NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

RI/FS Scope of Work

OLD UPPER MOUNTAIN ROAD SITE
Site Number 932112

Routes 31 & 93
Lockport, New York

June 2009

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New York State Department of Environmental Conservation
Division of Environmental Remediation
June 2009

1.0 INVESTIGATION OBJECTIVES

The purpose of the Remedial Investigation at the Old Upper Mountain Road Site is to further define the nature and extent of contamination that was identified during the 2007 NYSDEC Site Investigation, and to further investigate the upstream source of surface water contamination that was also identified during the Site Investigation. The specific objectives of the Remedial Investigation are to:

- further define the nature and extent of contamination in fill material at the site;
- further define the nature and extent of contamination in surface water and sediment of Gulf Creek adjacent to the site;
- evaluate groundwater flow patterns across the site and assess bedrock groundwater quality;
- quantify the volume of fill material throughout the site;
- investigate the storm sewer that discharges into Gulf Creek near Old Upper Mountain Road to determine the origin of this sewer and the possible upstream source of surface water contamination;
- identify potential pathways for human exposure as part of a qualitative exposure assessment; and
- complete a NYSDEC Fish and Wildlife Impact Analysis through Step 2A.

These objectives will be determined through a grided soil boring/test pit program, and the analysis of soil, fill, surface water, groundwater and sediment samples collected during the Remedial Investigation. The

specific responsibilities of the Standby Contractor are given in Section 4.0 of this Scope of Work. The NYSDEC is the lead agency for this investigation. All field activities and deliverables will be completed in accordance with appropriate USEPA guidance documents and the NYSDEC DER-10 guidance document.

2.0 SITE DESCRIPTION

The Old Upper Mountain Road Site consists of seven parcels near the intersection of NY State Routes 31 and 93 in the Town of Lockport, Niagara County, New York (Figure 1). The total area of the site is approximately 7 acres in a mixed residential/commercial/industrial neighborhood. The site is bounded on the west by Old Upper Mountain Road, on the south and east by the Somerset Railroad, and on the north by private property and a ravine approximately eighty feet deep known as the Gulf (Figure 1). A narrow stream flows along the bottom of the ravine and forms one of the headwaters of the East Branch of Gulf Creek. Gulf Creek flows in a northerly direction from the site and eventually discharges into Eighteenmile Creek approximately one mile to the north. The south and east portions of the site are located on a relatively flat-lying plateau (Figure 1).

3.0 SITE HISTORY

The Old Upper Mountain Road Site was reportedly operated as a municipal dump by the City of Lockport from 1921 through the 1950's. Access to the landfill at that time was from a viaduct under the railroad track just north of Old Upper Mountain Road (now Otto Place Road; Figure 1). In later years, a gate was placed at the viaduct to control unauthorized dumping. Garbage and other wastes were apparently dumped at the landfill, burned, and then pushed into the ravine. Clientele reportedly included Harrison Radiator, VanDeMark Chemical, Milward Alloys, Vanchlor, the Upson Company, and the Cotton Batting Company. Different areas of the dump were reportedly assigned to different companies. Neighboring residents often referred to the Harrison Dump, Upson Dump, etc.

Between June and October 2007 the NYSDEC conducted a Site Investigation at the site to obtain information sufficient to determine if the Old Upper Mountain Road Site should be included in the Registry of Inactive Hazardous Waste Sites, and if so, what the appropriate site classification should be. The specific objectives of this investigation were to (1) evaluate the site to determine if hazardous wastes were present, and if present, to determine if there was a consequential amount, and (2) determine the degree to which historical waste disposal has contaminated environmental media at and near the site. These objectives were determined through the analysis of surface soil, fill, surface water and sediment samples collected during the Site Investigation. The locations of the soil borings completed during the investigation are shown on Figure 2, while the locations of the samples collected for chemical analysis are shown on Figure 3.

The Site Investigation revealed that consequential amounts of hazardous wastes (D008 - lead) are present at this site (Figure 4; Table 1). These hazardous wastes have adversely impacted surface water (Table 2) and sediment (Table 3) in Gulf Creek adjacent to the site. In addition, the presence of exposed ash throughout the site may also pose a public health risk due to the high concentrations of contaminants in this fill material (Table 4). As a result, the Site Investigation Report recommended that the site be listed in the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites in New York State as a Class 2 site. This listing was completed in 2008, and the Old Upper Mountain Site is now a Class 2 site.

4.0 SCOPE OF WORK

To meet the Remedial Investigation objectives, a phased investigation will be completed at the Old Upper Mountain Road Site. Activities to be completed during the Remedial Investigation include the following: (1) a detailed property survey, (2) a grided soil boring/test pit program, (3) monitoring well installation, (4) a storm sewer investigation, and (5) collection of environmental samples for chemical analysis. These activities are described in the following sections in the general order in which they should be completed.

The Department will task a Standby Contractor to complete the following activities as part of the Remedial Investigation:

- subcontract with a brush clearing company to provide and mobilize equipment to clear vegetation at the site for access by the drill rig/excavator and to provide line-of-site for the survey crew. Large trees will not be removed. Brush shall be pushed into piles to facilitate ease of movement around the site. Miscellaneous garbage throughout the site shall also be pushed into piles;

- subcontract with a surveyor licensed in the State of New York to generate a detailed site map, including topography, and to lay out and stake the sampling grid across the site;

- subcontract with a drilling company to provide and mobilize to the site a drill rig, direct-push unit and/or excavator to complete approximately 65 soil borings/test pits to the top of bedrock (ranges from 12.7 feet to greater than 36.0 feet depth);

- subcontract with a drilling company to provide and mobilize to the site a rotary drill rig to install six (6) bedrock monitoring wells with protective casings and locking caps;

- subcontract with a laboratory to provide chemical analysis of the samples collected during the Remedial Investigation;

- provide a geologist to complete stratigraphic logs and well construction diagrams during the soil boring/test pit program and well installation activities;

- provide a technician during the soil boring/test pit program to collect samples, complete the appropriate paper work, and transport the samples and paper work to the analytical laboratory;

- provide a technician and appropriate equipment to develop, purge and sample the six bedrock monitoring wells installed during the Remedial Investigation; and

- draft a Remedial Investigation Report using data from both the Site Investigation and Remedial Investigation, and complete a detailed evaluation of remedial alternatives in a Feasibility Study Report. The RI and FS reports will be completed in accordance with appropriate USEPA guidance documents and the NYSDEC DER-10 guidance document.

Specific details of the work to be completed during the Remedial Investigation are described in the following sections.

4.1 Detailed Property Survey and Mapping

A detailed map of the Old Upper Mountain Road Site does not exist. As a result, the first task to be completed following the clearing and grubbing of the site is a detailed survey of the general area shown in Figure 2. The Standby Contractor shall retain a surveyor licensed in the State of New York to complete the survey and base map, which should include all structures at and near the site, all property boundaries, the edge of the ravine, Gulf Creek, railroad tracks, nearby roadways and utilities (manholes, fire hydrants, utility poles, etc). The base map shall be developed in AutoCAD format (version 2005 or earlier). The property boundaries shall be staked to provide quick visual identification during the completion of the Remedial Investigation field activities.

Following the completion of the base map, the surveyor shall establish, through surveying, a 50 foot by 50 foot grid across the entire Old Upper Mountain Road Site with each grid node staked for easy visual identification. This grid, shown on Figure 5, shall parallel Old Upper Mountain Road. Ground surface

elevation shall be determined at each grid node. Following this task, a detailed topographic map of the site and immediate vicinity shall be developed in AutoCAD format (version 2005 or earlier) with contours plotted at appropriate intervals.

Following the completion of the Remedial Investigation field activities, the surveyor shall be tasked to survey the following:

- horizontal locations and ground surface elevations of all soil borings/test pits completed during the Remedial Investigation that were not completed on the previously surveyed grid nodes, if any;

- horizontal locations and ground surface elevations of all samples collected during the Remedial Investigation that were not collected on the previously surveyed grid nodes;

- horizontal locations and ground surface elevations of any historic sample or boring locations that can still be identified; and

- horizontal locations and vertical elevations of all monitoring wells. This shall include the ground surface elevation and the elevation of the inner PVC riser of each well.

All soil boring, test pit, sample and well locations shall be added to the base map.

Vertical control shall be established to the nearest ±0.1 foot for all ground surface elevations. Monitoring well riser elevations shall be reported to the nearest ±0.01 foot. Elevations shall be determined relative to the North American Vertical Datum of 1988 (NAVD 88), with reference made to an existing monument in the vicinity of the site. Horizontal coordinates shall be given in the State Plane East Zone (feet), North American Datum (NAD) of 1983 to an accuracy of ±0.5 foot.

At the completion of all surveying activities, the surveyor shall submit the final map(s) to the NYSDEC and Standby Contractor in both hard copy and electronic formats (AutoCAD version 2005 or earlier).

4.2 Surface Soil Samples

Following the layout of the sampling grid across the Old Upper Mountain Road Site, thirteen (13)

surface soil samples shall be collected from throughout the site to augment the 2007 Site Investigation database for the purpose of evaluating potential direct contact exposures. The approximate locations of these samples are shown on Figure 6. All samples are located on grid nodes. The surface soil samples will be collected from 0" - 2" depth following the removal of the vegetative cover, if present, and shall be collected prior to implementing the soil boring/test pit program to avoid cross contamination.

The surface soil samples shall be collected by the Standby Contractor using standard sampling procedures and placed into laboratory supplied, pre-cleaned sample jars. The jars shall be labeled with a unique sample identification code, packed in a cooler with ice, and shipped under chain-of-custody control to an analytical laboratory. All samples shall be analyzed for Target Compound List (TCL) semivolatile organic compounds, TCL pesticides, TCL PCBs and Target Analyte List (TAL) metals. In addition, a portion of each sample shall be archived by the laboratory for possible TCLP metals analysis following an evaluation of the total metals results.

4.3 Soil Boring/Test Pit Program

One of the objectives of the Remedial Investigation is to quantify the volume of fill material throughout the Old Upper Mountain Road Site. To accomplish this objective, one soil boring or test pit (≈65 locations total) will be completed at each grid node on the 50 foot by 50 foot grid established across the site. The approximate locations of the borings and test pits that are easily accessible are shown on Figure 5, and will be staked by the licensed surveyor when the 50 foot by 50 foot grid is established across the site. Based upon visual and/or olfactory evidence, and at the direction of the NYSDEC field representative, additional soil borings or test pits may be completed to help delineate the areal extent of fill material encountered during the investigation.

4.3.1 *Drilling/Excavation Methods*

The direct-push technique is the most cost and time effective method of completing the soil borings shown on Figure 5. Fill thicknesses at these locations is expected to be more than 15 feet, with maximum thicknesses greater than 36 feet. For the deeper soil borings, alternative drilling and sampling methods may be required. It is anticipated that a track mounted direct-push vehicle will be required for the majority of the soil boring investigation. Proposed soil borings that fall on the face of the ravine where access with a drill rig is not possible shall be completed by utilizing a drop hammer, tripod system or other appropriate sampling system.

Locations at which the depth to native soils and/or bedrock is expected to be less than 15 feet bgs will

be completed as test pits. The locations of the proposed test pits are shown on Figure 5. An excavator capable of reaching 15 feet in depth will be required.

4.3.2 *Sample Collection and Analysis*

For the soil borings, continuous soil cores shall be collected with dedicated acetate liners in a Geoprobe MacroCore sampling system, or equivalent. The Drilling Subcontractor shall be responsible for opening these liners. Each soil boring shall be advanced to bedrock for the purpose of geologic logging and subsurface soil and/or fill collection. Soil cores shall be screened for organic vapors using a photoionization detector (PID) supplied by the Standby Contractor.

Test pits will also be advanced to bedrock for the purpose of geologic logging and subsurface soil and/or fill collection. Excavated soil shall be screened for organic vapors using a photoionization detector (PID) supplied by the Standby Contractor.

At least one sample shall be collected from each soil boring and test pit from the most contaminated interval (based upon instrument readings, visible staining, odors, etc.) for chemical analysis. Additional samples will be collected as discussed below or if multiple or distinct zones of gross contamination are encountered. Samples shall be collected by the Standby Contractor using standard sampling procedures and placed into laboratory supplied, pre-cleaned sample jars. The jars shall be labeled with a unique sample identification code, packed in a cooler with ice, and shipped under chain-of-custody control to an analytical laboratory. All samples shall be analyzed for TAL metals, with up to thirty (30) samples analyzed for TCL semivolatile organic compounds, TCL pesticides and TCL PCBs. Based upon PID screening results up to fifteen (15) samples shall also be analyzed for TCL volatile organic compounds. In addition, a portion of each sample shall be archived by the laboratory for possible TCLP metals analysis following an evaluation of the total metals results.

During the 2007 Site Investigation the fill material at the Old Upper Mountain Road Site was found to be layered. In an effort to better understand the distribution of metals in the fill material with depth, nine discrete samples from soil boring SB-2 (Figure 3) were submitted to Severn Trent Laboratories for chemical analysis of RCRA metals. Figures 7A thru F graphically show the results from these analyses for the six metals (arsenic, barium, cadmium, chromium, lead and mercury) detected in every sample. These figures reveal that concentrations vary with depth for each metal, but not always in a consistent manner between metals. During the Remedial Investigation up to five (5) soil borings completed at the site where fill thicknesses are anticipated to exceed 25 feet will be sampled continuously as described above with discrete

samples collected every four feet. These samples shall be analyzed for arsenic, barium, cadmium, chromium, lead and mercury to further evaluate the distribution of metals in the fill material with depth. In addition, a portion of each sample shall be archived by the laboratory for possible TCLP metals analysis following an evaluation of the total metals results.

4.3.3 *Completion of the Soil Boring/Test Pit Program*

Upon completion of each soil boring or test pit, the Drilling Subcontractor shall backfill each soil boring with excess soil from the samples, bentonite pellets and/or grout, and each test pit with excavated soils. To the extent possible, the site shall be restored to conditions similar to those encountered prior to the start of the investigation. All excess material from the samples shall be spread on the ground surface near each boring or test pit, unless gross contamination is encountered; these samples shall be containerized in 55-gallon drums for later disposal. The Drilling Subcontractor shall supply the drums if needed.

4.3.4 *Geologic Logging*

All geologic logging shall be completed by a geologist employed by the Standby Contractor. At the completion of the Remedial Investigation field activities, the Standby Contractor shall computer generate these logs and include them in the Remedial Investigation Report.

4.4 Bedrock Monitoring Wells

One of the objectives of the Remedial Investigation is to evaluate groundwater flow patterns across the site and to assess bedrock groundwater quality. To accomplish this objective, six (6) bedrock monitoring wells shall be installed during the investigation at the approximate locations shown on Figure 8. These locations, however, may be modified during the investigation based upon site conditions and access restrictions. The Drilling Subcontractor shall be responsible for identifying and avoiding all underground utility lines in the areas where monitoring wells are to be installed.

4.4.1 *Well Construction*

The bedrock monitoring wells shall be drilled by advancing 6¼-inch diameter augers with continuous split spoon sampling of the fill/overburden until bedrock is encountered. At this point the driller shall re-tool the drill rig and core the upper 2 feet of bedrock with an HQ core barrel (2.5-inch core diameter with a 3.8-inch hole diameter). The core hole shall then be reamed to 6 inches in diameter using a tricone roller bit to create a rock-socket. A 4-inch-diameter steel casing shall be lowered into the rock-socket and grouted into place. After allowing the grout to cure for at least 24 hours, bedrock shall be continuously cored through the casing with an HQ core barrel until groundwater is encountered, estimated to be approximately 40 feet below

ground surface.

All wells shall be constructed of 2" diameter threaded/flush joint Schedule 40 PVC screen (10 slot), threaded bottom plugs, and flush-threaded PVC riser pipe. The wells shall be constructed with either 5-feet or 10-feet long screens depending upon the saturated thickness of the water bearing zone encountered. An appropriately graded silica sand filter pack shall be placed around the screen and extend to approximately 2' above the screen. A 2' thick seal of bentonite pellets shall be placed above the filter pack, followed by a cement/5% bentonite grout mixture to grade. The bentonite pellets shall be allowed to hydrate prior to placing the cement/bentonite grout. The wells shall be completed by mounting a locking cap to the casing.

4.4.2 *Geologic Logging and Well Construction Diagrams*

All geologic logging shall be completed by a geologist employed by the Standby Contractor. The geologist shall also be responsible for completing well construction diagrams. At the completion of the Remedial Investigation field activities, the Standby Contractor shall computer generate these logs and diagrams, and include them in the Remedial Investigation Report.

4.4.3 *Well Development*

Each monitoring well shall be developed, to the extent practicable, by bailing or pumping. A minimum of 10 well volumes shall be removed during well development, with the purged water monitored for pH, temperature, conductivity and turbidity. These data will be recorded on Well Development Logs. If it appears that turbidity, pH, and conductivity are stabilizing and will benefit from further development, additional well volumes shall be purged. All well development activities shall be completed by the Standby Contractor using standard well development procedures. At the completion of the Remedial Investigation field activities, the Standby Contractor shall computer generate the Well Development Logs and include them in the Remedial Investigation Report.

4.4.4 *Sample Collection and Analysis*

Groundwater samples shall be collected from each monitoring well installed during the Remedial Investigation. Prior to sampling, the wells shall be purged of at least three (3) well volumes, with the purged water monitored for pH, temperature, conductivity and turbidity. If it appears that turbidity, pH, and conductivity are stabilizing and will benefit from further purging, additional well volumes shall be purged. If the turbidity is greater than 50 NTU after purging, the well shall be sampled for all parameters except metals, which shall be collected within 24 hours after the completion of purging. This technique is intended to reduce the amount of suspended sediment in the metals sample. All purging activities shall be completed

by the Standby Contractor using standard well purging procedures. At the completion of the Remedial Investigation field activities, the Standby Contractor shall computer generate the Well Purge Logs and include them in the Remedial Investigation Report.

The groundwater samples shall be collected by the Standby Contractor using standard groundwater sampling procedures and placed into laboratory supplied, pre-cleaned sample jars. The jars shall be labeled with a unique sample identification code, packed in a cooler with ice, and shipped under chain-of-custody control to an analytical laboratory. All samples shall be analyzed for TCL volatile organic compounds, TCL semivolatile organic compounds, TCL pesticides, TCL PCBs, TAL metals and the major anions (chloride, sulfate and alkalinity).

4.5 Storm Sewer Investigation and Surface Water Sampling

Following the identification of volatile organic compounds and pesticides in the upstream surface water sample collected during the 2007 Site Investigation, attempts were made to identify the source of this contamination. Both the City and Town of Lockport were contacted in an attempt to identify the origin of the storm sewer that discharges into Gulf Creek near Old Upper Mountain Road. Unfortunately, this sewer was not identified on any City or Town utility maps. Delphi Thermal, the owner of the property between Route 93 and Old Upper Mountain Road (Figure 1), was also contacted regarding this sewer. Delphi completed a detailed review of the company's utility maps, but could not identify a sewer in this area of the Delphi property. As a result, inspection of laterals and dye testing of the sewer will be required to identify the origin of the sewer and the possible upstream source of surface water contamination.

The first step in identifying the origin of the storm sewer that discharges into Gulf Creek is to remove the manhole covers on the Delphi property between Route 93 and Old Upper Mountain Road, and evaluate each manhole for the presence of laterals. The number, depth and direction of each lateral will be logged, while the location of each manhole will be measured with a handheld GPS unit or by the licensed surveyor. Based upon this inspection, a search for additional manhole covers will be made, with the manholes inspected as described above. Once the furthest manholes are identified, dye testing will take place with the intervening manholes and the discharge point observed for the presence of dye. Following the completion of this investigation, a map of the storm sewer will be prepared by the Standby Contractor using AutoCAD format (version 2005 or earlier).

Four (4) surface water samples will be collected during the Remedial Investigation to evaluate seasonal variations in chemistry, if any, and to compare to the surface water results obtained during the 2007

Site Investigation. The approximate locations of these samples are shown on Figure 9. These samples will be collected by the Standby Contractor using standard surface water sampling procedures and placed into laboratory supplied, pre-cleaned sample jars. The jars shall be labeled with a unique sample identification code, packed in a cooler with ice, and shipped under chain-of-custody control to an analytical laboratory. All samples will be analyzed for TCL volatile organic compounds, TCL semivolatile organic compounds, TCL pesticides, TCL PCBs and TAL metals.

4.6 Sediment Sampling and Analysis

Only two sediment samples were collected during the Site Investigation so the nature and extent of contaminated sediment is unknown. During the Remedial Investigation up to twenty (20) sediment samples from ten (10) locations will collected from Gulf Creek adjacent to the Upper Mountain Road Site. The locations of these samples will be determined in the field based upon access limitations. One sample from each location will be collected from 0" - 2" depth to evaluate exposure to a direct contact with creek sediments and light flooding events, while one sample from each location will be collected from 2" - 6" depth to characterize the total "reservoir" of what may be suspended during a large flood event. These samples will be collected by the Standby Contractor using standard sediment sampling procedures and placed into laboratory supplied, pre-cleaned sample jars. The jars shall be labeled with a unique sample identification code, packed in a cooler with ice, and shipped under chain-of-custody control to an analytical laboratory. All samples shall be analyzed for TAL metals, with ten (10) samples analyzed for TCL semivolatile organic compounds, TCL pesticides, TCL PCBs and TOC. All ten (10) shallow sediment samples (0" - 2" depth) will also be analyzed for TCL volatile organic compounds to further evaluate the extent of VOC contamination documented in sediment during the 2007 Site Investigation. Based upon PID screening results up to five (5) deep sediment samples (2" - 6" depth) shall also be analyzed for TCL volatile organic compounds. In addition, a portion of each sample shall be archived by the laboratory for possible TCLP metals analysis following an evaluation of the total metals results.

4.7 Health & Safety

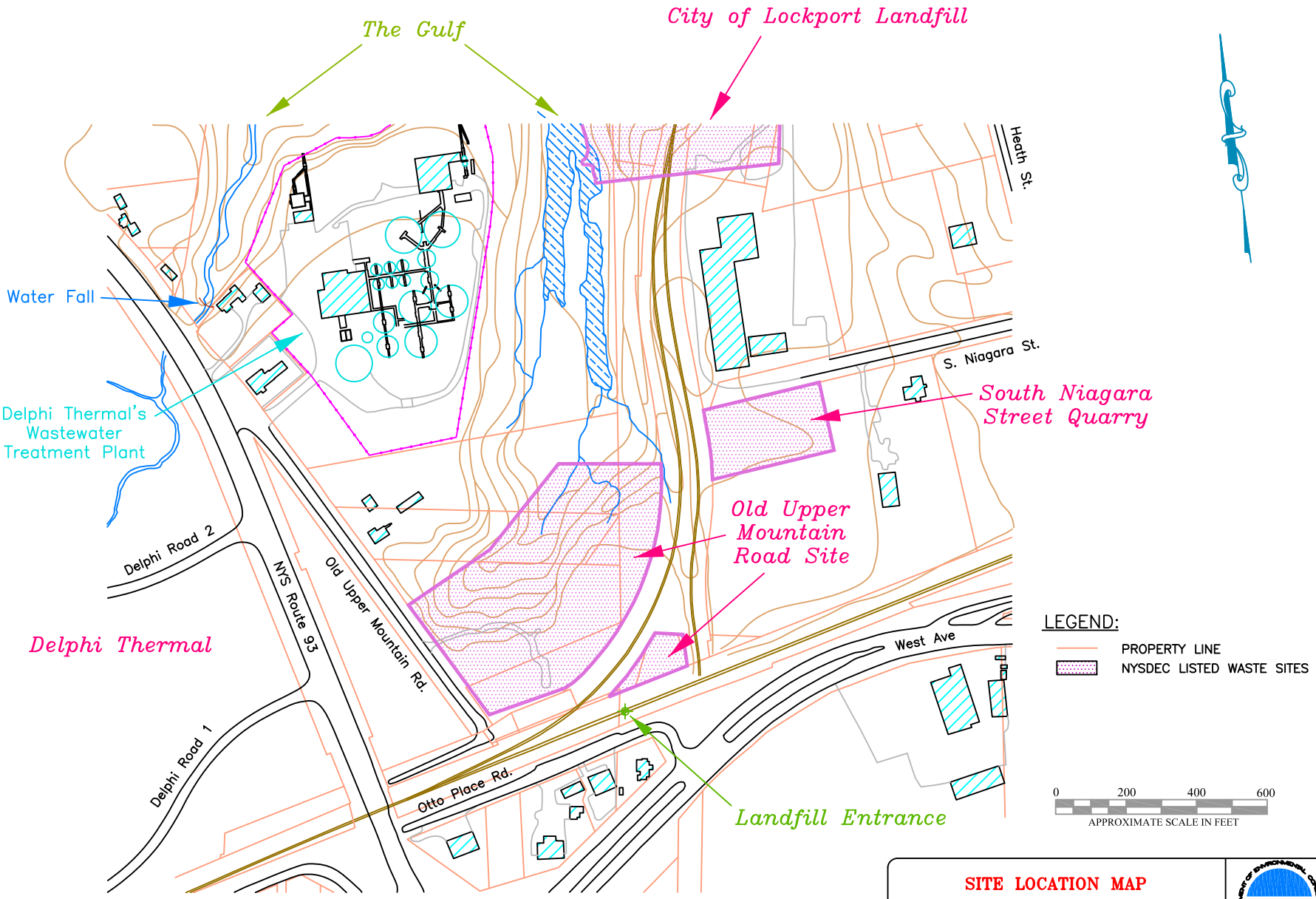
It is anticipated that all field work can be performed in Level D personal protective equipment with Level C backup. All field work shall be conducted in accordance with the Standby Contractor's standard Health and Safety Plan. The Standby Contractor shall provide appropriate personal protective equipment (PPE) suitable for working in and around contaminated liquid, fill, sediment and soil.

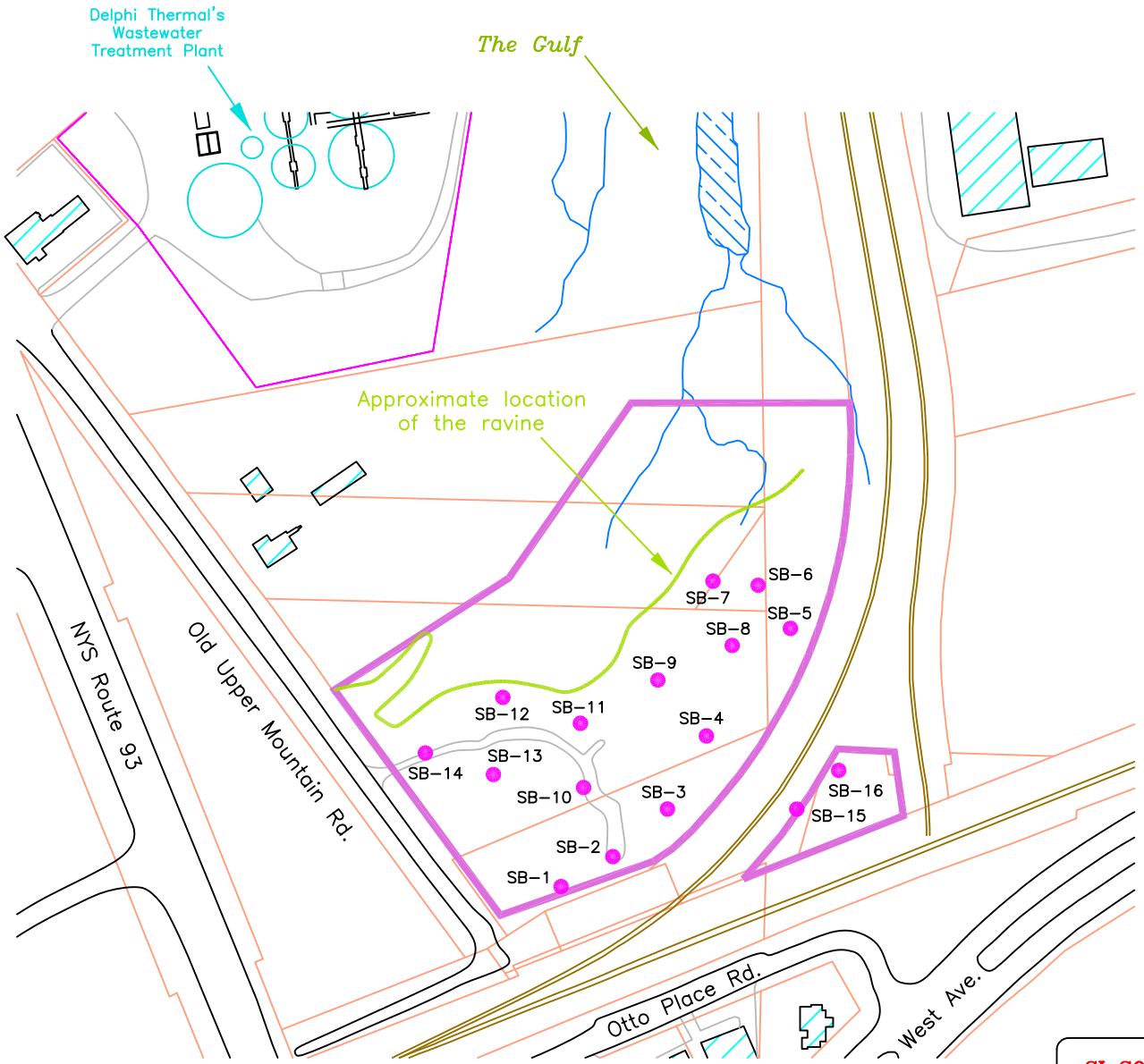
The Standby Contractor shall be responsible for clearly delineating the work area to prevent unauthorized access. During all intrusive activities, continuous air monitoring shall be conducted for organic

vapors by the Standby Contractor to determine the necessity to upgrade personal protective equipment. The Generic NYSDOH Community Air Monitoring Plan shall be implemented during all intrusive activities.

4.8 Decontamination

The direct-push vehicle, drill rig, excavator and sampling equipment shall be decontaminated prior to the implementation of any field activities. Reusable sampling equipment shall also be decontaminated between sampling locations. Decontamination wastes, used PPE, sampling equipment and garbage generated during the project shall be bagged and removed from the site at the end of each work day. Construction of a decon pad will not be required for this project.


The Gulf
City of Lockport Landfill
Heath St.
Water Fall
Delphi Thermal's Wastewater Treatment Plant
S. Niagara St.
South Niagara Street Quarry
Old Upper Mountain Road Site
Delphi Road 2
NYS Route 93
Old Upper Mountain Rd.
Delphi Thermal
West Ave
Delphi Road 1
Otto Place Rd.
Landfill Entrance
LEGEND:
PROPERTY LINE
NYSDEC LISTED WASTE SITES
0 200 400 600
APPROXIMATE SCALE IN FEET
SITE LOCATION MAP
DIVISION OF ENVIRONMENTAL REMEDIATION
DATE: 04/03/07
DRAWING: Upper Mtn Road.dwg
PROJECT:
UPPER MOUNTAIN ROAD SITE
FIGURE 1



LEGEND:

● SOIL BORING

0 100 200 300

APPROXIMATE SCALE IN FEET

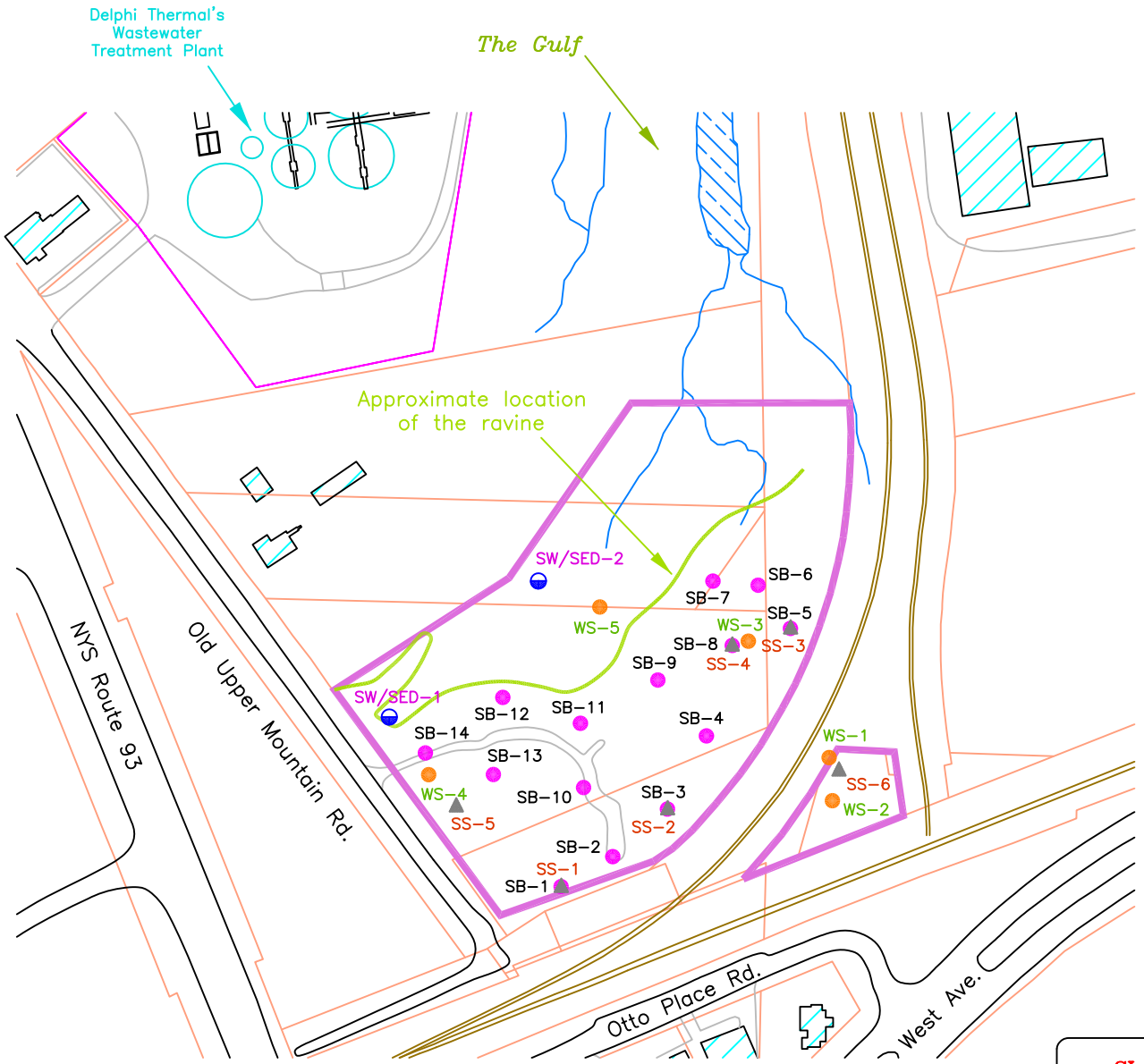
SI SOIL BORING LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 04/15/09 DRAWING: Upper Mtn Road.dwg

PROJECT: UPPER MOUNTAIN ROAD SITE

FIGURE 2



LEGEND:

- WASTE SAMPLE FROM PIT
- WASTE SAMPLE FROM SOIL BORING
- SURFACE WATER/SEDIMENT SAMPLE
- SURFACE SOIL SAMPLE

0 100 200 300

APPROXIMATE SCALE IN FEET

SI SAMPLE LOCATION MAP

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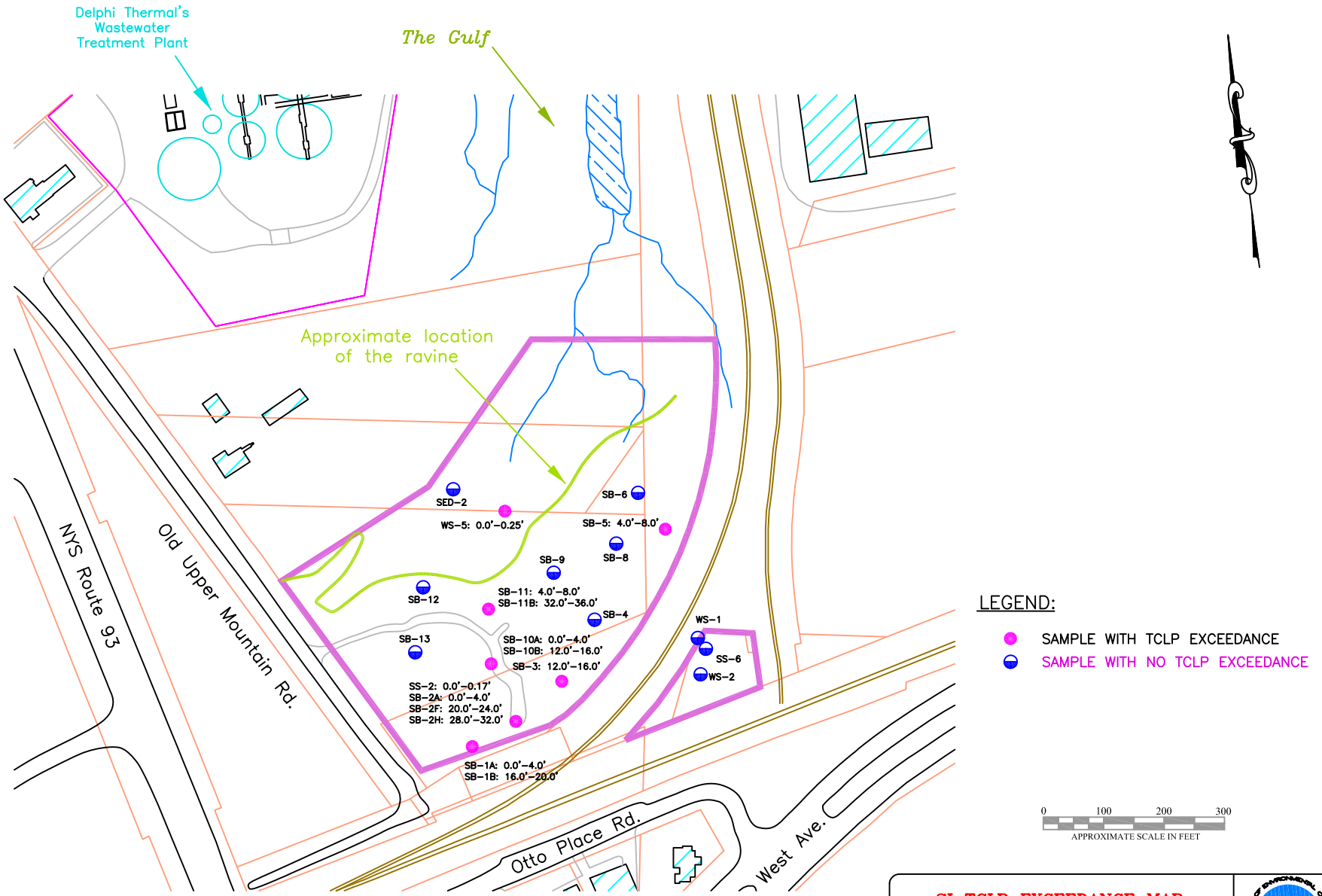
FIGURE 3



SI TCLP EXCEEDANCE MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

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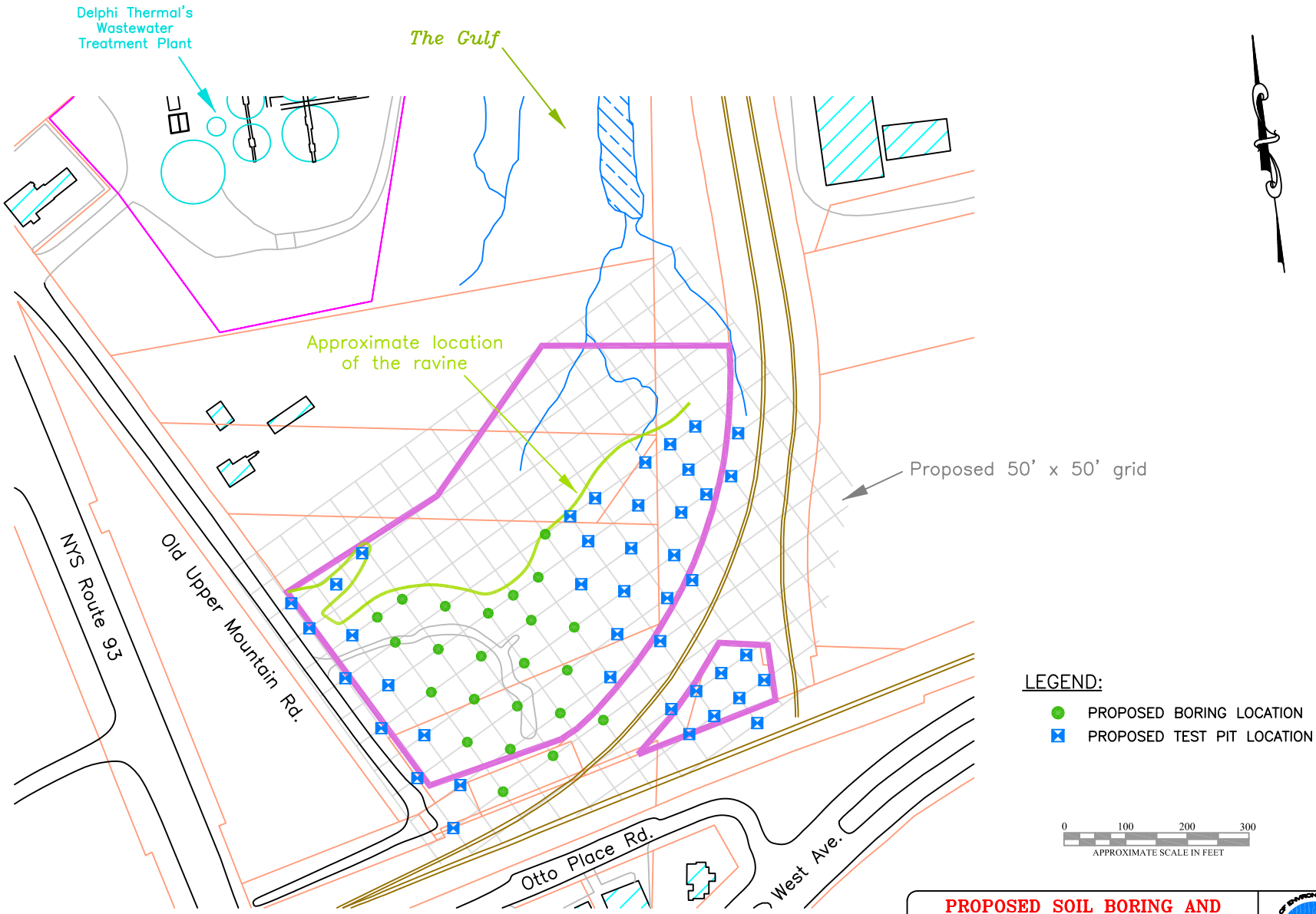
PROJECT: UPPER MOUNTAIN ROAD SITE

FIGURE 4



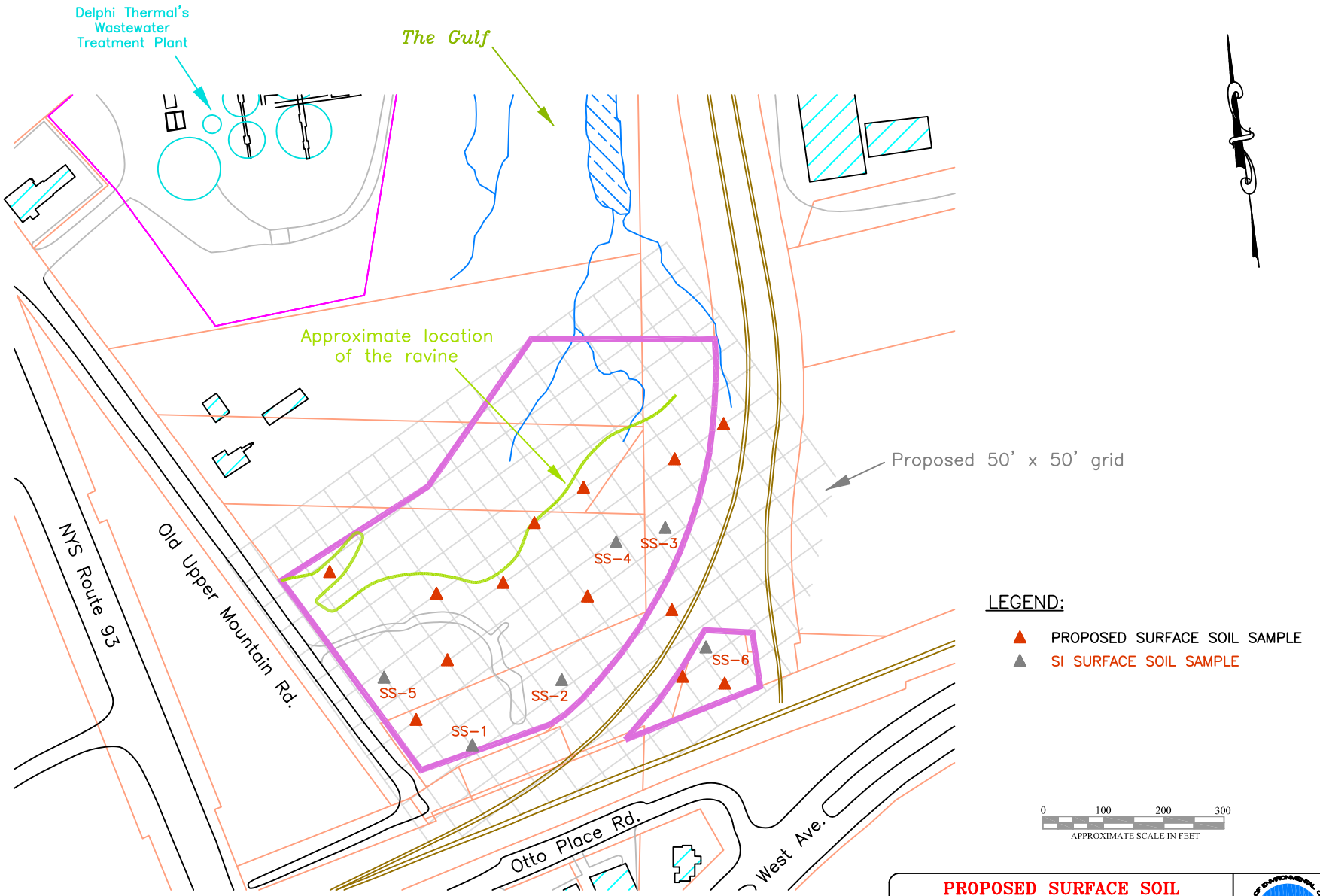
PROPOSED SOIL BORING AND TEST PIT LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 04/15/09 DRAWING: Upper Mtn Road.dwg

PROJECT: UPPER MOUNTAIN ROAD SITE

FIGURE 5



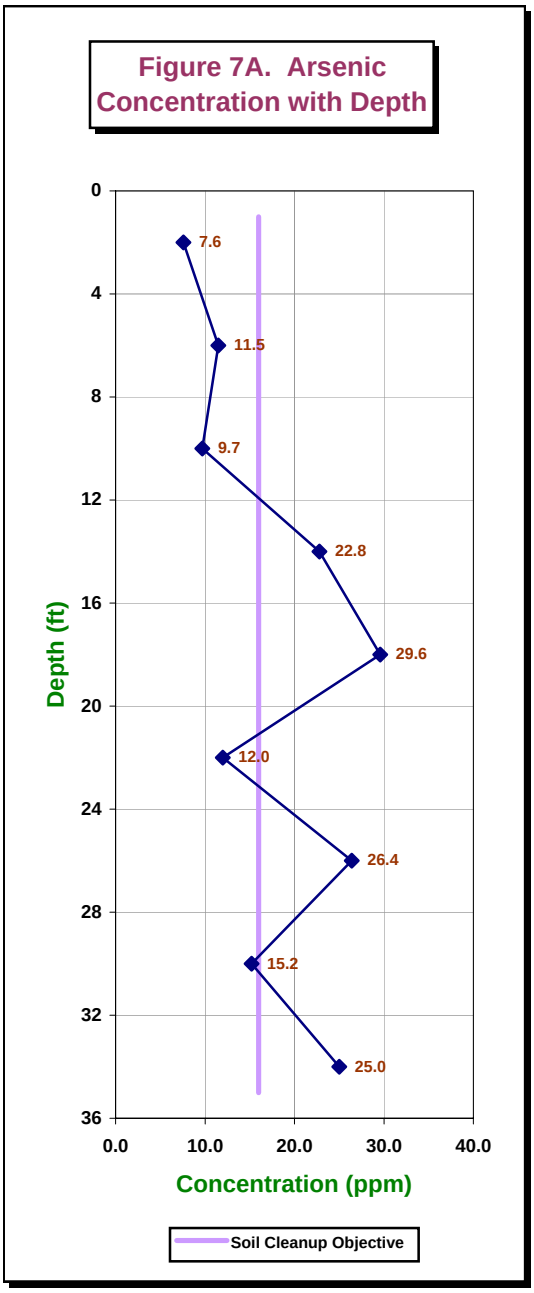
PROPOSED SURFACE SOIL LOCATION MAP

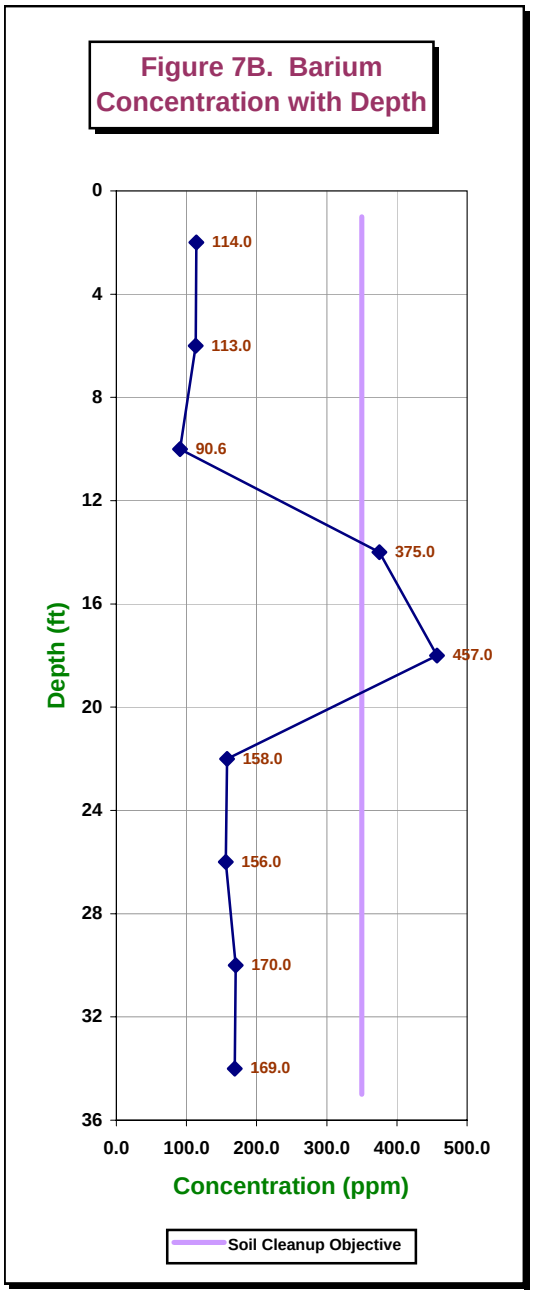
DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 04/15/09 DRAWING: Upper Mtn Road.dwg

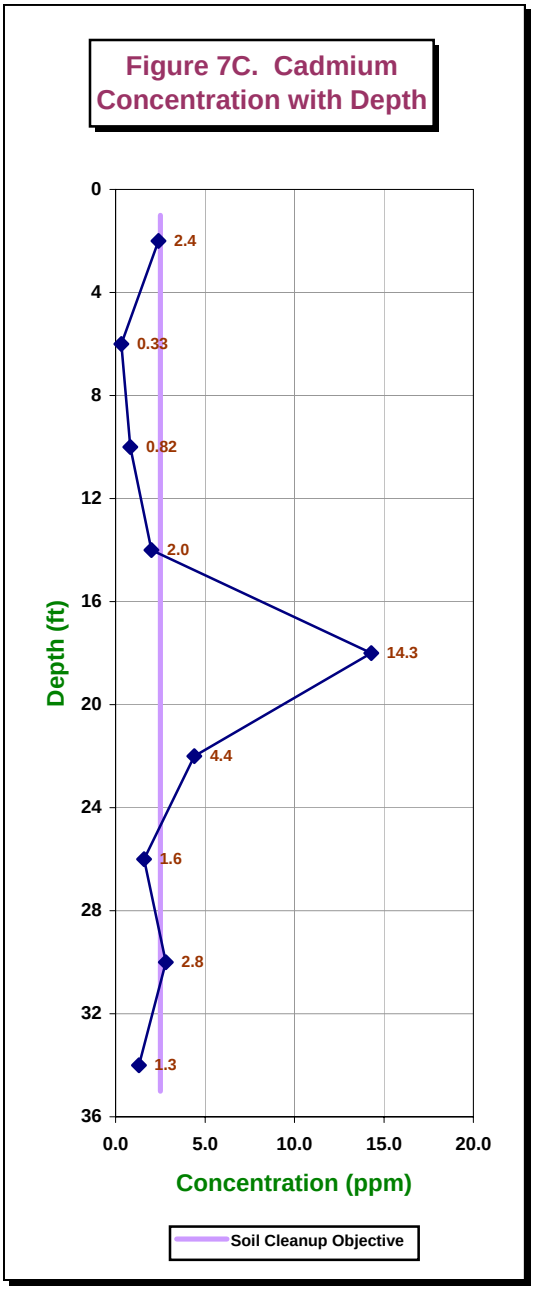
PROJECT: UPPER MOUNTAIN ROAD SITE

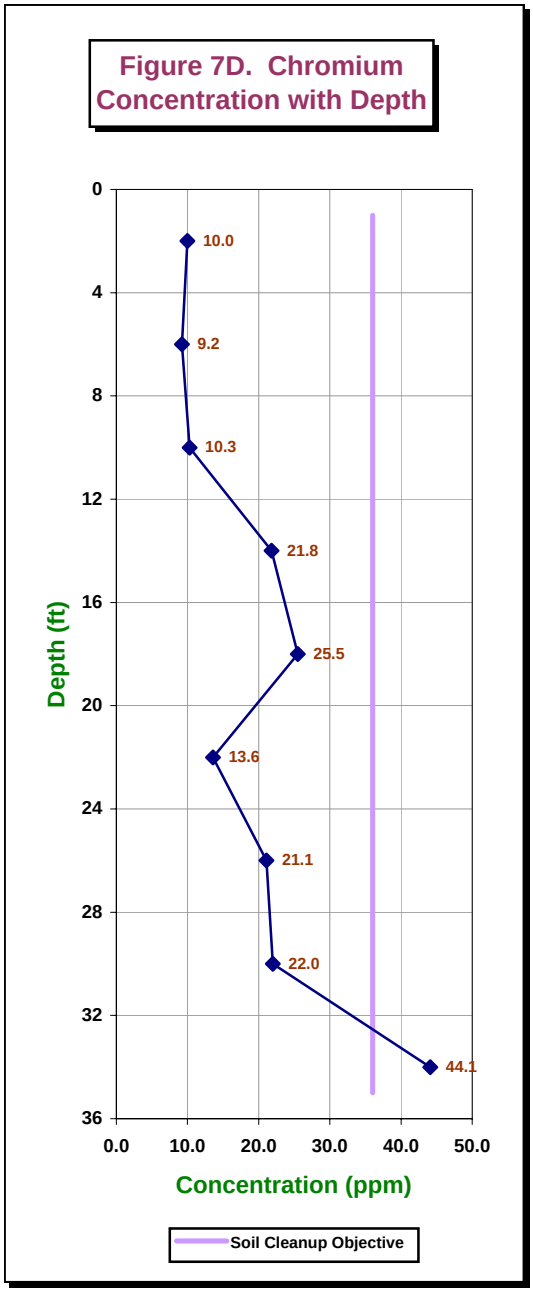
FIGURE 6



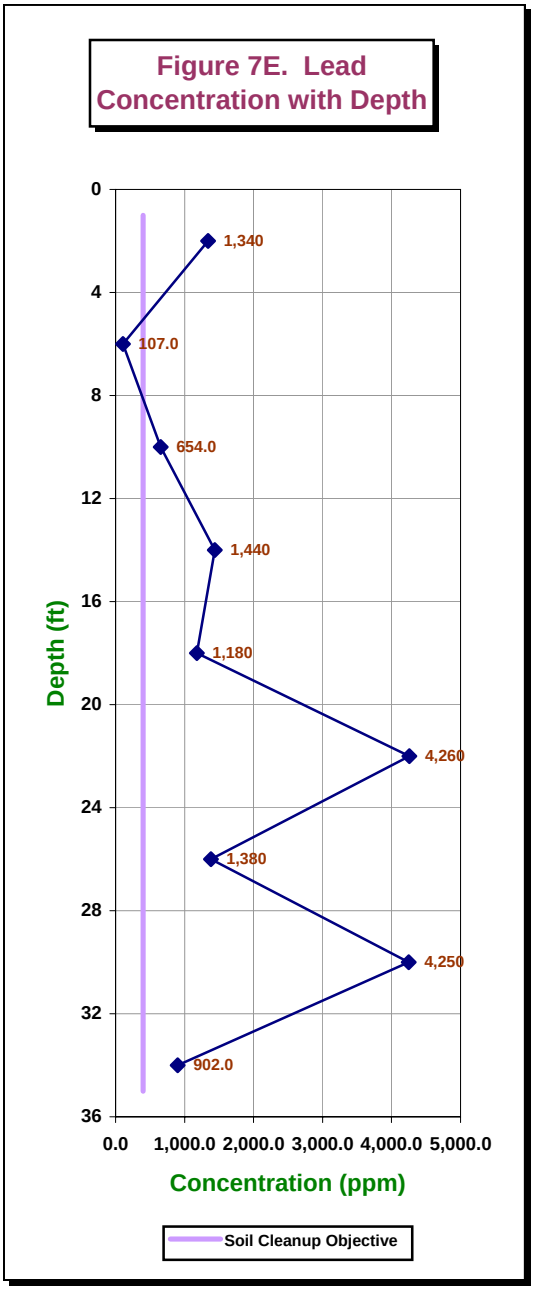


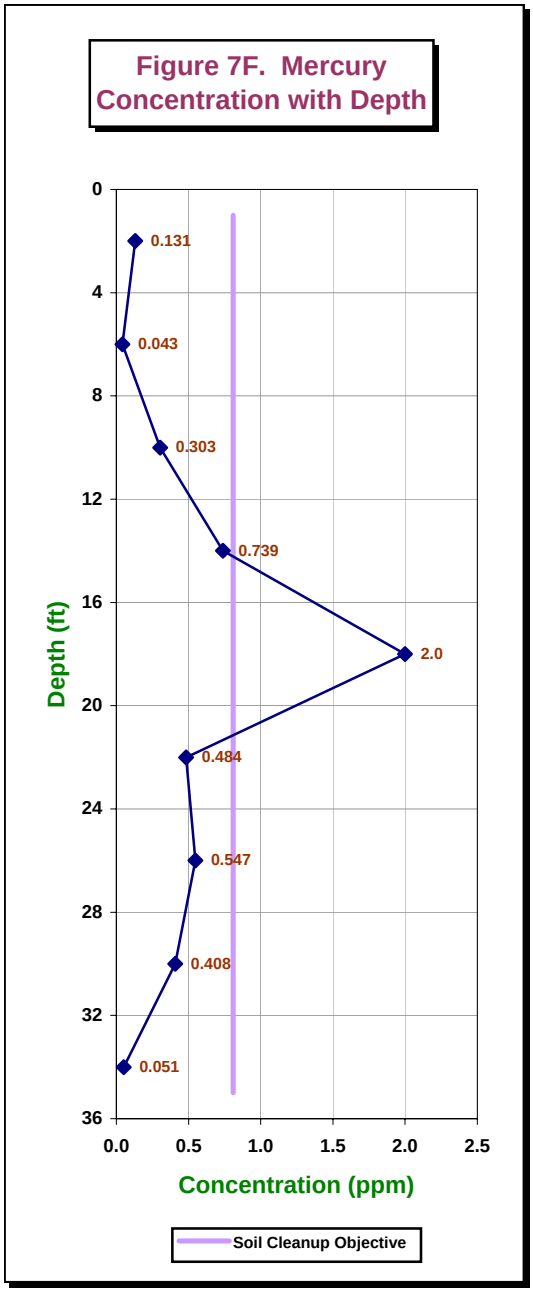
Figures 7A & B. Arsenic and barium concentrations with depth in soil boring SB-2. The results are plotted at the midpoint of the zone sampled (e.g., a sample collected from 28.0 to 32.0 feet depth is plotted at 32.0 feet).



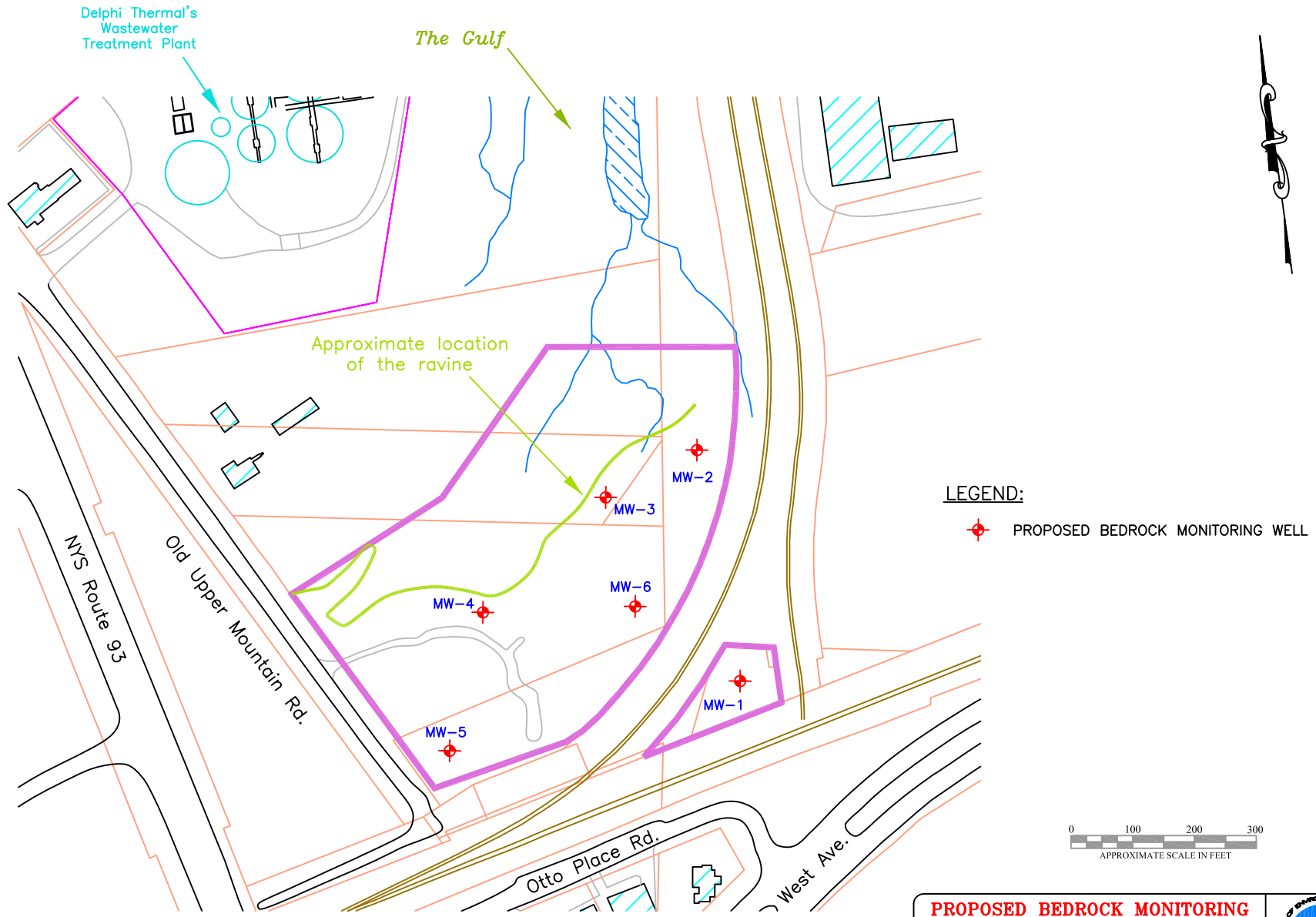


Figures 7C & D. Cadmium and chromium concentrations with depth in soil boring SB-2. The results are again plotted at the midpoint of the zone sampled.





Figures 7E & F. Lead and mercury concentrations with depth in soil boring SB-2. The results are again plotted at the midpoint of the zone sampled.



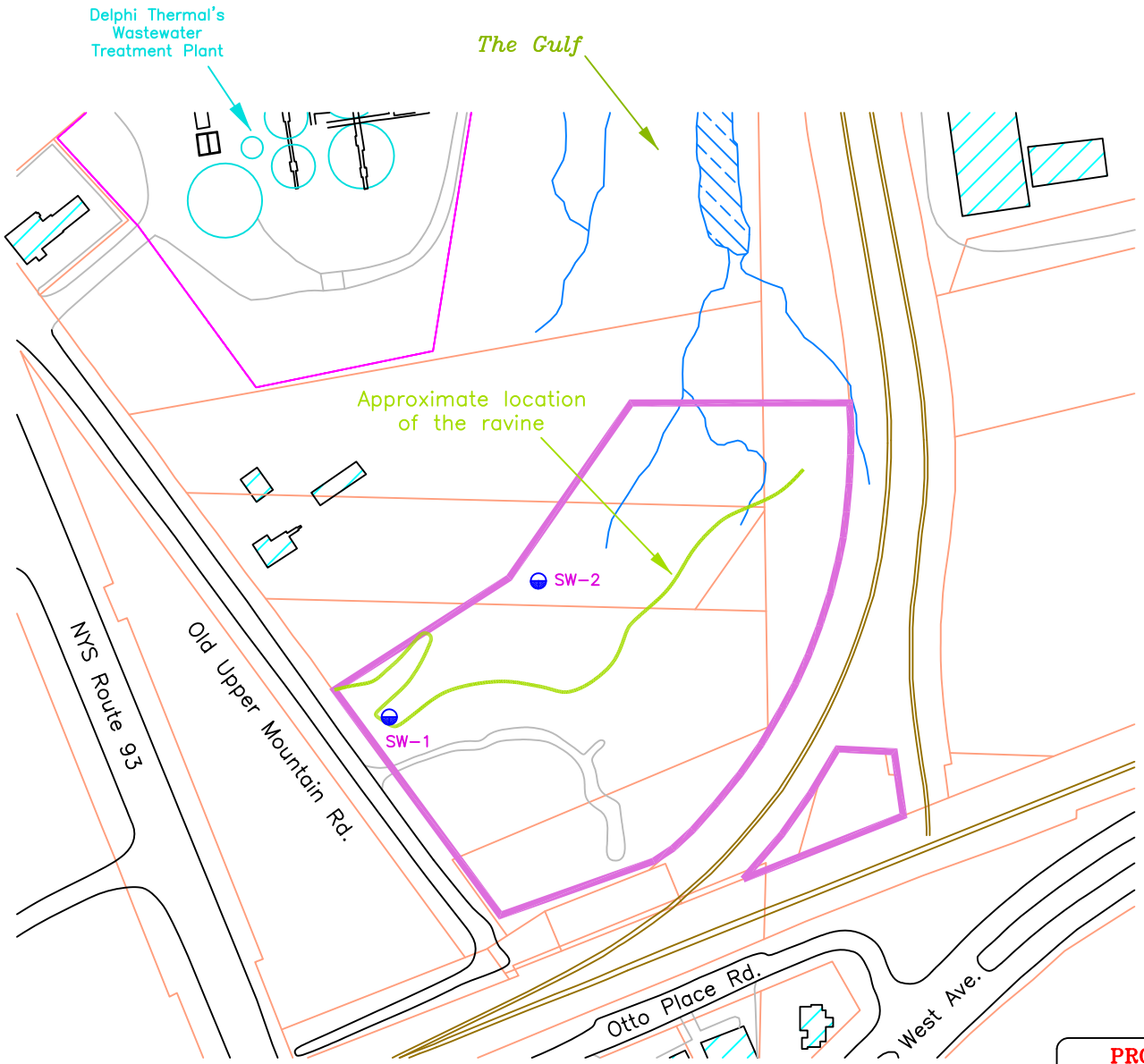
PROPOSED BEDROCK MONITORING WELL LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 04/15/09 DRAWING: Upper Mtn Road.dwg

PROJECT: UPPER MOUNTAIN ROAD SITE

FIGURE 8



LEGEND:

PROPOSED SURFACE WATER SAMPLE

0 100 200 300

APPROXIMATE SCALE IN FEET

PROPOSED SURFACE WATER SAMPLE LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 04/15/09 DRAWING: Upper Mtn Road.dwg

PROJECT: UPPER MOUNTAIN ROAD SITE

FIGURE 9

Table 1.
TCLP Results for Samples Collected from the Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number Date Sampled Sample Depth Sample Type	Regulatory Level *	SS-1 06/07/07 0.0' - 0.17' Peat	SS-2 06/07/07 0.0' - 0.17' Topsoil & Fill	SS-6 06/08/07 0.0' - 0.17' Ash	WS-1 06/08/07 1.8' - 2.0' Ash	WS-2 06/08/07 1.5' Ash	WS-5 06/13/07 0.0' - 0.25' Ash
Inorganic Compounds (mg/L or ppm)							
Arsenic	5.0	NA	NA	NA	NA	NA	NA
Barium	100.0	″	″	″	″	″	″
Cadmium	1.0	″	0.597	″	″	″	″
Chromium	5.0	″	0.0135	″	″	″	″
Lead	5.0	0.809	**272.0**	0.948	0.639	2.51	**15.8**
Mercury	0.2	NA	NA	NA	NA	NA	NA
Selenium	1.0	″	″	″	″	″	″
Silver	5.0	″	″	″	″	″	″

***** **6 NYCRR Part 371: Identification and Listing of Hazardous Wastes, NYSDEC, 1995.**
NA **Not analyzed.**
Samples W3 and W4 were also analyzed for TCLP volatiles, semivolatiles and pesticides. None of these compounds were detected.
Exceedances are shaded.

Table 1 (Continued).
TCLP Results for Samples Collected from the Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number Date Sampled Sample Depth Sample Type	Regulatory Level *	SB-1A 09/25/07 0.0' - 4.0' Ash	SB-1B 09/25/07 16.0' - 20.0' Ash	SB-2A 09/25/07 0.0' - 4.0' Waste	SB-2D 09/25/07 12.0' - 16.0' Ash	SB-2E 09/25/07 16.0' - 20.0' Ash	SB-2F 09/25/07 20.0' - 24.0' Waste
Inorganic Compounds (mg/L or ppm)							
Arsenic	5.0	NA	NA	NA	NA	NA	NA
Barium	100.0	″	″	″	″	″	″
Cadmium	1.0	″	″	″	″	″	″
Chromium	5.0	″	″	″	″	″	″
Lead	5.0	**101.0**	**7.4**	**31.0**	1.0	2.8	**76.9**
Mercury	0.2	NA	NA	NA	NA	NA	NA
Selenium	1.0	″	″	″	″	″	″
Silver	5.0	″	″	″	″	″	″

***** **6 NYCRR Part 371: Identification and Listing of Hazardous Wastes, NYSDEC, 1995.**
NA **Not analyzed.**
Exceedances are shaded.

Table 1 (Continued).
TCLP Results for Samples Collected from the Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number Date Sampled Sample Depth Sample Type	Regulatory Level *	SB-2G 09/25/07 24.0' - 28.0' Waste	SB-2H 09/25/07 28.0' - 32.0' Ash	SB-3 09/26/07 12.0' - 16.0' Ash	SB-4 09/26/07 8.0' - 12.0' Ash	SB-5 09/26/07 4.0' - 8.0' Waste	SB-6 09/25/07 4.0' - 8.0' Ash
Inorganic Compounds (mg/L or ppm)							
Arsenic	5.0	NA	NA	NA	NA	NA	NA
Barium	100.0	″	″	″	″	″	″
Cadmium	1.0	″	″	″	″	″	″
Chromium	5.0	″	″	″	″	″	″
Lead	5.0	2.8	**16.1**	**9.1**	0.024	**23.4**	2.2
Mercury	0.2	NA	NA	NA	NA	NA	NA
Selenium	1.0	″	″	″	″	″	″
Silver	5.0	″	″	″	″	″	″

***** **6 NYCRR Part 371: Identification and Listing of Hazardous Wastes, NYSDEC, 1995.**
NA **Not analyzed.**
Exceedances are shaded.

Table 1 (Continued).
TCLP Results for Samples Collected from the Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number Date Sampled Sample Depth Sample Type	Regulatory Level *	SB-8 09/26/07 8.0' - 10.1' Waste	SB-9B 09/26/07 12.0' - 16.0' Waste	SB-10A 09/26/07 0.0' - 4.0' Foundry Sand	SB-10B 09/26/07 12.0' - 16.0' Waste	SB-11 09/27/07 4.0' - 8.0' Ash	SB-11B 09/27/07 32.0' - 36.0' Ash
Inorganic Compounds (mg/L or ppm)							
Arsenic	5.0	NA	NA	NA	NA	NA	NA
Barium	100.0	″	″	″	″	″	″
Cadmium	1.0	″	″	″	″	″	″
Chromium	5.0	″	″	″	″	″	″
Lead	5.0	0.33	3.1	**31.8**	**7.2**	**25.9**	**27.0**
Mercury	0.2	NA	NA	NA	NA	NA	NA
Selenium	1.0	″	″	″	″	″	″
Silver	5.0	″	″	″	″	″	″

***** **6 NYCRR Part 371: Identification and Listing of Hazardous Wastes, NYSDEC, 1995.**
NA **Not analyzed.**
Exceedances are shaded.

Table 1 (Continued).
TCLP Results for Samples Collected from the Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number **Date Sampled** **Sample Depth** **Sample Type**	**Regulatory Level ***	**SB-12B** **09/27/07** **20.0' - 24.0'** **Ash**	**SB-13** **09/28/07** **12.0' - 16.0'** **Ash**	**SED-2** **06/13/07** **0.0' - 0.17'** **Sediment**			
Inorganic Compounds (mg/L or ppm)							
Arsenic	5.0	NA	NA	NA			
Barium	100.0	″	″	″			
Cadmium	1.0	″	″	″			
Chromium	5.0	″	″	″			
Lead	5.0	1.6	0.83	0.810			
Mercury	0.2	NA	NA	NA			
Selenium	1.0	″	″	″			
Silver	5.0	″	″	″			

***** **6 NYCRR Part 371: Identification and Listing of Hazardous Wastes, NYSDEC, 1995.**
NA **Not analyzed.**
Exceedances are shaded.

Table 2.
Analytical Results for Surface Water Samples Collected from the Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number Date Sampled Sample Location	Surface Water Standard *	SW-1 06/11/07 Upstream	SW-2 06/13/07 Downstream
Volatile Organic Compounds (µg/L or ppb)			
Bromodichloromethane	50 G	2.9	
Bromoform	50 G	0.30 J	
Chloroform	7.0	**11.0**	1.9
1,2-Dichloroethene (total)	5.0	**5.0**	
Dibromochloromethane	50 G	1.3	
Tetrachloroethene	0.7 G		**5.8**
1,1,1-Trichloroethane	5.0		1.3
Trichloroethene	5.0	**20.0**	**12.0**
Semivolatile Organic Compounds (µg/L or ppb)			
Benzo(a)anthracene	0.002 G		**0.3 J**
Bis(2-ethylhexyl)phthalate	5.0	4 BJ	**5 B**
Butylbenzylphthalate	50 G	2 J	2 BJ
Di-n-octylphthalate	50 G	4 J	4 BJ
Fluoranthene	50 G		0.4 J
Naphthalene	13 G		0.2 J
Phenanthrene	50 G		0.2 J
Pyrene	50 G		0.3 J
Pesticides (µg/L or ppb)			
4,4'-DDT	0.2	0.039 J	
Dieldrin	0.004		0.021 J
Endrin	0.2	0.014 J	
gamma-BHC (Lindane)	0.05	0.016 J	
gamma-Chlordane	0.05	0.013 J	
Heptachlor Epoxide	0.03	**0.16**	
Inorganic Compounds (µg/L or ppb)			
Aluminum	100.0		**1,870**
Antimony	3.0		
Arsenic	50.0		

Table 2 (Continued).
Analytical Results for Surface Water Samples Collected from the
Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number Date Sampled Sample Location	Surface Water Standard *	SW-1 06/11/07 Upstream	SW-2 06/13/07 Downstream
Inorganic Compounds (Continued)			
Barium	1,000	57.9	77.7
Beryllium	3.0 G		
Cadmium	5.0		
Chromium	50.0		5.2
Cobalt	5.0		
Copper	200.0		87.9
Iron	300.0	99.2	**2,700**
Lead	50.0		**57.2**
Manganese	300.0	5.6	76.4
Mercury	0.7		
Nickel	100.0		
Selenium	10.0		
Silver	50.0		
Thallium	0.5 G		
Vanadium	14.0		
Zinc	2,000 G	11.1	272.0

***** **NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998.**
B **Value greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).**
G **Guidance value.**
J **Compound reported at an estimated concentration below the reporting limit.**
NA **Not analyzed.**
Blanks indicate that the sample was analyzed for the associated compound but it was not detected.
Shaded values equal or exceed the NYSDEC surface water standards or guidance values.

Table 3.
Analytical Results for Sediment Samples Collected from the
Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number **Date Sampled** **Sample Depth** **Sample Type**	**NYSDEC** **Sediment** **Criteria ***	**SED-1** **06/11/07** **0.0' - 0.17'** **Sediment**	**SED-2** **06/13/07** **0.0' - 0.17'** **Sediment**
Volatile Organic Compounds (µg/kg or ppb)			
Acetone	2,200 **	17 J	60 BJ
Carbon Disulfide	NS	2 J	6 J
1,2-Dichloroethene	0.8 ●	**6 J**	**7 J**
Tetrachloroethene	23.8 ●		6 J
Trichlorofluoromethane	NS	2 J	4 J
Semivolatile Organic Compounds (µg/kg or ppb)			
Benzo(a)pyrene	41.3 ●	**2,300 J**	**1,300 J**
Benzo(a)anthracene	383.8	**2,500 J**	**1,600 J**
Benzo(b)fluoranthene	41.3 ●	**3,500 J**	**1,700 J**
Benzo(g,h,i)perylene	NS	1,300 J	1,300 J
Benzo(k)fluoranthene	41.3 ●	**960 J**	**750 J**
Chrysene	41.3 ●	**1,800 J**	**1,200 J**
Fluoranthene	32,028	5,700 J	2,600 J
Indeno(1,2,3-cd)pyrene	41.3 ●	**1,200 J**	**1,200 J**
Phenanthrene	3,768	3,200 J	1,200 J
Pyrene	30,178	3,100 J	2,100 J
Pesticides (µg/kg or ppb)			
4,4'-DDE	0.3 ●		**6.8 J**
4,4'-DDT	31.4	**74 BJ**	
Aldrin	3.1 ●		**6.4 J**
alpha-BHC	2.0		**7.2 J**
Dieldrin	24.2	**60 J**	7.6 J
PCBs (µg/kg or ppb)			
Aroclor-1260	606.8		63.0
Inorganic Compounds (mg/kg or ppm)			
Aluminum	SB (11,670) ++	2,470	7,420
Antimony	2.0		
Arsenic	6.0	3.2	**64.7**

Table 3 (Continued).
Analytical Results for Sediment Samples Collected from the
Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number Date Sampled Sample Depth Sample Type	NYSDEC Sediment Criteria *	SED-1 06/11/07 0.0' - 0.17' Sediment	SED-2 06/13/07 0.0' - 0.17' Sediment
Inorganic Compounds (Continued)			
Barium	433 **	18.5	215.0
Beryllium	10 **		0.51
Cadmium	0.6	**0.60**	**4.5**
Chromium	26.0	**63.9**	**131.0**
Cobalt	30.0 ++	2.6	**36.7**
Copper	16.0	**33.1**	**562.0**
Iron	20,000	17,100	**417,000**
Lead	31.0	**70.1**	**1,230**
Manganese	460.0	**652.0**	**1,370**
Mercury	0.15		**0.166**
Nickel	16.0	**11.6**	**180.0**
Selenium	3.9 **		
Silver	1.0		
Thallium	SB (2.6) ++		
Vanadium	150.0 ++	8.9	17.5
Zinc	120.0	**165.0**	**8,170**

***** NYSDEC Technical Guidance for Screening Contaminated Sediments, January 1999. Sediment criteria calculated using a total organic carbon content of 3.14%. Sediment criteria given are for the protection of benthic aquatic life from chronic toxicity (organics) and the lowest effect level (metals) unless otherwise noted.

● Sediment criteria for the protection of human health bioaccumulation.

****** 6 NYCRR Part 375: Environmental Remediation Programs, Soil Cleanup Objectives for the Protection of Ecological Resources, NYSDEC, 2006.

++ NYSDEC Technical and Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1995.

B Analyte detected in the associated blank, as well as in the sample (organics) or the value is greater than or equal to the instrument detection limit, but less than the contract required detection limit (inorganics).

J Compound reported at an estimated concentration below the sample quantitation limit.

N Spike sample recovery or spike analysis is not within quality control limits (inorganics).

NS No standard or guidance value available.

SB Site background concentration as determined during the Site Investigation of the Former Flintkote Plant Site (TVGA, 2005).

Blanks indicate that the sample was analyzed for the associated compound but it was not detected.

Shaded values equal or exceed the NYSDEC sediment criteria, Part 375 soil cleanup objectives, or TAGM 4046 soil cleanup objectives.

Table 4.
Analytical Results for Surface Soil Samples Collected from the Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number Date Sampled Sample Depth Sample Type	Part 375 Soil Cleanup Objective *	SS-1 06/07/07 0.0' -0.17' Peat	SS-2 06/07/07 0.0' -0.17' Topsoil & Fill	SS-3 06/07/07 0.0' -0.17' Soil	SS-4 06/07/07 0.0' -0.17' Ash	SS-5 06/07/07 0.0' -0.17' Ash	SS-6 06/08/07 0.0' -0.17' Ash
Semivolatile Organic Compounds (µg/kg or ppb)							
Acenaphthene	100,000			NA		11 J	110 J
Acenaphthylene	100,000	240 J		″		110 J	350 J
Anthracene	100,000	220 J		″		160 J	580 J
Benzo(a)anthracene	1,000	640 J	**1,000 J**	″	20 J	550.0	**1,900 J**
Benzo(a)pyrene	1,000	**1,100 J**	**1,100 J**	″	22 J	460.0	**1,700 J**
Benzo(b)fluoranthene	1,000	920 J	**1,800 J**	″	48 J	690.0	**2,600**
Benzo(g,h,i)perylene	100,000	400 J	1,200 J	″	20 J	270.0	980 J
Benzo(k)fluoranthene	1,000	470 J	610 J	″		210.0	940 J
Bis(2-ethylhexyl)phthalate	50,000 +			″	110 BJ	76 BJ	
Carbazole	NS			″		73 J	330 J
Chrysene	1,000	470 J	**1,200 J**	″	16 J	500.0	**1,800 J**
4-Chloro-3-methylphenol	240.0 +	**3,800**	**1,100 J**	″			
Dibenzo(a,h)anthracene	330.0		**480 J**	″		83 J	**350 J**
Dibenzofuran	14,000			″		27 J	98 J
Di-n-octylphthalate	50,000 +			″	19 BJ	17 BJ	
Fluoranthene	100,000	1,400 J	1,100 J	″	21 J	940.0	4,000
Fluorene	100,000			″		11 J	
Indeno(1,2,3-cd)pyrene	500.0	300 J	**1,100 J**	″	16 J	250.0	**930 J**
2-Methylnaphthalene	36,400 +	160 J		″		40 J	87 J
Naphthalene	100,000			″		29 J	180 J

Table 4 (Continued).
Analytical Results for Surface Soil Samples Collected from the Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number Date Sampled Sample Depth Sample Type	Part 375 Soil Cleanup Objective *	SS-1 06/07/07 0.0' -0.17' Peat	SS-2 06/07/07 0.0' -0.17' Topsoil & Fill	SS-3 06/07/07 0.0' -0.17' Soil	SS-4 06/07/07 0.0' -0.17' Ash	SS-5 06/07/07 0.0' -0.17' Ash	SS-6 06/08/07 0.0' -0.17' Ash
Semivolatile Organic Compounds (Continued)							
Phenanthrene	100,000	720 J	580 J	NA	15 J	530.0	2,200
Pyrene	100,000	660 J	1,100 J	″	14 J	630.0	2,600
Pesticides (µg/kg or ppb)							
4,4-DDE	1,800			NA		9.8	26.0
4,4'-DDT	1,700	120 B	160 B	″	2.1 BJ	25 B	57 B
Aldrin	19.0			″		2.2 J	6.4 J
alpha-BHC	97.0	34 J	38 J	″			8.9 J
alpha-Chlordane	910.0			″		2.8 J	11 J
delta-BHC	100,000			″		1.1 J	
Dieldrin	39.0	32 J	**40 J**	″		1.4 J	
Endosulfan II	4,800	49 J		″			
Endosulfan Sulfate	4,800			″		3.9 J	
Endrin Aldehyde	NS			″	1.2 J		23.0
Endrin Ketone	NS	34 J		″			
gamma-Chlordane	540.0 +			″	0.9 BJ	3.1 BJ	
Methoxychlor	NS		120.0	″			
PCBs (µg/kg or ppb)							
Aroclor-1254	-----			N/A			
Aroclor-1260	-----	270.0		″			
Total PCBs	1,000	270.0		″			

Table 4 (Continued).
Analytical Results for Surface Soil Samples Collected from the Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

Sample Number Date Sampled Sample Depth Sample Type	Part 375 Soil Cleanup Objective *	SS-1 06/07/07 0.0' -0.17' Peat	SS-2 06/07/07 0.0' -0.17' Topsoil & Fill	SS-3 06/07/07 0.0' -0.17' Soil	SS-4 06/07/07 0.0' -0.17' Ash	SS-5 06/07/07 0.0' -0.17' Ash	SS-6 06/08/07 0.0' -0.17' Ash
Inorganic Compounds (mg/kg or ppm)							
Aluminum	SB (11,670)	8,250	**12,200**	5,350	**16,400**	5,960	6,770
Antimony	SB (1.8)		**135.0**				**269.0**
Arsenic	16.0	**21.4**	16.0	3.7	**37.3**	**23.6**	**20.3**
Barium	350.0	**705.0**	**1,570**	65.1	230.0	265.0	**449.0**
Beryllium	14.0	1.2	1.3	0.3	0.67	0.59	0.55
Cadmium	2.5	**4.4**	**55.4**	1.6	0.5	0.7	**5.1**
Chromium	36.0	**56.2**	**297.0**	12.8	**37.7**	**43.1**	**42.5**
Cobalt	30.0 +	13.6	27.4	5.4	6.9	10.8	11.1
Copper	270.0	**277.0**	**22,300**	160.0	85.7	224.0	**1,230**
Iron	SB (17,300)	**40,800**	**61,500**	12,600	**24,100**	**80,300**	**30,100**
Lead	400.0	**1,310**	**24,300**	216.0	186.0	376.0	**3,280**
Manganese	2,000	177.0	573.0	534.0	809.0	434.0	533.0
Mercury	0.81	0.756	**1.9**	0.042		0.108	0.411
Nickel	140.0	134.0	**1,070**	26.1	25.0	89.1	84.3
Selenium	36.0						
Silver	36.0	1.1	**114.0**	1.0		0.94	3.0
Thallium	SB (2.6)						
Vanadium	150.0 +	22.2	25.6	13.1	31.4	22.8	34.1
Zinc	2,200	688.0	**13,400**	507.0	599.0	381.0	1,630

Table 4 (Continued).
Analytical Results for Surface Soil Samples Collected from the Old Upper Mountain Road Site during the 2007 NYSDEC Site Investigation.

*	6 NYCRR Part 375: Environmental Remediation Programs, Residential Soil Cleanup Objectives, NYSDEC, 2006.
+	NYSDEC Technical and Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1995.
B	Analyte detected in the associated blank, as well as in the sample (organics).
J	Compound reported at an estimated concentration below the sample quantitation limit.
NA	Not analyzed.
NS	No standard or guidance value available.
SB	Site background concentration as determined during the Site Investigation of the Former Flintkote Plant Site (TVGA, 2005).
	Blanks indicate that the sample was analyzed for the associated compound but it was not detected.
	Shaded values equal or exceed the Part 375 or TAGM 4046 soil cleanup objectives.