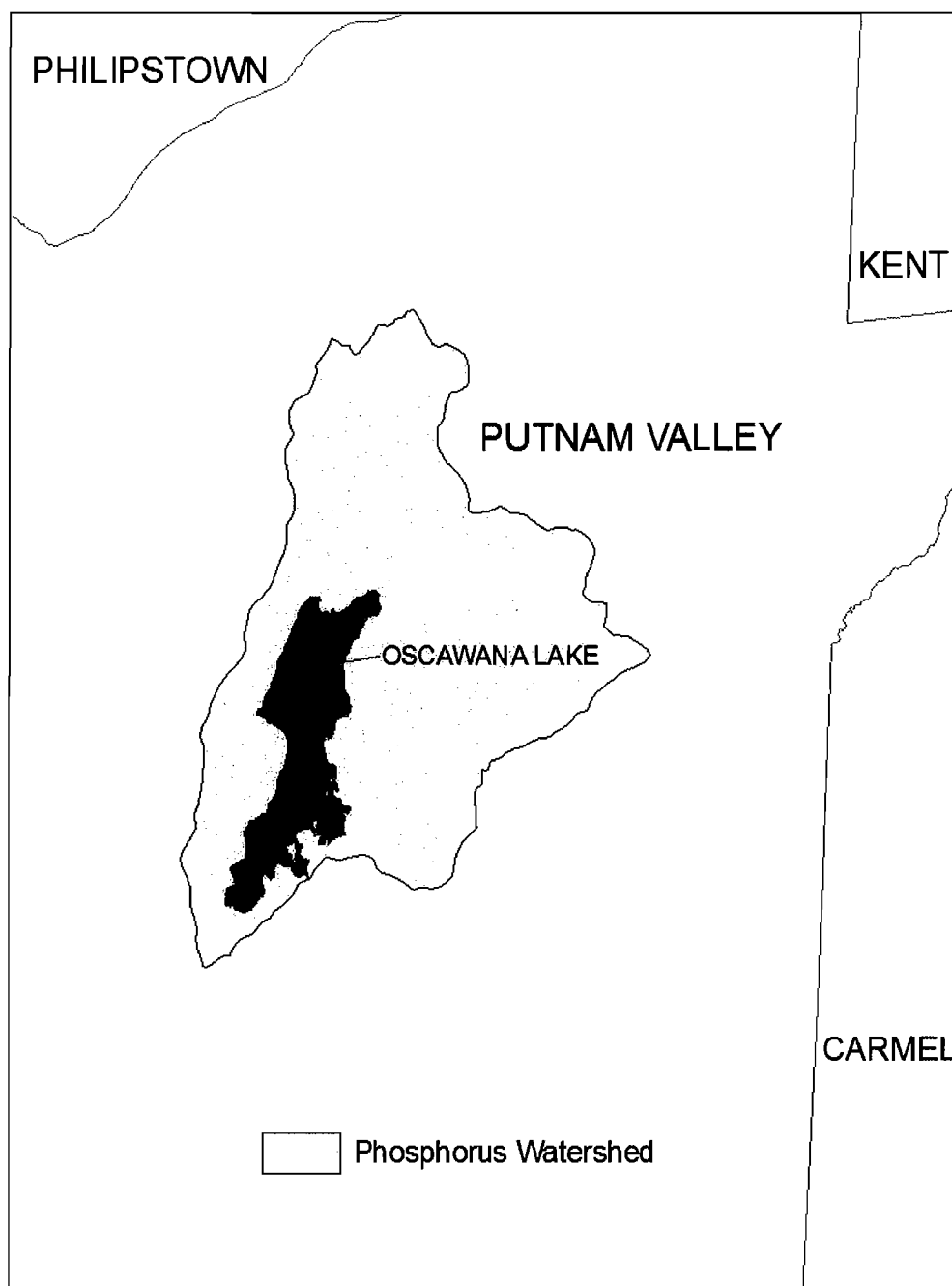


Figure 3 - Greenwood Lake Watershed



Figure 4 - Oscawana Lake Watershed



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 subdivision construction activities 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 most current version of the technical standard, New York State Stormwater Management Design Manual (“Design Manual”).

COUNTY	WATERBODY	COUNTY	WATERBODY
Albany	Ann Lee (Shakers) Pond, Stump Pond	Monroe	Genesee River, Lower, Main Stem
Albany	Basic Creek Reservoir	Monroe	Genesee River, Middle, Main Stem
Bronx	Van Cortlandt Lake	Monroe	Black Creek, Lower, and minor tribs
Broome	Whitney Point Lake/Reservoir	Monroe	Buck Pond
Broome	Beaver Lake	Monroe	Long Pond
Broome	White Birch Lake	Monroe	Cranberry Pond
Chautauqua	Chautauqua Lake, North	Monroe	Mill Creek and tribs
Chautauqua	Chautauqua Lake, South	Monroe	Shipbuilders Creek and tribs
Chautauqua	Bear Lake	Monroe	Minor tribs to Irondequoit Bay
Chautauqua	Chadakoin River and tribs	Monroe	Thomas Creek/White Brook and tribs
Chautauqua	Lower Cassadaga Lake	Nassau	Glen Cove Creek, Lower, and tribs
Chautauqua	Middle Cassadaga Lake	Nassau	LI Tribs (fresh) to East Bay
Chautauqua	Findley Lake	Nassau	East Meadow Brook, Upper, and tribs
Clinton	Great Chazy River, Lower, Main Stem	Nassau	Hempstead Bay
Columbia	Kinderhook Lake	Nassau	Hempstead Lake
Columbia	Robinson Pond	Nassau	Grant Park Pond
Dutchess	Hillside Lake	Niagara	Bergholtz Creek and tribs
Dutchess	Wappinger Lakes	Oneida	Ballou, Nail Creeks
Dutchess	Fall Kill and tribs	Onondaga	Ley Creek and tribs
Dutchess	Rudd Pond	Onondaga	Onondaga Creek, Lower and tribs
Erie	Rush Creek and tribs	Onondaga	Onondaga creek, Middle and tribs
Erie	Ellicott Creek, Lower, and tribs	Onondaga	Onondaga Creek, Upper, and minor tribs
Erie	Beeman Creek and tribs	Onondaga	Harbor Brook, Lower, and tribs
Erie	Murder Creek, Lower, and tribs	Onondaga	Ninemile Creek, Lower, and tribs
Erie	South Branch Smoke Cr, Lower, and tribs	Onondaga	Minor tribs to Onondaga Lake
Erie	Little Sister Creek, Lower, and tribs	Ontario	Honeoye Lake
Essex	Lake George (primary county listed as Warren)	Ontario	Hemlock Lake Outlet and minor tribs
Genesee	Black Creek, Upper, and minor tribs	Ontario	Great Brook and minor tribs
Genesee	Tonawanda Creek, Middle, Main Stem	Oswego	Lake Neatahwanta
Genesee	Tonawanda Creek, Upper, and minor tribs	Putnam	Oscawana Lake
Genesee	Little Tonawanda Creek, Lower, and tribs	Putnam	Lake Carmel
Genesee	Oak Orchard Creek, Upper, and tribs	Queens	Jamaica Bay, Eastern, and tribs (Queens)
Genesee	Bowen Brook and tribs	Queens	Bergen Basin
Genesee	Bigelow Creek and tribs	Queens	Shellbank Basin
Greene	Schoharie Reservoir	Rensselaer	Snyders Lake
Greene	Sleepy Hollow Lake	Richmond	Grasmere, Arbutus and Wolfes Lakes
Herkimer	Steele Creek tribs	Saratoga	Dwaas Kill and tribs
Kings	Hendrix Creek	Saratoga	Tribs to Lake Lonely
Lewis	Mill Creek/South Branch and tribs	Saratoga	Lake Lonely
Livingston	Conesus Lake	Saratoga	Schuyler Creek and tribs
Livingston	Jaycox Creek and tribs	Schenectady	Collins Lake
Livingston	Mill Creek and minor tribs		

APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity, cont'd.

COUNTY	WATERBODY	COUNTY	WATERBODY
Schoharie	Engleville Pond		
Schoharie	Summit Lake		
St. Lawrence	Black Lake Outlet/Black Lake		
Steuben	Lake Salubria		
Steuben	Smith Pond		
Suffolk	Millers Pond		
Suffolk	Mattituck (Marratooka) Pond		
Suffolk	Tidal tribs to West Moriches Bay		
Suffolk	Canaan Lake		
Suffolk	Lake Ronkonkoma		
Tompkins	Cayuga Lake, Southern End		
Tompkins	Owasco Inlet, Upper, and tribs		
Ulster	Ashokan Reservoir		
Ulster	Esopus Creek, Upper, and minor tribs		
Warren	Lake George		
Warren	Tribs to L. George, Village of L. George		
Warren	Huddle/Finkle Brooks and tribs		
Warren	Indian Brook and tribs		
Warren	Hague Brook and tribs		
Washington	Tribs to L. George, East Shore of Lake George		
Washington	Cossayuna Lake		
Wayne	Port Bay		
Wayne	Marbletown Creek and tribs		
Westchester	Peach Lake		
Westchester	Mamaroneck River, Lower		
Westchester	Mamaroneck River, Upper, and minor tribs		
Westchester	Sheldrake River and tribs		
Westchester	Blind Brook, Lower		
Westchester	Blind Brook, Upper, and tribs		
Westchester	Lake Lincolndale		
Westchester	Lake Meahaugh		
Wyoming	Java Lake		
Wyoming	Silver Lake		

Note: The list above identifies those waters from the final New York State "2008 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", dated May 26, 2008, that are impaired by silt, sediment or nutrients.

APPENDIX F

LIST OF NYS DEC REGIONAL OFFICES

<u>Region</u>	<u>COVERING THE FOLLOWING COUNTIES:</u>	<u>DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS</u>	<u>DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM</u>
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, PO BOX 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD, PO BOX 220 WARRENSBURG, NY 12885-0220 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 13: CONSTRUCTION SITE INSPECTION AND MAINTENANCE LOG SHEETS

Standardized Qualified Inspector Form



Project Name and Location of Project: _____		Date: _____	Weather: _____
Municipality: _____		Permit #: NYR10	
County: _____		Entry Time: _____	Exit Time: _____
Qualified Inspector: _____			
Qualified Inspector Title: _____			
5 Acre Waiver: <input type="checkbox"/> Yes <input type="checkbox"/> No			
Name of SPDES Permittee: _____			
Phone: _____		Fax: _____	
Name of Representative on Site: _____			

Qualified Inspector's Credentials & Certification

Qualified Inspector (QI) means a person that is knowledgeable in the principles and practices of erosion and sediment control (ESC). A person is considered qualified under the following conditions:

1. A licensed Professional Engineer; licensed Landscape Architect with documented training and education in the principles and practices of ESC;
2. An individual certified in ESC by CPESC, Incorporated or any other agency endorsed by the NYS Department of Environmental Conservation Office of Water Resources;
3. An individual working under the direct supervision of a qualified licensed Professional Engineer or qualified licensed Landscape Architect with documented training and education in the principles and practices of ESC **and has** completed the four (4) hour training program in the principles and practices of erosion and sediment control from either a Soil and Water Conservation District, CPESC or any other agency endorsed by the NYS Department of Environmental Conservation Office of Water Resources. This initial training must be completed no later than May 1, 2010. After receiving the initial training, an individual working under the direct supervision of a qualified licensed Professional Engineer or qualified licensed Landscape Architect must complete four (4) hours of training every three (3) years.
4. Any other individual endorsed by the NYS Department of Environmental Conservation by written documentation.
5. 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.1

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES
Standardized Qualified Inspector Form

Part I. CONSTRUCTION DURATION INSPECTIONS

Page 2 of _____

- a. SITE PLAN/SKETCH OF AREAS DISTURBED AT TIME OF INSPECTION AND
AREAS THAT HAVE BEEN STABILIZED (TEMPORARY OR FINAL) SINCE LAST INSPECTION:

Part I. CONSTRUCTION DURATION INSPECTIONS

Page 3 of _____

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES
Standardized Qualified Inspector Form

b. Other Permit Required Reporting

Maintaining Water Quality - *Attach Color Photographs of the site documenting discharge points and site conditions.*

Describe the condition of runoff at all points of discharge.

Is there an increase in turbidity causing a substantial visible contrast to natural conditions? _____

Is there residue from oil and floating substances, visible oil film, or globules or grease? _____

Is there evidence of silt deposition from project in a stream, wetland, or other water body? _____

If yes, where? _____ remedial measure needed? _____

Provide a description of the conditions of all natural water bodies within or immediately adjacent to the project. _____

Area of Disturbance

Total area of disturbance (as shown on sketch plan and not including areas that have temporary or permanent stabilization measures applied) _____

Are all disturbances within the limits of the SWPPP? _____

Weather Conditions

A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection; _____

General Housekeeping

Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained? _____

Is construction impacting the adjacent property? _____

Is dust adequately controlled? _____

Describe corrective action(s): _____

Date correction needed: _____

c. Runoff Controls *Direct runoff away from exposed soil surfaces and control water that falls onto the site*

Runoff conveyance systems ☐ N A

Are all runoff conveyance systems called for in the SWPPP installed, stabilized and working? _____

If not, what specific areas need detailing? _____

With minimum side slopes 2H:1V or flatter? _____ Stabilized by geotextile fabric, seed, or mulch with no erosion occurring? _____ Sediment-laden runoff directed to sediment trapping structure? _____

Describe corrective action(s): _____

Date correction needed: _____

Runoff Control Structures ☐ N A

Have all required runoff control structures (rock outlets and aprons) been installed and constructed per plan and according to the Blue Book? _____ Installed concurrently with pipe installation? _____

Describe corrective action(s): _____

Date correction needed: _____

Standardized Qualified Inspector Form

Page 4 of _____

Temporary Stream or Channel Crossing ☐ N A

Have construction crossings at concentrated flow areas been culverted? _____

Describe corrective action(s): _____

Date correction needed: _____

Stone Check Dam ☐ N A

Installed per standards? _____ channel stable (flow is not eroding soil underneath or around the structure). _____ does sediment need to be removed? _____

Describe corrective action(s): _____

Date correction needed: _____

Excavation Dewatering ☐ N A1. Flowing water ☐ N A – Upstream berm (sandbags, inflatable dams, etc. with one-foot minimum freeboard) and downstream berms are installed per plan? _____ and functioning? (clean water from upstream pool is being pumped to the downstream pool)? _____2. Sediment laden water from work area ☐ N A - Is being discharged to a silt-trapping device? _____3. Groundwater from excavations ☐ N A - is being managed properly (sumps and sediment control)? _____

Describe corrective action(s): _____

Date correction needed: _____

d. Soil Stabilization *Basic erosion control is achieved by covering all bare ground areas.*Topsoil and Spoil Stockpiles ☐ N A

Stabilized - sediment controls at downhill slope? _____

Describe corrective action(s): _____

Date correction needed: _____

Revegetation/Stabilization ☐ N AHas temporary or permanent seeding *and* mulch (as shown on site sketch plan) been applied to areas that have been inactive for 14 days or less (or, inactive for 7 days if over 5 acres disturbed)? _____

Has soil preparation been applied as specified in the SWPPP and in accordance with the Blue Book (Assure that all the necessary soil testing/fertilizer/lime, topsoil, decompaction has been applied)? _____

Have rolled erosion control products specified for steep slopes or channels been installed? _____

Describe corrective action(s): _____

Date correction needed: _____

e. Sediment ControlsStabilized Construction Entrance ☐ N A

Stone is clean and all access areas covered (entrances, construction routes, materials storage areas, equipment parking)? _____ Tracking onto public streets is minimized and cleaned daily? _____

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES
Standardized Qualified Inspector Form

Describe: _____
Date correction needed: _____

Standardized Qualified Inspector Form

Page 5 of _____

Silt Fence ☐ N A

Installed on contour? not across conveyance channels? _____ At least 10 feet from toe of slope? _____ At appropriate spacing intervals based on slope? _____ Wrapped ends for continuous support? _____ Fabric is tight, without rips or frayed areas? _____ Posts are stable? _____ buried 6 inches minimum? _____ Any "bulges"? _____

Describe: _____

Date correction needed: _____

Temporary Sediment Trap ☐ N A

Is outlet structure constructed properly? _____ geotextile fabric has been placed beneath rock fill? _____ Maintenance – depth of sediment in basin? _____ 50% capacity? _____

Describe: _____

Date correction needed: _____

Temporary Sediment Basin ☐ N A

Is basin and outlet structure constructed per the approved plan? _____
Are basin side slopes stabilized with seed/mulch? _____

Maintenance – depth of sediment in basin? _____ 50% capacity? _____

Describe: _____

Date correction needed: _____

Drop Inlet Protection ☐ N A

Type(s) of inlet control? _____
Installed per Blue Book specifications: drainage area (typically 1 acre)? _____
Appropriate for location? _____
Describe: _____

Date correction needed: _____

f. Digital Color Photographs of Deficient BMPs

The *qualified inspector* shall attach paper color copies of the digital photographs to this inspection report of deficient BMPs with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions.

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES
Standardized Qualified Inspector Form

g. Digital Color Photographs of BMPs that have been Corrected

The *qualified inspector* shall attach paper color copies of the digital photographs to this inspection report of corrected BMPs with date stamp, that clearly show the condition of the practice(s) after the corrective actions has been completed.

Page 6 of _____

h. Post-Construction Stormwater Management

Report of any corrective action(s) that must be taken to install, correct, repair, replace or maintain any deficiencies identified with the construction of the post-construction stormwater management practice(s).

Report the current phase of construction of all post-construction stormwater management practice(s) and whether the installation appears to be geometrically consistent with the approved hydraulic design (e.g. the pond, the outlet structure, orifice, pipe sizing and slope is geometrically consistent with the SWPPP): _____

i. Revisions to SWPPP

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 other report, 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 and/or the MS4, they shall promptly submit such facts or information. 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 permit violation (GP-0-10-001 Part VII.G)

j. Inspection Notes and Signature

Inspection Notes:

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES
Standardized Qualified Inspector Form

Page 7 of _____

PART I. j. Signature

GP-0-10-001 Part VII.Q

Articles 175 and 210 of the New York State Penal Law provide for Criminal penalty of a fine and/or imprisonment for falsifying forms and reports required by this permit.

Qualified Inspector (print name)

Date of Inspection

Signature

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Title: _____ Address: _____

Phone: _____ Email: _____

CPESC#: _____

Stormwater Training Number for *Trained Individuals*: _____

P.E. or L.A. Supervisor Name for *Trained Individuals*: _____

Compliance certification:

Received and reviewed by _____ Title: _____

The above signed acknowledges receipt of this inspection report

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 14: MS4 ACCEPTANCE FORM



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

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form
for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information

1. Owner/Operator Name: Robert Morgan

2. Contact Person: Southpoint Cove LLC

3. Street Address: PO BOX 1660

4. City/State/Zip: Pittsford, NY 14534

II. Project Site Information

5. Project/Site Name: Southpoint Cove Apartments

6. Street Address: 1440 Empire Boulevard

7. City/State/Zip: Penfield, NY 14526

III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information

8. SWPPP Reviewed by: Geoff Benway

9. Title/Position: Town Engineer

10. Date Final SWPPP Reviewed and Accepted: OCTOBER 11, 2013

IV. Regulated MS4 Information

11. Name of MS4: Town of Penfield

12. MS4 SPDES Permit Identification Number: NYR20A 048

13. Contact Person: Geoff Benway

14. Street Address: Town of Penfield, 3100 Atlantic Avenue

15. City/State/Zip: Penfield, NY 14526

16. Telephone Number: 5852.340.8600

(NYS DEC - MS4 SWPPP Acceptance Form - January 2010)

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).

Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

R A LAFONTAIN

Title/Position:

Town Supervisor

Signature:

R A LAFONTAIN

Date:

OCTOBER 11, 2013

VI. Additional Information

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

**APPENDIX 15: NOTICE OF INTENT (BLANK)
(WILL BE COMPLETED PRIOR TO CONSTRUCTION)**

NOTICE OF INTENT



New York State Department of Environmental Conservation

Division of Water

625 Broadway, 4th Floor

Albany, New York 12233-3505

NYR

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(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State
Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-10-001

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)

[illegible]

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

S	P	O	L	E	T	A
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Owner/Operator Contact Person First Name

D	A	V	I	D
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Owner/Operator Mailing Address

1	0	8	0		P	I	T	T	S	F	O	R	D		V	I	C	T	O	R		R	O	A	D	-		S	U	I	T	E		1	0	0	
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City

[illegible]

State

N	Y
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Zip

1	4	5	3	4
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Phone (Owner/Operator)

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Fax (Owner/Operator)

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Email (Owner/Operator)

D	S	P	O	L	E	T	A	@	S	P	O	L	E	T	A	.	C	O	M
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FED TAX ID

	-				(not required for individuals)
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Project Site Information

Project/Site Name

S O U T H P O I N T C O V E A P A R T M E N T H O M E S

Street Address (NOT P.O. BOX)

1 4 4 0 E M P I R E B L V D

Side of Street

☒ North ☐ South ☐ East ☐ West

City/Town/Village (THAT ISSUES BUILDING PERMIT)

T O W N O F P E N F I E L D

State

N Y

Zip

1 4 5 8 0 -

County

M O N R O E

DEC Region

8

Name of Nearest Cross Street

W I L B U R T R A C T R O A D

Distance to Nearest Cross Street (Feet)

1 5 0 0

Project In Relation to Cross Street

☐ North ☐ South ☒ East ☐ West

Tax Map Numbers

Section-Block-Parcel

1 0 8 . 0 6 - 1 - 8 . 1

Tax Map Numbers

1 0 8 . 0 6 - 1 - 8 . 2

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)

2 9 5 7 6 2

Y Coordinates (Northing)

7 8 3 5 8 5

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

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**Post-Development
Future Land Use**

- ☐ SINGLE FAMILY HOME
☐ 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

Number of Lots

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***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**

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**Total Area To
Be Disturbed**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Existing Impervious
Area To Be Disturbed**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Future Impervious
Area**

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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

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 %

B

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 %

C

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 %

D

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 %

7. Is this a phased project? ☒ Yes ☐ No

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

Start Date

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End Date

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

Name

[illegible]

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

[illegible]

9b. How was the wetland identified?

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

[illegible]

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-10-001? ☐ Yes ☒ No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-10-001? ☐ 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?

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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?

[illegible]

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

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

[illegible]

Contact Name (Last, Space, First)

[illegible]

Mailing Address

[illegible]

City

[illegible]

State Zip

N	Y	1	4	6	1	4	-				
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Phone

5	8	5	-	3	2	5	-	1	0	0	0
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Fax

$$\boxed{5} \boxed{8} \boxed{5} - \boxed{7} \boxed{6} \boxed{0} - \boxed{8} \boxed{5} \boxed{8} \boxed{0}$$

Email

[illegible]

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-0-10-001. 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

[illegible]

MI

F

Last Name

[illegible]

Signature _____

John F. Camso, P.E.

Date _____

1	0	/	2	2	/	2	0	1	3
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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

Other

[illegible]

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

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

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)**

<u>RR Techniques (Area Reduction)</u>	<u>Total Contributing Area (acres)</u>	<u>Total Contributing Impervious Area (acres)</u>
<input type="radio"/> Conservation of Natural Areas (RR-1) ...	<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>	and/or <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Sheetflow to Riparian Buffers/Filters Strips (RR-2)	<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>	and/or <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input checked="" type="radio"/> Tree Planting/Tree Pit (RR-3)	<table border="1" style="display: inline-table; width: 60px; height: 20px; text-align: center;">0</table> . <table border="1" style="display: inline-table; width: 60px; height: 20px; text-align: center;">4 2 0</table>	and/or <table border="1" style="display: inline-table; width: 60px; height: 20px; text-align: center;">0</table> . <table border="1" style="display: inline-table; width: 60px; height: 20px; text-align: center;">4 2 0</table>
<input type="radio"/> Disconnection of Rooftop Runoff (RR-4) ..	<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>	and/or <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
 <u>RR Techniques (Volume Reduction)</u>		
<input checked="" type="radio"/> Vegetated Swale (RR-5)		<table border="1" style="display: inline-table; width: 60px; height: 20px; text-align: center;">1</table> . <table border="1" style="display: inline-table; width: 60px; height: 20px; text-align: center;">5 5 0</table>
<input type="radio"/> Rain Garden (RR-6)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Stormwater Planter (RR-7)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input checked="" type="radio"/> Rain Barrel/Cistern (RR-8)		<table border="1" style="display: inline-table; width: 60px; height: 20px; text-align: center;">3</table> . <table border="1" style="display: inline-table; width: 60px; height: 20px; text-align: center;">6 1 3</table>
<input type="radio"/> Porous Pavement (RR-9)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Green Roof (RR-10)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
 <u>Standard SMPs with RRv Capacity</u>		
<input type="radio"/> Infiltration Trench (I-1)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Infiltration Basin (I-2)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Dry Well (I-3)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Underground Infiltration System (I-4)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input checked="" type="radio"/> Bioretention (F-5)		<table border="1" style="display: inline-table; width: 60px; height: 20px; text-align: center;">5</table> . <table border="1" style="display: inline-table; width: 60px; height: 20px; text-align: center;">4 6 7</table>
<input type="radio"/> Dry Swale (O-1)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
 <u>Standard SMPs</u>		
<input type="radio"/> Micropool Extended Detention (P-1)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Wet Pond (P-2)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Wet Extended Detention (P-3)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Multiple Pond System (P-4)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Pocket Pond (P-5)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Surface Sand Filter (F-1)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Underground Sand Filter (F-2)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Perimeter Sand Filter (F-3)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Organic Filter (F-4)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Shallow Wetland (W-1)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Extended Detention Wetland (W-2)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Pond/Wetland System (W-3)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Pocket Wetland (W-4)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>
<input type="radio"/> Wet Swale (O-2)		<table border="1" style="display: inline-table; width: 60px; height: 20px;"></table> . <table border="1" style="display: inline-table; width: 60px; height: 20px;"></table>

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

<u>Alternative SMP</u>	<u>Total Contributing Impervious Area (acres)</u>																
<input type="radio"/> Hydrodynamic	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>																
<input type="radio"/> Wet Vault	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>																
<input type="radio"/> Media Filter	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>																
<input type="radio"/> Other <table border="1" style="display: inline-table; border-collapse: collapse; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>											<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>						

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

[illegible][illegible]

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

		0	.	7	0	6
--	--	---	---	---	---	---

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

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 •

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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.
If No, the sizing criteria has not been met. Contact Regional Office stormwater contact person to discuss next steps.

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.

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

. 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).

.

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, the sizing criteria has not been met. Contact Regional Office stormwater contact person to discuss next steps.

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

- 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

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

[illegible]

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.

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					
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[illegible]

☐ None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ☐ Yes ☒ No

If Yes, Indicate Size of Impact.					.
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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

with this NOI?

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	P							
---	---	---	--	--	--	--	--	--	--

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

D A V I D

MI**Print Last Name**

S P O L E T A

Owner/Operator Signature**Date**

10/22/2013

**Stormwater Pollution Prevention Plan –
Southpoint Cove Apartment Homes**

APPENDIX 16: NOTICE OF TERMINATION (BLANK)



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

(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized
under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR _____

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person:

4a. Telephone:

5. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. ☐ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP.
*Date final stabilization completed (month/year): _____

9b. ☐ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR _____
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. ☐ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? ☐ yes ☐ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed?
☐ yes ☐ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the
SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? ☐ yes ☐ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

- ☐ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.
- ☐ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).
- ☐ For post-construction stormwater management practices that are privately owned, the deed of record has been modified to include a deed covenant that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.
- ☐ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? ☐ yes ☐ no
(If Yes, complete section VI - "MS4 Acceptance" statement)

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:

Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the
SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

Stormwater Pollution Prevention Plan – Southpoint Cove Apartment Homes

APPENDIX 17: EROSION CONTROL DETAILS

Figure 5A.35
Stabilized Construction Entrance

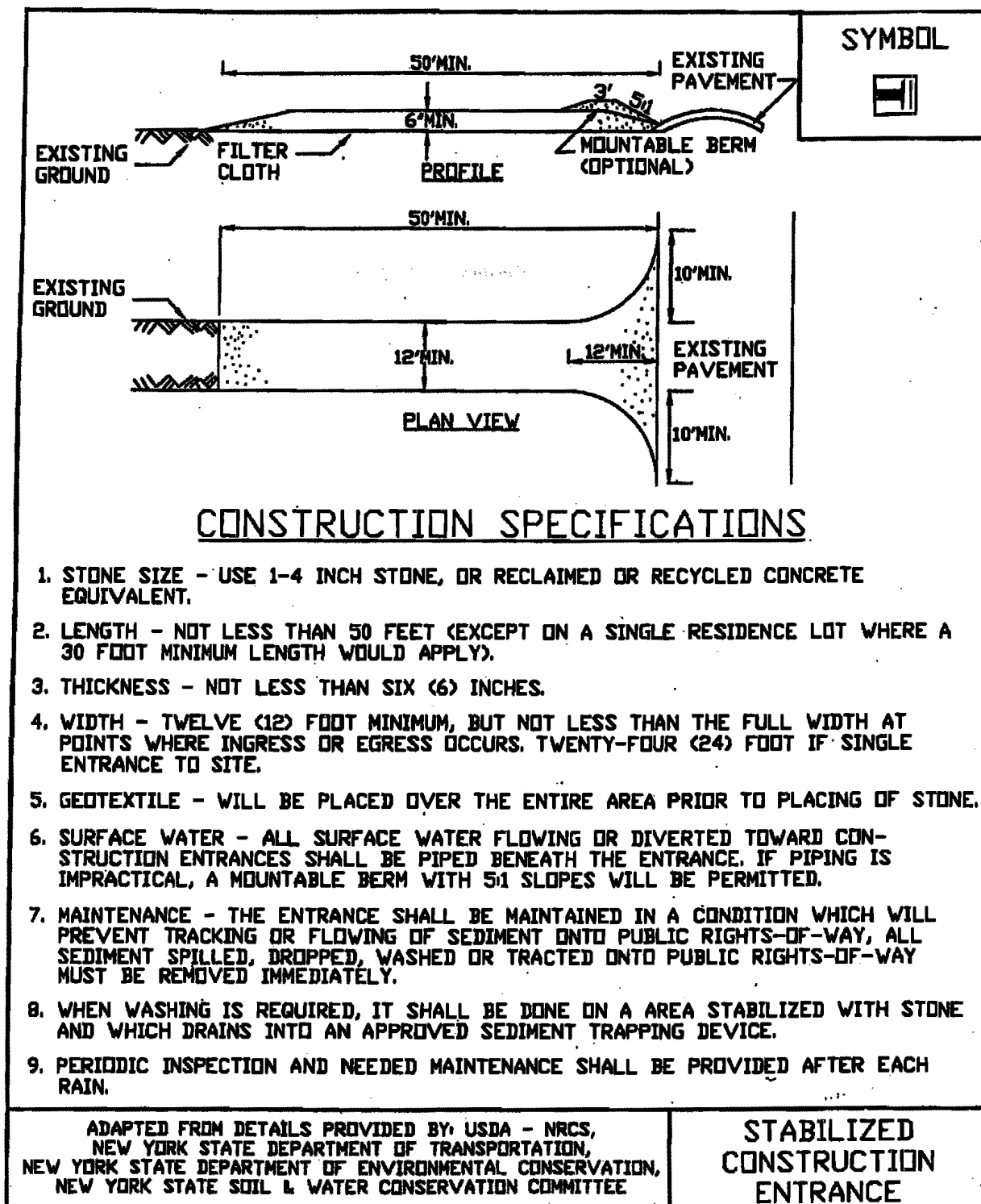


Figure 5A.8
Silt Fence

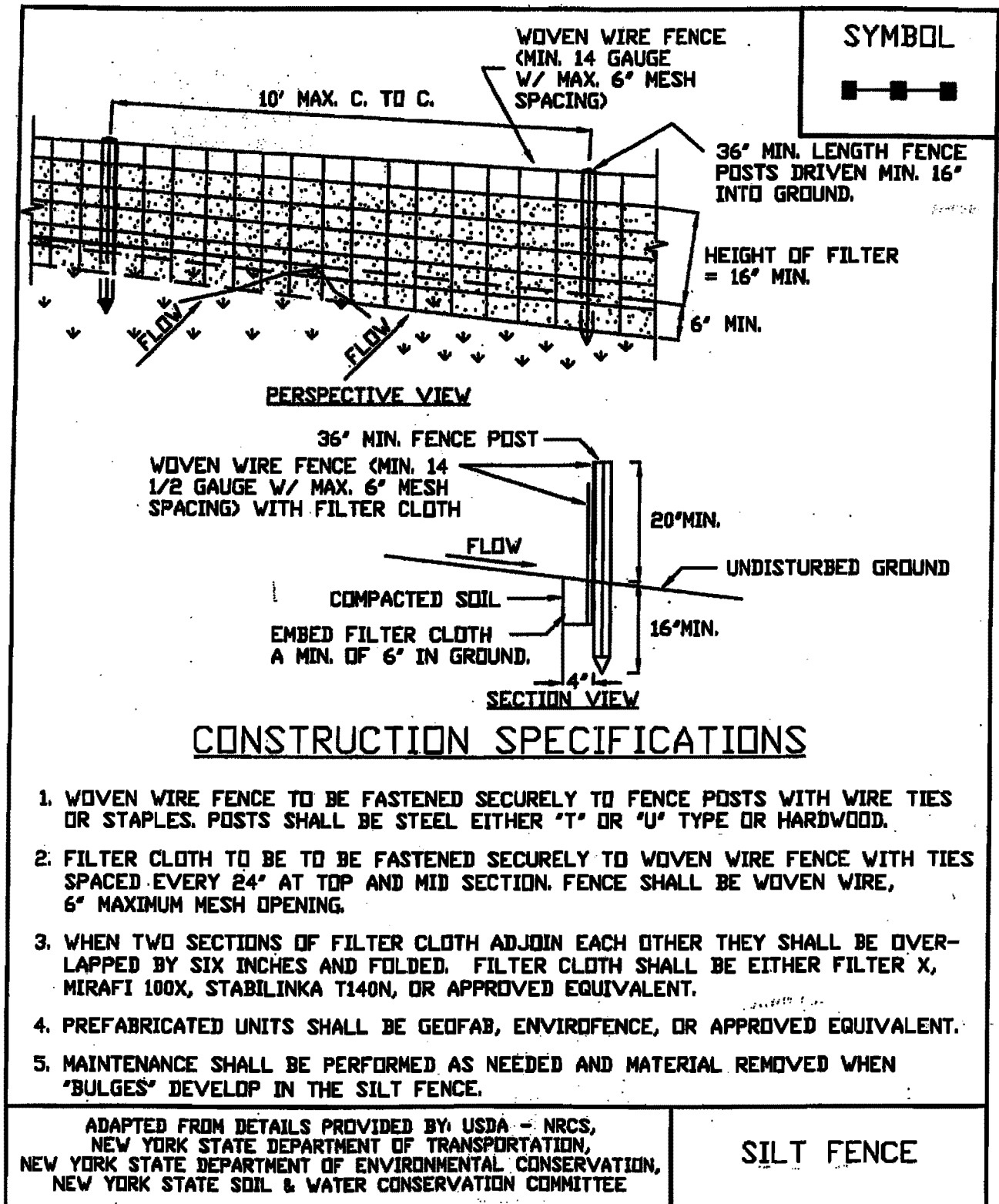


Figure 5A.12
Filter Fabric Drop Inlet Protection

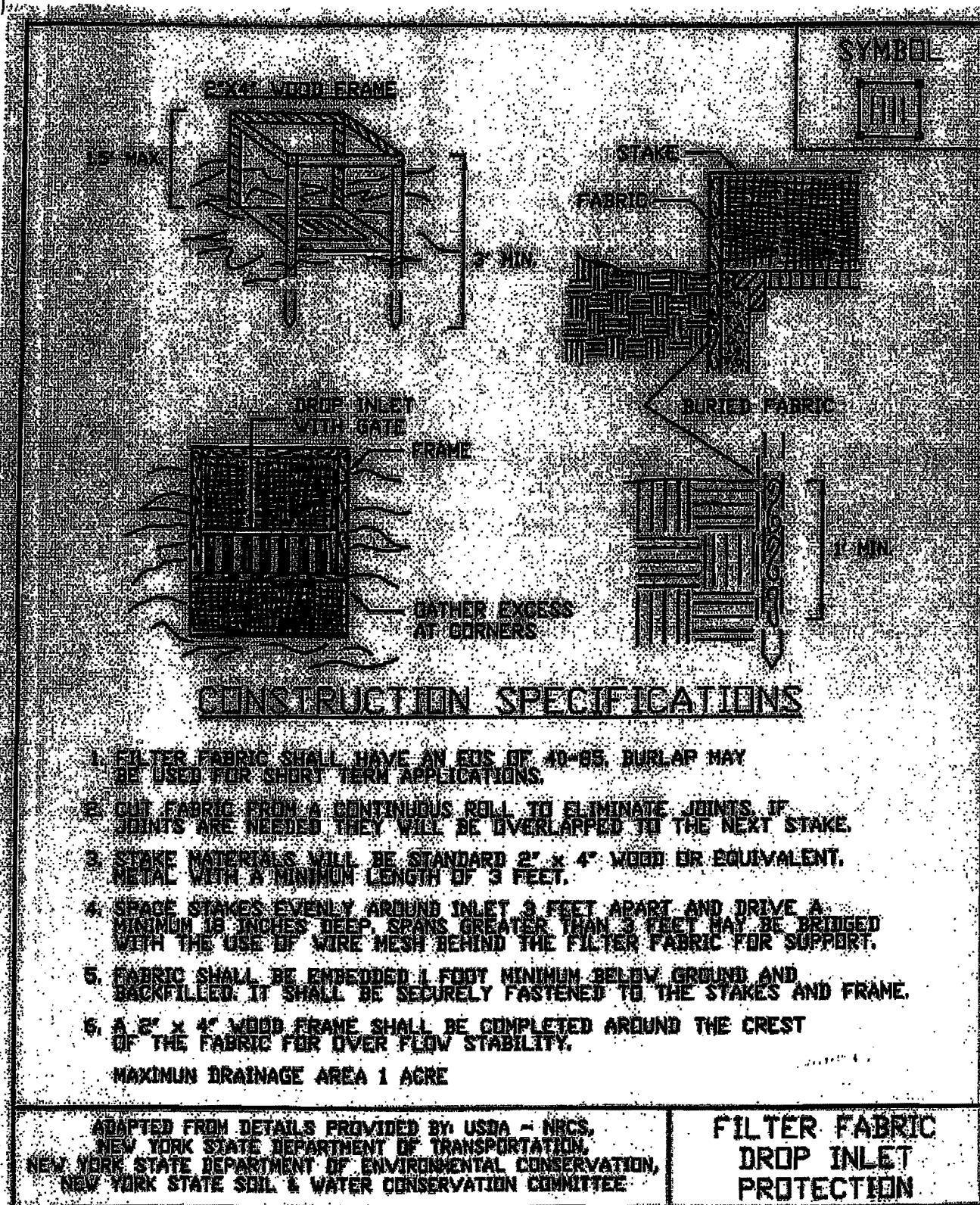


Figure 5A.9
Check Dam

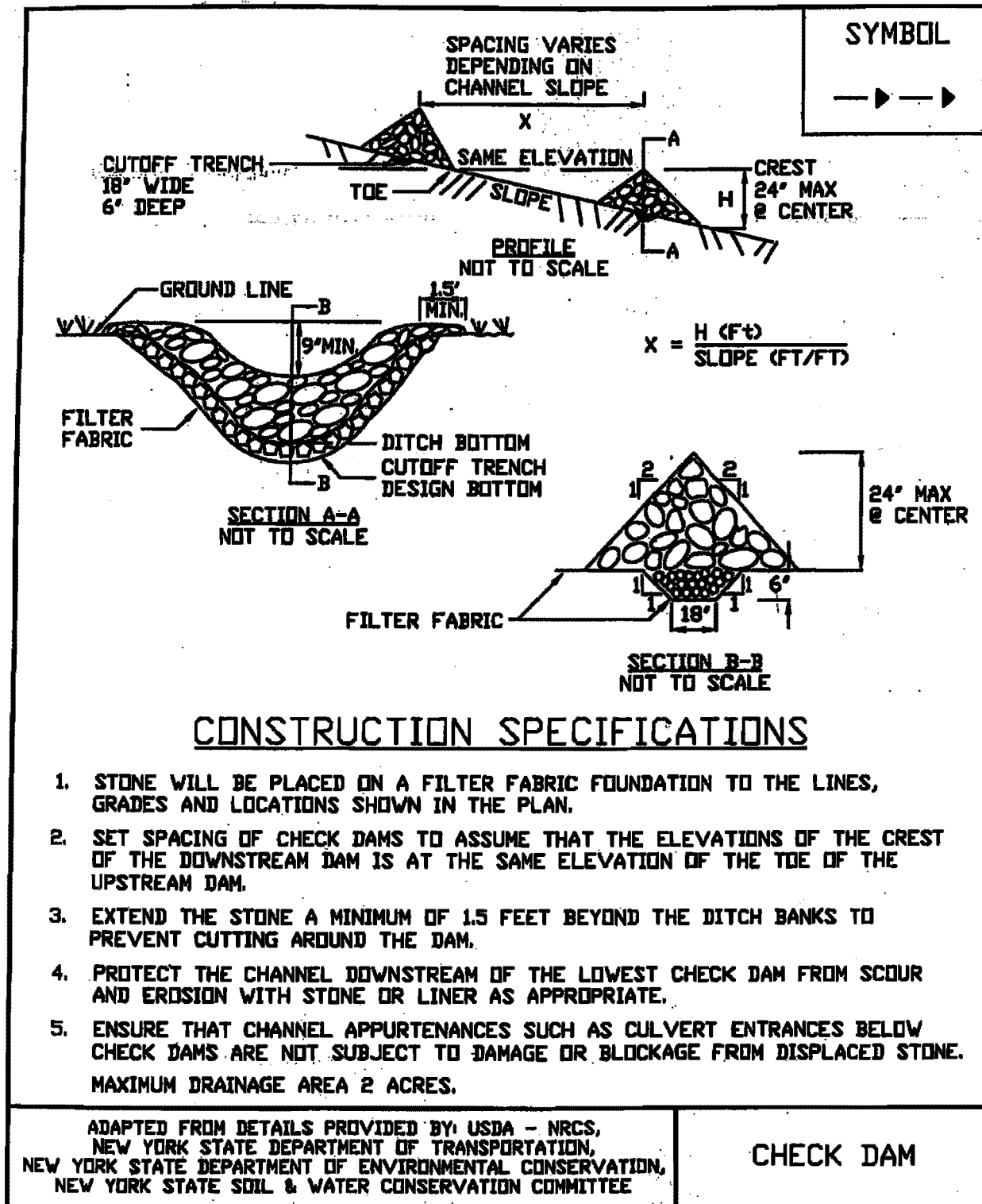


Figure 5A.9
Check Dam

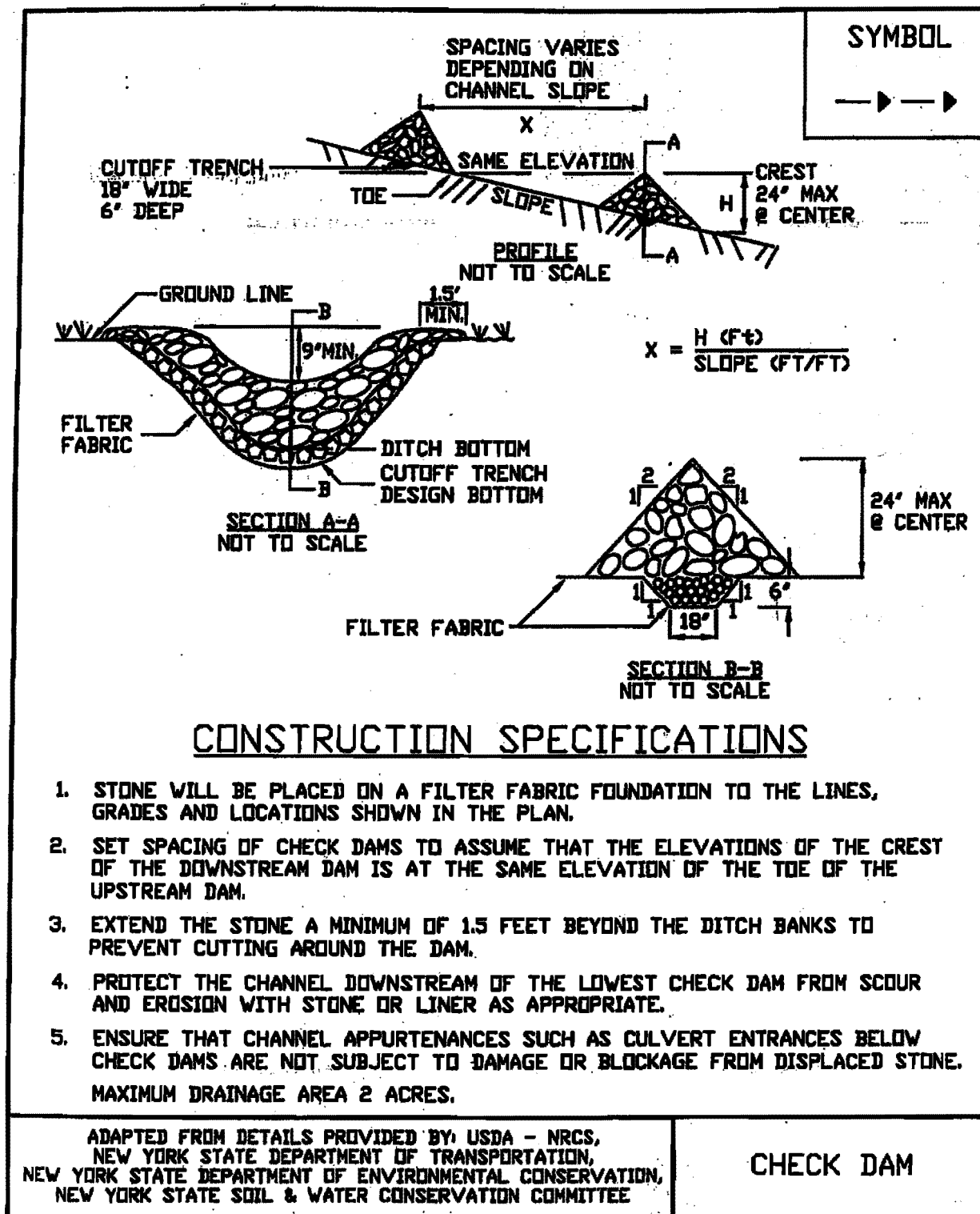


Figure 5A.8
Silt Fence

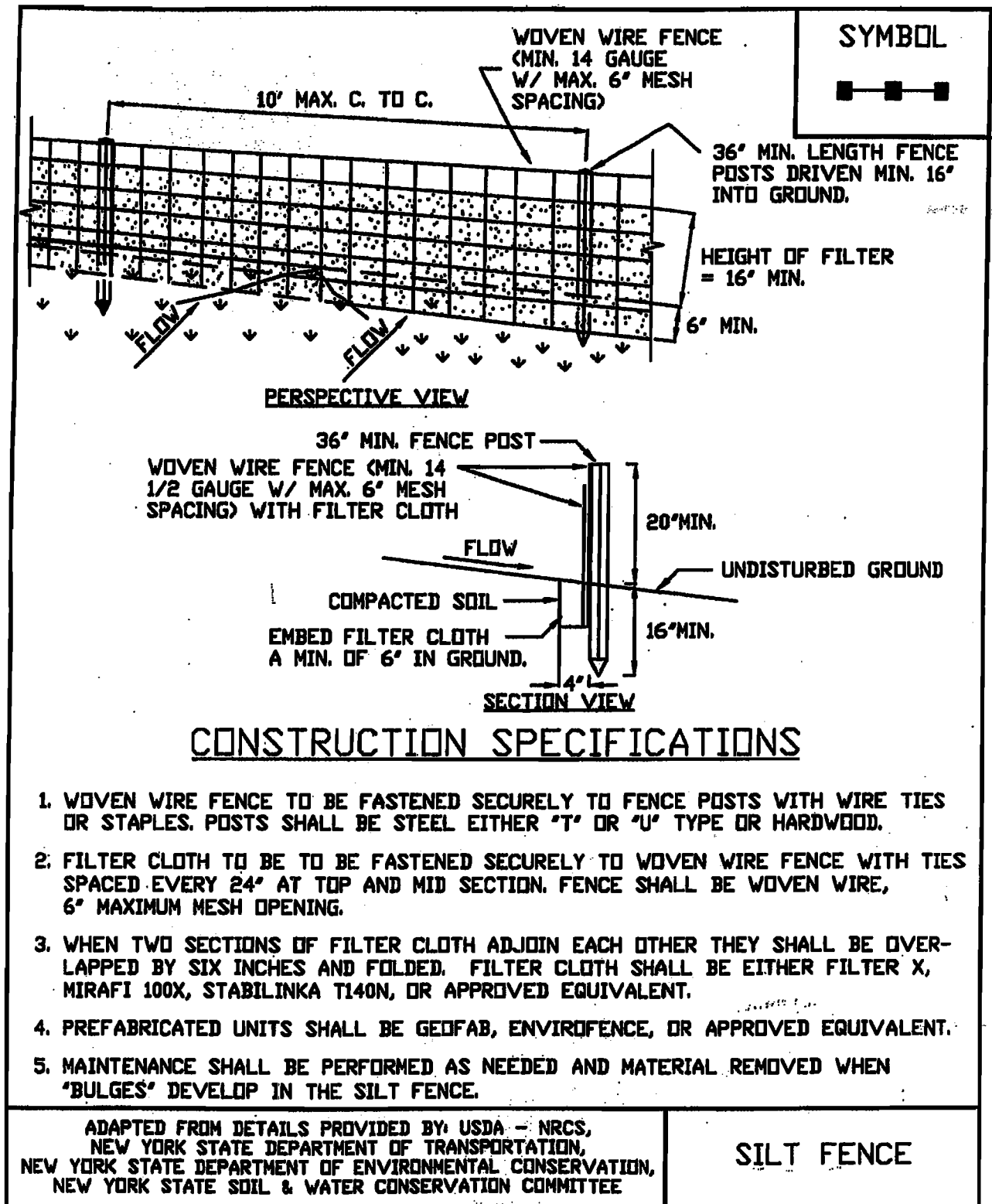


Figure 5B.14
Riprap Outlet Protection Detail (1)

