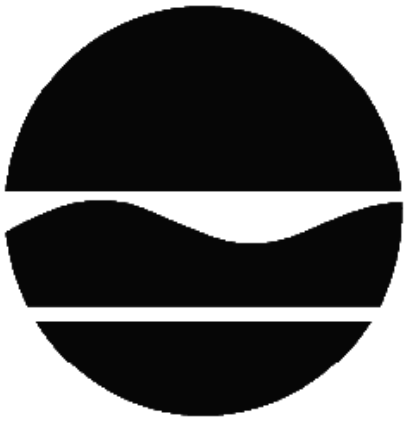
PROPOSED REMEDIAL ACTION PLAN

New York Twist Drill (Loading Dock Area)
Operable Unit Number 02: Off-Site Contamination
State Superfund Project
Melville, Suffolk County
Site No. 152169
November 2014



Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

PROPOSED REMEDIAL ACTION PLAN

New York Twist Drill (Loading Dock Area)
Melville, Suffolk County
Site No. 152169, OU 2
November 2014

SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site, which pertains to off-site contamination. The disposal of hazardous wastes on-site resulted in threats to public health and the environment that are being addressed by remedial actions undertaken on-site by a remedial party (Volunteer) under the Voluntary Cleanup Program.

Based on the implementation of the on-site remedial actions by the Volunteer, the findings of the Remedial Investigation indicate that the off-site contamination no longer poses a threat to human health or the environment. The remedial actions conducted on-site will attain the off-site remediation objectives identified, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action is the remedy proposed by this Proposed Remedial Action Plan (PRAP). A No Further Action remedy may include site management, which will include continued operation of any remedial system previously installed and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the proposed remedy for the site. This PRAP identifies the remedial actions conducted and discusses the basis for No Further Action.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all PRAPs. This is an opportunity for

public participation in the remedy selection process. The public is encouraged to review the reports and documents, which are available at the following repository:

Half Hollow Hills Community Library
510 Sweet Hollow Road
Melville, NY 11747
Phone: 631-421-4535

A public comment period has been set from:

November 26, 2014 to December 26, 2014

A public meeting is scheduled for the following date:

December 9, 2014 at 7:30 PM

Public meeting location:

Half Hollows Hills Community Library – Dix Hills Building
55 Vanderbilt Parkway, Dix Hills, NY 11746

At the meeting, the findings of the remedial investigation (RI) will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP.

Written comments may also be sent through to:

Brian Jankauskas
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233
brian.jankauskas@dec.ny.gov

The Department may modify the proposed remedy presented in this PRAP based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein. Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up

in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The New York Twist Drill Loading Dock Area is located at 25 Melville Park Road in a large commercial/industrial area immediately south of the Long Island Expressway in Melville, New York.

Site Features: The main facility feature is a two-story office building. Paved parking lots are located to the east and north of the building and a grass lawn is located to the south.

Current Zoning/Use(s): The property is presently zoned for commercial use and currently used for offices.

Past Use of the Site: The site was initially developed in 1966 and occupied by the New York Twist Drill Company (NYTD) until 1984. NYTD manufactured carbon steel and other hardened metal twist drills. Operations included heat treatment with salt baths, nitriding, and vapor degreasing with chlorinated solvents. A State Pollutant Discharge Elimination System (SPDES) permit was in place from the mid 1960's to early 1980's, which permitted discharging industrial wastewater from site operations to the environment. Several SPDES violations were issued to NYTD for unacceptable discharges. In 1985, the building was converted into a two-story office complex.

Operable Units (OU): The site was divided into two operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.

OU 01 covers on-site activities for this class 2 site which were undertaken under the Voluntary Cleanup Program (Site number V00128). Remedial actions are being performed on-site to address contamination and prevent the migration of contamination off-site in accordance with the Record of Decision, dated March 2004. Site remedial actions include reductive dechlorination, free-phase product removal and a vapor control system.

OU 02 covers off-site activities, which are being conducted under the State Superfund Program.

Site Geology and Hydrogeology: Glacial deposits consisting of stratified sand and gravel are present from the surface to a depth of approximately 50 feet. The Magothy formation underlies the glacial deposits and consists of fine grained sand with interbedded layers of clayey sand, silty sand, and clay. Groundwater is approximately 45 feet below ground surface and flows southeast.

Operable Unit (OU) Number 02 is the subject of this document.

A Record of Decision was issued previously for OU 01.

A site location map is attached as Figure 1. Figure 2 indicates the site boundary of OU 01.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy. For OU 02, an alternative which allows for unrestricted use of OU 02 was evaluated.

A comparison of the results of the investigation against unrestricted use standards, criteria and guidance values (SCGs) for OU 02 contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

Drico Corporation

Robert, Mark and Jeffrey Hammer and Suzanne Eliot

A consent order for a remedial investigation/feasibility study was executed on November 16, 2004 between the Department and the potentially responsible parties (PRPs) for OU 02. PRPs for the site have performed investigation activities to date as required by the Department. An agreement is in place for the PRPs to implement the selected remedy for OU 02.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,

- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on OU 02 includes data for:

- air
- groundwater
- indoor air
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: Remedial Investigation Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified for OU 02 at this site are:

tetrachloroethylene (PCE)
trichloroethene (TCE)
cis-1,2-dichloroethene (DCE)
1,1-dichloroethene
trans-1,2-dichloroethene
1,1,1-trichloroethane (TCA)
1,1-dichloroethane (DCA)

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media are being addressed by remedial actions undertaken on-site (OU 01) by a remedial party (Volunteer) under the Voluntary Cleanup Program. More complete information can be found in the RI Report.

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

There were no IRMs performed on OU 02 during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU 02.

Nature and Extent of Contamination: Based upon investigations conducted to date, the primary contaminants of concern for OU 02 include tetrachlorethene (PCE), trichloroethene (TCE), cis-1,2 Dichloroethene (DCE), trans-1,2-dichloroethene, 1,1 dichloroethene, 1,1,1-trichloroethane and 1,1-dichloroethane.

Groundwater - Based on the groundwater monitoring results from 2012, PCE and its associated degradation products TCE and DCE are considered the primary contaminants, which were detected above the groundwater standard of 5 parts per billion. The leading edge of the PCE contamination was detected approximately 4,600 feet downgradient of the site along Ruland Road at a concentration of 180 parts per billion (ppb). However, a subsequent sample detected PCE at 23 ppb. The depth of contamination is approximately 50 feet below ground surface (bgs) at the site and descends to approximately 300 feet bgs downgradient of the site south of Bayliss Road. The width of the groundwater contamination plume is approximately 400 feet near Bayliss Road where the highest detections of PCE (211 ppb) and DCE (286 ppb) were located. The detection of DCE within the plume at a greater concentration than PCE indicates that natural degradation of PCE is occurring, since PCE is the primary contaminant detected on-site and DCE is a known degradation product of PCE. On-site remedial activities conducted since 2003 have significantly reduced site impacts to off-site groundwater, as a result groundwater conditions near the site have improved and reduced the length of the plume to 4,300 feet. Groundwater contamination is attenuating further down-gradient of the site based on low levels detected at the furthest monitoring well from the site located along Ruland Road, the decreasing trend of site related contamination detected at MW-09 from 2008 to 2012 and the detection of the final degradation product of PCE, known as ethane/ethene, within the plume.

Vapor Intrusion - One structure down-gradient of the site has been evaluated for vapor intrusion. Sampling has detected elevated PCE, TCE and DCE concentrations beneath the building, but has not detected PCE, TCE or DCE within the indoor air. In 2007, sub-slab soil vapor concentrations of PCE, TCE and DCE were detected at 1,010 micrograms per cubic meter (ug/m3), 67 ug/m3 and 14.6 ug/m3, respectively. Subsequent sub-slab soil vapor sampling in

2014 detected PCE up to 74 ug/m3, but TCE and DCE were not detected. Clean groundwater is located above the zone of contaminated groundwater further downgradient of the site, therefore, soil vapor will not be impacted from this site's groundwater contamination.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

Exposures associated with contamination on Operable Unit 1 (on-site) have been assessed as part of remedial activities for Site #V00128. Exposures to off-site contamination are being assessed as part of Operable Unit 2. People will not come into contact with groundwater contamination unless they dig or drill below the surface. Contaminated groundwater in the area is not used for drinking and the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Environmental sampling indicates soil vapor intrusion does not appear to be currently occurring off-site; however, the potential for exposures via soil vapor intrusion should be monitored.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: SUMMARY OF PROPOSED REMEDY

Based on the results of the investigations, the actions performed by the Volunteer, and the evaluation presented here, the Department is proposing No Further Action with Groundwater and Vapor Monitoring as the remedy for Operable Unit (OU) 02 pertaining to off-site contamination. This proposed remedy does not change the selected remedy for OU 01 regarding the on-site contamination currently being performed by the Volunteer. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

A Site Management Plan is required, which includes the Monitoring Plan to assess the performance and effectiveness of OU 01 remedy on off-site media. The plan must include, but may not be limited to:

1. Complete two vertical profile borings and install monitoring wells at determined intervals as conducted at VP-09 to complete the fifth transect.

2. Monitoring of groundwater to assess the performance and effectiveness of the on-site remedy (OU 01).

3. Monitoring of sub-slab vapor in one off-site building.

4. A schedule of monitoring and frequency of submittals to the Department;

5. If new private wells (potable wells, irrigation wells, heating and cooling wells) are identified within or near the off-site contamination, samples of groundwater will be collected and evaluated to determine if there are potential exposures to site contamination;

6. Site monitoring activities will evaluate on- and off-site conditions and determine if corrective action(s) or exposure evaluation(s) are warranted.

Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are volatile organic compounds (VOCs). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. The data presented is from OU 02, which is located beyond the OU 01 boundary, shown on Figure 2.

Groundwater

Groundwater samples were collected to assess groundwater conditions off-site and to evaluate the on-site remedy. Groundwater investigations were conducted by completing vertical profile points along transects located down-gradient of the site (Figure 3) to identify zones where site contamination was present. Based on the results from the vertical profile points, permanent monitoring wells were installed (Figure 4) and sampled prior to conducting the next transect.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
1,1,1-trichloroethane	0 - 40	5	25/259
1,1-dichloroethane	0 – 39.3	5	24-259
1,1-dichloroethene	0 - 43	5	26/145
cis-1,2-dichloroethene (DCE)	0 - 499	5	122/259
tetrachloroethylene (PCE)	0 – 2,700	5	151/259
trans-1,2-dichloroethene	0 – 68.2	5	11/259
trichloroethene (TCE)	0 - 740	5	136/259
1,1,2-trichloro-1,2,2-trifluoroethane	0 – 12.1	5	9/234
1,2,4-trimethylbenzene	0 – 9.6	5	5/153
1,2-dichlorobenzene	0 – 3.9	3	1/259
1,2-dichloroethane	0 – 1	0.6	2/259
acetone	0 – 103	50	4/248

benzene	0 – 4.1	1	1/259
chlorobenzene	0 – 18.6	5	2/259
chloroethane	0 – 6.7	5	1/259
chloroform	0 10.6	7	2/259
dichlorodifluoromethane	0 – 7.7	5	3/259
methyl ethyl ketone	0 – 2,040	50	3/192
sec-butylbenzene	0 – 7.9	5	4/153
tert-butyl methyle ether	0 – 33	10	4/259
toluene	0 – 265	5	4/259
vinyl chloride	0 – 7.4	2	4/259

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

Site contamination was detected above groundwater SCGs 4,600 feet downgradient of the site near Ruland Road (Figure 4) and at a width of approximately 400 feet near Bayliss Road (Figure 5). Site contamination was detected 50 feet below groundwater surface (ft bgs) at the site and descends to 300 ft bgs at VP-08 located downgradient of the site (Figure 6). In 2006, initial sampling at a vertical profile point, identified as VP-01, detected PCE at 2,700 ppb. Groundwater quality has improved immediately downgradient of the site, which is illustrated on Figure 7 by the outline of the contamination defined by the vertical groundwater profiles and current groundwater measurements from the monitoring wells near the site that are below SCGs. Due to the remedial actions conducted on-site, the overall length of the plume has been reduced to approximately 4,300 feet. From 2008 to 2012, a decreasing trend of site related contamination was detected within the plume at MW-09. The highest detection during the last round of groundwater sampling in December 2012 was 286 ppb of cis-1,2-dichloroethene (DCE) at MW-11D (Figure 4). The detection of DCE within the plume at a greater concentration than PCE indicates that natural degradation of PCE is occurring, since PCE is the primary contaminant detected on-site and DCE is a known degradation product of PCE. Attenuation of volatile organic compounds within the plume is expected to continue to occur due to remedial activities conducted by the Volunteer and degradation of PCE.

A well search was performed, which identified private wells located within the plume. No private wells used for potable water were identified within the groundwater contamination plume, however private wells used for air conditioning and diffusion were identified. Private well owners were contacted and samples were collected if permitted by the property owner. Site related contamination was found in an air conditioning system well (screened from 240 to 270 ft bgs) and the associated diffusion well (screened from 86 to 100 ft bgs) just south of MW-11 cluster (Figure 4). Two supply well fields are located down-gradient of the site. The Gazza Boulevard well field is located approximately 2.1 miles from the site and the New Highway well field is located approximately 4.1 miles from the site. Each of these supply well fields have treatment for volatile organic compounds that are not related to the New York Twist Drill site.

Site investigations conducted at VP-05, VP-06 and the deep interval of VP-09 detected trichloroethene (TCE), which is also a chlorinated VOC, as the primary contaminant. Due to the characteristics of the contamination (concentration of TCE verses PCE, depth and location of contamination within the aquifer and isotope analysis),

the contamination at these locations was determined to be originating from another source and is not considered to be related to the site. A subsequent investigation was conducted by the Department, but was unable to locate the source of the contamination. Continued monitoring at MW-07 and MW-08 has shown a reduction in contamination. The remaining 15 contaminants indicated in Table 1 (beneath TCE) are not considered to be site related contaminants of concern due to the sporadic detections, comparison to on-site concentrations and/or are not significantly above the SCGs.

Based on the findings of the RI, the presence of chlorinated volatile organic compounds has resulted in the contamination of groundwater. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are: PCE, TCE, DCE, 1,1-dichloroethene, trans-1,2-dichloroethene, 1,1,1-trichloroethane (TCA), 1,1-dichloroethane.

Soil Vapor

The evaluation of the potential for soil vapor intrusion resulting from the presence of site related soil or groundwater contamination was evaluated by the sampling of sub-slab soil vapor under a structure and indoor air inside a structure. At the structure within OU 02, a full suite of samples were collected to evaluate whether soil vapor intrusion was occurring.

Samples were collected from the sub-slab (two sample points) of a structure located to the south of the site. Sub-slab soil vapor sample results were shown to have decreased at both locations within the building footprint during the second round of sampling. Indoor air and outdoor air samples were also collected at this time. The samples were collected to assess the potential for soil vapor intrusion. The results indicate PCE and TCE were detected in sub-slab vapor, but not in indoor air or ambient air samples. Based on the findings further monitoring is warranted at the structure.

Based on the findings of the Remedial Investigation, the presence of PCE and TCE has resulted in the contamination of soil vapor. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of soil vapor to be addressed by the remedy selection process are, PCE and TCE.

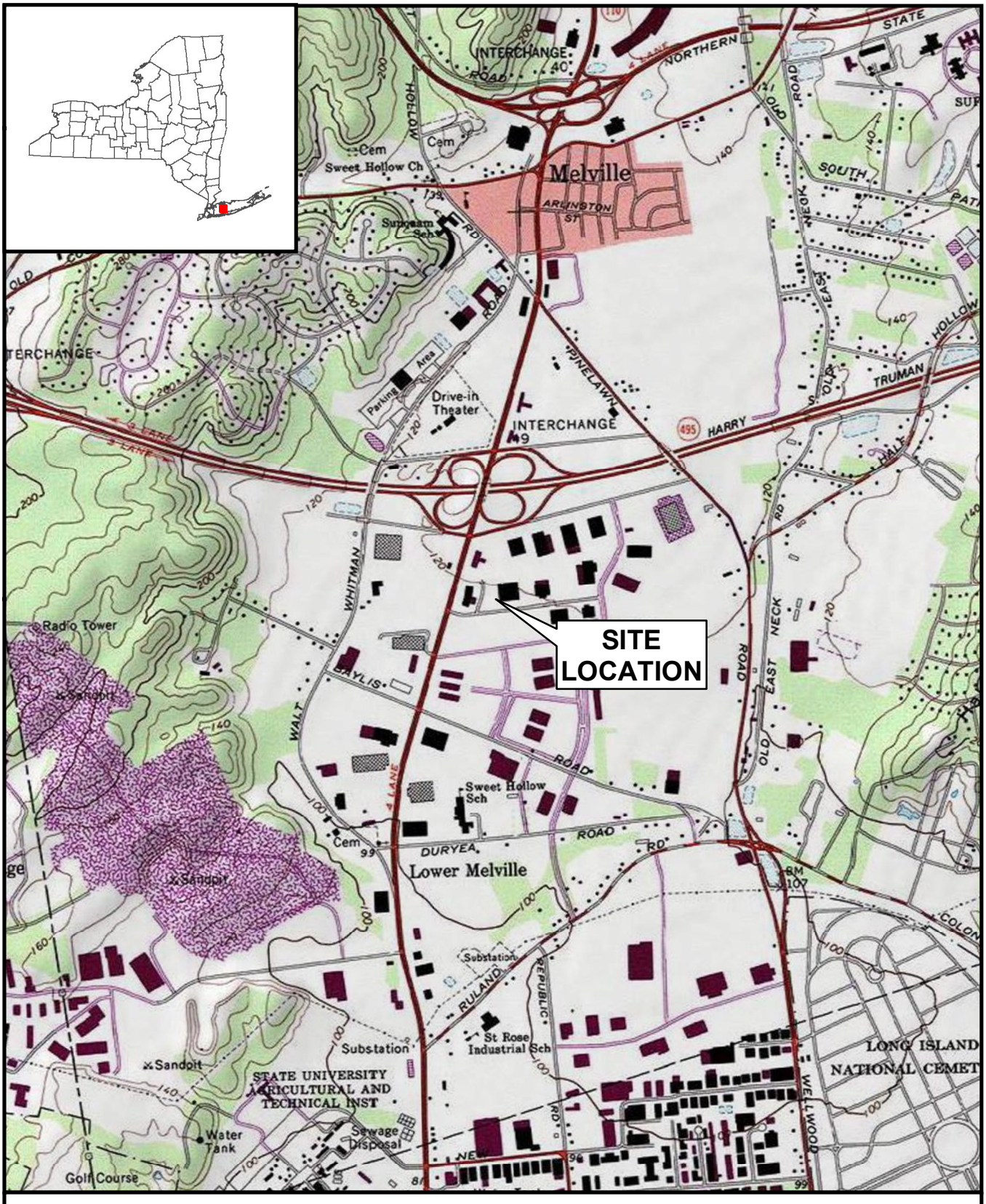


Figure 1

Site Location Map

New York Twist Drill
Town of Huntington, Suffolk County
Site No. 152169

DEPARTMENT OF ENVIRONMENTAL CONSERVATION • NEW YORK STATE •

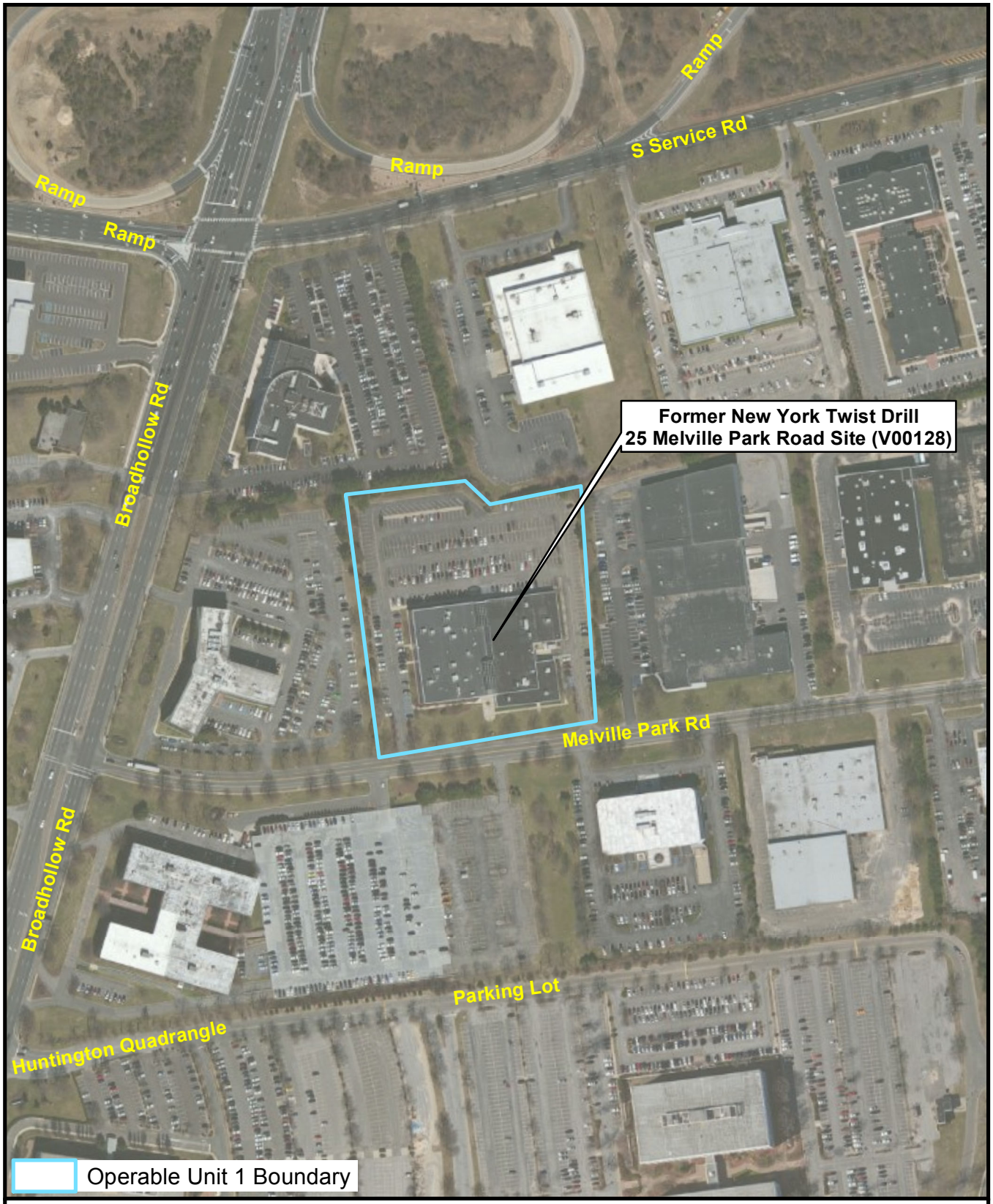


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Figure 2
Site Map

New York Twist Drill
Town of Huntington,Suffolk County
Site No. 152169

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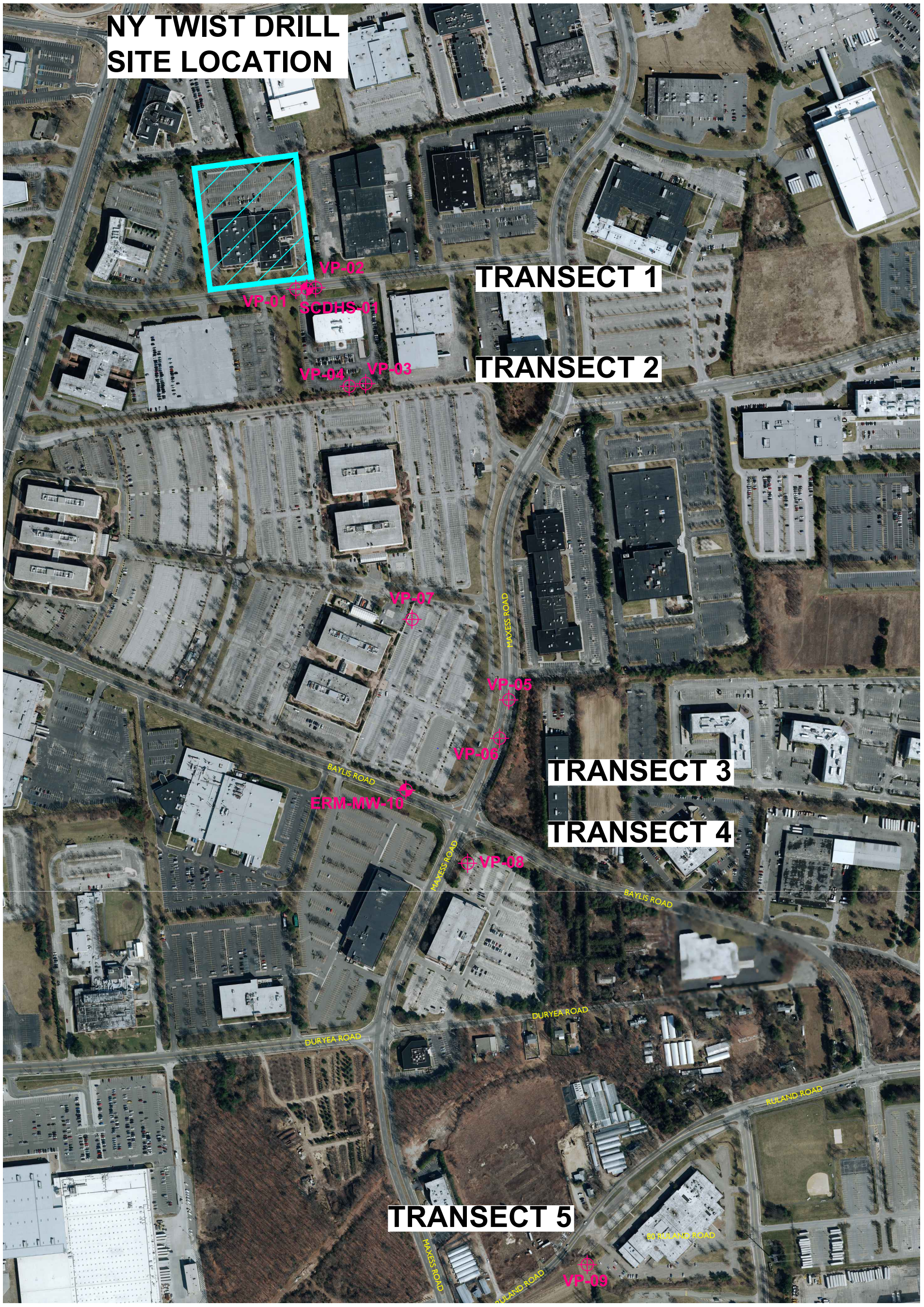

TITLE

VERTICAL PROFILE
□ORING LOCATIONS

PREPARED FOR
RESPONDANTS ORDER ON CONSENT
NO. W1-0998-04-04

Environmental Resources Management

FIGURE 3

DRAWN BY	SCALE	DATE	JOB NO.
G□S/EMF	AS SHOWN	11/0□/13	0025381

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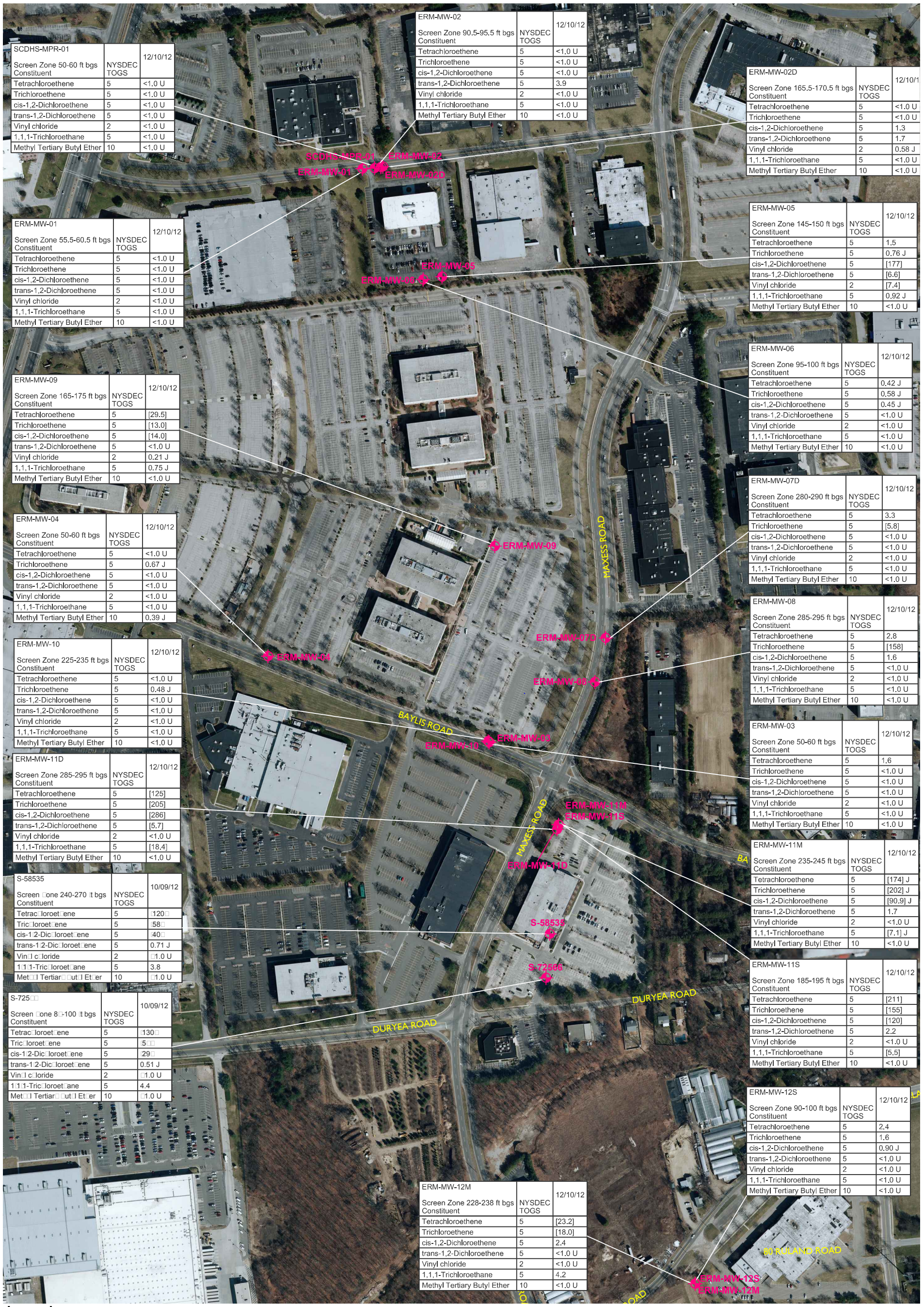


SCDHS-MPR-01 Screen Zone 50-60 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	<1.0 U
Trichloroethene	5	<1.0 U
cis-1,2-Dichloroethene	5	<1.0 U
trans-1,2-Dichloroethene	5	<1.0 U
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	<1.0 U
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-02 Screen Zone 90.5-95.5 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	<1.0 U
Trichloroethene	5	<1.0 U
cis-1,2-Dichloroethene	5	<1.0 U
trans-1,2-Dichloroethene	5	3.9
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	<1.0 U
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-02D Screen Zone 165.5-170.5 ft bgs Constituent	NYSDEC TOGS	12/10/1
Tetrachloroethene	5	<1.0 U
Trichloroethene	5	<1.0 U
cis-1,2-Dichloroethene	5	1.3
trans-1,2-Dichloroethene	5	1.7
Vinyl chloride	2	0.58 J
1,1,1-Trichloroethane	5	<1.0 U
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-01 Screen Zone 55.5-60.5 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	<1.0 U
Trichloroethene	5	<1.0 U
cis-1,2-Dichloroethene	5	<1.0 U
trans-1,2-Dichloroethene	5	<1.0 U
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	<1.0 U
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-05 Screen Zone 145-150 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	1.5
Trichloroethene	5	0.76 J
cis-1,2-Dichloroethene	5	[177]
trans-1,2-Dichloroethene	5	[6.6]
Vinyl chloride	2	[7.4]
1,1,1-Trichloroethane	5	0.92 J
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-09 Screen Zone 165-175 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	[29.5]
Trichloroethene	5	[13.0]
cis-1,2-Dichloroethene	5	[14.0]
trans-1,2-Dichloroethene	5	<1.0 U
Vinyl chloride	2	0.21 J
1,1,1-Trichloroethane	5	0.75 J
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-06 Screen Zone 95-100 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	0.42 J
Trichloroethene	5	0.58 J
cis-1,2-Dichloroethene	5	0.45 J
trans-1,2-Dichloroethene	5	<1.0 U
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	<1.0 U
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-04 Screen Zone 50-60 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	<1.0 U
Trichloroethene	5	0.67 J
cis-1,2-Dichloroethene	5	<1.0 U
trans-1,2-Dichloroethene	5	<1.0 U
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	<1.0 U
Methyl Tertiary Butyl Ether	10	0.39 J

ERM-MW-07D Screen Zone 280-290 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	3.3
Trichloroethene	5	[5.8]
cis-1,2-Dichloroethene	5	<1.0 U
trans-1,2-Dichloroethene	5	<1.0 U
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	<1.0 U
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-10 Screen Zone 225-235 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	<1.0 U
Trichloroethene	5	0.48 J
cis-1,2-Dichloroethene	5	<1.0 U
trans-1,2-Dichloroethene	5	<1.0 U
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	<1.0 U
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-08 Screen Zone 285-295 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	2.8
Trichloroethene	5	[158]
cis-1,2-Dichloroethene	5	1.6
trans-1,2-Dichloroethene	5	<1.0 U
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	<1.0 U
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-11D Screen Zone 285-295 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	[125]
Trichloroethene	5	[205]
cis-1,2-Dichloroethene	5	[286]
trans-1,2-Dichloroethene	5	[5.7]
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	[18.4]
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-03 Screen Zone 50-60 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	1.6
Trichloroethene	5	<1.0 U
cis-1,2-Dichloroethene	5	<1.0 U
trans-1,2-Dichloroethene	5	<1.0 U
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	<1.0 U
Methyl Tertiary Butyl Ether	10	<1.0 U

S-58535 Screen □one 240-270 □t bgs Constituent	NYSDEC TOGS	10/09/12
Tetrac□loroet□ene	5	□120□
Tric□loroet□ene	5	□58□
cis-1□2-Dic□loroet□ene	5	□40□
trans-1□2-Dic□loroet□ene	5	0.71 J
Vin□l c□loride	2	□1.0 U
1□1□1-Tric□loroet□ane	5	3.8
Met□□l Tertiar□ □ut□l Et□er	10	□1.0 U

ERM-MW-11M Screen Zone 235-245 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	[174] J
Trichloroethene	5	[202] J
cis-1,2-Dichloroethene	5	[90.9] J
trans-1,2-Dichloroethene	5	1.7
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	[7.1] J
Methyl Tertiary Butyl Ether	10	<1.0 U

S-725□□ Screen □one 8□-100 □t bgs Constituent	NYSDEC TOGS	10/09/12
Tetrac□loroet□ene	5	□130□
Tric□loroet□ene	5	□5□□
cis-1□2-Dic□loroet□ene	5	□29□
trans-1□2-Dic□loroet□ene	5	0.51 J
Vin□l c□loride	2	□1.0 U
1□1□1-Tric□loroet□ane	5	4.4
Met□□l Tertiar□ □ut□l Et□er	10	□1.0 U

ERM-MW-11S Screen Zone 185-195 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	[211]
Trichloroethene	5	[155]
cis-1,2-Dichloroethene	5	[120]
trans-1,2-Dichloroethene	5	2.2
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	[5.5]
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-12S Screen Zone 90-100 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	2.4
Trichloroethene	5	1.6
cis-1,2-Dichloroethene	5	0.90 J
trans-1,2-Dichloroethene	5	<1.0 U
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	<1.0 U
Methyl Tertiary Butyl Ether	10	<1.0 U

ERM-MW-12M Screen Zone 228-238 ft bgs Constituent	NYSDEC TOGS	12/10/12
Tetrachloroethene	5	[23.2]
Trichloroethene	5	[18.0]
cis-1,2-Dichloroethene	5	2.4
trans-1,2-Dichloroethene	5	<1.0 U
Vinyl chloride	2	<1.0 U
1,1,1-Trichloroethane	5	4.2
Methyl Tertiary Butyl Ether	10	<1.0 U

Legend

- Monitoring well location
- **J** The constituent was positively identified the associated numerical value is the approximate concentration of the constituent for the sample.
- **[ ]** Indicates that a compound was detected above it's comparison criteria.
- **U** Non detect

All data reporting is in micrograms per liter (ug/l).

N

0 350□ 700□

GRAPHIC SCALE IN FEET

TITLE

VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER 2012

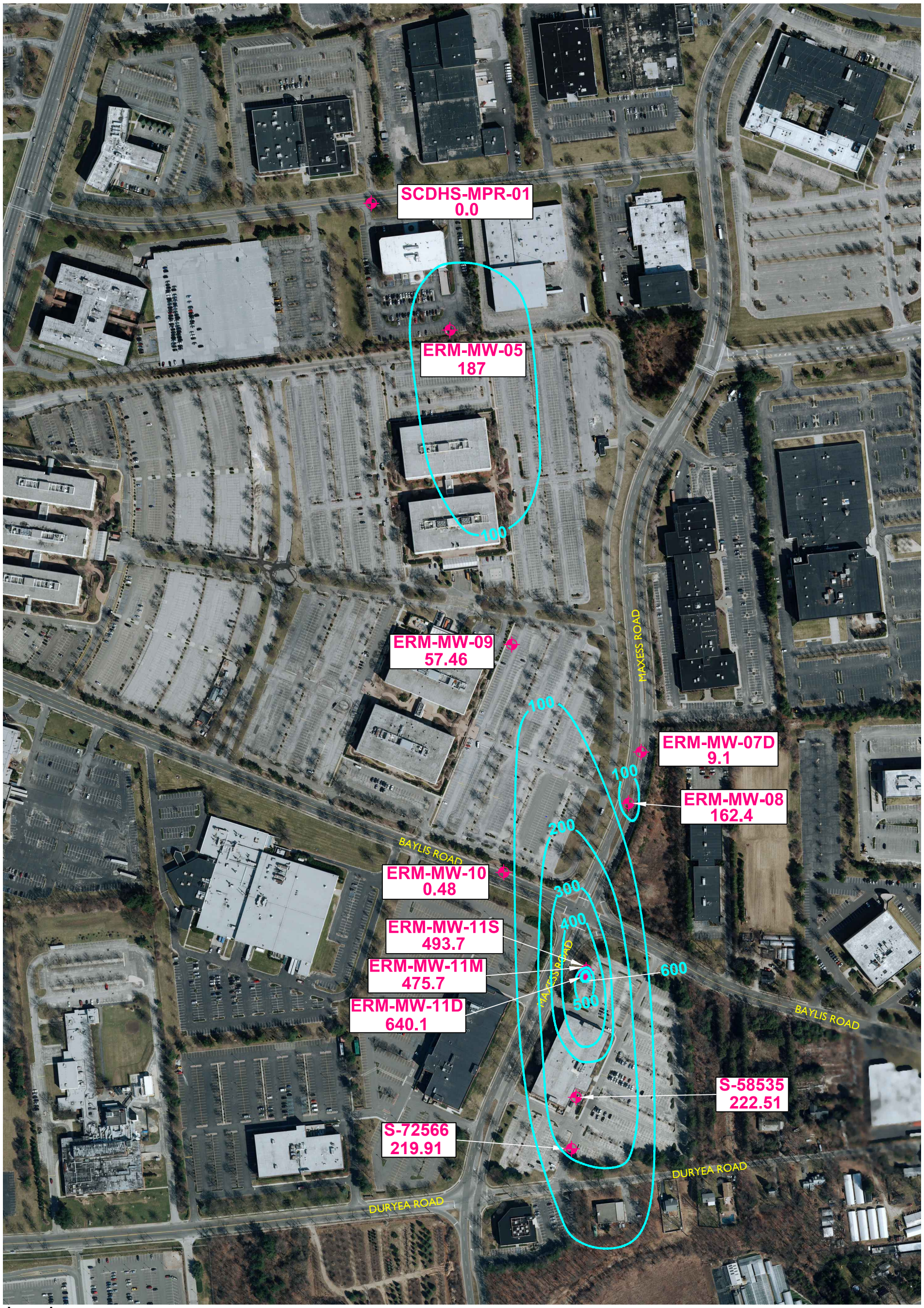
PREPARED FOR
RESPONDANTS ORDER ON CONSENT
NO. W1-0998-04-04

Environmental Resources Management

FIGURE 4

DRAWN BY	SCALE	DATE	JOB NO.
G□S/EMF	AS SHOWN	11/22/13	0025381

R:\Scout\Projects\NY Twist Drill\CAD\2013 - FS Report\CAD\2013-02-12 - NY Twist Drill 2012 C□emistr□Spider Map.dwg (11/22/2013 - 3:19pm Melville)



Legend

- Monitoring well location
- 162.4 — Total VOC Concentration from Groundwater Sample Collected in 2012
- Total VOC Concentraton Contour

All data reporting is in micrograms per liter (ug/l).

Total VOC: Sum of PCE, TCE, cis-DCE, trans DCE, VC, MTBE and TCA

0 300 600

GRAPHIC SCALE IN FEET

N

TITLE

TOTAL VOC CONTOUR MAP
2012
NYTD
MONITORING WELL NETWOR

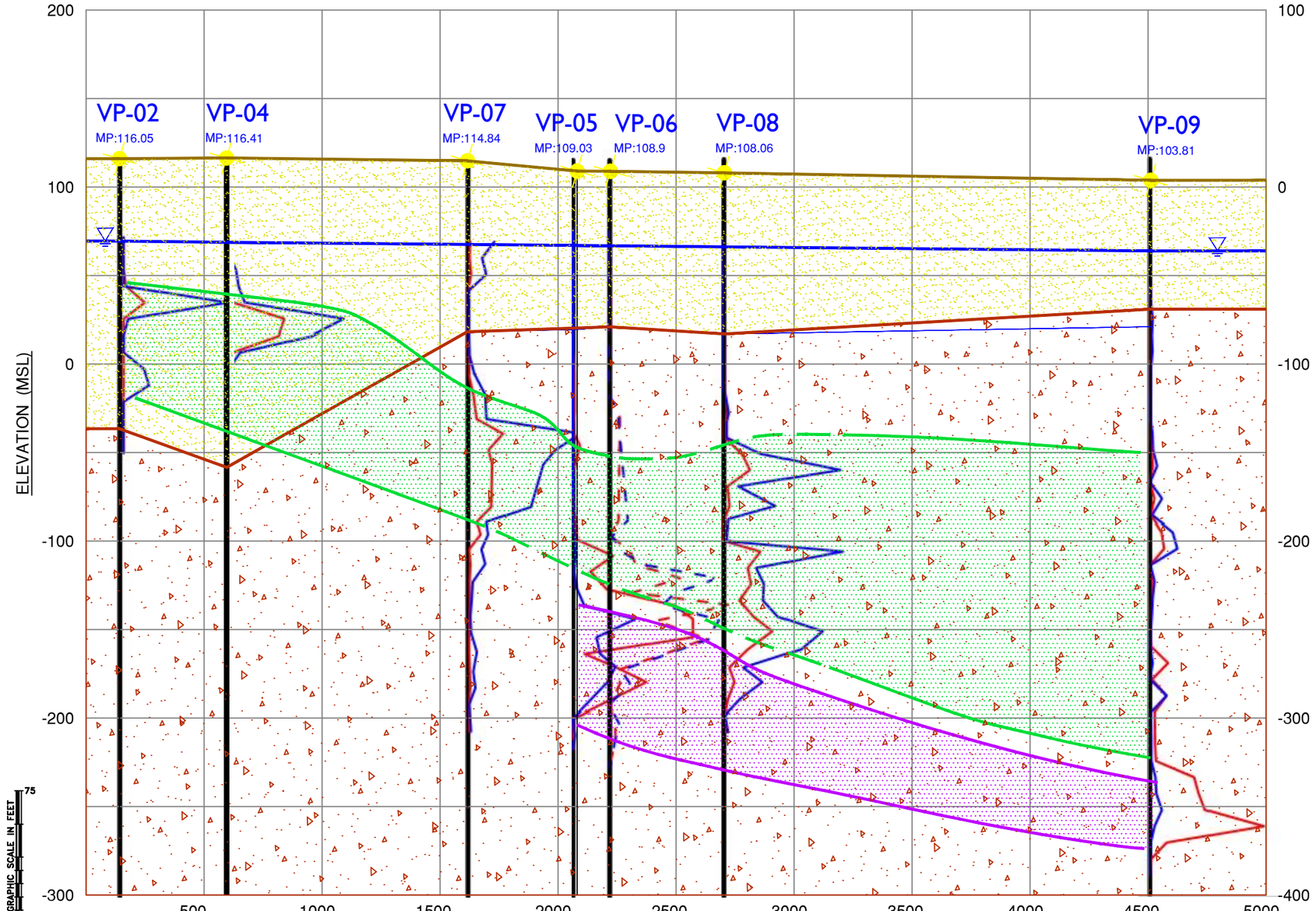
PREPARED FOR
RESPONDANTS ORDER ON CONSENT
NO. W1-0998-04-04

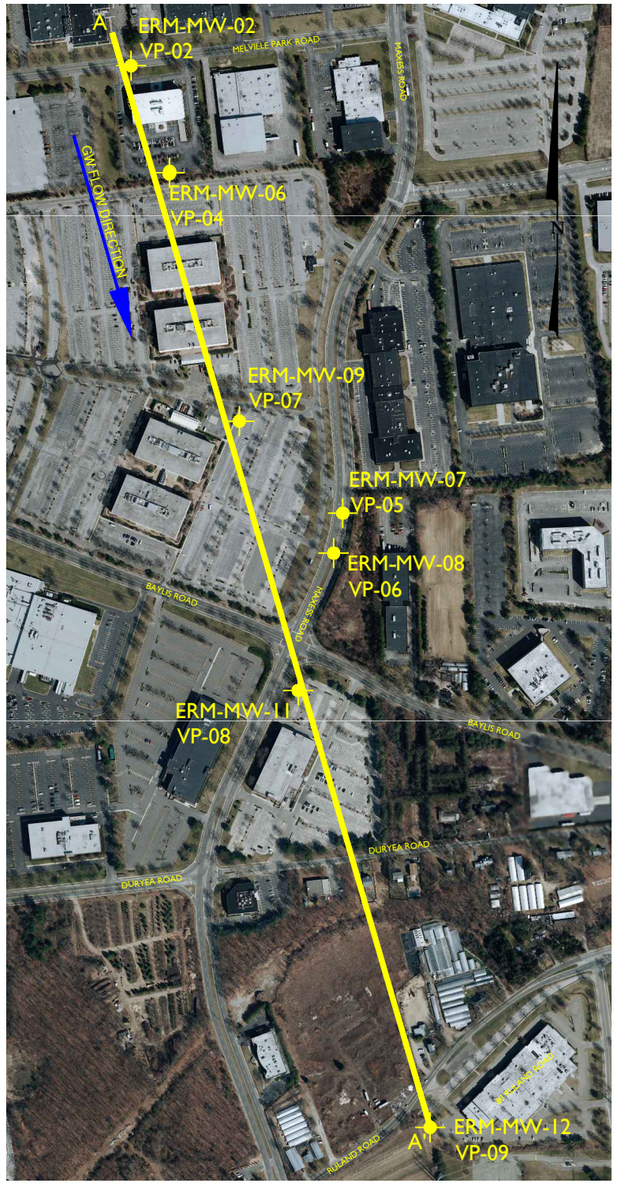
Environmental Resources Management

FIGURE 5

DRAWN BY	SCALE	DATE	JOB NO.
G S/EMF	GRAPHIC	07/03/2014	0025381

R:\Scout\Projects\NY Twist Drill\CAD\2013 RI Report\CAD\2013-02-12 - NY Twist Drill 2012 C emistr Data - v04.dwg (07/18/2014 - 11:22am Melville)





NOTES:
1. ORTHO IMAGE SOURCE NEW YORK STATE GIS
2. GROUNDWATER QUALITY DATA, VARIOUS REPORTS FROM 03-2006 TO 03-2008
3. Vertical profiles completed between March 2006 and October 2012.

LEGEND

- UPPER GLACIAL
- MAGATHY
- WATER TABLE ELEVATION (11/21/2012)
- GROUND SURFACE
- UPPER GLACIAL/MAGATHY INTERFACE
- PCE (RELATIVE CONCENTRATION)
- TCE (RELATIVE CONCENTRATION)
- NYTD PLUME, 100ug/l
- UNKNOWN SOURCE PLUME, 100 ug/l

TITLE

VERTICAL PLUME CROSS SECTION VERTICAL PROFILE DATA

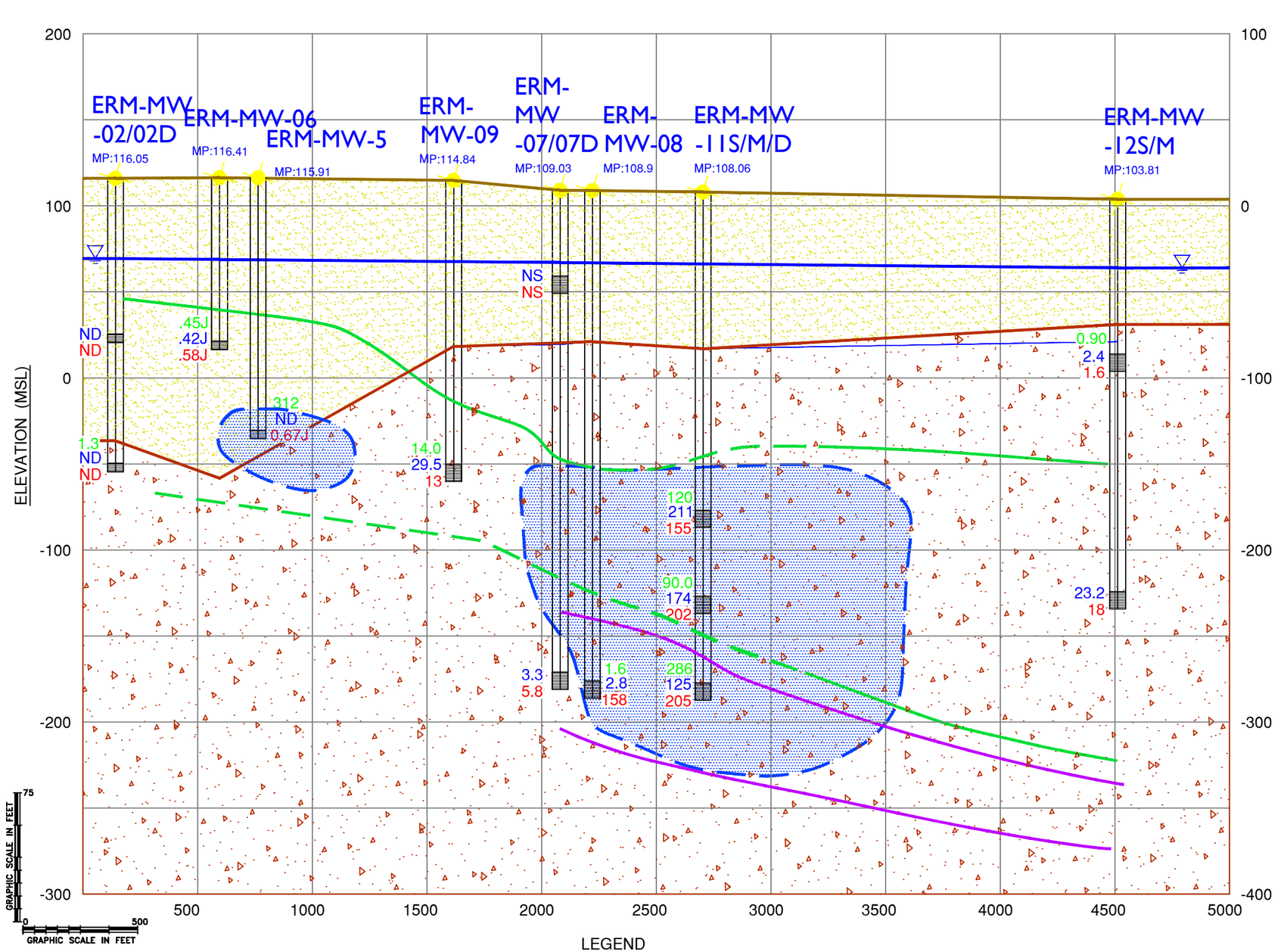
PREPARED FOR
RESPONDANTS ORDER ON CONSENT
NO. W1-0998-04-04

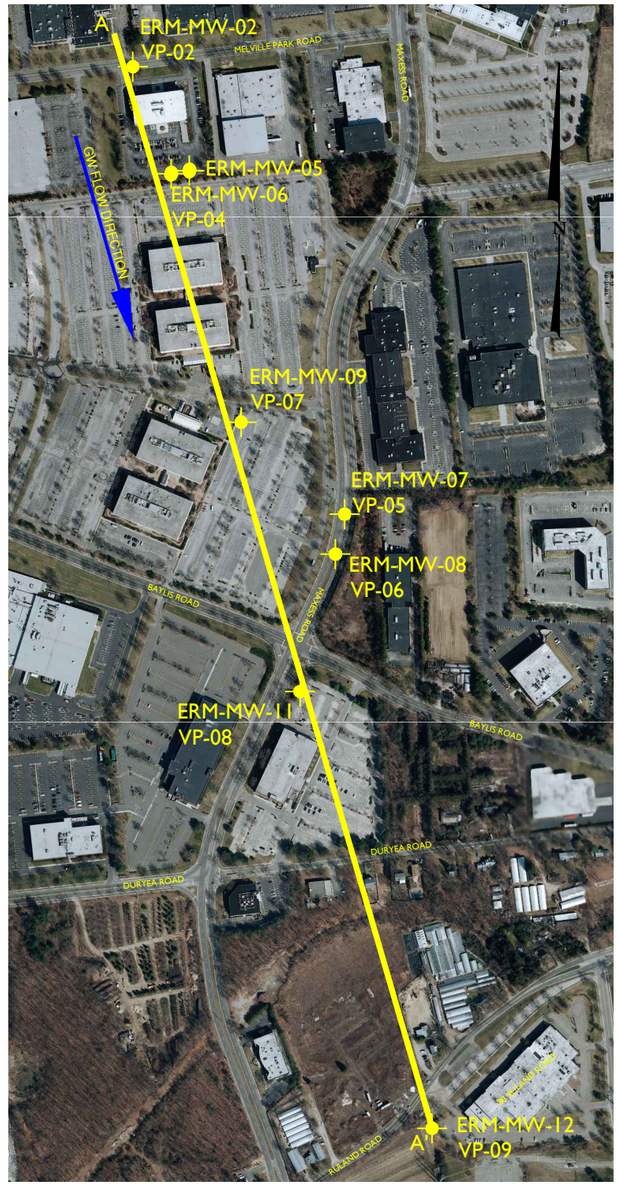
Environmental Resources Management

FIGURE 6

DRAWN BY	SCALE	DATE	JOB NO.
JMC/MCW/ EMF	GRAPHIC	07/08/14	0025381

R:\Scout\Projects\NY Twist Drill\CAD\2013 RI Report\CAD\2013-05-03 - NY Twist Drill - Vertical Plume Cross Section v03.dwg (07/08/2014 - 4:2 pm Melville)





NOTES:
1. ORTHO IMAGE SOURCE NEW YORK STATE GIS
2. GROUNDWATER QUALITY DATA FROM DECEMBER 2012 SAMPLING EVENT.
3. ERM-MW-07 WAS NOT SAMPLED DUE TO AN OBSTRUCTION IN THE WELL.
4. ND = NON-DETECT
5. CONCENTRATIONS EXPRESSED IN ug/L

LEGEND

- UPPER GLACIAL
- MAGATHY
- WATER TABLE ELEVATION (11/21/2012)
- GROUND SURFACE
- UPPER GLACIAL/MAGATHY INTERFACE
- PCE CONCENTRATION 23.2
- TCE CONCENTRATION 18
- cis-DCE CONCENTRATION 312
- NYTD PLUME 100 ug/l BASED ON VERTICAL PROFILE DATA
- UNKNOWN SOURCE PLUME 100 ug/l BASED ON VERTICAL PROFILE DATA
- TOTAL VOC PLUME BASED ON 2012 DATA (>100 ug/L)

TITLE

VERTICAL PLUME CROSS SECTION MONITORING WELL DATA

PREPARED FOR
RESPONDANTS ORDER ON CONSENT
NO. W1-0998-04-04

Environmental Resources Management

FIGURE 7

DRAWN BY	SCALE	DATE	JOB NO.
JMC/MCW EMF	GRAPHIC	07/09/14	0025381

R:\Scout\Projects\NY Twist Drill\CAD\2013 RI Report\CAD\2014-07-01 - NY Twist Drill - Vertical Plume Cross Section-MW Data v02.dwg (08/19/2014 - 1:11pm Melville)