SITE MANAGEMENT PLAN

Fumex Sanitation

Nassau County, New York

Prepared for:

NYSDEC

NYSDEC Site Number: 130041

Division of Environmental Remediation

March 2012

September 2014 Rev No. 04

CDM Smith

Fumex Sanitation

NASSAU COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: 130041

Prepared for:
New York State Department of Environmental Conservation
Division of Environmental Remediation

Originally Prepared by:
CDM Smith

Revised in September 2014 by:
Groundwater & Environmental Services, Inc

Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date
1	06/06/12	NYSDOH comments incorporated as part of site reclassification review	06/06/12
2	04/04/13	Clarified property owner responsibilities	04/04/13
3	06/24/14	NYSDEC revised the SMP to update property owner responsibilities	06/26/14
4	9/29/14	Groundwater & Environmental Services, Inc (GES) updated the SMP and GMP at the request of the Site Owner, Adam Mann, to include the NYSDEC-approved deviations to the sampling protocols.	

MARCH 2012

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Introduction and Description of Remedial Program

1.1 Introduction

This document is required as an element of the remedial program at Fumex Sanitation Site (hereinafter referred to as the "Site") under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by New York State Department of Environmental Conservation (NYSDEC).

1.1.1 General

The NYSDEC, under the State Superfund Program (SSF), remediated a .24 acre property located in Garden City Park, Town of North Hempstead, Nassau County, New York. The SSF program requires the NYSDEC to investigate and remediate contaminated media at the Site. A figure showing the location of this Site is provided in Figure 1. The boundaries of the Site are more fully described in the metes and bounds description provided in Appendix A.

After completion of the remedial construction 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 Environmental Conservation Law (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 originally prepared by Camp Dresser and McKee (CDM), on behalf of NYSDEC, 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. It has since been revised by the NYSDEC and Groundwater & Environmental Services, Inc (GES) on behalf of the Site Owner. 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 Nassau 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 EC/ICs; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) 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; (2) a Monitoring Plan for implementation of Site Monitoring.

This plan also includes a description of Periodic Review Reports (PRR) 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.
- Failure to comply with this SMP is also a violation of ECL, 6NYCRR Part 375 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 North Hempstead, County of Nassau, New York and is identified as Section 33, Block 174 and Lot 58 on the tax map entitled "Nassau County Department of Assessment Land & Tax," Sheet 1 of 1. The Site is a 0.24 -acre area bounded by Bedford Avenue to the north, a commercial property to the south, Herricks Road to the east, and a residential property to the west (see Figure 1). The boundaries of the Site are more fully described in Appendix A – ALTA/ACSM Land Title Survey. There is a one-story brick building present on-site that includes office space and a garage.

1.2.2 Site History

Fumex operated a commercial termite extermination business at this location from 1952 to 1992. Reportedly, the originally unpaved parking lot was sprayed regularly with chlordane for insect control from 1952 to 1978. The parking lot was then paved sometime between 1978 and 1981. In 1981, a chlordane rinse water spill of less than 30 gallons occurred in the asphalt parking lot. Some of the rinse water entered a dry well located within the parking lot. Site investigations have confirmed that chlordane and other pesticides have contaminated soil and the groundwater beneath the Site and the soil of a

neighboring yard. In 1986, the NYSDEC entered into an Order-On-Consent with Fumex Sanitation, Inc. in which Fumex agreed to conduct an investigation to determine the extent of contamination in the soil and groundwater at the Site. Limited site investigations were conducted by the property owner; NYSDEC completed further investigations in 1989 and included the Site in the Registry of Inactive Hazardous Waste Disposal Sites. CDM completed a Phase I Remedial Investigation (RI) for NYSDEC in 1996, a Phase II RI in 1998, and an additional investigation in 1999. The remedial investigations identified the primary contaminants as heptachlor, chlordane, and dieldrin in the soil and groundwater. Heptachlor concentrations in the on-site shallow soils ranged from 4.8 parts per million (ppm) to 51 ppm; while chlordane and dieldrin concentrations ranged from 35 to 280 ppm, and 3.5 to 15 ppm, respectively. Concentrations of these pesticides decreased significantly with depth. Soil samples collected from neighboring properties indicated that the residential property that bounds the western side of the Fumex property had surface soil pesticide contamination. Groundwater samples, collected from on-site and off-site monitoring wells, indicate that heptachlor, chlordane and dieldrin detected in the on-site monitoring wells are not migrating off-site.

CDM completed a Feasibility Study (FS) in January 2000. Based on the results of the RI, the following Remedial Action Objectives (RAOs) were identified for the Site.

1. Treat or remove the principal threat posed by the Site to groundwater and potential impacts to downgradient users.

2. Isolate or remove the contaminated material in order to provide protection to human health from direct contact or ingestion of hazardous constituents in wastes or surface soil at the Site.

3. Prevent infiltration of water through the surface soil and subsequent percolation into the subsurface soil and groundwater.

In March 2001, a Record of Decision (ROD) was signed for the Fumex site. The ROD required:

- the excavation and proper disposal of the top 18 inches of soil from the entire parking lot in the rear of the Site,
- excavation and proper disposal of the contaminated surface soils at the adjacent residential property,
- the installation and maintenance of an impermeable cap over the parking lot at the rear of the Site,
- removal of an on-site drywell and replacement with a catch basin connected to the local storm sewer,
- an Environmental Easement to maintain the impermeable cap and restrict any soil excavation beneath the impermeable cap;
- power washing (with detergent) of the concrete floor in the former garage area with collection and proper disposal of all wash water, and
- implementation of a groundwater monitoring program.

Remedial Design investigations were conducted by Dvirka and Bartilucci (D&B) under contract with the NYSDEC in 2006 and 2007. These investigations included soil and groundwater sampling, an asbestos and lead-based paint survey, a property boundary/physical features survey, and a subsurface utility survey.

An Explanation of Significant Differences (ESD) was issued by the NYSDEC in April 2007. The ESD substituted an asphalt cover for the impermeable cap, based on results from the pre-design investigation that showed pesticides are not migrating off-site. This ESD was the basis of the completed Remedial Action.

D&B completed the Remedial Design (RD) in October 2009. D&B's contract reached an expenditure limit and CDM was issued a work assignment by NYSDEC to provide bidding assistance and construction management.

Remedial activities were initiated in August 2010 and were completed in October 2011.

Between on or about June 12, 2013 and July 1, 2014, the Site was owned by Frontseat, LLC, of Hempstead, New York. In November 2013, Frontseat, LLC, of Hempstead, New York, leased the Site to Winsupply, Inc. (the current tenant). The Site building was subsequently refurbished into a commercial warehouse which now stores and sells fire sprinkler components. On July 1, 2014, Frontseat, LLC, sold the Site to AJM RE Holdings XI, LLC (hereinafter referenced as the current Site Owner). In accordance with the terms of the Consent Order dated as of August 4, 2014, the current Site Owner, is required to perform sampling for pesticides only for up to 5 sampling events occurring annually or at such longer time period as the Department may determine (starting in September or October, 2014).

1.2.3 Geologic Conditions

Beneath the Fumex Sanitation Site are approximately 800 feet of unconsolidated deposits overlying crystalline bedrock. The shallowest soils beneath the Site are the Upper Glacial formation. The Upper Glacial formation consists of Pleistocene age outwash sands and gravels and is approximately 100 feet thick in the vicinity of the Fumex Sanitation Site. The depth to groundwater is approximately 40 to 50 feet below grade. Shallow groundwater flow is generally to the southwest (see Figure 2). Immediately beneath the Upper Glacial formation is the Magothy formation. The Magothy is composed of sands with intermittent clay layers and is 300 to 400 feet thick in the vicinity of the Site. The Magothy formation is used as the primary aquifer for public drinking water in Nassau County, with most wells screened 300-400 feet below the water table. Beneath the Magothy formation is the Raritan formation, consisting of the Raritan clay and the Lloyd sand. The Raritan formation is approximately 300 feet thick and overlies bedrock.

1.3 Summary of Remedial Investigation Findings

1.3.1 General

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the Site. The RI was conducted in 2 phases. The first phase was conducted between January 1996 and December 1996 the second phase between February 1997 and January 2000. A report entitled Fumex Sanitation Site Final Phase II Remedial Investigation Report (CDM, 2000) was prepared which describes the field activities and findings of the RI in detail.

The RI included the following activities:

- Soil samples were collected from on-site borings to determine contamination levels at various depths beneath the Site;
- Shallow and deep monitoring wells were installed to evaluate on-site and off-site groundwater;
- A survey of area water supply wells, both public and private, and existing monitoring well was conducted;

- Surface soil samples were taken from an adjacent residential property; and
- Wipe samples were taken from the former garage area of the on-site building.

To determine which media (soil, groundwater, etc.) are contaminated at levels of concern, the RI analytical data was compared to environmental Standards, Criteria, and Guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the Site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of New York State Sanitary Code. For soils, NYSDEC DER-10 provides soil cleanup objectives for the protection of groundwater, background conditions, and health-based exposure scenarios. NYSDOH developed a site specific soil cleanup level for chlordane of 1400 ppb for the off-site residential soils impacted by this Site. In addition, for soils, site-specific background concentration levels can be considered for certain classes of contaminants.

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the Site required remediation. These are summarized below. More complete information can be found in the RI Report.

1.3.2 Soil

Surface and shallow soil samples were taken at six on-site and eight off-site locations during the Remedial Investigation. These six locations are the boring for monitoring well MW-6 and five soil borings. At the six on-site locations, seven soil samples were taken in the first foot of soil beneath the asphalt parking lot. All seven of these samples, taken at widely separated locations throughout the parking lot (See Figure 3), greatly exceeded recommended soil cleanup objective for various pesticides. (See Figure 4)

The greatest shallow soil contamination was found in the surface (immediately below pavement) sample from soil boring SB-12, which contained 51,000 ppb of heptachlor, 510 times the recommended soil cleanup objective of 100 ppb. Chlordane was also present at 280,000 ppb, or 518 times the cleanup objective of 540 ppb. Dieldrin was present at 15,000 ppb, which is 341 times the cleanup objective of 44 ppb.

The least contaminated shallow on-site soil sample was taken from the 0-1 foot interval during the installation of monitoring well MW-6. This sample contained contamination that was over 50 times the cleanup objective for heptachlor, dieldrin and chlordane. The concentration of heptachlor in this sample was 4,800 ppb, dieldrin was 3,500 ppb, and chlordane was 35,000 ppb.

These results indicate that shallow soil pesticide contamination existed throughout the entire rear parking area. This conclusion is consistent with reports of the historical spraying of the lot with pesticides for insect control. Contamination in subsurface soils generally decreased significantly with depth. One notable exception was the MW-6 boring, where dieldrin concentrations at a depth of 10-12 feet were 386 times the SCOs. Chlordane and heptachlor concentrations at that depth were also much higher than in the shallow soil samples from the MW-6 boring. At several locations pesticide concentrations increased again slightly to as much as 10 times SCOs in the 45-47 foot sample, located just above the water table.

In October, 1999 two composite soil samples, EB and WB, were taken from the residential property that borders the Site to the west, and both were analyzed for pesticides. One of these composite samples, taken from the eastern boundary (nearest Fumex) of the residential property contained a chlordane concentration of 6,800 ppb. This is 5 times the 1,400 ppb off-site chlordane cleanup level identified for this Site by NYSDOH.

Additional soil samples were taken from adjacent, off-site properties in September 2000. Surface soil samples were taken from three locations on the residential property immediately west of the Site where

pesticide contamination had previously been found. Only one of these three soil samples exceeded soil cleanup objectives. Surface soil sample SS-2 contained 3,400 ppb of chlordane, or 2.4 times the NYSDOH soil cleanup level. Three other surface soil samples taken from properties adjoining the Site to the south did not exceed SCOs.

1.3.3 Groundwater

Six on-site and eight off-site groundwater monitoring wells were installed during the RI and previous investigations of this Site (See Figures 2 and 3). There is one deep and five shallow monitoring wells on-site. At the time of the RI there were five shallow and three deep off-site monitoring wells. The shallow wells are approximately 50 feet deep and the deep wells are approximately 125 feet deep. Two downgradient wells were added during the remedial action.

Each of the five shallow on-site monitoring wells (MW-1,2,3,4&5) were contaminated with several pesticides at concentrations above groundwater standards. The highest concentration of chlordane in on-site groundwater was 34 ppb in a June, 1998 sample from MW-1. This concentration is 680 times the groundwater standard of 0.05 ppb. The highest concentration of dieldrin in groundwater was 5.2 ppb in the September 1998 sample from MW-1. That concentration is 1,300 times the groundwater standard of 0.004 ppb.

The highest concentration of heptachlor in groundwater was found in the March 1996 sample from MW-5. This sample contained 0.5 ppb of heptachlor, 12 times the groundwater standard of 0.04 ppb. The highest concentration of heptachlor epoxide in groundwater was found in the March 1996 sample from MW-2. This sample contained 0.61 ppb of heptachlor epoxide, 20 times the groundwater standard of 0.03 ppb.

The other monitoring well on-site is MW-6, a deep well. The only contaminant found in groundwater from this well was chlordane at 0.057 ppb, just above the groundwater standard and a much lower concentration than in the shallow wells on-site.

The only contaminant found in groundwater from any of the 8 off-site wells was dieldrin at 0.03 ppb in MW-9S. MW-9S is a shallow well upgradient of the site. The contamination to this well likely came from a pesticide application at a building nearby.

Based on the lack of groundwater contamination in off-site monitoring well MW-10, which is approximately 25 feet downgradient of the Site (see Figure 3), on-site pesticide contamination in groundwater does not appear to be migrating from the Site. This is likely due to the extremely low solubility of most pesticides in water and the affinity pesticides have to adsorb to soil particles.

1.3.4 Wipe Samples

Three surface wipe samples were taken from the former garage area of the on-site building in September 2000. The results indicated 6,300 nanograms and 2,300 nanograms of chlordane/100 square centimeters from the wipe samples taken on the floor, and 87 nanograms of chlordane/100 square centimeters from the wipe sample taken on a wall. These levels are low and do not present a significant health risk to persons at the Site.

1.4 Summary of Remedial Design Investigations

1.4.1 General

D&B conducted a Pre-Design Investigation in June 2006 to obtain information necessary for completion of the RD. This investigation included additional sampling of soil and groundwater, and an asbestos and lead-based paint survey inside the on-site building. A report entitled Fumex Sanitation Site Limited Site Data Summary Report (D&B, 2007) describes the field activities and results in detail.

The investigation included the following activities:

- Collection and analysis of on-site soil samples to provide data to evaluate potential disposal options for the soil excavated during the implementation of the remedy
- Collection and analysis of soil samples from the residential property immediately to the west of the site (280 Bedford Avenue) to assist in delineating the horizontal and vertical extent of chlordane contamination that was previously detected in surface soil at this property.
- Collection and analysis of groundwater samples from existing on-site and off-site monitoring wells to establish pre-remedy baseline groundwater conditions.
- Performance of a property boundary/physical features survey of the site and the residential property.
- Performance of a subsurface utility survey to identify the presence and locations of detectable subsurface utilities both on-site and on the residential property.

1.4.2 Soil

One on-site composite soil sample was collected from locations under the asphalt in the parking lot, as shown in Figure 5. This was an effort to evaluate disposal options for the soils excavated during remediation. The sample was analyzed for Toxicity Characteristic Leaching Procedure (TCLP) parameters, Target Compound List (TCL) PCBs, reactivity, corrosivity, ignitability, and TCL pesticides. Results are summarized in Tables 1 and 2. Due to exceedances of hazardous waste limits, it was required that soils excavated from the top 18 inches of the parking lot be disposed of as a hazardous waste.

Eight soil samples were collected from the residential property to further delineate the off-site chlordane contamination. Samples from 0 to 6 inches and 18 to 24 inches below ground surface at four locations (see Figure 5) were analyzed for TCL pesticides. Results are summarized in Table 3. Due to the evidence that the pesticide contamination was less than 18 inches below ground surface, it was determined that the area be excavated to a depth of 18 inches.

1.4.3 Groundwater

Groundwater samples were collected from nine monitoring wells in an effort to establish a pre-remedy baseline for groundwater quality. Due inaccessibility, five of the originally proposed 14 samples were not collected. The samples were analyzed for TCL pesticides and results are provided in Table 4. Results were compared to NYSDEC Class GA groundwater standards and guidance values. Exceedances were within an order of magnitude of the groundwater standards.

1.4.4 Underground Storage Tanks

The presence of an Underground Storage Tank (UST) on-site was suspected but not confirmed during the investigation. The location as shown on Figure 6 was determined based upon a geophysical survey. The presence of the tank was later confirmed and removed during the remedial action.

1.4.5 Asbestos and Lead-Based Paint Survey

An asbestos and lead-based paint survey was conducted of the on-site building interior in February 2007. It was determined that the floor tile and wall mastic contained 9.9% and 13.6% asbestos, respectively, and thus by definition asbestos containing materials (ACM).

Table 1

FUMEX SANITATION SITE
ON-SITE COMPOSITE SAMPLE RESULTS
TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) PARAMETERS

SAMPLE ID SAMPLE DEPTH DATE OF COLLECTION UNITS	COMP-S-1 6-12" 6/20/2006 ug/L	INSTRUMENT DETECTION LIMIT ug/L	HAZARDOUS WASTE REGULATORY LEVEL ug/L
Volatile Organics*			
Vinyl Chloride	U	10	200
1,1-Dichloroethene	U	10	400
2-Butanone	U	10	300
Chloroform	U	10	300
Carbon Tetrachloride	U	10	600
1,2-Dichloroethane	U	10	100
Benzene	U	10	60
Trichloroethene	U	10	700
Tetrachloroethene	U	10	1,400
Chlorobenzene	8	10	1,700
Semivolatile Organics			
1,4-Dichlorobenzene	U	33	7,500
2-Methylphenol	U	33	200,000
4-Methylphenol	U	33	200,000
Hexachloroethane	U	33	3,000
Nitrobenzene	U	33	2,000
Hexachlorobutadiene	U	33	500
2,4,6-Trichlorophenol	U	33	2,000
2,4,5-Trichlorophenol	U	67	400,000
2,4-Dinitrophenol	U	67	--
2,4-Dinitrotoluene	U	33	130
Hexachlorobenzene	U	33	130
Pentachlorophenol	U	67	100,000
Pyridine	U	33	5,000
Pesticides			
gamma-BHC	0.9	0.17	400
Heptachlor	1.6	0.17	8
Heptachlor epoxide	1.2	0.17	--
Methoxychlor	U	1.7	10
Toxaphene	U	17	500
Chlordane	**45**	8.3	30
Herbicides			
2,4-D	U	3.3	10,000
2,4,5-TP (Silvex)	U	0.33	1,000
Metals			
Arsenic	46.4	1.6	5,000
Barium	539	2.1	100,000
Cadmium	7.7	0.1	1,000
Chromium	6.6 B	0.38	5,000
Lead	140	0.46	5,000
Mercury	U	0.2	200
Selenium	9.7 B	0.98	1,000
Silver	U	0.91	5,000

QUALIFIERS:

U: Compound analyzed for but not detected

B: Compound concentration is less than the CRDL but greater than the IDL

J: Compound found at a concentration below the detection limit

NOTES:

--: Not Established

Bold: Result exceeds Hazardous Waste Characteristic Limit

*: Grab sample collected from 6 to 12 inches below the base of the existing on-site dry well.

TABLE 1 (Cont'd)

FUMEX SANITATION SITE
ON-SITE COMPOSITE SAMPLE RESULTS
REACTIVITY, CORROSIVITY, IGNITABILITY
AND TARGET COMPOUND LIST (TCL) PCBs

SAMPLE ID SAMPLE DEPTH (FT) DATE OF COLLECTION	COMP-S-1 6-12" 6/20/2006	INSTRUMENT DETECTION LIMIT	HAZARDOUS WASTE REGULATORY LEVEL
Ignitability, in °F	> 140	200	< 140
Reactive Cyanide, in mg/kg	U	1.2	250
Reactive Sulfide, in mg/kg	4.1	1.2	500
Corrosivity (pH), in s.u.	7.8	1	≤ 2 or ≥ 12.5
PCBs, in ug/kg			
Aroclor-1016	U	33	--
Aroclor-1221	U	33	--
Aroclor-1232	U	33	--
Aroclor-1242	U	33	--
Aroclor-1248	U	33	--
Aroclor-1254	U	33	--
Aroclor-1260	U	33	--
Total PCBs	U	33	50,000

QUALIFIERS:
U: Compound analyzed for but not detected
--: Limit not established

Table 2

FUMEX SANITATION SITE
ON-SITE COMPOSITE SOIL SAMPLE RESULTS
TARGET COMPOUND LIST (TCL) PESTICIDES

SAMPLE IDENTIFICATION	COMP-S-1		CONTRACT REQUIRED DETECTION LIMIT
DEPTH	6-12"		
DATE OF COLLECTION	06/21/06		
PERCENT SOLIDS	82		
DILUTION FACTOR	500		
Units	ug/kg		ug/kg
alpha-BHC		U	1.7
beta-BHC		U	1.7
delta-BHC		U	1.7
gamma-BHC (Lindane)		U	1.7
Heptachlor	15,000		1.7
Aldrin		U	1.7
Heptachlor epoxide		U	1.7
Endosulfan I		U	1.7
Dieldrin	5,400		3.4
4,4'-DDE	1,400	J	3.4
Endrin		U	3.4
Endosulfan II		U	3.4
4,4'- DDD		U	3.4
Endosulfan sulfate		U	3.4
4,4'-DDT		U	3.4
Methoxychlor		U	17
Endrin ketone		U	3.4
Endrin aldehyde		U	3.4
alpha-Chlordane	39,000	DP	1.7
gamma-Chlordane	42,000	D	1.7
Toxaphene		U	170
Total Pesticides	102,800		1.7

NOTES:
--: Not established
QUALIFIERS:
U: Compound analyzed for but not detected
D: Result taken from reanalysis at a 1:5,000 dilution
P: Difference in measurement for 2 gas chromotograph columns used under analytical protocol > 25 percent

Table 3

FUMEX SANITATION SITE
OFF-SITE SOIL SAMPLE RESULTS
TARGET COMPOUND LIST (TCL) PESTICIDES

SAMPLE IDENTIFICATION	OFF-SS-1	OFF-SS-1	OFF-SS-2	OFF-SS-2	OFF-SS-3	OFF-SS-3	OFF-SS-4	OFF-SS-4	Contract Required	NYSDEC
DEPTH	0-6"	18-24"	0-6"	18-24"	0-6"	18-24"	0-6"	18-24"	Detection	Recommended
DATE OF COLLECTION	06/20/06	06/20/06	06/20/06	06/20/06	06/20/06	06/20/06	06/20/06	06/20/06	Limit	Soil Cleanup
PERCENT SOLIDS	85	79	88	81	84	82	88	87		Objectives
DILUTION FACTOR	1.0	1.0	10.0	1.0	1.0	1.0	10.0	1.0		
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
alpha-BHC	U	U	U	U	U	U	U	U	1.7	110
beta-BHC	U	U	U	U	1.9 JP	U	U	1.3 JP	1.7	200
delta-BHC	2.3 P	U	U	U	U	U	U	U	1.7	300
gamma-BHC (Lindane)	U	U	U	U	U	U	U	U	1.7	60
Heptachlor	4.2 P	U	17 JP	U	U	U	67 P	U	1.7	100
Aldrin	U	U	U	U	U	U	U	U	1.7	41
Heptachlor epoxide	**23 P**	U	U	U	4.3	U	U	U	1.7	20
Endosulfan I	U	U	U	U	U	U	U	U	1.7	900
Dieldrin	**50 D**	U	**78 P**	2.1 J	6.5 P	U	43 P	1.8 J	3.4	44
4,4'-DDE	110 D	U	90 P	4.7 P	24	3.0 J	170	13	3.4	2,100
Endrin	58 P	U	35 JP	2.4 JP	U	U	62 P	2.8 JP	3.4	100
Endosulfan II	U	U	U	U	U	U	U	U	3.4	900
4,4'- DDD	U	U	35 JP	11 P	6.0 P	U	U	U	3.4	2,900
Endosulfan sulfate	U	U	U	U	U	U	U	U	3.4	1,000
4,4'-DDT	210 D	U	120 P	U	30	2.9 JP	190 P	14	3.4	2,100
Methoxychlor	U	U	U	U	U	U	U	U	17	--
Endrin ketone	U	U	U	U	U	U	U	U	3.4	--
Endrin aldehyde	6.1 P	U	U	U	U	U	U	U	3.4	--
alpha-Chlordane	110 DP	0.94 JP	570 DP	17 P	15 P	2.2 P	360 DP	12 P	1.7	1,400*
gamma-Chlordane	67 DP	U	460 DP	15 P	12 P	1.2 JP	320 DP	11 P	1.7	1,400*
Toxaphene	U	U	U	U	U	U	U	U	170	--
Total Pesticides	640.6	0.9	1,405.0	52.2	99.7	9.3	1,212.0	55.9	--	10,000

NOTES:

: Concentration exceeds NYSDEC Recommended Soil Cleanup Objective

--: Not established

*:Site-specific level of 1,400 ug/kg for Chlordane established in Record of Decision dated 3/01.

QUALIFIERS:

U: Compound analyzed for but not detected

D: Result taken from reanalysis at a secondary dilution

J: Compound found at a concentration below the CRDL, value estimated

P: Difference in measurement for 2 gas chromatograph columns used under analytical protocol > 25 percent.

Table 4

FUMEX SANITATION SITE
GROUNDWATER SAMPLE RESULTS
PESTICIDES

SAMPLE IDENTIFICATION	MW-1	MW-3	MW-4	MW-5	MW-6	MW-7S	MW-7D	MW-9S	MW-9D	Contract Required Detection Limit	NYSDEC Class GA Standard or Guidance Value
DATE OF COLLECTION	06/20/06	06/21/06	06/20/06	06/20/06	06/23/06	06/21/06	06/23/06	06/21/06	06/21/06		
DILUTION FACTOR	5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
alpha-BHC	U	U	U	U	U	U	U	U	U	0.050	--
beta-BHC	U	U	U	U	U	U	U	U	U	0.050	--
delta-BHC	U	U	U	0.058 P	U	U	U	U	U	0.050	--
gamma-BHC (Lindane)	U	U	U	U	U	U	U	U	U	0.050	--
Heptachlor	U	U	U	**0.13 P**	U	U	U	U	U	0.050	0.04 ST
Aldrin	U	U	U	0.11 P	U	U	U	U	U	0.050	ND ST
Heptachlor epoxide	U	**0.12**	U	**0.55 P**	U	U	U	**0.034 J**	**0.048 JP**	0.050	0.03 ST
Endosulfan I	U	0.11 P	0.2	U	U	U	U	U	U	0.050	--
Dieldrin	3.2	0.22	0.13	1.1 P	0.068 J	0.041 J	0.042 J	U	U	0.10	--
4,4'-DDE	**0.82 P**	U	U	U	U	U	U	U	U	0.10	0.2 ST
Endrin	U	U	U	0.4 P	U	U	U	U	U	0.10	ND ST
Endosulfan II	U	U	U	U	U	U	U	U	U	0.10	--
4,4'- DDD	U	U	U	U	U	U	U	U	U	0.10	0.3 ST
Endosulfan sulfate	U	U	U	U	U	U	U	U	U	0.10	--
4,4'-DDT	U	U	U	U	U	U	U	U	U	0.10	0.2 ST
Methoxychlor	U	U	U	U	U	U	U	U	U	0.10	35 ST
Endrin ketone	U	U	U	U	U	U	U	U	U	0.10	5 ST
Endrin aldehyde	U	U	U	U	U	U	U	U	U	0.10	5 ST
alpha-Chlordane	**12 DP**	**0.22 P**	**0.2 P**	**3.4 DP**	0.042 JP	U	U	**0.062 P**	U	0.050	0.05 ST
gamma-Chlordane	**11 D**	**0.21**	**0.22**	**2.6 D**	**0.051**	U	U	0.043 J	U	0.050	0.05 ST
Toxaphene	U	U	U	U	U	U	U	U	U	5.0	0.06 ST

QUALIFIERS:

U: Compound analyzed for but not detected

D: Result taken from reanalysis at a secondary dilution

J: Compound found at a concentration below the CRDL, value estimated

P: Difference in measurement for 2 gas chromatograph columns used under analytical protocol > 25 percent, lower concentration reported

NOTES:

--: Not established

GV: Guidance Value

ST: Standard

Bold: Result exceeds NYSDEC Class GA Standard

1.5 Summary of Remedial Actions

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

1. The excavation and off-site disposal of approximately 730 tons of on-site contaminated soils and asphalt followed by backfilling of the remaining open excavations with clean imported fill. The disturbed areas were covered with asphalt and/or topsoil and seed. Removal of an on-site drywell and installation of a new stormwater management system that connects to the Nassau County stormwater system
2. Removal and off-site disposal of an underground storage tank
3. Installation of two new monitoring wells and completion of a round of groundwater sampling of the entire monitoring well network
4. Abatement of ACM floor tile and encapsulation of ACM wall mastic inside the on-site building
5. Power washing (with detergent) of the concrete floor in the former garage and the encapsulation of the floor surface with the application of an epoxy resin coating
6. Roof and door repair to the on-site building
7. The excavation and off-site disposal of approximately 33 tons of off-site contaminated soils from the western residential property followed by backfilling of the remaining open excavations with clean imported fill. The disturbed areas were covered with topsoil and seed
8. Development and implementation of a Site Management Plan for long term management of remaining contamination which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, and (3) reporting

The cleanup has made the off-site residential property located at 280 Bedford Avenue suitable for residential use. NYSDEC issued a Final Completion Letter to the property remedial contractor in September 2011. Remedial work is considered complete and the off-site residential property is not governed by this SMP.

The on-site portion of the Site was cleaned up to be protective of groundwater and is now suitable for commercial or industrial reuse.

The building repairs noted above were completed in the fall of 2011 and all remedial activities were completed at the Site in December 2011.

1.5.1 Removal of Contaminated Materials from the Site

The SCOs for the Site were established for the protection of public health for commercial use. The SCOs for the primary contaminants of concern (COCs) and applicable land use for this site is provided in Table 5.

Table 5: Soil Cleanup Objectives

Contaminant	CAS No.	Unrestricted Use SCOs (ppm)	Commercial SCOs (ppm)
4,4'-DDE	72-55-9	0.0033	62
4,4'-DDT	50-29-3	0.0033	47
4,4'-DDD	72-54-8	0.0033	92
Aldrin	309-00-2	0.005	0.68
alpha-BHC	319-84-6	0.02	3.4
beta-BHC	319-85-7	0.036	3
Chlordane (alpha)	5103-71-9	0.094	24
delta-BHC	319-86-8	0.04	500
Dieldrin	60-57-1	0.005	1.4
Endosulfan I	959-98-8	2.4	200
Endosulfan II	33213-65-9	2.4	200
Endosulfan sulfate	1031-07-8	2.4	200
Endrin	72-20-8	0.014	89
Heptachlor	76-44-8	0.042	15
Lindane (gamma-BHC)	58-89-9	0.1	9.2

The excavation of the on-site parking lot removed 4 – 10 inches of asphalt and 18 inches of contaminated soil. Figure 6 shows the previously existing site conditions and the limits of the excavation. The endpoint elevations of the excavation are shown in Figure 7. The area was backfilled with clean imported fill and an asphalt cover was installed to produce the final grade shown in Figure 8.

The UST was excavated and discovered to be a 500 gallon tank and to contain 36 gallons of a mixture of water and petroleum related compounds. The tank was cleaned and disposed of at a steel recycling facility. Due to PID screening results which indicated the presence of volatile organic compounds (VOCs), approximately 3 feet of soils were removed below the original tank bed bottom. Following removal the area was backfilled with clean soil to existing grade.

1.5.2 Site – Related Treatment Systems

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

1.5.3 Remaining Contamination

Beneath the on-site parking lot, contamination remains beneath the asphalt cover. This contamination was not removed because it lies beneath the depth of excavation selected in the remedy. The nature and extent of the remaining contamination is shown in Figure 10. The concentrations of all detected contamination at the excavation limits are given; concentrations in exceedance of commercial SCOs are bolded and italicized. Contaminated soils are at depths beneath final grade level of 15 inches and greater. The complete results of the excavation endpoint samples are summarized in Table 6.

Two areas within the on-site building contain known contamination, the concrete slab and a section of the north and east interior wall.

The remedial plans required the floor tiles be removed and disposed of and the concrete slab be power washed but otherwise left intact. Following the power washing, concrete chip samples were collected and analyzed for pesticides. The results revealed high levels of chlordane contamination, ranging from 8.9 ppm to 17 ppm. A coat of durable epoxy was applied to the concrete surface to provide a protective barrier to prevent direct contact with the contaminants remaining in the floors.

Current operations at the Site include use of a small forklift and truck deliveries and pickups. Due to these operations, select areas of the epoxy resin coating (intended to limit contact with pesticide-impacted concrete in the building) have been damaged. Industrial floor matting was proposed to be installed in the warehouse where the forklift is operated to protect the epoxy resin coating from further damage and to limit contact with the exposed areas. The matting was installed in June 2014 by the NYSDEC.

The RD investigation identified asbestos-containing mastic coating on an area of interior exposed brick and concrete masonry unit walls. During the remedial action, the walls were painted with an epoxy-based encapsulant and a simple sheetrock barrier wall was constructed over the encapsulated mastic to prevent disturbance.

In the event of any demolition of the existing structure as part of redevelopment of the property, the concrete slab would need to be characterized to identify disposal requirements (non hazardous C&D debris or as hazardous material). There are no soil samples from beneath the concrete slab; however, in the event of building demolition and removal of any parts of the concrete slab, soil samples must be collected to characterize these soils to determine appropriate management and disposition as well as health and safety requirements for site workers.

The areas of the wall containing mastic would need to be disposed of as asbestos containing materials.

Table 6: Soil Excavation Endpoint Sample Results

			Sample ID	B-1	B-2	B-3	B-4	B-5	B-6	SW-1	SW-2	SW-3	SW-4
			Sampling Date	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010
Compound	CAS #	Units	Commercial SCO										
4,4-DDD	72-54-8	µg/kg	92000	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
4,4-DDE	72-55-9	µg/kg	62000	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
4,4-DDT	50-29-3	µg/kg	47000	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
Aldrin	309-00-2	µg/kg	680	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
alpha-BHC	319-84-6	µg/kg	3400	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
alpha-Chlordane	5103-71-9	µg/kg	24000	19000 P	24000 P	25000 P	6700 P	31000 P	19000 P	240 P	520000 EP	3000 P	1900 P
beta-BHC	319-85-7	µg/kg	3000	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
delta-BHC	319-86-8	µg/kg	500000	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
Dieldrin	60-57-1	µg/kg	1400	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	1700 EP	1900 U	420 U	180 U
Endosulfan I	959-98-8	µg/kg	200000	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
Endosulfan II	33213-65-9	µg/kg	200000	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
Endosulfan Sulfate	1031-07-8	µg/kg	200000	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
Endrin	72-20-8	µg/kg	89000	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
Endrin aldehyde	7421-93-4	µg/kg	N/A	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
Endrin ketone	53494-70-5	µg/kg	N/A	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
gamma-BHC	58-89-9	µg/kg	9200	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
gamma-Chlordane	5103-74-2	µg/kg	N/A	21000 P	25000 P	28000 P	7500 P	33000 P	21000 P	310 P	370000 E	3400 P	1800 P
Heptachlor	76-44-8	µg/kg	15000	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
Heptachlor epoxide	1024-57-3	µg/kg	N/A	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
Methoxychlor	72-43-5	µg/kg	N/A	1900 U	1800 U	2000 U	900 U	2000 U	1800 U	21 U	1900 U	420 U	180 U
Toxaphene	8001-35-2	µg/kg	N/A	19000 U	18000 U	20000 U	9000 U	20000 U	18000 U	210 U	19000 U	4200 U	1800 U

Notes

1. Values highlighted in orange exceed the commerical Remedial Program Soil Cleanup Objectives (6 NYCRR Subpart 375-6, December 14, 2006)

Qualifiers

U - The compound was not detected at the indicated concentration.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

E - Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.

D - The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.

Section 2
Engineering and Institutional Control Plan

2.1 Introduction

2.1.1 General

Since remaining contaminated soil and groundwater 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 by the Site Owner. 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

The following engineering control systems are in place at the Site and are as follows and discussed below:

- Soil and Asphalt Cover System
- Epoxy Resin Coating and Industrial Matting
- Bridging Encapsulant
- Fencing

2.2.1.1 Soil and Asphalt Cover System

Exposure to remaining contamination in soil/fill at the Site is prevented by a soil and asphalt cover system placed over the Site. This cover system is comprised of 11 to 20 inches of clean soil under asphalt pavement (Figure 9). The Excavation Work Plan that appears in Appendix B 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 by the Site Owner are provided in the Monitoring Plan included in Section 3 of this SMP.

2.2.1.2 Epoxy Resin Coating and Industrial Matting

Exposure to remaining contamination in the concrete inside the on-site building is prevented by an epoxy coating and an industrial matting applied over the cement floor. Procedures for the inspection and maintenance of this cover by the Site Owner are provided in the Monitoring Plan included in Section 3 of this SMP.

Current operations at the Site include use of a small forklift and truck deliveries and pickups. Due to these operations, select areas of the epoxy resin coating (intended to limit contact with pesticide-impacted concrete in the building) have been damaged. Industrial floor matting was proposed to be installed in the warehouse where the forklift is operated to protect the epoxy resin coating from further damage and to limit contact with the exposed areas. The matting was installed in June 2014 by the NYSDEC.

2.2.1.3 Bridging Encapsulant

Exposure to remaining asbestos containing mastic material on the walls of the on-site building is prevented by an encapsulant applied on top of the mastic material. A sheetrock wall was constructed over the encapsulated mastic to prevent disturbance.

2.2.1.4 Fencing

Security for the Site is provided by fencing that encloses the parking lot. The 21.5 foot wide section of concrete wall on the southern border of the property demolished during remedial construction activities was replaced with a 12-foot chain link fence. The remainder of the southern border is protected with 6-foot chain link fence. The western side of the parking lot is separated from the bordering residential property with 6-foot chain link fencing. The on-site building encloses the eastern side of the parking lot, and the northern edge has brick and block wall with locking chain link fence swinging gates to provide access.

The Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the Site, occurs.

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 6.4 of NYSDEC DER-10.

2.2.2.1 Soil and Asphalt Cover System

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

2.2.2.2 Epoxy Resin and Industrial Matting Cleaning

The epoxy floor coating and Industrial Matting are permanent controls and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity by the Site Owner.

2.2.2.3 Bridging Encapsulant

The encapsulant on the ACM mastic is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals for the lifetime of the wall by the Site Owner. Any demolition of a wall containing encapsulated ACM will include the abatement of all ACM according to all federal, state, and local regulations.

2.2.2.4 Fencing

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

2.3 Institutional Controls

A series of Institutional Controls is required by the ROD/ESD 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 commercial and industrial uses only. Adherence to these ICs on the Site is required by the Environmental Easement and will be implemented under this SMP by the Site Owner. These ICs are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns;
- All ECs must be operated and maintained by the Site Owner as specified in this SMP;
- All ECs on the Controlled Property must be inspected by the Site Owner at a frequency and in a manner defined in the SMP.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site Management of the Controlled Property must be reported by the Site Owner at the frequency and in a manner defined in this SMP;

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

The Site has a series of ICs in the form of use restrictions. Adherence to these Institutional Controls by the Site Owner is required by the Environmental Easement. Site use restrictions that apply to the Site (defined in the Environmental Easement as the "Controlled Property") are:

- The Controlled Property may only be used for commercial and industrial uses, provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The Controlled Property may not be used for a higher level of use, such as unrestricted, residential, or restricted residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the Controlled Property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for intended use;
- Vegetable gardens and farming on the Controlled Property are prohibited;
- The Site Owner 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 a professional engineer or environmental professional acceptable to the Department or Relevant Agency.
- The Site Owner shall continue in full force and effect any institutional and engineering controls required for the Site, unless the Site Owner first obtains permission to discontinue such controls from the Department or Relevant Agency, in compliance with the approved SMP subject to modifications as approved by the Department or Relevant Agency.

2.3.1 Excavation Work Plan

The Site has been remediated for commercial and industrial uses. Any future intrusive work that will penetrate the soil and asphalt cover system, 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 B 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 and CAMP are attached as Appendices C and D, respectively, 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. 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 by, or on behalf of, the Site Owner with the notification provided in Section B-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 by, or on behalf of, the Site Owner under the Site Management Reporting Plan (See Section 5).

The Site Owner and associated parties 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 Institutional Controls

2.4.1 Inspections

Inspections of all Engineering Controls installed at the Site will be conducted by the Site Owner at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually by the Site Owner, regardless of the frequency of the Periodic Review Report (PRR). The inspections will determine and document the following:

- Whether ECs 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;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system;

Inspections will be conducted by the Site Owner in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the PRR 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 by the Site Owner 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 Site 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 6NYCRR Part 375, and/or ECL.
- 7-day advance notice of any proposed ground-intrusive activities pursuant to the EWP.
- 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 ECs 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 Order on Consent, 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 the qualified environmental professional. These emergency contact lists must be maintained in an easily accessible location at the Site.

Table 7: 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
Chemical Emergency Advice (Chemtrec)	(800) 424-9300

Table 8: Other Contact Numbers

Qualified environmental professional:	Phone:
NYESDEC (Albany Office)	*Work Hours*: (518) 402-9814 *After Hours*: (800) 342-9226 *(leave message)*
NYSDEC (Region 1 Office)	*Work Hours*: (631) 444-0204
Nassau County Department of Health	(516) 571-3410
New York State Department of Health, Division of Environmental Health	(800) 458-1158

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

2.5.2 Map and Directions to Nearest Health Facility

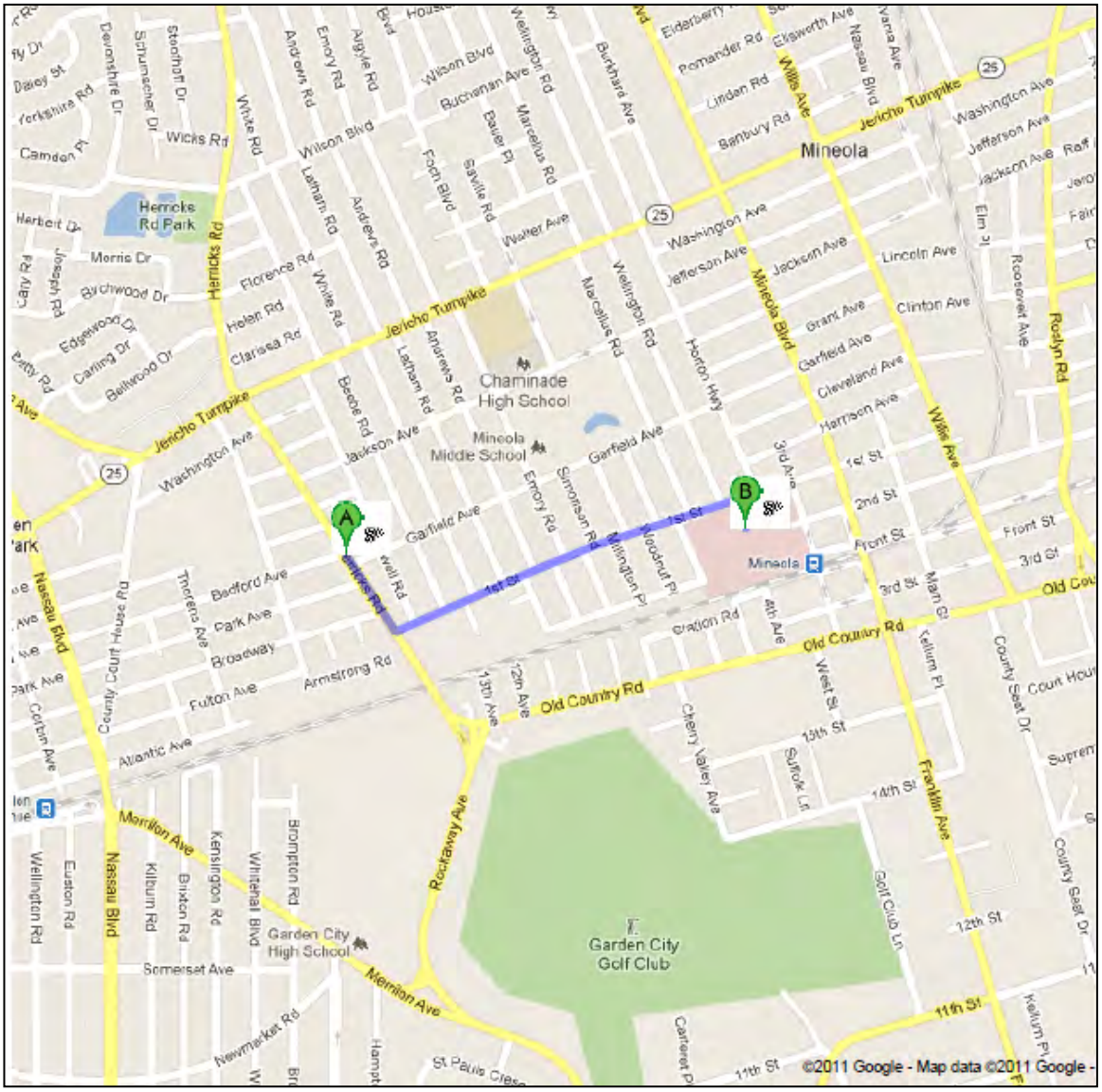
Site Location: 131 Herricks Road, Garden City Park, NY
Nearest Hospital Name: Winthrop University Hospital
Hospital Location: 259 First St, Mineola, NY 11501
Hospital Telephone: 516-663-0333

Directions to the Hospital:

1. Head **southeast** on **Herricks Rd** toward **Garfield Ave**
2. Take the 2nd left onto **1st St**
3. Continue 0.5 miles, hospital is on right

Total Distance: 0.7 mi
Total Estimated Time: 3 min

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 the Site Owner via telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 7). The list will also be posted prominently at the Site and made readily available to all personnel at all times.

Section 3
Site Monitoring Plan

3.1 Introduction

3.1.1 General

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

The NYS Licensed Professional Engineer or a qualified environmental professional hired by the Site Owner[1] shall perform sampling, monitoring, maintenance of groundwater for up to five (5) sampling events for pesticides only occurring annually or at such longer time period as the Department may determine and other remedial activities including the preparation of certified monitoring reports to the NYSDEC. The performance of these activities is a fundamental element of the NYSDEC's determination that the Controlled Property is safe commercial and industrial use, but not all uses. The SMP may be modified in accordance with the NYSDEC's statutory and regulatory authority. The Site Owner and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from the NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (i.e., groundwater);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance for ambient groundwater standards;
- Assessing achievement of the remedial performance criteria;
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environmental; and,
- Preparing the necessary reports for the various monitoring activities.

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

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

[1] All references to activities to be performed by Site Owner throughout this Section 3 shall be read as activities to be performed by or on Site Owner's behalf by a NYS Licensed Professional Engineer or a qualified environmental professional hired by the Site Owner.

Annual monitoring of the performance of the remedy and status of contamination in groundwater on-site and off-site will be conducted. This monitoring program will be reevaluated by NYSDEC every five years, or as otherwise requested in connection with Site Owner's submittal of monitoring reports. Trends in groundwater in the affected areas will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are summarized in Table 9 and outlined in detail in Sections 3.2 and 3.3 below.

Table 9: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Soil and Asphalt Cover System Monitoring & Inspections of Other Engineering Controls	Annual	N/A	Visual Inspection
Groundwater	Annual	Groundwater	TCL Pesticides (8081)

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

3.2 Soil and Asphalt Cover System Monitoring

3.2.1 Asphalt Cover

The on-site asphalt cover will be inspected annually by the Site Owner. Inspections will note any cracks, depressions, and other irregularities that affect the asphalt surface. Maintenance will be performed by the Site Owner to keep the final grade intact.

3.2.2 Stormwater Trench Drain

The stormwater management system that connects to the Nassau County stormwater system will be inspected annually by the Site Owner. Inspections will note any blockages or deterioration. Maintenance will be performed by the Site Owner to keep the system functioning.

3.3 Other Engineering Controls

3.3.1 Epoxy Resin Coating and Industrial Matting

The interior epoxy resin coating and industrial matting will be inspected annually by the Site Owner. Inspections will note any irregularities that affect the integrity of the coating. Maintenance will be performed by the Site Owner to keep the coating intact.

3.3.2 Roof

The building will be inspected by the Site Owner annually for leaks. Any observed leaks will be noted and maintenance will be performed by the Site Owner on the roof to keep its integrity intact and the building free of all leaks.

3.3.3 Fence and Gate

The integrity of the fence and gate will be inspected annually by the Site Owner. Inspections will note any deficiencies, and maintenance will be performed by the Site Owner to correct them.

3.4 Media Monitoring Program

3.4.1 Groundwater Monitoring

Groundwater monitoring will be performed by the Site Owner on a periodic basis to assess the performance of the remedy and to document levels of remaining contamination in groundwater. This monitoring program will consist of sampling and analysis of groundwater from 10 groundwater monitoring wells for pesticides only for up to 5 sampling events occurring annually or at such longer time period as the Department may determine. Such groundwater monitoring shall commence with the 2014 sampling scheduled to occur in late September – early October 2014 timeframe.

The locations are shown on the survey included in Appendix A and are summarized in the table below.

Table 10: Groundwater Monitoring Wells

Well ID	Shallow/Deep	Location
MW-1	Shallow	On-site (parking lot)
MW-2	Shallow	On-site (parking lot)
MW-3	Shallow	On-site (parking lot)
MW-4	Shallow	On-site (parking lot)
MW-5	Shallow	On-site (parking lot)
MW-6	Deep	On-site (parking lot)
MW-7S	Shallow	Downgradient, on Broadway
MW-7D	Deep	Downgradient, on Broadway

MW-10R	Shallow	Downgradient, on Park Ave
MW-11R	Shallow	Downgradient, on Park Ave

Note: Existing monitoring wells MW-8S, MW-8D, MW9S and MW-9D are not listed as they are no longer incorporated into the sampling network as approved by the NYSDEC.

This program will allow the effectiveness of the asphalt cover to be monitored by the Site Owner. This monitoring program will be reevaluated every five years to determine if it requires modification. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC. Further details of the groundwater monitoring program are specified in Appendix E.

3.4.2 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped by the Site Owner. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan) by the Site Owner if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed by the Site Owner based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement by the Site Owner will be done only with the prior approval of NYSDEC.

Once the NYSDEC determines that groundwater monitoring is no longer necessary, the Site Owner shall properly decommission all 14 wells in the monitoring well network including: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7S/7D, MW-8S/D, MW-9S/9D, MW-10R, and MW-11R.

Well abandonment will be performed in accordance with NYSDEC's Commissioner Policy (CP)-43: "Groundwater Monitoring Well Decommissioning Policy" dated November 3, 2009. Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.5 Site-Wide Inspection

Site-wide inspections will be performed by the Site Owner 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 ECs. During these inspections, an inspection form will be completed by the Site Owner (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 all ECs;
- Condition of the on-site building (e.g. roof leaks, vandalism);
- 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;
- Confirm that site records are up to date.

3.6 Monitoring Quality Assurance/Quality Control

All sampling and analyses will be performed by the Site Owner **i**n accordance with the requirements of the Quality Assurance Project Plan (QAPP) prepared for the Site (included in Appendix E). Main Components of the QAPP include:

- QA/QC Objectives for Data Measurement;
- Sampling Program:
- Sample Tracking and Custody;
- Calibration Procedures:
- Analytical Procedures;
- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.
- Internal QC and Checks;
- QA Performance and System Audits;
- Preventative Maintenance Procedures and Schedules;
- Corrective Action Measures.

3.7 Monitoring Reporting Requirements

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

All monitoring results will be reported **by** the Site Owner to NYSDEC on a periodic basis in the PRR. A report will also be prepared subsequent to each sampling event. The report will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;

- Type of samples collected (e.g., groundwater);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (or be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether groundwater conditions have changed since the last reporting event.

Groundwater well data will be submitted by the Site Owner to NYSDEC in the NYSDEC Electronic Information Management System (EIMS) EDD format as specified in the latest version of the NYSDEC Electronic Data Deliverable Manual. EDD submittals will include:

1) An initial submittal containing information regarding the data provider, facility, and locations with surveyed LAT LONG coordinates. A subfacility code will be identified with the NYSDEC PM.
2) Available well construction data
3) Field Sample data including matrix, sample date and time, water level data, and field parameter data
4) Laboratory analytical data for each field sample collected.

A summary of the monitoring program deliverables are summarized in Table 11 below.

Table 11: Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Periodic Review Report	Once every 3 years thereafter
Site-wide Inspection	Annually
Groundwater Monitoring	Annually

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

Section 4
Operation and Maintenance Plan

4.1 Introduction

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 applicable and has not been included in this SMP.

Section 5
Inspections, Reporting and Certifications

5.1 Site Inspections

5.1.1 Inspection Frequency

All inspections will be conducted by the Site Owner[1] at the frequency specified in the schedules provided in Section 3 Monitoring Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted 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

A general site-wide inspection form will be completed by the Site Owner during the site-wide inspection (see Appendix F). This form is 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 by the Site Owner 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 by the Site Owner;
- 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 NYS Licensed Professional Engineer or a qualified environmental professional hired by the Site Owner will prepare the following certification:

[1] All references to activities to be performed by Site Owner throughout this Section 5 shall be read as activities to be performed by or on Site Owner's behalf by a NYS Licensed Professional Engineer or a qualified environmental professional hired by the Site Owner.

- 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 NYSDEC;
- 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 NYSDEC 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, [name], of [business address], am certifying as [Owner or Owner's Designated Site Representative] for the Site.

The signed certification will be included in the PRR described below.

5.3 Periodic Review Report

A PRR will be submitted by the Site Owner to the NYSDEC every third year. The next PRR is due by May 18, 2017. In the event that the Site is subdivided into separate parcels with different ownership, a single PRR will be prepared by the Site Owner that addresses the Site described in Appendix A (ALTA/ACSM Land Title Survey). The report will be prepared by the Site Owner in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. Media sampling results will also incorporated into the PRR. 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 summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;

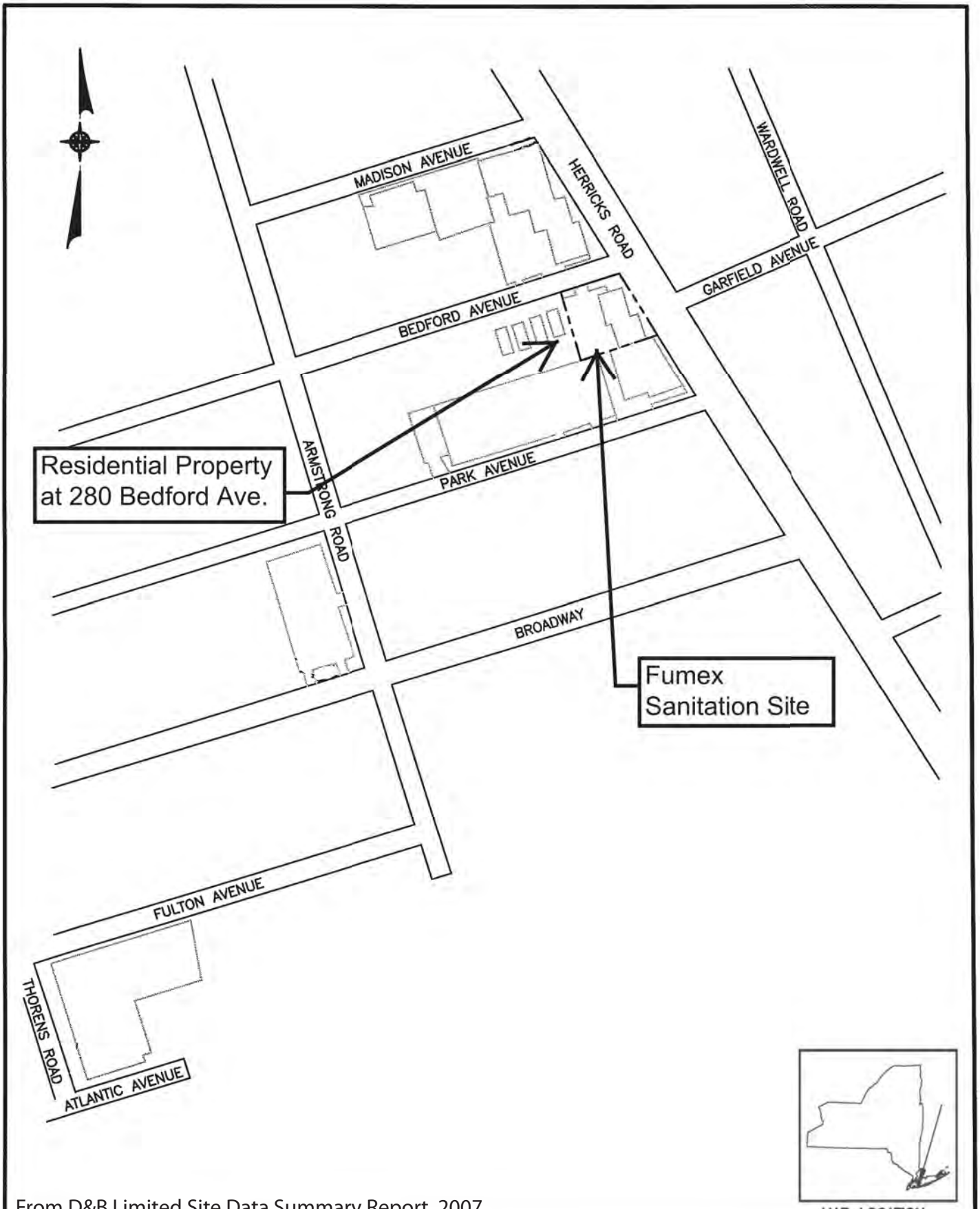
- Data summary tables and graphical representations of contaminants of concern by media (groundwater), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the site-specific ROD/ESD;
  - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
  - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
  - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
  - The overall performance and effectiveness of the remedy.

The PRR 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 by the Site Owner 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 by the Site Owner pursuant to the corrective measures plan until it is approved by the NYSDEC.

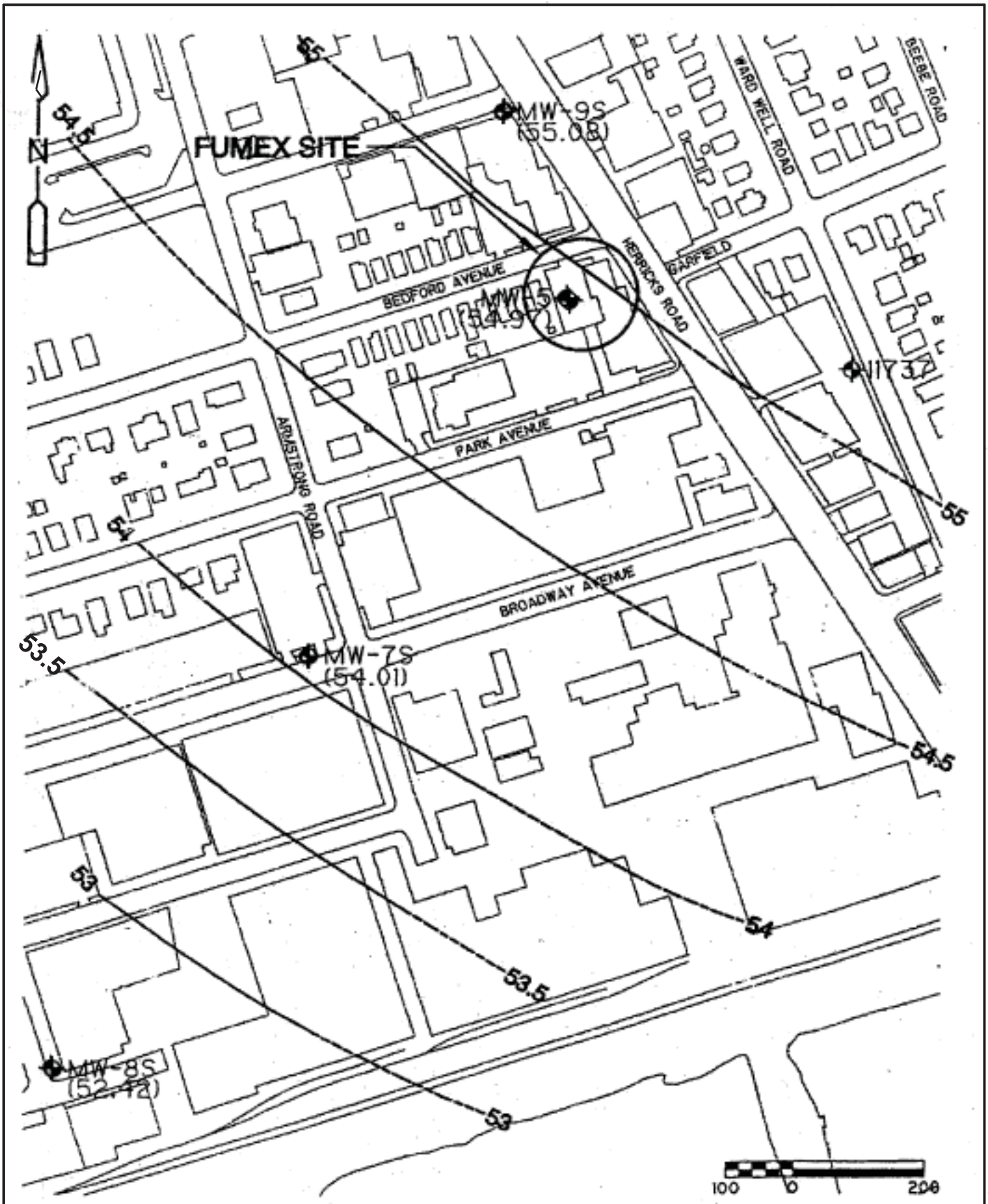
FIGURES



From D&B Limited Site Data Summary Report, 2007

CDM Smith

Figure 1
Location Map
Fumex Sanitiation
Garden City Park, New York



From CDM Phase II Report, Fumex Site

Figure 2
Study Area Water Table Contour Map
Fumex Sanitation
Garden City Park, New York

CDM Smith

From CDM Phase II Report Amendments

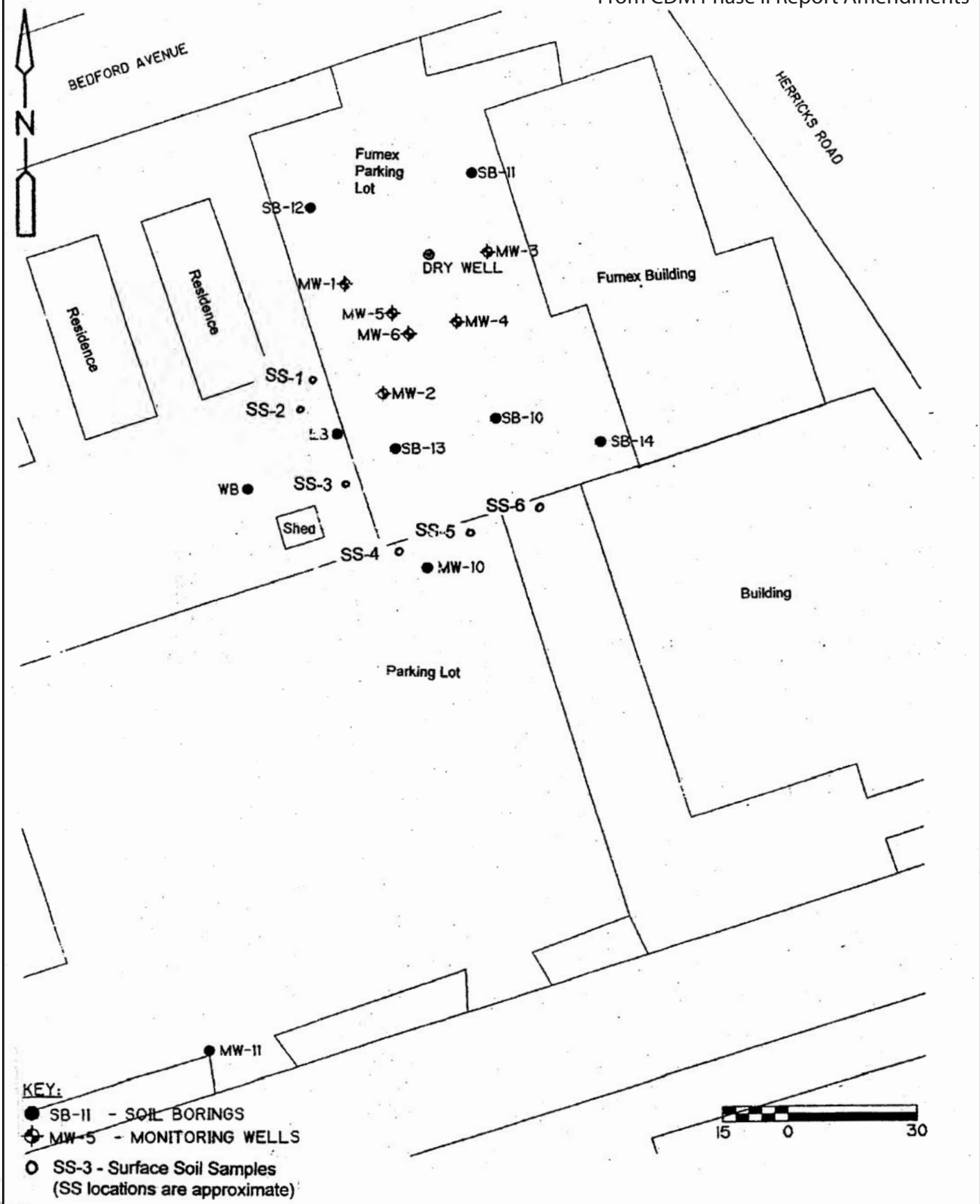


Figure 3
Monitoring Wells and Soil Sample Locations Map
Fumex Sanitation
Garden City Park, New York

CDM Smith

From CDM Phase II Report, Fumex Site

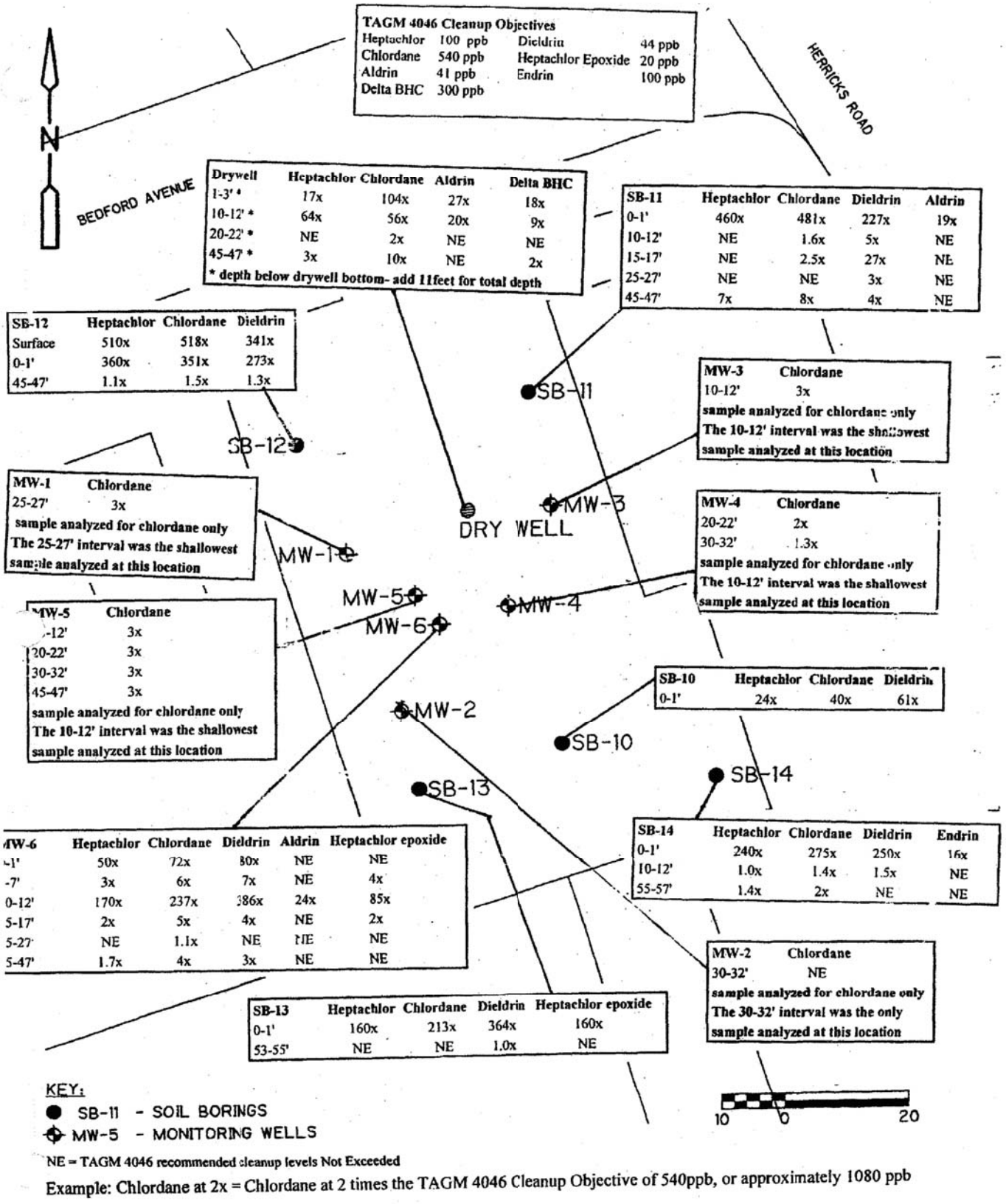
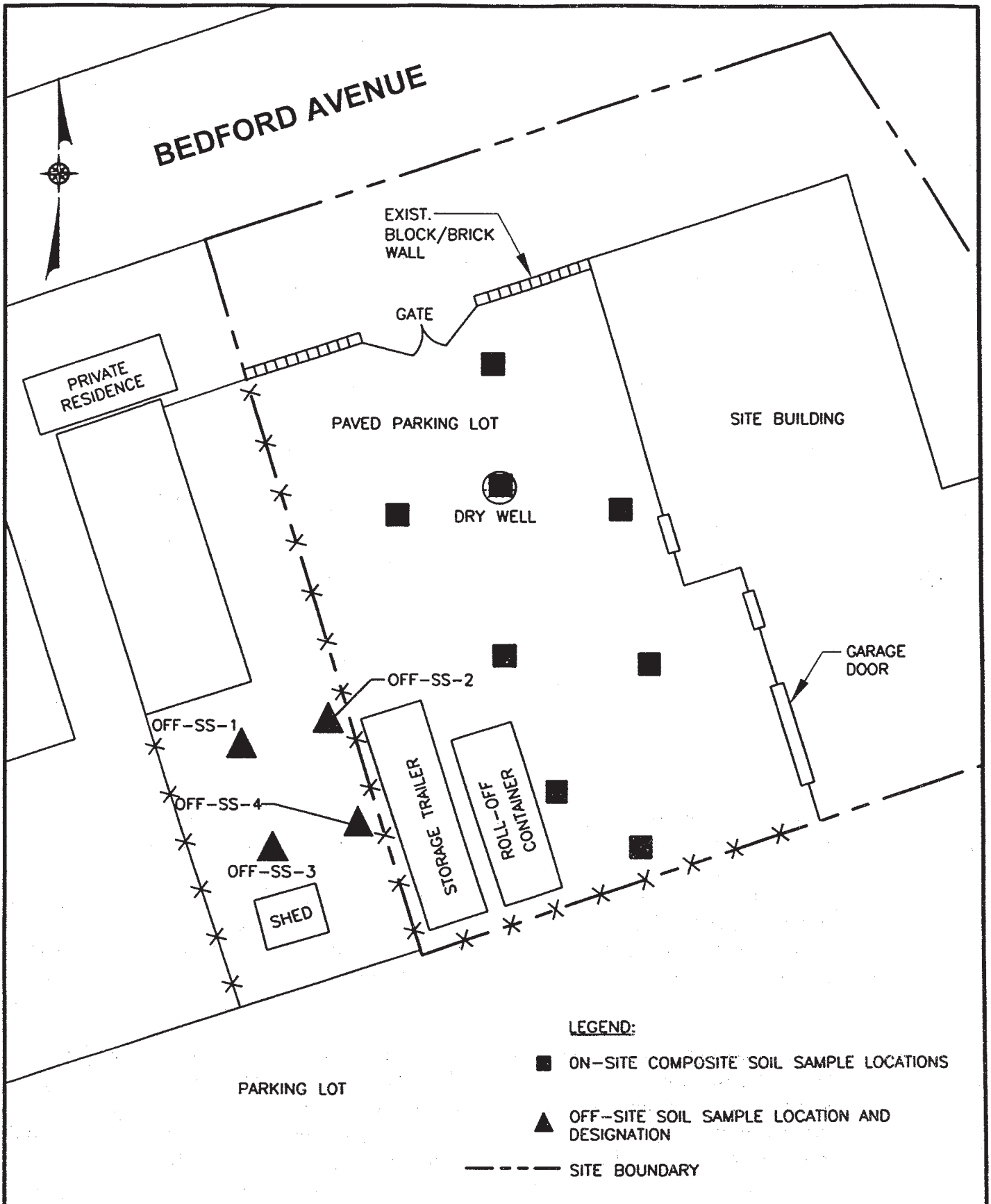


Figure 4
On-Site Pesticide Soil Contamination in Multiples of TAGM 4046 Cleanup Objectives
Fumex Sanitation
Garden City Park, New York

CDM Smith

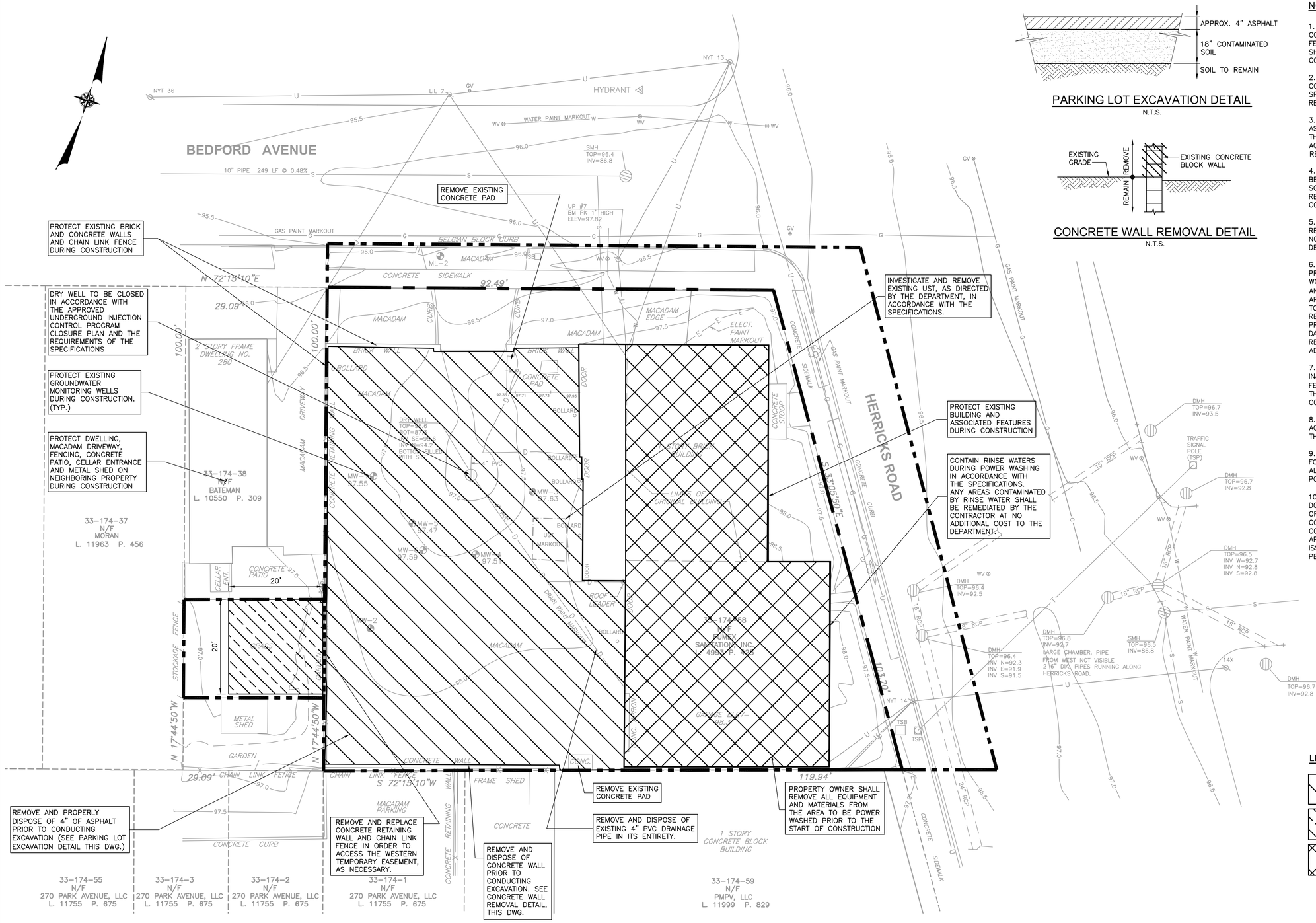


Not to Scale

From Predesign Investigation (Dvirka and Bartilucci)

CDM Smith

Figure 5
Soil Sample Locations
Fumex Sanitation
Garden City Park, New York



PARKING LOT EXCAVATION DETAIL
N.T.S.

CONCRETE WALL REMOVAL DETAIL
N.T.S.

NOTES:

1. BEFORE COMMENCEMENT OF ANY REMEDIATION ACTIVITIES, THE CONTRACTOR SHALL APPLY FOR AND OBTAIN ANY APPLICABLE PERMITS FROM FEDERAL, STATE AND LOCAL REGULATORY AGENCIES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ENSURING COMPLIANCE WITH ALL CONDITIONS AND NOTIFICATION REQUIREMENTS OF ISSUED PERMITS.

2. CONTRACTOR SHALL CONDUCT ALL EXCAVATION AND HANDLING OF CONTAMINATED SOIL IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS AND ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

3. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF EXISTING ASPHALT PAVEMENT, CONCRETE PADS, BOLLARDS, ETC. WITHIN THE LIMITS OF THE ASPHALT PARKING LOT, AS NECESSARY TO PERFORM THE WORK, AND IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

4. CONTRACTOR'S WORK WITHIN THE WESTERN TEMPORARY EASEMENT SHALL BE COMPLETED WITHIN 5 DAYS, INCLUDING EXCAVATION OF CONTAMINATED SOIL, ENDPOINT SAMPLING, BACKFILL AND COMPACTION AND SITE RESTORATION. WATERING, PLACEMENT OF SOD OR PLANTING MAY BE COMPLETED AFTER 5 DAYS IN ACCORDANCE WITH THE SPECIFICATIONS.

5. ENDPOINT SAMPLING SHALL BE CONDUCTED WITHIN EACH EXCAVATION, AS REQUIRED BY THE SPECIFICATIONS, PRIOR TO BACKFILL AND COMPACTION. NO BACKFILLING SHALL TAKE PLACE UNTIL THE APPROVAL OF EXCAVATION DEPTHS AND ENDPOINT SAMPLING RESULTS BY THE ENGINEER.

6. GROUNDWATER MONITORING WELLS MW-1 THROUGH MW-6 SHALL BE PROTECTED DURING CONSTRUCTION. PRIOR TO CONDUCTING EXCAVATION WORK, MW-1 THROUGH MW-6 SHALL BE EXPOSED AND THE RISER PIPE CUT AND CAPPED AT A DEPTH OF 18" BELOW FINAL EXCAVATION DEPTH IN THAT AREA, AND THE EXCAVATION BACKFILLED WITH GENERAL FILL. SUBSEQUENT TO THE INSTALLATION OF THE IMPERMEABLE CAP, THE WELLS SHALL BE RESTORED IN ACCORDANCE WITH THE ON-SITE WELL RESTORATION DETAIL PROVIDED ON DWG. 5. GROUNDWATER MONITORING WELLS THAT ARE DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE ABANDONED AND REPLACED IN KIND, AS DIRECTED BY THE DEPARTMENT AND AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. CONTRACTOR SHALL EXECUTE THE WORK TO PREVENT DAMAGE OR INJURY TO EXISTING SITE STRUCTURES, UTILITIES AND EXISTING SITE FEATURES (E.G., RETAINING WALLS, FENCING). ANY DAMAGE RESULTING FROM THE PERFORMANCE OF THE WORK SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DEPARTMENT.

8. CONTRACTOR SHALL EMPLOY A COMMUNITY AIR MONITORING PROGRAM IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS THROUGHOUT THE PERFORMANCE OF THE WORK.

9. CONTRACTOR SHALL PERFORM ALL POWER WASHING ACTIVITIES IN THE FORMER GARAGE AREA IN ACCORDANCE WITH THE SPECIFICATIONS. REMOVE ALL TILE AND FLOORING IN ACCORDANCE WITH THE SPECIFICATIONS PRIOR TO POWER WASHING CONCRETE FLOOR.

10. CONTRACTOR SHALL INSTALL TWO (2) MONITORING WELLS IMMEDIATELY DOWNGRADIENT IN PUBLIC RIGHT-OF-WAYS. REFER TO DRAWING NO. 5 FOR OFF-SITE GROUNDWATER MONITORING WELL INSTALLATION PLAN AND CONSTRUCTION DETAIL. THE AREA OF THIS WORK IS NOT WITHIN THE CONTRACT LIMITS DEPICTED ON THESE DRAWINGS. CONTRACTOR SHALL APPLY FOR, PAY ALL FEES NECESSARY TO OBTAIN, AND COMPLY WITH ALL ISSUED FEDERAL, STATE AND LOCAL PERMITS, INCLUDING ROAD OPENING PERMITS NECESSARY TO INSTALL THE OFF-SITE MONITORING WELLS.

LEGEND:

EXTENT OF HAZARDOUS WASTE TO BE EXCAVATED TO 1.5' BELOW BOTTOM OF ASPHALT PARKING LOT (SEE PARKING LOT EXCAVATION DETAIL THIS DWG.)

EXTENT OF NON-HAZARDOUS WASTE TO BE EXCAVATED 1.5' BELOW GROUND SURFACE

AREA OF BUILDING TO BE POWER WASHED

NO.	DATE	REVISION	INT.

PROJECT ENGINEER:	DRAWN BY:
FD	CM
DESIGNED BY:	CHECKED BY:
MRD/FD	-

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NASSAU COUNTY **FUMEX SANITATION SITE** NEW YORK
SOIL EXCAVATION AND ASPHALT COVER INSTALLATION
CONTRACT NO. D007692

SITE REMEDIATION PLAN

PROJECT NO.	DRAWING NO.
2602	3
DATE: OCTOBER 2009	
SCALE: 1"=10'	

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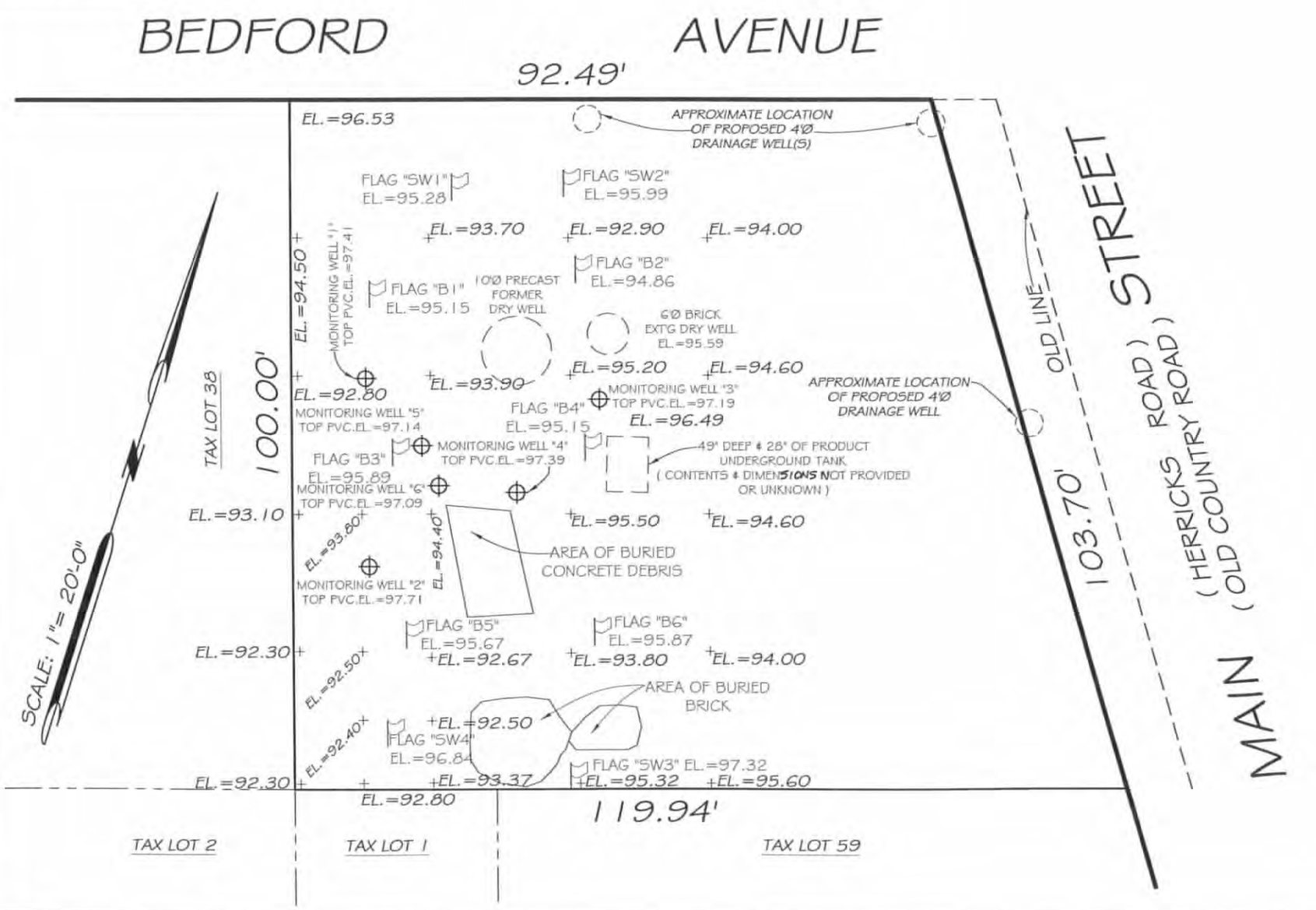
SURVEY NO. 10-10369

TITLE NO.

THE OFFSETS OR DIMENSIONS SHOWN HEREON FROM THE PROPERTY LINES TO THE STRUCTURES, ARE FOR A SPECIFIC PURPOSE AND USE; THEREFORE THEY ARE NOT INTENDED TO MONUMENT THE PROPERTY LINES OR TO GUIDE THE ERECTION OF FENCES, ADDITIONAL STRUCTURES OR ANY OTHER IMPROVEMENT

DIST: | SECTION: 33 | BLOCK: 174 | TAX LOT: 58



MAP OF PROPERTY

SITUATE AT

GARDEN CITY PARK
TOWN OF HEMPSTEAD
NASSAU COUNTY, N.Y.

LOT NUMBERS:

UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.

COPIES OF THIS SURVEY MAP NOT BEARING THE LAND SURVEYOR'S INKED SEAL OR EMBOSSED SEAL SHALL NOT BE CONSIDERED TO BE A VALID TRUE COPY.

GUARANTEES OR CERTIFICATIONS INDICATED HEREON SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED, AND ON HIS BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON, AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. GUARANTEES OR CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.

GUARANTEED TO :-

STRUCTURES AND/OR POSSESSION NOT SHOWN

SURVEYED :- DECEMBER 10, 2010

STATE OF NEW YORK
LAURENCE MICHAEL HAYNES
No. 50125
LICENSED LAND SURVEYOR

ISLAND WIDE LAND SURVEYORS

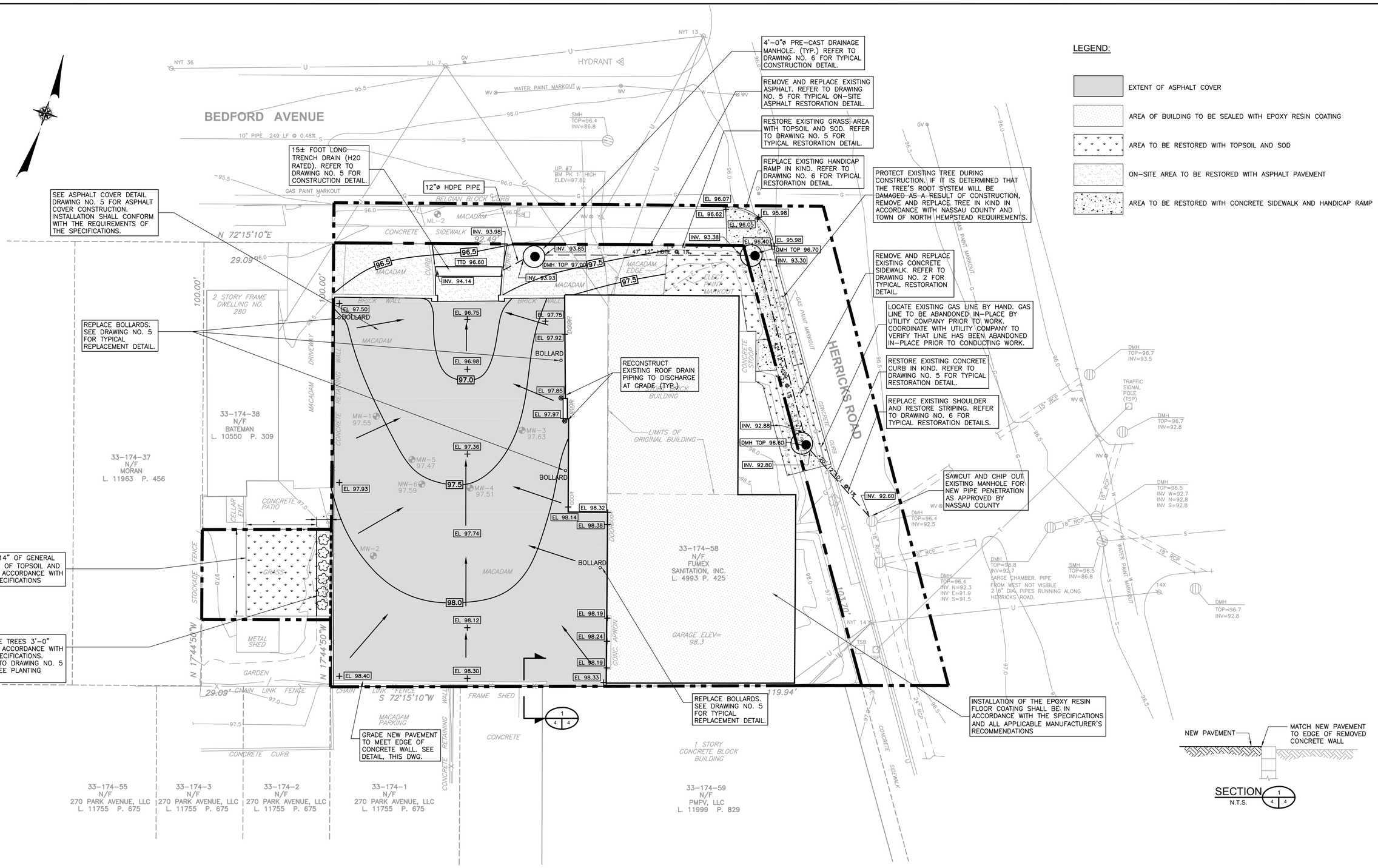
PROFESSIONAL LAND & CITY SURVEYORS

199 LAFAYETTE DRIVE, SYOSSET, N.Y. 11791

PHONE: 1-866-808-5800 FAX: 516-496-1792

RECORDS OF WALTER I. BROWN, GUSTAVE A. ROULLIER & ROBERT A. HAYNES

DRAFTED BY:- R.A.J. 12-13-10



NO.	DATE	REVISION	INT.

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.

PROJECT ENGINEER:	DRAWN BY:
FD	CM
DESIGNED BY:	CHECKED BY:
MRD/FD	-

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NASSAU COUNTY **FUMEX SANITATION SITE** NEW YORK
SOIL EXCAVATION AND ASPHALT COVER INSTALLATION
CONTRACT NO. D007692

SITE RESTORATION PLAN

PROJECT NO.	DRAWING NO.
2602	4
DATE: OCTOBER 2009	
SCALE: 1"=10'	

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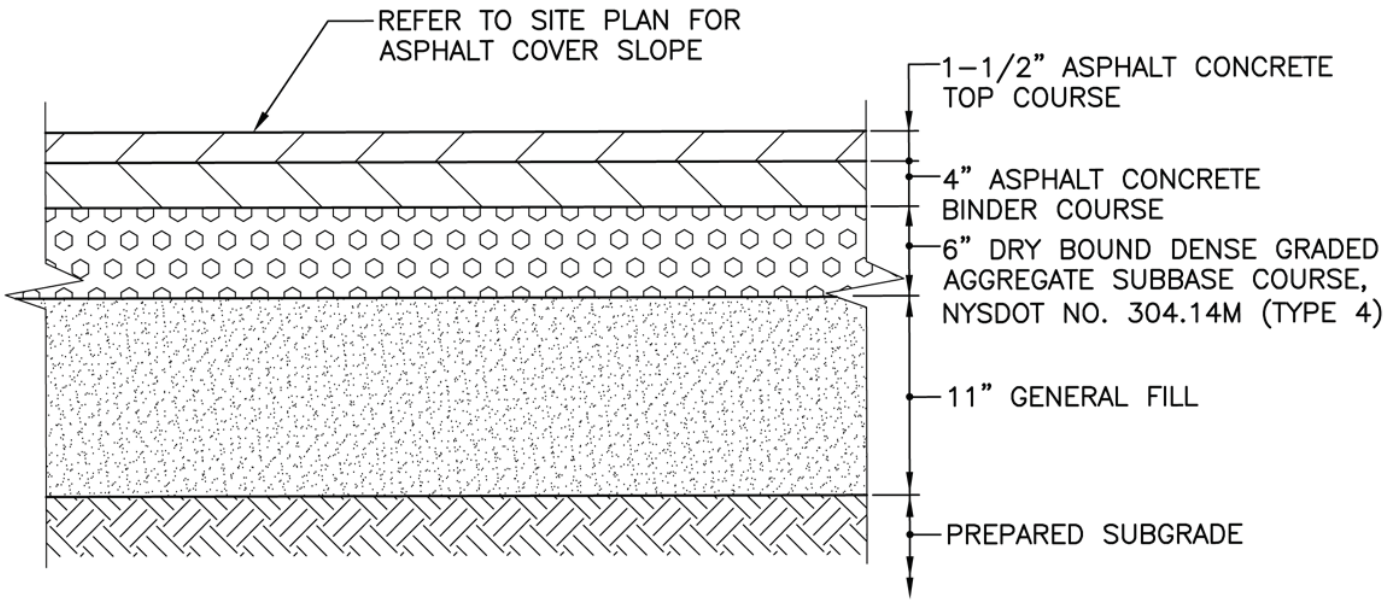


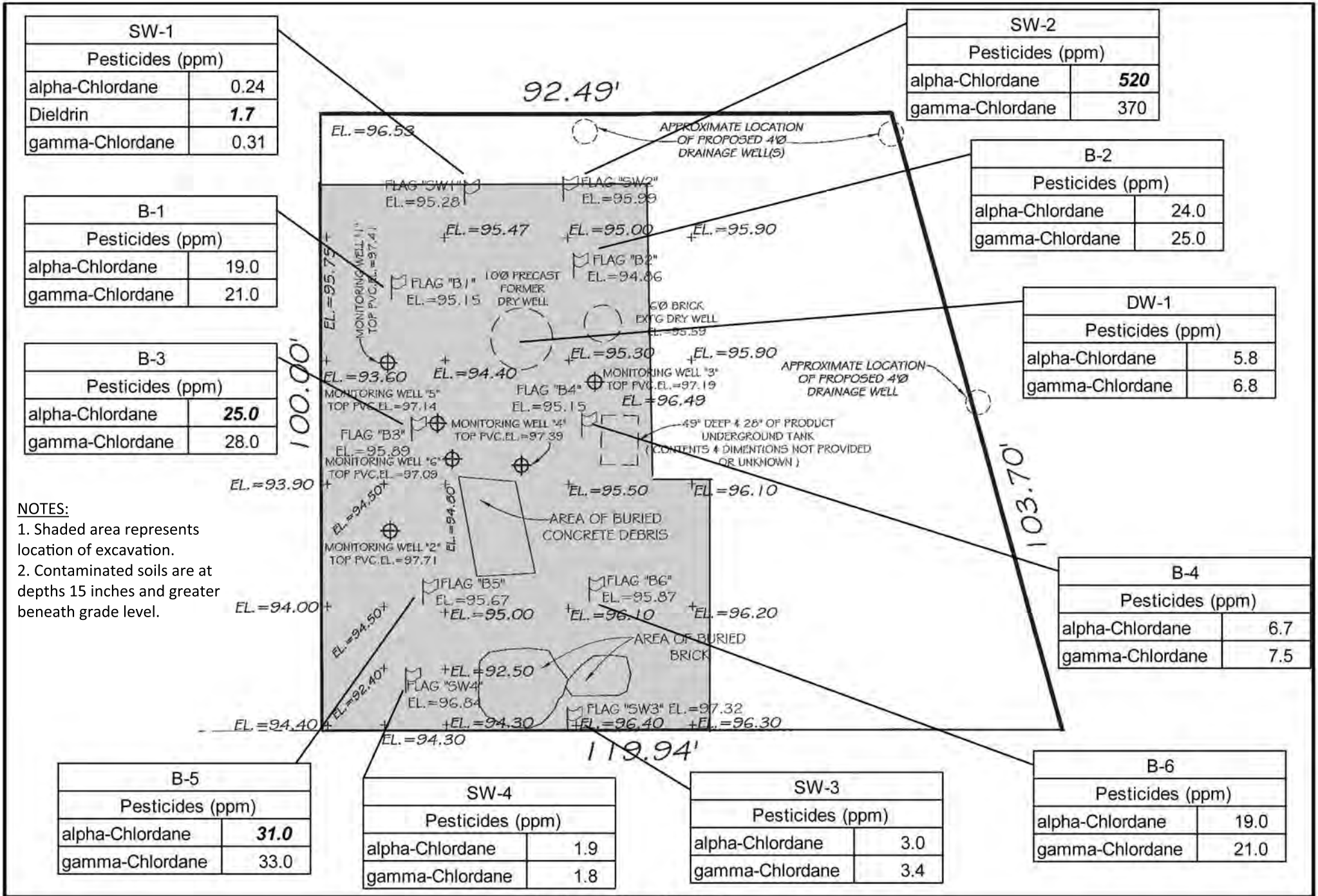
ASPHALT COVER DETAIL

Not to Scale

From Soil Excavation and Asphalt Cover Design, October 2009

CDM Smith

Figure 9
Ashalt Cover Detail
Fumex Sanitation
Garden City Park, New York



SW-1	
Pesticides (ppm)	
alpha-Chlordane	0.24
Dieldrin	***1.7***
gamma-Chlordane	0.31

SW-2	
Pesticides (ppm)	
alpha-Chlordane	***520***
gamma-Chlordane	370

B-1	
Pesticides (ppm)	
alpha-Chlordane	19.0
gamma-Chlordane	21.0

B-2	
Pesticides (ppm)	
alpha-Chlordane	24.0
gamma-Chlordane	25.0

DW-1	
Pesticides (ppm)	
alpha-Chlordane	5.8
gamma-Chlordane	6.8

B-3	
Pesticides (ppm)	
alpha-Chlordane	***25.0***
gamma-Chlordane	28.0

NOTES:
1. Shaded area represents location of excavation.
2. Contaminated soils are at depths 15 inches and greater beneath grade level.

B-4	
Pesticides (ppm)	
alpha-Chlordane	6.7
gamma-Chlordane	7.5

B-5	
Pesticides (ppm)	
alpha-Chlordane	***31.0***
gamma-Chlordane	33.0

SW-4	
Pesticides (ppm)	
alpha-Chlordane	1.9
gamma-Chlordane	1.8

SW-3	
Pesticides (ppm)	
alpha-Chlordane	3.0
gamma-Chlordane	3.4

B-6	
Pesticides (ppm)	
alpha-Chlordane	19.0
gamma-Chlordane	21.0

CDM Smith

N

Map Source: Map of Property
Situate at Garden City Park
Town of Hempstead
Nassau County, N.Y.
Island Wide Land Surveyors, 2010

Figure 10
Remaining Contamination
Fumex Sanitation
Garden City Park, NY

Appendix A

ALTA/ACSM Land Title Survey

REFERENCES

1) BEING KNOWN AND DESIGNATED AS LOTS 44, 45, 46, 47, AND 48, IN BLOCK 12 AS SHOWN ON A MAP ENTITLED, "MAP OF MINEOLA WEST, SITUATED IN THE TOWN OF NORTH HEMPSTEAD, NASSAU CO., N.Y., OWNED BY MINEOLA WEST CORP'N.," DATED MAY 16, 1925, AND FILED IN THE NASSAU COUNTY CLERK'S OFFICE ON JUNE 16, 1925 AS MAP NO. 562, CASE NO. 544.

2) MAP ENTITLED, "DEPARTMENT OF PUBLIC WORKS, NASSAU COUNTY, N.Y., MAP SHOWING REAL PROPERTY TO BE ACQUIRED FOR SANITARY SEWER AND/OR OTHER PUBLIC PURPOSES, BEING WASHINGTON AVE. AND VARIOUS OTHER STREETS IN SEWAGE COLLECTION DISTRICT NO. 2–NHP INCORPORATED VILLAGE OF GARDEN CITY AND VICINITY OF NEW HYDE PARK, TOWNS OF HEMPSTEAD AND NORTH HEMPSTEAD," DATED APRIL 1957, AND FILED IN THE NASSAU COUNTY CLERK'S OFFICE AS MAP NO. 6912.

3) THE FOLLOWING DEED BOOKS/PAGES:

4993/425, 4992/429, 11755/675, 12544/578, 11999/829, 1144/472, 1447/425, 1818/421, 5144/442, 9670/613

4) MAP ENTITLED "SITE REMEDIATION PLAN, SOIL EXCAVATION AND ASPHALT COVER INSTALLATION CONTRACT NO. D007692" PREPARED BY DVIRKA AND BARTILUCCI, DATED OCTOBER 2009.

5) MAP ENTITLED "FUMEX SATIATION SITE, TOWN OF NEW HYDE PARK, NASSAU COUNTY, NEW YORK" DATED AUGUST, 2006 BY YEC, INC., DONALD R. STEDGE, P.L.S.

LEGEND

- B — BOLLARD
- Ø — UTILITY POLE
- OVERHEAD WIRES
- EDGE OF PAVEMENT
- CURB
- DEPRESSED CURB
- FIRE HYDRANT
- –W– WATER MARK–OUT
- WV WATER VALVE
- –G– GAS MARK–OUT
- GV GAS VALVE
- SIGN
- CHAIN LINK FENCE
- MW MONITORING WELL
- RD ROOF DRAIN
- AREA SUBJECT TO ENVIRONMENTAL EASEMENT

SIGN LEGEND

- S1 STOP
- S2 STREET SIGN
- S3 SPEED LIMIT 40
- S4 NO STOPPING

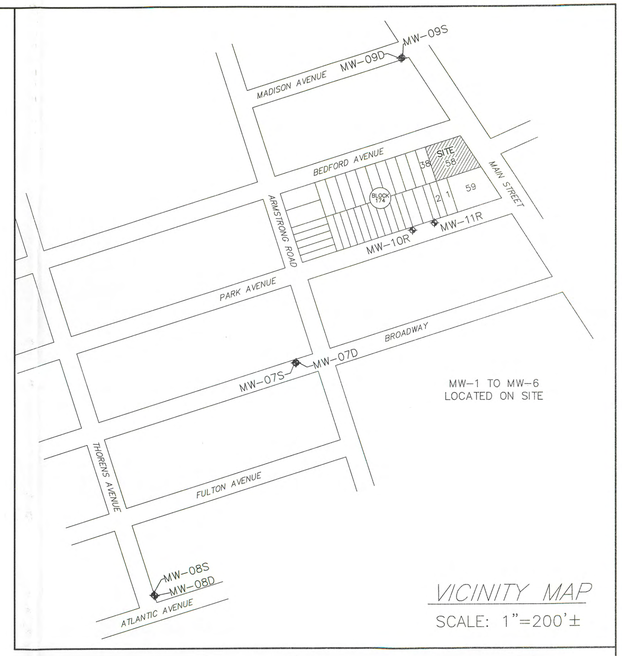
WELL SUMMARY

WELL NUMBER	GRADE ELEV	OUTER CASING	INNER CASING	NORTHING	EASTING	LATITUDE	LONGITUDE
MW–1	96.2	96.25	95.95	209167.0	1079975.5	N40.74027358°	W73.65456117°
MW–2	96.7	96.68	96.41	209140.9	1079984.2	N40.74020181°	W73.65453011°
MW–3	96.3	96.32	95.97	209173.9	1080008.8	N40.74029233°	W73.65444067°
MW–4	96.2	96.23	96.08	209157.8	1080001.4	N40.74024803°	W73.65446775°
MW–5	96.1	96.14	95.88	209159.9	1079986.5	N40.74025411°	W73.65452144°
MW–6	96.3	96.28	95.79	209155.2	1079990.2	N40.74024108°	W73.65450825°
MW–7D	88.3	88.32	88.06	208604.1	1079597.2	N40.73873272°	W73.65593411°
MW–7S	88.2	88.22	87.92	208603.2	1079594.4	N40.73873036°	W73.65594414°
MW–8D	98.2	98.16	97.93	207959.1	1079208.8	N40.73696656°	W73.65734483°
MW–8S	98.5	98.51	98.24	207960.7	1079206.4	N40.73697097°	W73.65735353°
MW–9D	94.0	94.40	93.67	209446.3	1079886.2	N40.74104117°	W73.65487931°
MW–9S	94.1	94.70	94.01	209447.4	1079889.6	N40.74104414°	W73.65486714°
MW–10R	95.9	95.87	95.51	208969.9	1079917.2	N40.73973328°	W73.65477422°
MW–11R	96.2	96.17	95.93	208989.8	1079977.9	N40.73978725°	W73.65455486°

SCALE: 1"=10'

NORTH

LONG ISLAND STATE PLANE COORDINATE SYSTEM NAD83



VICINITY MAP

SCALE: 1"=200'±

Bedford Avenue

50' WIDE R.O.W.

Main Street

(A.K.A. HERRICKS ROAD) (A.K.A. COUNTY ROAD) (A.K.A. OLD COUNTRY LANE)

P.O.B.

N72°14'25"E 92.49'

S33°06'35"E 103.70'

S72°14'25"W 119.94'

N17°45'35"W 100.00'

SECTION 33 BLOCK 174 LOT 58
FUMEX SANITATION, INC.
LIBER 4993, PAGE 425
GROSS LAND AREA=10,621 S.F.±

SANITARY SEWER (SHOWN PER REF. 5)

GAS PAINT MARKOUT (SHOWN PER REF. 5)

SIGNAL BOX CASTING ONLY

48 LF 15" HDPE

6 LF 15" HDPE

TRENCH DRAIN

INV 92.65

BRICK & BLOCK WALL

ACCESS

GATE

CONCRETE SIDEWALK (OLD)

PAVED

SOD

5' BUILDING SETBACK LINE (PER REFERENCE 5)

INV 93.22

MANHOLE RIM 95.62 INV 92.62(IN) INV 92.52(OUT)

43 LF 15" HDPE

MANHOLE RIM 95.44 INV 92.09

10" MAPLE

STRIPE

(NEW)

(OLD)

SIDEWALK

DEPRESSED CURB LANDING

SIDELINE SHOWN ON MAP NO. 562

PROPOSED LINE OF ACQUISITION

PARCEL 12 SHOWN ON "MAP SHOWING REAL PROPERTY TO BE ACQUIRED FOR SANITARY SEWER AND/OR OTHER PUBLIC PURPOSES"

GRASS & DIRT

MANHOLE RIM 95.53 INV. 91.58

18 LF 12" DIP

MANHOLE RIM 95.14 INV 91.19

INLET GRT 94.91

MANHOLE RIM 95.14 INV 91.34

CONCRETE SIDEWALK (OLD)

GUY

TRAFFIC SIGNAL

ELEC BOXES

ELECTRIC LINE (SHOWN PER REF. 5)

SEEDED GRASS

10' BUILDING SETBACK LINE (PER REFERENCE 5)

ENCROACHMENT EASEMENT (D)

FILED MAP LINE PER REFERENCE 1 (TYP.)

1 STORY MASONRY BUILDING

2 STORY FRAME DWELLING

TAX LOT 38
N/F FEDERAL HOME LOAN MORTGAGE CORP.
LIBER 12544/PG 578

TAX LOT 59
N/F P.M.P.V., LLC
LIBER 11999/PG 829

TAX LOT 1
N/F 270 PARK AVENUE LLC
LIBER 11755/PG 675

2' WIDE UTILITY EASEMENT

BLOCK WALL

CURB

CONCRETE

LOT LINE

LOT 1 LOT 2 LOT 3 LOT 42 LOT 43 LOT 44 LOT 45 LOT 46 LOT 47 LOT 48 LOT 49 LOT 50

MW–01 MW–02 MW–03 MW–04 MW–05 MW–06 MW–07S MW–07D MW–08S MW–08D MW–09S MW–09D MW–10R MW–11R

COVENANTS AND RESTRICTIONS AND/OR AGREEMENTS PER ROYAL REGISTERED PROPERTY REPORT TO MAY 2, 2011

(A) DEED BOOK 1144 PAGE 472: UTILITY RESERVATIONS. (AFFECTS REAR TWO FEET OF ALL LOTS, AS WELL AS STREETS)

(B) DEED BOOK 1447 PAGE 425: RESTRICTIONS AND UTILITY RESERVATIONS. SETBACK LINES PLOTTED. (RESERVATIONS AFFECT REAR TWO FEET OF LOTS 47 AND 48, AS WELL AS STREETS)

(C) DEED BOOK 1818 PAGE 421: RESTRICTIONS AND UTILITY RESERVATIONS. SETBACK LINES PLOTTED. (RESERVATIONS AFFECT REAR TWO FEET OF LOTS 44, 45 AND 46, AS WELL AS STREETS)

(D) DEED BOOK 5144 PAGE 442: ENCROACHMENT ASSIGNMENT PRIOR TO WIDENING OF HERRICKS ROAD. ALL VISIBLE STRUCTURES ARE PLOTTED. (AFFECTS LINE BETWEEN LOTS 58 AND 59.)

(E) DEED BOOK 9670 PAGE 613: RESOLUTION FOR ESTABLISHMENT OF A GARBAGE AND REFUSE DISTRICT. NOT PLOTTED. (AFFECTS ALL LOTS.)

ENVIRONMENTAL EASEMENT METES AND BOUNDS DESCRIPTION:

BEGINNING AT A POINT BEING THE INTERSECTION OF THE WESTERLY SIDELINE OF MAIN STREET AS SHOWN AS THE PROPOSED LINE OF ACQUISITION ON MAP SHOWING "REAL PROPERTY TO BE ACQUIRED FOR SANITARY SEWER AND/OR OTHER PUBLIC PURPOSES", DATED APRIL 1957 AND FILED IN THE NASSAU COUNTY CLERK'S OFFICE AS MAP NO. 6912 WITH THE NORTHERLY SIDELINE OF BEDFORD AVENUE (50 FEET WIDE RIGHT OF WAY) AS SHOWN ON "MAP OF MINEOLA WEST, SITUATED IN THE TOWN OF NORTH HEMPSTEAD, NASSAU CO., NY OWNED BY MINEOLA WEST CORP'N", DATED MAY 16, 1925 AND FILED ON JUNE 16, 1925 AS MAP NO. 562, CASE NO. 544; AND RUNS THENCE

1. ALONG THE SIDELINE OF MAIN STREET SOUTH 33 DEGREES 06 MINUTES 35 SECONDS EAST 103.70 FEET TO A POINT IN THE SOUTHERLY LINE OF LOT 48 AS SHOWN ON SAID MAP OF MINEOLA WEST; THENCE

2. ALONG THE SOUTHERLY LINE OF SAID LOT 48 IN PART, SOUTH 72 DEGREES 14 MINUTES 25 SECONDS WEST 119.94 FEET TO A POINT; THENCE

3. ALONG THE WESTERLY LINES OF LOTS 48, 47, 46, 45 AND 44 AS SHOWN ON SAID MAP OF MINEOLA WEST, NORTH 17 DEGREES 45 MINUTES 35 SECONDS WEST 100.00 FEET TO A POINT IN THE SOUTHERLY LINE OF BEDFORD AVENUE; THENCE

4. ALONG THE SOUTHERLY LINE OF BEDFORD AVENUE, NORTH 72 DEGREES 14 MINUTES 25 SECONDS EAST 92.49 FEET TO THE POINT AND PLACE OF BEGINNING.

TOTAL ACREAGE IS 10,621 SQUARE FEET OR 0.24 ACRES.

THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THIS EASEMENT ARE SET FORTH 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 CAN BE OBTAINED FROM NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NEW YORK, 12233 OR AT DERWEB@GW.STATE.NY.US.

NOTES:

1) THIS SURVEY IS PREPARED IN ACCORDANCE WITH AN ABSTRACT OF TITLE PREPARED BY ROYAL REGISTERED PROPERTY REPORTS, INC., SEARCHED THROUGH MAY 2, 2011. BY CONTRACTUAL AGREEMENT, ROYAL SEARCHED ONLY THE CURRENT OWNER RECORDS OF THE SUBJECT PROPERTY, LOT 58.

2) HORIZONTAL DATUM AND BEARING BASE ARE THE NEW YORK LONG ISLAND STATE PLANE COORDINATE SYSTEM NAD83.

3) THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

4) ZONING SETBACKS ARE TO BE VERIFIED WITH CITY BUILDING AND PLANNING OFFICIALS PRIOR TO ANY CONSTRUCTION OR IMPROVEMENTS.

5) "EDUCATION LAW ARTICLE 145 SECTION 7209:2 IT IS A VIOLATION OF EDUCATION LAW ARTICLE 145 SECTION 7209:2 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY."

THIS SURVEY IS CERTIFIED TO THE PEOPLE OF THE STATE OF NEW YORK ACTING THROUGH ITS COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION TO HAVE BEEN MADE ON THE GROUND IN ACCORDANCE WITH AN ABSTRACT OF TITLE PROVIDED BY ROYAL REGISTERED PROPERTY REPORTS, INC., AND THAT THIS MAP AND SURVEY HAVE BEEN PREPARED IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS.

11/10/2011

ALTA/ACSM LAND TITLE SURVEY
FUMEX SANITATION, INC. – NYSDEC SITE #130041
SECTION 33 BLOCK 174 LOT 58
GARDEN CITY PARK, NASSAU COUNTY, NEW YORK

BORBAS SURVEYING & MAPPING, LLC
402 MAIN STREET, BOONTON, NEW JERSEY 07005
Phone (973) 316-8743 Fax (973) 402-6627 www.borbas.com
NJ CERTIFICATE OF AUTHORIZATION NO. 24GA28056200
Environmental Site Mapping o Hazardous Materials and Waste Surveys
Aerial Control and GPS Surveys o Topographic and Existing Condition Surveys
Remote Sensing and GIS o Hydrographic/Bathymetric Surveys o ALTA/ACSM Certified Surveys
Transportation and Right of Way Surveys o Deformation and Structure Monitoring Surveys

J. PETER BORBAS
NEW YORK PROFESSIONAL LAND SURVEYOR 050566–1

Date: NOVEMBER 10, 2011

SCALE:	1"=10'
SHEET NO.:	1 OF 3
FIELD BOOK:	–
JOB NO.:	110502
PROJECT NAME:	110502
DRAWING NO.:	110502_2011–11–07.DWG

REFERENCES

1) BEING KNOWN AND DESIGNATED AS LOTS 44, 45, 46, 47, AND 48, IN BLOCK 12 AS SHOWN ON A MAP ENTITLED, "MAP OF MINEOLA WEST, SITUATED IN THE TOWN OF NORTH HEMPSTEAD, NASSAU CO., N.Y., OWNED BY MINEOLA WEST CORP'N.," DATED MAY 16, 1925, AND FILED IN THE NASSAU COUNTY CLERK'S OFFICE ON JUNE 16, 1925 AS MAP NO. 562, CASE NO. 544.

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5) MAP ENTITLED "FUMEX SATIATION SITE, TOWN OF NEW HYDE PARK, NASSAU COUNTY, NEW YORK" DATED AUGUST, 2006 BY YEC, INC., DONALD R. STEDGE, P.L.S.

LEGEND

- B — BOLLARD
- Ø — UTILITY POLE
- OVERHEAD WIRES
- EDGE OF PAVEMENT
- CURB
- DEPRESSED CURB
- FIRE HYDRANT
- –W– WATER MARK–OUT
- WV WATER VALVE
- –G– GAS MARK–OUT
- GV GAS VALVE
- SIGN
- CHAIN LINK FENCE
- MW MONITORING WELL
- RD ROOF DRAIN
- AREA SUBJECT TO ENVIRONMENTAL EASEMENT

SIGN LEGEND

- S1 STOP
- S2 STREET SIGN
- S3 SPEED LIMIT 40
- S4 NO STOPPING

WELL SUMMARY

WELL NUMBER	GRADE ELEV	OUTER CASING	INNER CASING	NORTHING	EASTING	LATITUDE	LONGITUDE
MW–1	96.2	96.25	95.95	209167.0	1079975.5	N40.74027358°	W73.65456117°
MW–2	96.7	96.68	96.41	209140.9	1079984.2	N40.74020181°	W73.65453011°
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MW–11R	96.2	96.17	95.93	208989.8	1079977.9	N40.73978725°	W73.65455486°

SCALE: 1"=10'

NORTH

LONG ISLAND STATE PLANE COORDINATE SYSTEM NAD83

Bedford Avenue
50' WIDE R.O.W.

Main Street
(A.K.A. HERRICKS ROAD)
(A.K.A. OLD COUNTY ROAD)
(A.K.A. GLOWESVILLE LANE)

P.O.B.

N72°14'25"E 92.49'

S33°08'35"E 103.70'

S72°14'25"W 119.94'

N17°45'35"W 100.00'

SECTION 33 BLOCK 174 LOT 58
FUMEX SANITATION, INC.
LIBER 4993, PAGE 425
GROSS LAND AREA=10,621 S.F.±

SANITARY SEWER (SHOWN PER REF. 5)

GAS PAINT MARKOUT (SHOWN PER REF. 5)

SIGNAL BOX CASING ONLY

CONCRETE SIDEWALK (OLD)

SOD

PAVED

6 LF 15" HDPE

TRENCH DRAIN

INV 92.65

BRICK & BLOCK WALL

ACCESS

GATE

48 LF 15" HDPE

43 LF 15" HDPE

MANHOLE RIM 95.44 INV 92.09

10" MAPLE

DOVERED CONC. LANDING

GRASS & DIRT

MANHOLE RIM 95.53 INV 91.58

MANHOLE RIM 95.62 INV 92.82(IN) INV 92.52(OUT)

5' BUILDING SETBACK LINE (PER REFERENCE 5)

FILED MAP LINE PER REFERENCE 1 (TYP.)

1 STORY MASONRY BUILDING

SIDELINE SHOWN ON MAP NO. 562

PROPOSED LINE OF ACQUISITION

PARCEL 12 SHOWN ON "MAP SHOWING REAL PROPERTY TO BE ACQUIRED FOR SANITARY SEWER AND/OR OTHER PUBLIC PURPOSES"

10" MAPLE

18 LF 12" DIP

MANHOLE RIM 95.14 INV 91.19

INLET GRT 94.91

MANHOLE RIM 95.14 INV 91.34

CONCRETE SIDEWALK (OLD)

10' BUILDING SETBACK LINE (PER REFERENCE 5)

GUY

TRAFFIC SIGNAL

ELEC BOXES

SEEDED GRASS

ELECTRIC LINE (SHOWN PER REF. 5)

ENCROACHMENT EASEMENT D

MW–01
MW–02
MW–03
MW–04
MW–05
MW–06

TAX LOT 38
N/F FEDERAL HOME LOAN MORTGAGE CORP.
LIBER 12544/PG 578

2 STORY FRAME DWELLING

CONCRETE

AREA OF EXCAVATION

BRICK & BLOCK WALL

TAX LOT 59
N/F P.M.P.V., LLC
LIBER 11999/PG 829

TAX LOT 1
N/F 270 PARK AVENUE LLC
LIBER 11755/PG 675

LOT LINE

LOT 42 LOT 43 LOT 44 LOT 45 LOT 46 LOT 47 LOT 48 LOT 49 LOT 50 LOT 1 LOT 2 LOT 3

COVENANTS AND RESTRICTIONS AND/OR AGREEMENTS PER ROYAL REGISTERED PROPERTY REPORT TO MAY 2, 2011

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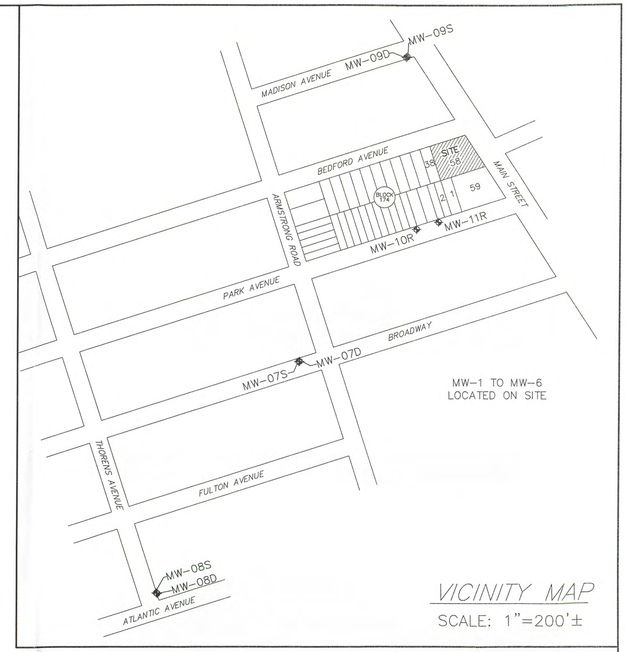

VICINITY MAP

SCALE: 1"=200'±

ENVIRONMENTAL EASEMENT METES AND BOUNDS DESCRIPTION:

BEGINNING AT A POINT BEING THE INTERSECTION OF THE WESTERLY SIDELINE OF MAIN STREET AS SHOWN AS THE PROPOSED LINE OF ACQUISITION ON MAP SHOWING "REAL PROPERTY TO BE ACQUIRED FOR SANITARY SEWER AND/OR OTHER PUBLIC PURPOSES", DATED APRIL 1957 AND FILED IN THE NASSAU COUNTY CLERK'S OFFICE AS MAP NO. 6912 WITH THE NORTHERLY SIDELINE OF BEDFORD AVENUE (50 FEET WIDE RIGHT OF WAY) AS SHOWN ON "MAP OF MINEOLA WEST, SITUATED IN THE TOWN OF NORTH HEMPSTEAD, NASSAU CO., NY OWNED BY MINEOLA WEST CORP'N", DATED MAY 16, 1925 AND FILED ON JUNE 16, 1925 AS MAP NO. 562, CASE NO. 544; AND RUNS THENCE

1. ALONG THE SIDELINE OF MAIN STREET SOUTH 33 DEGREES 06 MINUTES 35 SECONDS EAST 103.70 FEET TO A POINT IN THE SOUTHERLY LINE OF LOT 48 AS SHOWN ON SAID MAP OF MINEOLA WEST; THENCE

2. ALONG THE SOUTHERLY LINE OF SAID LOT 48 IN PART, SOUTH 72 DEGREES 14 MINUTES 25 SECONDS WEST 119.94 FEET TO A POINT; THENCE

3. ALONG THE WESTERLY LINES OF LOTS 48, 47, 46, 45 AND 44 AS SHOWN ON SAID MAP OF MINEOLA WEST, NORTH 17 DEGREES 45 MINUTES 35 SECONDS WEST 100.00 FEET TO A POINT IN THE SOUTHERLY LINE OF BEDFORD AVENUE; THENCE

4. ALONG THE SOUTHERLY LINE OF BEDFORD AVENUE, NORTH 72 DEGREES 14 MINUTES 25 SECONDS EAST 92.49 FEET TO THE POINT AND PLACE OF BEGINNING.

TOTAL ACREAGE IS 10,621 SQUARE FEET OR 0.24 ACRES.

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11/10/2011

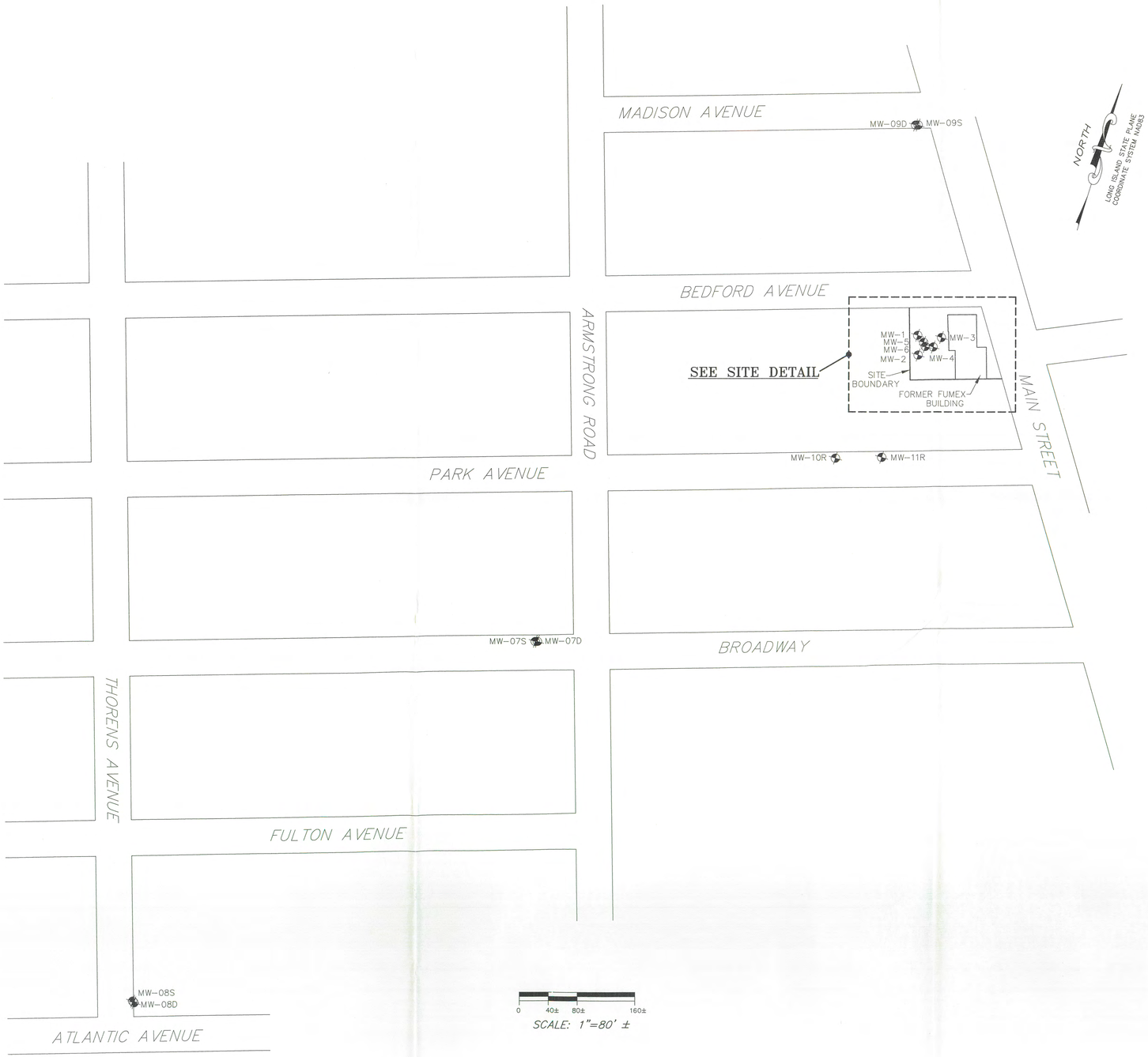
ALTA/ACSM LAND TITLE SURVEY SHOWING EXCAVATION
FUMEX SANITATION, INC. – NYSDEC SITE #130041
SECTION 33 BLOCK 174 LOT 58
GARDEN CITY PARK, NASSAU COUNTY, NEW YORK

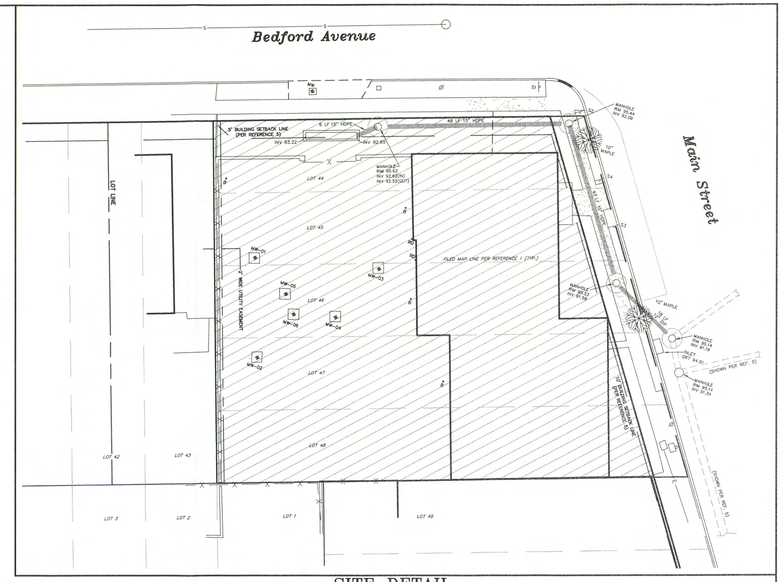
SCALE: 1"=10'	
SHEET NO.: 2 OF 3	
FIELD BOOK: –	
JOB NO.: 110502	
PROJECT NAME: 110502	
DRAWING NO.: 110502_2011–11–07.DWG	

BORBAS SURVEYING & MAPPING, LLC
402 MAIN STREET, BOONTON, NEW JERSEY 07005
Phone (973) 316-8743 Fax (973) 402-6627 www.borbas.com
NJ CERTIFICATE OF AUTHORIZATION NO. 24GA28056200
Environmental Site Mapping ○ Hazardous Materials and Waste Surveys
Aerial Control and GPS Surveys ○ Topographic and Existing Condition Surveys
Remote Sensing and GIS ○ Hydrographic/Bathymetric Surveys ○ ALTA/ACSM Certified Surveys
Transportation and Right of Way Surveys ○ Deformation and Structure Monitoring Surveys

J. PETER BORBAS
NEW YORK PROFESSIONAL LAND SURVEYOR 050566–1

Date: NOVEMBER 10, 2011





SITE DETAIL
SCALE: 1"=20'

NOTES:

1) HORIZONTAL DATUM AND BEARING BASE ARE THE NEW YORK LONG ISLAND STATE PLANE COORDINATE SYSTEM NAD83.

2) THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

3) STREETS SHOWN ON THIS MAP WERE NOT LOCATED BY BORBAS SURVEYING AND MAPPING AND ARE FOR REFERENCE PURPOSES ONLY.

4) "EDUCATION LAW ARTICLE 145 SECTION 7209-2 IT IS A VIOLATION OF EDUCATION LAW ARTICLE 145 SECTION 7209-2 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY."

WELL SUMMARY

WELL NUMBER	GRADE ELEV	OUTER CASING	INNER CASING	NORTHING	EASTING	LATITUDE	LONGITUDE
MW-1	96.2	96.25	95.95	209167.0	1079975.5	N40.74027358°	W73.65456117°
MW-2	96.7	96.68	96.41	209140.9	1079984.2	N40.74020181°	W73.65453011°
MW-3	96.3	96.32	95.97	209173.9	1080008.8	N40.74029233°	W73.65444067°
MW-4	96.2	96.23	96.08	209157.8	1080001.4	N40.74024803°	W73.65446775°
MW-5	96.1	96.14	95.88	209159.9	1079986.5	N40.74025411°	W73.65452144°
MW-6	96.3	96.28	95.79	209155.2	1079990.2	N40.74024108°	W73.65450825°
MW-7D	88.3	88.32	88.06	208604.1	1079597.2	N40.73873272°	W73.65593411°
MW-7S	88.2	88.22	87.92	208603.2	1079594.4	N40.73873036°	W73.65594414°
MW-8D	98.2	98.16	97.93	207959.1	1079208.8	N40.73696656°	W73.65734483°
MW-8S	98.5	98.51	98.24	207960.7	1079206.4	N40.73697097°	W73.65735353°
MW-9D	94.0	94.40	93.67	209446.3	1079886.2	N40.74104117°	W73.65487931°
MW-9S	94.1	94.70	94.01	209447.4	1079889.6	N40.74104414°	W73.65486714°
MW-10R	95.9	95.87	95.51	208969.9	1079917.2	N40.73973328°	W73.65477422°
MW-11R	96.2	96.17	95.93	208989.8	1079977.9	N40.73978725°	W73.65455486°

MONITORING WELL LOCATION MAP
FUMEX SANITATION, INC. – NYSDEC SITE #130041
SECTION 33 BLOCK 174 LOT 58
GARDEN CITY PARK, NASSAU COUNTY, NEW YORK

SCALE: AS SHOWN
SHEET NO.: 3 OF 3
FIELD BOOK: –
JOB NO.: 110502
PROJECT NAME: 110502
DRAWING NO.: 110502_2011-11-07.DWG

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Date: NOVEMBER 10, 2011

Appendix B

Excavation Work Plan

SEE EDITS ON PP. B-1, B-2 + B-3

Appendix B
Excavation Work Plan

NOTE: SECTION 2.4.2 OF SMP MAIN DOC STATES 7 DAYS. 7 DAYS IS CONSISTENT W/ 375-1.6(a)(4)

B.1 Notification

At least 15 (7) 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:

David J. Chiusano, Project Manager
NYSDEC – Div. of Env. Remediation
625 Broadway
Albany, NY 12233-7017
Phone: (518) 402-9814 or 888-459-8667
E-Mail: djchiusa@gw.dec.state.ny.us

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 EWP,
- 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 C of this document,
- Identification of disposal facilities for potential waste streams,
- Identification of sources of any anticipated backfill, along with all required chemical testing results

B.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.

B.3 Stockpile Methods

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.

B.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.

delete

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

NOTE: ANY PARTY PERFORMING INVASIVE WORK MUST COMPLY W/ EWP + SMP

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.

B.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.

All trucks loaded with site materials will exit the vicinity of the site using only the approved truck routes. This will be the most appropriate route that 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; (g) community input.

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.

B.6 Materials Disposal Off-Site

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).

B.7 Materials Reuse On-Site

Chemical criteria for on-site reuse of material will be approved by NYSDEC. 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.

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.

B.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.

B.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 ROD/ESD. 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 this will constitute a modification of the cover element of the remedy and the upper surface of the 'Remaining Contamination Zone'. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

B.10 Backfill from Off-Site Sources

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.

All 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.

B.11 Stormwater Pollution Prevention

Upon the start of any excavation, the storm water run- off will be directed utilizing berms, dikes and silt fence in order to contain all storm water within the site boundaries. All existing storm drainage structures will be protected and maintained from run off utilizing filter fabric coverings, during the entire project.

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.

B.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.

B.13 Community Air Monitoring Plan

A Community Air Monitoring Plan is presented in Appendix D. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

B.14 Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-site. Specific odor control methods to be used on a routine basis will include the covering of all areas of organic or odorous material which were exposed during excavation with a minimum 6-in and a maximum 24-inch deep layer of clean fill. Excavated organic or odorous material shall be immediately removed off-site and shall not be stockpiled on-site. Such material shall be properly characterized and disposed of off-site. 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. 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 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.

B.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.
- No oils, calcium chloride, or contaminated liquids other than potable water shall be used for dust control.

B.16 Other Nuisances

A plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

Appendix C

Health and Safety Plan

HEALTH AND SAFETY PLAN

FUMEX SANITATION SITE

SITE NO. 130041

GARDEN CITY PARK

NASSAU COUNTY, NEW YORK

TABLE OF CONTENTS

SAFETY POLICY STATEMENT

It is the policy of the contractor to make safety its highest priority. Each employee of the company has an obligation in this plan. We will have an open line of communication at all levels in the effort. It is our opinion that all accidents are preventable. Safety is everyone's responsibility. There are no acceptable excuses. All of us must work as if our life or the life of a colleague depends on it; they do! If we are all aggressively proactive in safety then we will achieve our goal.

1. General

1.2. Development and Implementation

This site specific Health and Safety Plan [HASP] has been formulated to establish the health and safety procedures required to minimize potential risk to personnel who will be involved with the activities on NYS DEC contract, located in Garden City Park, in the County of Nassau, New York. The provisions of this HASP shall apply to all employees and all sub-contractor's personnel who will be assigned to this project.

The procedures in this plan have been developed based on the contract technical specifications and the physical hazards known or anticipated for the operations to be conducted on this site. If site conditions or work activities vary from the activities covered by this plan, amendments to this HASP will be made as necessary.

This HASP has been written to comply with the requirements of the Occupational Safety and Health Administration [OSHA] Construction Industry Standard [29 CFR 1926], General Industry Standard [29 CFR 1910] including 29 CFR 1910.120, where applicable, and the NYS-DEC Environmental Health and Safety Policy and Procedures, as well as the contractor Safety Program. All site activities must be conducted in compliance with this HASP and applicable federal, state and New York State and safety regulations. Sub-contractors will follow the contractor HASP and must make this HASP available to each employee who will work at this site. Any new employee or on-site visitor must sign in with the contractor Safety Representative prior to any on-site activity. Each employee must sign a copy of the attached HASP sign-off sheet.

This health and safety plan is formulated upon existing and available information regarding this site and upon past experiences at similar sites and projects. In addition, this plan is also based on OSHA regulations, contractual specifications applicable to the scope of this work as so outlined, client health and safety plans and procedures, the contractor Corporate Health and Safety Program, J.Barwick policies and procedures. Employees and sub-contractor employees are required to adhere to all of these documents during the course of this project.

Responsibility for the implementation of health and safety at the site is an integrated effort of the contractor staff consisting of the Project Manager [PM], the Site Superintendent [SS], the Site Foreman [SF], the designated On Site Safety Representative [OSSR], and all other contractor employees and sub-contractor site personnel.

The PM is responsible for implementing the requirements of the HASP. The PM is responsible for ensuring accessibility to a copy of this HASP to all members of the contractor field team and the subcontractors. The PM is responsible for collecting the proper documentation from subcontractors as well as the HASP sign-off sheets from and all contractor and subcontracted personnel.

The OSSR is responsible for assuring for compliance with the HASP. The OSSR has the authority to correct all health and safety deficiencies and to immediately stop work in situations where imminent danger is perceived. The OSSR is responsible for initiating emergency response and coordinating site evacuation when necessary.

The OSSR will furnish the Resident Engineer [RE] with a monthly safety report containing the following information:

- Summary of all OSHA recordable injuries/illnesses/incident rates.
- Copies of all injury/illness reports.

- Copies of all accident investigations and root cause and corrective actions.
- Documentation of all Safety Training-Toolbox talks.
- Safety and Rescue equipment inspection log, including calibration records where appropriate.
- Work area inspection and audits.
- Hazardous Material/Petroleum spills log.
- Certified Safety Professional weekly audit reports and any other inspections.
- Evaluation of HASP and changes to personnel or contract number.
- On Site Safety Representative's daily inspection reports.

Subcontractors must comply with the provisions of this HASP and any and all other local, federal, state and Nassau County health and safety regulations that are applicable to the activities being performed.

All personnel on-site are res ponsible for abiding by the health and safety procedures listed in th is HASP and for maintaining their personal safety equipment. Any contractor emloyees or subcontractor employees who do not adhere to the provisions of this HASP will be excluded from the site/project.

2.0 Approval and Changes to HASP

This HASP and future modifications/changes to this plan must be approved as follows:
After preparation and approval by the contractor, this plan will be submitted in accodance with the applic able contract and specifications. The contractor designated Pr oject Manager is responsible for the final approval of this plan before being submitted to NYS DEC. The contractor Corporate Director of Health an d Safety or a designated representative is responsible for the approval of this plan and any future changes after preparation.

2.0.1 Access to HASP

Copies of this HASP will be available on the project site throughout the duration of this project. All personnel, including the sub-contract ors, will be given the opportunity to read and agree to abide by this plan prior to the start of work on the site.

3.0.1 Evacuation Drill

There will be an evacuation drill conducted at least semi-annually in coordination with any existing DEP drills. The evacuation drill will be held during regular work hours but timed so as not to disrupt major contract work. Upon evacuation, the contractor will immediately notify the Resident Engineer that all personnel have safely been evacuated.

3.0.2 Site Description

The project site is located at 131 Herricks Road in Garden City Park, Town of North Hempstead, Nassau County, New York. The property is approximately 1/3 acre in size and includes a one-story brick building and a paved parking area in the rear. The site was historically occupied by Fumex Sanitation, Inc., a

commercial termite extermination business. The site is bordered by Bedford Avenue to the north, Herricks Road to the east, and a commercial building, United Refrigeration, to the south. Residential properties border the site to the southwest and west.

The property is relatively flat, and the rear parking lot gently slopes to facilitate drainage into an on-site dry well. The southern and western limits of the rear parking lot are surrounded by chain-link fence, and the northern property boundary is demarcated by a brick wall with access via a gate from Bedford Avenue. A retaining wall along the southern and western property boundaries separates the site from adjacent properties.

3.0.3 Scope of work

The work under this contract includes all the work required for the complete remediation of the Fumex Sanitation Site. The work includes but is not limited to:
Install temporary facilities and utilities;
Construction of temporary site security and erosion control fencing to protect the site and neighboring properties;
Excavation, grading, backfill, compaction and landscaping as per the contract specifications.
Close existing dry well and remove underground piping;
Install new storm water drainage facilities and associated connection to storm sewer;
Install asphalt cover;
Abate asbestos floor tiles in garage area, as well as the encapsulation of asbestos wall mastic found in the main building;
Decontaminate and seal concrete floor in garage;
Conduct endpoint soil sampling and testing;
Transport and dispose of waste materials;
Remove temporary utilities and facilities and site restoration.

4.1 Site Task and Operations

4.1.1 Mobilization and initial set-up.
4.1.2 Install temporary facilities and utilities
4.1.3 Construction of temporary site security and erosion control fencing to protect the site and neighboring properties;
4.1.4 Excavation, grading, backfill, compaction and landscaping as per the contract specifications.
4.1.5 Close existing dry well and remove underground piping;
4.1.6 Install new storm water drainage facilities and associated connection to storm sewer;
4.1.7 Install asphalt cover;
4.1.8 Abate asbestos floor tiles in garage area, as well as the encapsulation of asbestos wall mastic found in the main building;
4.1.9 Decontaminate and seal concrete floor in garage;
4.1.10 Conduct endpoint soil sampling and testing;
4.1.11 Transport and dispose of waste materials;
4.1.12 Remove temporary utilities and facilities and site restoration
4.1.13 De-mobilization of site and removal of all the contractor's equipment as per contract specifications.

4.2 Safety Hazards

4.2.1 Slips, Trips, and fall

Employees will be aware of slip, trip, and fall hazards onsite and discuss at the weekly toolbox safety meeting. The presence of heavy equipment requires all personnel onsite to wear heavy work boots and hard hats. All personnel should be aware of the variability of the work surface in their work area. Every attempt will be made to prevent accidents due to slips, trips, and falls by thorough review of the daily tasks and site conditions during the morning tailgate safety meeting.

4.2.2 Falling Objects

Work on this project will include activities where there is a hazard from falling objects. ANSI approved hard hats will be worn at all times when on the site except indoors. All hard hats to have reflective material applied. Scaffolds and work platforms must have toe boards. Workers must not throw or drop equipment or tools from one level to another. Loose tools must not be carried up or down ladders. Power tools must not be hoisted or lowered by their cord. Use a securely tied rope to raise or lower tools from one level to another. Five-gallon plastic pails may only be used for hoisting tools or materials if the handle is removed and rope, chain, or "nine-wire" are securely fastened through the walls of the bucket. Keep workers away from areas where materials or tools are being hoisted or lowered.

4.2.3 Back Strain

Back Strain is a common injury in construction that is practically 100% preventable. Back strain usually results from one of the following factors:

- Lifting or carrying objects that are awkward or too heavy
- Lifting or carrying objects over slippery or uneven terrain
- Awkward body position or turning at the waist while lifting
- Poor lifting technique or bending at the waist when lifting
- Injuries from falls or equipment accidents

To avoid back strain injuries:

- Use tools such as hand trucks, dollies, or heavy equipment to carry awkward or heavy loads (over 50 lbs)
- Make sure working and walking surfaces are flat and free of objects or substances that could cause a worker to slip or trip while carrying objects.
- Use proper body position when lifting.
- Turn the whole body, don't twist.
- Use proper technique for lifting (feet apart, knees bent, load center of gravity close to the body, head up and back straight, using legs to perform the lift)
- Always use seatbelts in vehicles and equipment and always operate safely.

4.2.4 Crushing, Pinching, Striking by Equipment and Tools

Use barricades to keep personnel away from the swing radius of operating equipment. Workers are not to transit between a piece of equipment and another object, or approach a piece of heavy equipment unless directed to do so by the operator.

Work on raised equipment will not be performed unless the raised equipment is securely blocked on place.

Workers using jackhammers will wear steel-toed boots and metatarsal guards. Workers using any type of power cutting, chipping, or grinding tool must wear proper eye protection (ANSI 2-87 rated face shield and glasses).

When using heavy equipment to unload materials requires workers to position the load manually, taglines must be used. Do not handle loads manually if there is any pinch or crush hazard.

4.2.5 Electrical Hazards

Ground fault circuit interrupters will be used on all portable, electrically operated equipment. All extension cords must be "hard service" (such as ST, SJT), with ground circuit, covering, and strain relief intact. Cords must be inspected prior to each use, and defective cords repaired to original condition or destroyed. "Romex" or other types of permanent wiring equipment must not be used to fabricate extension cords. All equipment and power lines with a potential electrical exposure will be verified, locked, and tagged as being out of service. This will be accomplished before any work operations are initiated. All lines must be traced to the main electrical panel or nearest junction box to confirm the lines have been de-energized. All lockou/tag-out procedures found in Section 10 -SAFETY PROCEDURES, ENGINEERING CONTROLS AND WORK PRACTICES of this HASP will be followed.

4.2.6 Power Tools

Injuries: A variety of hand and power tools will be used during this project. This includes plate tampers, jumping jacks, cut-off saws, pipe cutters, pipe threaders, pipe and liner fusion welders, chain saws, and other electrical and combustion-powered equipment.

Prior to use of any equipment, the operator will make themselves knowledgeable of proper operation either by receiving instructions or reading manufacturer's operating manual. All operators will be required to demonstrate proficiency in tool operation.

Prior to each day's use, all guards, governors, and protective devices will be checked. Proper PPE for specific tools that may be required in addition to standard Level D or Level C PPE will be assigned by HSR and used. This may include face shield, chaps, and metatarsal or foot guards. Loose clothing will not be worn when using power tools.

All electrical hand tools will be approved double-insulated or properly grounded, and used only with ground fault circuit interrupters.

4.2.7 Foot and Hand Injuries

All site workers will wear appropriate footwear. Where the possibility of foot injuries exists, additional foot protection, such as metatarsal guards, may be required.

All work performed on the site requires proper hand protection. General work requires leather-palm work gloves. Some kinds of cutting, where the possibility of cutting the hand exists, should be done using cut-proof gloves (such as wire-reinforced or Kevlar [TM] gloves). Taglines should be used to guide loads being moved with heavy equipment. Never place hands on a load between a load and the ground, solid objects, or other equipment.

4.2.8 Basic Personal Protective Equipment

All employees at the site will be issued the following Personal Protective Equipment (PPE)
ANSI Standard hard hat
Protective eyewear which will be used during all eye hazardous work
A reflective vest must be worn in all areas at all times when on the worksite.

The following PPE will be on hand at all times for use by workers:

- Personal Fall Arrest Systems
- Respirators in all standard sizes. Includes HEPA cartridges and organic vapor cartridges.

4.2.9 Encountering Utilities (Overhead *I* Buried)

Equipment (i.e., cranes, man lifts, drill rigs, etc.) having the potential to come in contact with overhead power lines, will not be positioned or operated within approximately 10 feet of energized power transmission lines. Transit of equipment under power lines must leave a minimum 10 feet of clearance. When operating near high-tension transmission lines, the utility must be called to ascertain their voltage and safe approach distance

At least 48 hours prior to commencing any excavation, the contractor will contact the local "One-Call" system for utility mark out. Be aware that some utilities do not participate in the one- call system and must be called separately. TEI will also obtain any pertinent drawings or plans from the owner and the engineer to check for non-utility owned lines that may still be live. SEE Appendix "J"-Utility Locate Program.

4.2.10 Confined Space Entry

A confined space is a work zone or area that has the following characteristics:

- Limited openings for entry or exit
- Is large enough or so configured that an em ployee can enter and performed assigned work
- It is not intended for continuous employee occupancy.

4.2.20 Traffic Safety

With the use of flags, signage, barricades, lights and traffic cones, certified flagmen will be on duty from start to finish during any and all work that may include temporary as well as prolonged closure of sidewalks and streets.
(Please also see paragraph 14.0 Maintenance & Protection of Traffic)

4.3 Physical Hazards

4.3.1 Heat Stress

Sweating does not cool the body unless moisture is removed from the skin by evaporation. The wearing of personal protective equipment (PPE) reduces the body's ability to eliminate large quantities of heat because the evaporation of sweat is decreased. The body's effort to maintain an acceptable temperature becomes impaired.

Heat related problems include heat fatigue, heat rash, fainting, heat cramps, heat exhaustion and heat stroke. Heat rash occurs because sweat isn't evaporating; making the skin wet most of the time. Standing erect and immobile in the heat allows blood to pool to lower parts of the body. As a result, blood does not return to the heart to be pumped to the brain, and fainting may occur.

Heat cramps are painful spasms of the muscles due to excessive salt loss associated with profuse sweating. The loss of large amounts of fluid and excessive loss of salt results in heat exhaustion. The skin will be clammy and moist and persons exhibit extreme wetness, giddiness, nausea, and headache. Heat stroke occurs when the body's temperature regulatory system has failed. Skin is hot, dry, red, and spotted. The affected person may be mentally confused and delirious. Convulsions could occur. EARLY RECOGNITION AND TREATMENT OF HEAT STROKE ARE THE ONLY MEANS OF PREVENTING BRAIN DAMAGE OR DEATH. A person exhibiting signs of heat stroke should be removed from the work area to a shaded area. The person should be soaked with water to promote evaporation. Fan the person's body to increase cooling, and GET MEDICAL ATTENTION IMMEDIATELY.

Table 3.0 Heat Strain:
Signs, Symptoms, and Adverse Health Effects.

The incidence and severity of heat strain will vary widely among people, even under identical heat stress conditions. Disabilities often arise from the combined effects of environmental heat loading and metabolic heat production. Prolonged increases in deep body temperature during the first trimester of pregnancy may endanger the fetus and are associated with temporary infertility for people of both genders.

Profuse and extended sweating produces dehydration and loss of body electrolytes and may lead to **heat exhaustion** or muscle cramps. A prime objective of heat stress management must always be preventing **heat stroke,** which is life threatening and is the most serious of the heat-induced disabilities.

The **heat stroke** victim is often manic, disoriented, confused, delirious or unconscious. The victim's skin is hot and dry, sweating has ceased, and the body temperature is 40°C (1~4°F) or higher, Immediate emergency care and hospitalization are essential if signs of heat stroke develop.

4.3.2 Heat Stress Management Program

The Site Heat Stress Program will be enforced during periods when the ambient temperature exceeds comfortable working conditions, ***typically above 80° F under normal working conditions and above 70 F during activities utilizing chemically resistant PPE.*** At this time, Site Supervisors and personnel should be aware of, and implement the Heat Stress Program.

4.3.3 Cold Stress

Cold injury is classified as either localized, as in frostbite, frost-nip or chilblain; or generalized, as in hypothermia. The main factors contributing to cold injury are exposure to humidity, high winds, contact with wetness and inadequate clothing.

The likelihood of developing f**rostbite** occurs when the face or extremities are exposed to a cold wind in addition to cold temperatures. The freezing point of the skin is about 30 F. The fluids around the cells of the body tissue freeze causing the skin to turn white. This freezing is due to exposure to extremely low temperatures. As wind velocity increases, heat loss is greater and frostbite will occur more rapidly. The first symptom of frostbite is usually an uncomfortable sensation of coldness followed by numbness. There may be a tingling, stinging or aching feeling in the effected area. The most vulnerable parts of the body are the nose, cheeks, ears, fingers and toes.

Symptoms of **hypothermia,** a condition caused by abnormally low body temperature, include uncontrollable shivering and sensations of cold. The heartbeat slows and may become irregular, the pulse weakens and the blood pressure changes. Pain in the extremities and severe shivering can be the first warning of dangerous exposure to cold.

When the ambient temperature or wind chill equivalent falls to below 32 F, site personnel who must remain outdoors should wear insulated coveralls, insulated boot liners, hard hat helmet liners and insulated hand protection. Woolen mittens are more efficient insulators than gloves. The head can lose 40% of body heat when exposed. When it is not necessary to wear a hard hat, a wool-knit cap will provide the best head protection. A facemask may also be worn if respiratory protection is not required. Site personnel should dress in several layers rather than one single heavy outer garment. The outer piece of clothing should be wind- and water- proof. Clothing made of thin cotton fabric is ideal since it helps to evaporate sweat. Loosely fitting clothing also aids in sweat evaporation. Socks with high wool content are best. If two pairs of socks are worn, the inner sock should be smaller and made of cotton. If clothing becomes wet, it should be taken off immediately and a dry set of clothing put on.

It may become necessary to shield the work area temporarily if wind conditions become adverse. The HSR will determine if this type of action is necessary, and heated break trailers will be available during the winter months.

4.3.18 Monitoring Procedures

Since prolonged exposure to cold air or to immersion to cold water, at temperatures well above freezing can lead to dangerous hypothermia, whole body protection must be provided. Adequate insulating dry clothing to maintain core temperatures above 36 C (96.8 F) must be utilized by workers if work is performed in air temperatures below 4 C (40 F). Wind chili cooling rate and the cooling power of air are critical factors. (Wind chill cooling rate is defined as heat loss from a body expressed in watts per meter squared which is a function of the air temperature and wind velocity upon the exposed body.) The higher the wind speed and the lower the temperature in the work area, the greater the insulation value of the protective clothing required. An equivalent chill temperature chart relating the actual dry bulb air temperature and the wind velocity is presented below. The equivalent chill temperature should be used when estimating the combined cooling effect of wind and low air temperatures on exposed skin or when determining clothing insulation requirements to maintain the deep body core temperature.

4.3.19 Noise

Exposure to occupational noise in the construction industry is regulated by 29 CFR 1926.52. The standard requires workers to be enrolled in a hearing conservation program when noise exposures exceed 85dB (A) for an 8-hour day. The standard requires protection from the effects of noise exposure to be provided when exposures exceed 90dB (A) for an 8-hour day. Depending upon the noise levels generated, the contractor may choose to perform noise monitoring of its personnel to determine when, and during what activities, hearing protection will be required and to determine the appropriate noise reduction rating that the protection must provide.

Exposure to noise may result in the following:

- Temporary hearing losses where normal hearing returns after a rest period
- Interference with speech communication and perception of auditory signals
- Interference with the performance of complicated tasks
- Permanent hearing loss due to repeated exposure resulting in nerve destruction in the inner ear.

Site workers will be provided with hearing protection devices. These will usually be earplugs with a noise reduction rating of 30dB or better. Workers will be trained on how and when to use them.

4.3.20 Heavy Equipment Hazards

The use of heavy equipment will require all personnel in the immediate work area to wear hard hats and appropriate footwear in addition to personal protective equipment (PPE) required for performing work activities in the work area. No person will walk underneath a piece of equipment when it is carrying a load, or if it is transporting materials to another area.

The following information warrants extra attention regarding work around heavy equipment (front end wheel loaders, backhoes, rollers, bulldozers, etc.) and heavy materials:

- Hard hats are to be worn at all times on site. Other protective gear, as specified in this HASP is required as well.
- Obtain visual contact with and acknowledgement from the equipment operator before passing into swing radius or other danger zone.
- Establish hand signal communication when verbal communication is difficult. Designate one person per work group to give hand signals to equipment operators.
- Be cautious of solid footing at all times.
- Heavy equipment must have backup alarms with audible above the surrounding noise level.
- Only qualified people are to operate heavy equipment.
- Use proper chains, hoists, straps, and any other equipment of sufficient rating to safely move heavy materials. Tow chains are not to be used for lifting.
- Heavy equipment should be used to move objects too heavy to handle manually.
- Do not walk directly in back of or to the side of heavy equipment without the operator' s eye contact. Do not enter the swing radius of an excavator or crane, or the "boom shadow" of a drill rig without the acknowledgement and permission of the operator. These areas should be marked or barricaded while the excavator, crane, or drill rig is in operation.
- Do not use a piece of equipm ent unless you are familiar with its operation. This applies to heavy and light equipment, and hand tools.

Be sure no underground or overhead power lines, electrical conduit, sewer lines, gas lines, water lines, telephone lines, or other utilities will present a hazard in the work area. Call the "One-Call" number at least 72 hours prior to beginning excavation activities. Be aware that some public utilities may not participate in "One-Call" and must be contacted separately.

Equipment (i.e. backhoes, cranes, man lifts, etc.) that have the potential to come in contact with overhead power lines will not be positioned or operated within 10-feet of energized power transmission lines.

4.4 Biological Hazards

4.4.1 Animal Bites

4.4.2 Domestic and Wild Animal Bites

Bites inflicted by domestic and wild animals primarily pose a serious risk of infection. In some cases they may carry rabies as well. Rabies has been found in wild and domestic animals in nearby Westchester County and nearby counties in NJ. In order to prevent problems arising from these bites it is essential that site personnel stay away from all wild or domestic animals, particularly nocturnal animals that become active in the daytime (such as raccoons, foxes, etc.). If an animal becomes a hazard, call the Department of Animal Control. Don't try to catch animals yourself. Dead animals will be handled using equipment whenever possible.

First Aid for animal bites:

- If bleeding is minor, then wash the wound site
- Control the bleeding
- Apply antibiotic ointment
- Cover the wound
- Seek medical attention immediately

4.4.3 Insect Bites

Ticks are bloodsuckers, attaching themselves to warm-blooded vertebrates to feed. Deer ticks, which are associated with the transmission of Lyme disease (ticks transmit the bacteria that causes the disease) have been observed in New England and Mid- Atlantic states. There have been reports that other ticks such as wood ticks can carry the disease.

One characteristic of Lyme disease is a bulls-eye rash that develops around the bite site. The rash appears in about 60-80% of all Lyme disease cases. Other rashes associated with Lyme disease are red, mottled rashes along the jaw, neck, armpits, groin, or buttocks, as well as localized around the site of an insect bite. Contact your HSR immediately if you develop such a rash.

Other symptoms that could indicate exposure to Lyme disease are; strong flu-like symptoms (chills, fever, headache, body aches); and joint pain. Contact your HSR immediately if you develop these symptoms.

Personnel should carefully inspect themselves each day for the presence of ticks or any rashes. This is important since prompt removal of the tick can prevent disease transmission. Female deer ticks are about 1/16-inch in length and are black and brick red in color. Males are smaller and all black.

Removal of the tick is important in that the tick should not be crushed and care must be taken so that the head is also removed. If the head is not completely removed or if the tick is allowed to remain for days feeding on human blood, a condition known as **tick** paralysis can develop, this is due to a neurotoxin that the tick apparently injects while engorging. This neurotoxin acts upon the spinal cord causing in coordination, weakness, and paralysis.

Tick season lasts from April through October; peak season is May through July. Wear light colored clothing (easier to spot ticks) with longs sleeves and make sure that shirts are tucked into pants and pants are tucked into socks or boots. Duct taping the pants to the boots can keep out ticks and trap those that do get through. Work in heavily vegetated areas should be performed in a lightweight disposable coverall such as Kleengard[TM], treated with repellent and taped to boots and gloves. Ticks have a tendency to crawl upwards. These procedures will make it more difficult for a tick to reach your skin.

Studies have determined that repellents containing D*EET* (n,n-diethyl m-toluamide) as a main ingredient are most effective against mosquitoes and ticks. DEET can be directly applied to the exposed skin of adults and/or clothing. Permethrin is another repellent; however, it can only be directly applied to clothing.

Mosquitoes are bloodsuckers that feed on m ammals and birds and can transm it diseases such as West Nile Virus and, rarely in the US, Malaria. The sam e repellents and clothing strategies that work for ticks a lso work for mosquitoes. Head nets are often useful when working in areas infested with mosquitoes.

Bees, Wasps, and other Stinging insects can cause lethal allergic reactions in susceptible individuals. Individuals who are aware that this is an issue must inform site management prior to starting work at the site, and should have epinephrine prophylaxis readily available in the event they are stung. Bites from any arthropod that cause a reaction should be seen by a physician promptly.

4.4.4 Dust Control

Dust which may be created by machines both working and or delivering on site will be controlled by water. During excavation, there will be at least one employee assigned to the monitoring and controlling of airborne dust particles that may be ingested and or breathed in by workers as well as the neighboring public. Construction Signs will be posted as well. All workers will be issued HEPA Certified respiration masks in an effort to protect them from prolonged exposure to dust particles that may or may not contain Chloradane.

5.0 Safety Hazards Analysis

5.1 Work Operation and Task Hazard Matrix

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Mobilization/Demobilization, Initial Site Set-up	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools. [29 CFR 1926.400, 401]	4.2.5 10.0
	Struck by, caught between equipment, vehicles or tools	Back-up alarms, spotters, Class 2 vests. [29 CFR 1926.201, 600]	4.2.4 4.2.8
	Biological Hazards Insect bites	Protective clothing, repellents	4.4.3 10.0
Survey	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools.	4.2.5

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Survey [contd.]	Struck by, caught between equipment, vehicles or tools	[29 CFR 1926.400, 401] Back-up alarms, spotters, Class 2 vests. [29 CFR 1926.201, 600]	4.2.4 4.2.8
	Cuts or lacerations	Proper gloves, PPE [29 CFR 1910.132	4.2.7 4.2.8
	Noise	Monitoring, engineering controls and hearing protection [29 CFR 1926.52]	4.3.19
	Muscle & Back Sprains and Strains	Proper lifting techniques and training	4.2.3
Install temporary facilities and utilities	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools. [29 CFR 1926.400, 401]	4.2.5 10.0
	Struck by, caught between equipment, vehicles or tools	Back-up alarms, spotters, Class 2 vests. [29 CFR 1926.201, 600]	4.2.4 4.2.8

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Installing temp. facilities and utilities [contd.]	Cuts or lacerations	Proper gloves, PPE [29 CFR 1910.132	4.2.7 4.2.8
	Noise	Monitoring, engineering controls and hearing protection [29 CFR 1926.52]	4.3.19
	Muscle & Back Sprains and Strains	Proper lifting techniques and training	4.2.3
Silt Fence & Site security	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools. [29 CFR 1926.400, 401]	4.2.5 10.0
	Struck by, caught between equipment, vehicles or tools	Back-up alarms, spotters, Class 2 vests. [29 CFR 1926.201, 600]	4.2.4 4.2.8
	Cuts or lacerations	Proper gloves, PPE [29 CFR 1910.132	4.2.7 4.2.8

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Silt fence & Site security [contd.]	Noise	Monitoring, engineering controls and hearing protection [29 CFR 1926.52]	4.3.19
	Muscle & Back Sprains and Strains	Proper lifting techniques and training	4.2.3
Excavation, grading, backfilling, compaction & landscaping	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools. [29 CFR 1926.400, 401]	4.2.5 10.0
	Exposure to Hazardous materials and air contaminants	Use of Tyvec suits when necessary as well as respirator masks and dust control	4.2.8 4.4.4
	Struck by, caught between equipment, vehicles or tools [Brush hogs, chain saws, weed whackers, wood chippers	Back-up alarms, spotters, Class 2 vests, PPE, including chaps [29 CFR 1926.201, 600]	4.2.4 4.2.8

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Excavation, etc. contd.	Cuts or lacerations	Proper gloves, PPE [29 CFR 1910.132	4.2.7 4.2.8
	Noise	Monitoring, engineering controls and hearing protection [29 CFR 1926.52]	4.3.19
	Muscle & Back Sprains and Strains	Proper lifting techniques and training	4.2.3
Close existing dry well and remove underground piping	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools. [29 CFR 1926.400, 401]	4.2.5 10.0
	Exposure to Hazardous materials and air contaminants	Use of Tyvec suits when necessary as well as respirator masks and dust control	4.2.8 4.4.4
	Struck by, caught between equipment, vehicles or tools	Back-up alarms, spotters, Class 2 vests. [29 CFR 1926.201, 600]	4.2.4 4.2.8

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Close existing dry well and remove underground piping	Cuts or lacerations	Proper gloves, PPE [29 CFR 1910.132	4.2.7 4.2.8
	Noise	Monitoring, engineering controls and hearing protection [29 CFR 1926.52]	4.3.19
	Muscle & Back Sprains and Strains	Proper lifting techniques and training	4.2.3
Install new storm water drainage facilities and connect to storm sewer	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools. [29 CFR 1926.400, 401]	4.2.5 10.0
	Collapse/buried by	Sloping, shoring, benching	15.0
	Struck by, caught between equipment, vehicles or tools [pinch points]	Back-up alarms, spotters, Class 2 vests. [29 CFR 1926.201, 600]	4.2.4 4.2.8

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Install new storm water drainage facilities and connect to storm sewer [contd]	Cuts or lacerations	Proper gloves, PPE [29 CFR 1910.132	4.2.7 4.2.8
	Noise	Monitoring, engineering controls and hearing protection [29 CFR 1926.52]	4.3.19
	Muscle & Back Sprains and Strains	Proper lifting techniques and training	4.2.3
	Exposure to hazardous materials, air contaminants	Monitor air with instruments, PPE and decon procedures, dust control [29 CFR 1926. 100, 120]	10.2
Load Out	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools. [29 CFR 1926.400, 401]	4.2.5 10.0
	Truck/equip. exiting	Maintenance Protection of Traffic	14.0
	Struck by, caught between equipment,	Back-up alarms, spotters, Class 2 vests.	4.2.4 4.2.8

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Load Out [contd.]	vehicles or tools	[29 CFR 1926.201, 600]	
	Cuts or lacerations	Proper gloves, PPE [29 CFR 1910.132	4.2.7 4.2.8
	Noise	Monitoring, engineering controls and hearing protection [29 CFR 1926.52]	4.3.19
	Muscle & Back Sprains and Strains	Proper lifting techniques and training	4.2.3
Install asphalt cover	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools. [29 CFR 1926.400, 401]	4.2.5 10.0
	Struck by, caught between equipment, vehicles or tools [pinch points]	Back-up alarms, spotters, Class 2 vests. [29 CFR 1926.201, 600]	4.2.4 4.2.8

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Install asphalt cover [contd.]	Cuts or lacerations	Proper gloves, PPE [29 CFR 1910.132	4.2.7 4.2.8
	Noise	Monitoring, engineering controls and hearing protection [29 CFR 1926.52]	4.3.19
	Muscle & Back Sprains and Strains	Proper lifting techniques and training	4.2.3
	Exposure to hazardous materials, air contaminants	Monitor air with instruments, PPE and decon procedures, dust control [29 CFR 1926. 100, 120]	10.2
Abate asbestos floor tiles Decontaminate & seal concrete floor in garage	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools. [29 CFR 1926.400, 401]	4.2.5 10.0
	Struck by, caught between equipment,	Back-up alarms, spotters, Class 2 vests.	4.2.4 4.2.8

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Abate asbestos floor tiles [contd.]	vehicles or tools [pinch points]	[29 CFR 1926.201, 600]	
	Cuts or lacerations	Proper gloves, PPE [29 CFR 1910.132	4.2.7 4.2.8
	Noise	Monitoring, engineering controls and hearing protection [29 CFR 1926.52]	4.3.19
	Muscle & Back Sprains and Strains	Proper lifting techniques and training	4.2.3
	Exposure to hazardous materials, air contaminants	Monitor air with instruments, PPE and decon procedures, dust control [29 CFR 1926. 100, 120]	10.2
Conduct endpoint soil sampling & testing	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools. [29 CFR 1926.400, 401]	4.2.5 10.0

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Conduct endpoint soil sampling & testing	Struck by, caught between equipment, vehicles or tools [pinch points]	Back-up alarms, spotters, Class 2 vests. [29 CFR 1926.201, 600]	4.2.4 4.2.8
	Cuts or lacerations	Proper gloves, PPE [29 CFR 1910.132	4.2.7 4.2.8
	Noise	Monitoring, engineering controls and hearing protection [29 CFR 1926.52]	4.3.19
	Muscle & Back Sprains and Strains	Proper lifting techniques and training	4.2.3
	Exposure to hazardous materials, air contaminants	Monitor air with instruments, PPE and decon procedures, dust control [29 CFR 1926. 100, 120]	10.2
Remove temporary utilities and facilities, site restoration and Demobilization	Slips, Trips & Falls	Housekeeping, material storage. [29 CFR 1926.250]	4.2.1
	Face, eye injuries	Safety glasses/goggles/ face shield. [29 CFR 1926.102]	4.2.8
	Electrical Shock	De-energize power lines. Use only double insulated/grounded power tools. [29 CFR 1926.400, 401]	4.2.5 10.0

Work Operation/Task	Potential Hazard	Prevention/Corrective Measures	HASP Reference
Remove temporary utilities and facilities, site restoration and Demobilization [contd.]	Struck by, caught between equipment, vehicles or tools [pinch points]	Back-up alarms, spotters, Class 2 vests. [29 CFR 1926.201, 600]	4.2.4 4.2.8
	Cuts or lacerations	Proper gloves, PPE [29 CFR 1910.132	4.2.7 4.2.8
	Noise	Monitoring, engineering controls and hearing protection [29 CFR 1926.52]	4.3.19
	Muscle & Back Sprains and Strains	Proper lifting techniques and training	4.2.3
	Exposure to hazardous materials, air contaminants	Monitor air with instruments, PPE and decon procedures, dust control [29 CFR 1926. 100, 120]	10.2

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6.0 SAFETY PROCEDURES, ENGINEERING CONTROLS AND WORK PRACTICES

6.1 General Site Rules/ Prohibitions

The project rules have been developed in order to create a problem-free and rewarding work environment, one in which the employees understand what is expected of them on the project site. An employee who fails to maintain at all times the proper standards of conduct or who violates any of the following rules and regulations may be subject to disciplinary action, including but not limited to, termination of employment or denial of access.

6.2 Unacceptable Conduct

6.2.1 General

Unacceptable employee conduct and/or violation of a project rule or requirement may be reason for disciplinary action up to and including suspension without pay, termination of employment, or denial of access to the work area or client facilities. Examples of unacceptable employee conduct and/or rule violations are as follows:

1. Work areas, machinery and all facilities shall be maintained clean and orderly at all times.

2. All posted warning signs, signals and safety rules shall be obeyed.

3. Horse play, rowdiness, profane language, reckless driving of vehicles and equipment or a belligerent attitude on the part of any employee toward other company personnel or the general public is forbidden and will not be tolerated.

4. All sites are considered alcohol free work sites. No alcohol will be allowed on site.

5. The use, possession or sale of regulated drugs is prohibited without a doctor's written prescription and management's prior knowledge. Violators will be removed from the project.

6. Blatant disregard of safety rules is a possible danger to yourself as well as those around you. Any employee found not in compliance with safety rules will be terminated immediately.

7. Supervisors and foreman are authorized to enforce these safety rules and instruct new employees to perform their job in a safe and efficient manner.

6.3 [Intentionally left blank]

6.4 Smoking

NO SMOKING IS ALLOWED. To avoid fire or explosion hazards associated with the presence of flammable liquids or gases, smoking will only be permitted in areas -designated by the Site Superintendent. Smoking in any other areas, whether outside, in buildings, in vehicles, or in equipment is **PROHIBITED** and grounds for **IMMEDIATE TERMINATION**.

6.5 [Intentionally left blank]

6.6 Material Loading / Unloading

The contractor will implement protocols for loading and unloading materials onsite. These protocols will include D.O.T. requirements covering:

Grounding
Placarding
Bills of Lading and Manifests
Driver Qualifications
Wheel Chocks
Use of Heavy Equipment.
Workers using forklifts must have documented forklift training.

6.7 [Intentionally left blank]

6.8 Fire Protection

Flammable liquids and gases that will be present on site will include gasoline and diesel fuels for heavy machinery and acetylene gas for welding and cutting. As these materials are extremely flammable, proper safety precautions will be followed at all times, and, all site employees shall be familiar with the operation of dry chemical fire extinguishers.

All equipment, vehicles, and trailers on site will be equipped with extinguishers, as follows:

- All heavy equipment will have a charged, inspected 10 lb. ABC dry chemical fire extinguisher mounted to the cab and accessible for use.
- All vehicles will have a charged, inspected 10 lb. ABC dry chemical fire extinguisher.
- All office, tool, and break trailers will have at least one 10 lb. ABC dry chemical fire extinguisher mounted adjacent to each access door.
- All office and break trailers will have working smoke detectors.

6.9 TOOLS

6.9.1 Purpose

The purpose of this policy is to establish safe work practices for the use of hand and power
tools. Because we are reliant so heavily on this type of equipment and use it frequently, hand and power tools are the source of many injuries on our projects. We must ensure our tools are used correctly, properly maintained and removed from service when no longer suitable for use. Above all, only qualified and trained personnel will be permitted to use these tools.

6.9.2 Applicable Regulations

OSHA 29 CFR 1926.300

6.9.3 Responsibilities

Project Supervision shall:

- Purchase all hand and power tools according to company policy specific to brand and model;
- Ensure that all tools requiring guards are equipped as such before they are put into service on the job;
- Develop a procedure for the distribution of abrasive wheels for cutoff and chop saws.

Employees shall:

- Not remove any guard on a hand or power tool;
- Inspect hand and power tools prior to use to ensure safe operating condition; and report any damaged or defective tools to their foremen.

6.9.4 Procedural Overview

General Requirements:

- Maintain all hand and power tools and similar equipment in a safe condition;
- When power operated tools are designed to accommodate guards, they shall be equipped with such guards when in use. Should the guard obstruct the work it will not be removed;
- Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains or other reciprocating, rotating or moving parts of equipment shall be guarded if such parts are exposed to contact by employees or otherwise create a hazard;
- Impact tools, such as drift pins, wedges and chisels, shall be kept free of mushroomed head; and
- The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

- Power-operated Hand Tools:
    - Electric power operated tools shall either be approved double-insulated type or grounded;
    - Do not use a power tool with broken or defective insulation on the cord, broken or defective plugs, or loose or broken switches;
    - The use of electric cords for hoisting or lowering tools is not permitted, and;
    - If the tool is provided with a side-mounted handle, it must remain on the tool to prevent wrist injuries should the tool bind during operation.

6.10. Chainsaws

Equipment:

- When purchasing chain saws, always buy those with anti-kickback chains. Regular chains should be disposed of and replaced with anti-kickback chains. Anti-kickback chains are designed to skim the surface of the work in the event that the upper part of the chain comes into contact with the work. Older chains have a flat link between each of the raised cutters while newer chains have either a triple thick raker in front of each cutter or an extra raised section between cutters.
- All chainsaws shall be equipped with a momentary finger contact or constant pressure "on/off" control switch that will shut off power when the pressure is released; all saws must have spark-arresting mufflers; and
- Electric chain saws shall be approved, double insulated, or grounded.

Inspection and Service:

- Equipment will be inspected for defects and broken or worn chains. Any chain saw that is broken or defective must be taken out of service and repaired immediately or removed from the job;
- Chains shall be kept sharp, well lubricated and properly tensioned at all times. The chain needs sharpening when it must be pushed through to cut or when it throws sawdust rather than wood chips;
- Chain saws shall be inspected before each day's use and during each refueling. Saws that are not in safe operating condition will not be used; and If electric chainsaws are used, disconnect the power source from the chain saw before making any adjustments or repairs.

Use:

- Do not walk with a running chainsaw;
- Work "down" with the saw whenever possible;
- If electric chainsaws are used, never use the cord to hoist or lower the tool;
- Before refueling, saws must be cool to the point that spilled gas will not ignite;
- Keep the air filter clean and use the correct mixture of fuel and oil; fully charged 201b. ABC fire extinguishers shall be kept at all refueling areas;
- Saws must be kept clean of excess oil to prevent slipping or fire hazards. Any spills that occur must be cleaned up immediately;
- Chain saws will be carried or moved with the engine in the off position;
- When starting a chain saw, place it on the ground, hold the handle with one leg and pull the starter with the other hand. Never start a saw in the air or on your leg; Running saws must be gripped with both hands; and
- Maintain a clear work area free of tripping hazards and obtain firm footing before commencing any work. Keep your weight balanced on both feet and do not over reach.

Personal Protective Equipment:

- Employees using chain saws are exposed to flying debris, dust and noise. Hard hats, safety glasses and face shields (mesh is acceptable), and gloves are required when working with chain saws. No loose or ragged clothing will be allowed. Additionally, hearing protection must be worn.

Training

- Always read and become familiar with the manufacturers instructions before use; and

- Operators shall be trained in the safe operation and maintenance of chain saws, proper tree falling procedures and the use of personal protective equipment.

6.11. Cut-Off Saws

Inspection:

- Ensure guard is installed and functioning as intended by the manufacturer;
- Handles are installed and functioning as intended by the manufacturer;
- Trigger releases freely when released;
- Muffler is installed;
- Ensure no bolts are missing and ail bolts are tight and functioning as intended by the manufacturer;
- The pull cord handle is not broken or cracked;
- The RPM of the tool is clearly marked on the tool;
- The wheel flanges are clean and straight so the blade will spin true. The wheel flanges are recessed and are of the same diameter;
- The wheel flanges are at least one-fourth the size of the blade;
- The wheel arbor is the correct size for the blade. Never alter a wheel arbor to force a --blade to fit the cut-off saw; and
- If there is a blade in the tool, remove the blade and follow blade inspection guidelines.

6.12 Hazard Communication

Information on hazard communication can be obtained from the Health and Safety Representative (HSR). The information contained in this procedure is available to employees at any time. Employees, designated representatives, and government officials will be provided copies of this program upon request.

6.12.1 Implementing Personnel

The following personnel have specific duties to perform to ensure the implementation of the program.

1. Project Manager (PM)

- Responsible for chemicals and hazardous materials brought on or into the project facility, including those brought onsite by subcontractors
- Ensures that the number and the amount of chemicals stored are based on need
- Ensures that only approved chemicals are brought onsite
- Responsible for the overall authority program
- Approves chemical substances for purchase Ensures that chemical inventory surveys are performed

2. HSR

- Maintains the Chemical Inventory List
- Maintains the MSDS book
- Provides information about the hazard communication standard
- Assists the PM with performing chemical inventory surveys

3. Supervisor

Ensures that all hazardous chemicals are properly labeled, stored, and disposed of in accordance with the MSDSs.

Conducts hazard communication training, including training on the safe use of hazardous chemicals for routine and non-routine tasks

6.12.1 [contd.]

4. Waste Management Supervisor (WMS)

Approves chemical substances for purchase Provides technical assistance on disposal of chemicals

5. Employees

Handle chemicals properly

Report any problems to their supervisor

Sign the hazard communications training log

6.12.2 Hazard Communication Process. The following table shows how the Hazard Communication Process works.

Stage	Description
1	New employees are given information and training on the hazard communication standard and the Hazard Communication Program
2	A new chemical is required
3	The HSR and waste management personnel approve the chemical for use or recommend a less hazardous chemical
4	The chemical is ordered and the MSDS is requested
5	The chemical and the MSDS arrive
6	The chemical is checked for proper labeling and is stored appropriately
7	The MSDS is forwarded to the HSR for review
8	Inventory List Form, and places the MSDS in the MSDS book. Employees are given additional training on the new chemical substance or hazard. The HSR reviews the MSDS for completeness.

A. Ordering Chemicals or Hazardous Materials

Any employee who initiates a material requisition for chemicals or hazardous materials is required to include the MSDS as a line item on the requisition. Procurement personnel will ensure that the MSDS is forwarded to the employee requesting the material.

B. Approval of Chemicals

A list of chemical products currently approved for use is shown in Chemical lnventory list. If a chemical does not appear on this list, the requestor will obtain the written approval from the HSR (or designee) before ordering the chemical. Approval will be documented by means of a Written Approval for Chemical Use Form.

C. Subcontract Language

All subcontracts will contain a clause requiring submittal review of MSDSs for ail chemicals, products, and potentially hazardous materials to be brought onsite. The MSDSs will be listed as a deliverable in the contract language. Subcontracts will also state that the subcontractors are bound by the requirements of the Hazard Communication Program.

D. **Coordination with Owners, Operators, and Subcontractors**

Whenever outside employees are to work in an area where potentially hazardous chemicals are present, the owner, operator, or subcontractor will be advised of these hazards and given information so that the subcontractor may train its employees. The subcontractor will be given full access to the Chemical lnventory List and the MSDS library in order to gather the necessary information.

The HSR will gather information when the contractor or its subcontractors' personnel are likely to be exposed to another employer's hazardous chemicals. Coordination activities will be documented by means of a Multi-employer Workplace Hazard Communication lnterface Form.

Record keeping

The following program records are to be retained as long as the project program is active:

- Copy of the written Hazard Communication Program
- Multi-Employer Workplace Hazard Communication Interface Form
- Written approval of chemical use
- MSDS Archive Record Cover Sheet
- Current Chemical Inventory List & Current MSDSs
- Copy of training records

F. Chemical lnventory List

The Chemical lnventory List is the master list of all potentially hazardous chemicals onsite.

The Chemical Inventory List serves as an index to the MSDS book and as a tool for updating the training program.

1. The Chemical Inventory List will contain the following information:

- Product name
- Manufacturer/supplier
- Location Stored
- Quantity on hand
- Annual usage
- MSDS received [yes or no]

2. The Chemical Inventory List will be updated each time a potentially hazardous chemical is brought on site.

3. The following list contains examples of the typical chemicals or hazardous materials found on field sites:

- *Diesel Fuel*
- *Gasoline*
- *Motor Oil*
- *Lubricating grease*
- *Hydraulic Oil*
- *2 Cycle Oil*
- *Oxygen*
- *Acetylene*

***G.* Exempted Chemicals**

The only materials/articles exempted from inclusion in the Chemical Inventory List are as follows:

Tobacco products

Wood or wood products and treated wood (dioxin, etc.)

Consumer products used in the workplace in the same form and concentration as a product packaged for use by the general public

-

H. Annual *Review*

By January 31 of each New Year, the HSR or designee will perform an annual physical inventory of chemicals and a review of the Chemical lnventory List to ensure accuracy. Substances that are no longer stored or used must be deleted from the list. After completion of the annual review, the updated Chemical lnventory List will replace the older one in the MSDS book.

The outdated Chemical lnventory List will be sent to Project Document Control Center (PDCC) as a historical record. It is recommended that the HSR or designee keep file copies of old chemical inventory lists at the field site.

1. *Material Safety Data Sheets (MSDS)*

1. *MSDS* Contents

An MSDS is an identity document for a chemical or chemical product. It provides the following information:

Company, product, chemical name, and description of the chemical

Physical data

Procedures for handling the chemical safely, including handling during emergencies

Fire and explosion hazard data

Health hazard data

Recommended personal protective equipment

Reactivity data

First aid procedures

Spill or leak procedures

2. MSDS Book

A book (three-ring binder or equivalent) of MSDSs for all potentially hazardous chemicals will be maintained in the Health and Safety office. MSDSs will be kept in alphabetical order, and the Chemical Inventory List will serve as the index to the MSDS book. The MSDSs must be readily available to employees during all work shifts.

3. New MSDSs

MSDSs must be received before or at the time of receipt of the first shipment of any potentially hazardous chemical from a supplier.

When MSDSs are received with subsequent shipments of potentially hazardous chemicals, they will be reviewed for completeness and for new or updated information. If the MSDS has been updated, the new MSDS will replace the older MSDS in the book. The old MSDSs will be forwarded to PDCC for retention as a permanent record with an MSDS Archive Record Cover Sheet.

4. Acquiring a *Missing MSDS*

If an MSDS is not provided with a shipment that has been labeled as a hazardous chemical, the HSR or designee shall obtain one from the manufacturer or supplier as soon as possible. The HSR will communicate with the site manager and the procurement officer when obtaining missing MSDSs.

Annual Review

After the annual physical inventory of chemicals onsite, a review of the MSDS book will be conducted to purge the files of MSDSs for chemicals that are no longer in use. MSDSs for chemicals no longer in use will be removed from the book and forwarded to an MSDS Archive

Labels and Warnings

1. The purpose of a label is to convey immediate identity and hazard information to the user of the chemical.
2. A label is any written, printed, or graphic material displayed on or affixed to a product container.
A warning is a statement, picture, or symbol that tells the user what could or will happen if the product is used in certain ways.

Labels must include at least the following information:

- Identity of the hazardous chemical(s)
- Appropriate hazard warnings to help employees protect themselves from the hazards of the substance

- Name and address of the chemical manufacturer, importer, or other person responsible for the chemical and from whom more information about the chemical can be obtained

IMPORTANT: Many hazardous chemicals that arrives onsite may carry appropriate Department of Transportation (DOT) labels. These diamond-shaped labels convey information about hazard classifications during shipment but do not meet hazard communication requirements.

Rules for Labeling

The manufacturer, importer, or distributor of a hazardous chemical must affix a label, tag, or other type of marking to every container that leaves its workplace. Labels must be legible, in English, and prominently displayed on the container.

The name or other identifier used to identify the chemical on its label must also appear prominently on the MSDS to enable employees to easily locate the MSDS for that chemical product.

A worker may transfer chemicals from a bulk container to a portable container for immediate use during the current shift only. Appropriate labels must be attached to the portable container. The temporary container may not be used for storage of the chemical.

Exceptions to Labeling Rules. Pipes and piping systems, engines, fuel tanks, and operating systems in vehicles are not considered containers. However, employees must be informed and trained about the hazards of the substances used in such systems. Individual stationary containers such as storage tanks will have signs, placards, or other written forms of warning attached to them which contain the same information as a permanent label.

Replacing Labels. The project/facility HSR will obtain new labels and place them on containers under the following conditions:

Original labels become illegible, dirty, or defaced

Original labels are damaged, torn, or affected by weather

The contents of the container degrade the original label **Missing Labels.** If a label is missing from a container, the receiving supervisor will isolate the container to prevent its use and contact the HSR for the appropriate steps to take to identify the material. After the material is identified, labels will be obtained and placed on the container.

A container is any bag, barrel, bottle, box, can, cylinder or drum that holds a substance.

A portable container is one into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer.

Portable containers will be approved for the use intended (e.g., flammable liquids).

Information and Training Requirements

"Information" is the term used to describe the details given about the Hazard Communication's Program." Training" is the term used to describe the steps taken to teach employees how to handle the hazardous chemicals to which they may be exposed.

Information and training will be provided to employees as follows:

Initial information and training, in conjunction with other site-specific training, will be provided when a new employee arrives onsite.

Initial information and training will be provided when new employees are first assigned to a work area where they may be exposed to hazardous chemicals under normal working conditions or in a foreseeable emergency

Additional information and training will be provided when a new hazard is introduced into the employees' work area. Examples of new hazards are

A new chemical is to be used, or a previously used chemical is to be used in a different way that poses a new hazard

General Topics of Information

The following general information will be given to all employees:

- Requirements of the Hazard Communication Standard Employee rights under the standard Location and availability of the written hazard communication program, the Chemical
- Inventory List, and MSDSs Operations in their work areas where chemicals are used. The person(s) to contact for further information

General Training Topics

The following general topics will be addressed during training sessions for all employees:
Hazardous chemicals and states of matter
Chemical, physical, and health hazards
Routes of entry
Exposure limits and ways to control exposure
Personal protective equipment and engineering controls
Container labels
MSDSs
The person(s) to contact for further information

5. Specific Training Topics

Personnel who work with hazardous chemicals for routine and non-routine tasks will receive at least the following training:

Hazard analysis of the work to be performed

Hazardous ingredients of the chemical or substance

How to detect the presence or release of hazardous chemicals

The environmental or medical monitoring being conducted to detect hazardous chemicals and to measure the employee's exposure to them

How to read and understand MSDSs and labels

What to do if a label or MSDS is missing
What engineering controls are being used

Safe work practices

How to protect oneself from the hazards of the chemicals they encounter

What to do in case of an emergency
The person(s) to contact for further information

6. ***Question and Answer Periods***

A question and answer period will always be included in each information and training session.
Employees and visitors will be encouraged to participate by asking questions or requesting further information.

7 Visitors will be provided with the same general topics of information as employees.

If visitors are to enter areas where hazardous chemicals or materials are used, they will be fully advised of the potential hazards and given the opportunity to
to review the MSDSs.

8. Training for employees will be documented using a training roster form.

7.0 EMERGENCY SPILL CONTROL

Emergency Spill Control will be discussed in the Emergency Spill Control Plan to be submitted separately as per Specification Section. See Appendix "C" -NYSDEC Spill Protocol.

- Spills and leaks -In the event of a spill or leak, DEC Resident Engineer must be notified immediately and DEC spill protocols must be implemented. Persons not wearing protective equipment and clothing should be restricted from contaminated areas until cleanup has been completed. The following steps should be undertaken following a spill or leak: Notify safety personnel.
    1. Notify DEC Resident Engineer immediately.
    2. Implement DEC protocols, which include a spill containment kit, secondary containment, absorbents etc.
    3. Do not touch the spilled material; stop the leak if it is possible to do so without risk.
    4. Use non-sparking tools.
    5. For small liquid spills, take up with sand or other noncombustible absorbent material and place into closed containers for later disposal.
    6. For large liquid spills, build dikes far ahead of the spill to contain the spill for later reclamation or disposal.

  A hazardous substance release is defined by EPA as any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of contaminated containers) of hazardous substances. In the event of a release that is above the reportable quantity for that chemical, employers are required to notify the proper Federal, State, and local authorities [40CFR 355.401].

8.0 STAFF ORGANIZATION, QUALIFICATIONS AND RESPONSIBILITIES

Staff Organizational Chart

An organizational structure has been developed that sets forth lines of authority, responsibilities, and communication procedures concerning site health, safety, and emergency response. The organization stru cture includes m anagement, supervisors, and employees of the Contractor and subcontractors

An Organizational Chart is provided in Appendix "H".

8.2 Staff Qualifications

Qualifications of site personnel will be provided following their selection and completion of the Organizational Chart and will be included as part of this HASP (see APPENDIX *"G*-Staff Qualifications).

8.3 Staff Responsibilities

TABLE 5.0 PROJECT PERSONNEL

Position Responsibilities		Interactions	Alternate Contact
President [Pres.]	**General project oversight as key administrator and corporate liaison**	**President/CEO, PM, SS, CSP, PE, OSSR**	**PM, CSP, OSSR, PM, PE**
Project Manager [PM]	**Responsible for technical and administrative performance of overall contract to ensure conformance with technical and scope requirements, progress vs. schedule, expenditures vs. budget, and appropriate issues. Directly supports Site Superintendent and is available to him/her at all times. Will visit site periodically, or as necessary. Provides overview of project on regular basis to include monthly reports and projections. Assigns key on-site personnel and identifies requests, secures, and monitors use of resources for this project. Approves program expenditures.**	**Pres., SS, CSP, OSSR.**	**SS**
Site Superintendent [SS]	**Acts as point of contact for client's field representatives. Has the authority to direct supervision over all on-site personnel and sub-contractors. Coordinates daily site-specific work efforts and ensures all activities are in strict compliance with this HASP. Has the authority to suspend all work that posses any health and safety risk. Maintains consistency of technical approach. Briefs subordinate technical personnel on task requirements. Identifies and resolves technical problems. Provides periodic review of project progress and adherence to project schedule.**	**Pres., PM, CSP, OSSR, Site Supervision**	**PM & Designated Asst. Super.**
On Site Safety Representative [OSSR]	**On site during all work activities. Develops implements and enforces compliance with the HASP and any modifications and/or changes. Instructs site personnel in health and safety procedures through Pre-Entry Briefings, Weekly Safety Meeting and Periodic briefings. Supervises and/or performs any monitoring activities as required. Evaluates air-monitoring data to make any necessary field decisions regarding safety and health in consultation with HSR. Has authority to suspend any and all work that poses any health and safety risk or if safety violations persist. Effect evacuation of the site or work area as necessary.**		

9.0 Training

9.1 [Intentionally left blank]

9.2 Site-Specific Training

All workers will be required to comply with all aspects of this HASP and will be given an initial Pre Entry Briefing. Changes in project scope may require modifications to the HASP, and those changes must be reviewed with all site personnel.

9.3 On Site Training

9.3.1 Pre-Entry Briefing (New Hire Orientation)

Prior to the commencement of on-site activities all site employees will attend a Pre-Entry Briefing to review the specific information and requirements of the approved HASP, including areas of intrusive/exposure-potential work and non-intrusive/non-exposure potential work, work zones, etc. HASP sign-off sheets will be collected at this meeting indicating attendance at the Pre Entry Briefing or review of the HASP as new employees arrive on-site. Short safety refresher meetings will be conducted periodically, as needed, throughout the duration of the project. Meetings will be led by the HSR or Corporate Safety Director.

9.3.2 Site-specific training will include:

- Hazard Communication [HazCom]
- Location of Material Safety Data Sheets [MSDS]
- Explanation of the HASP
- Health and Safety Personnel and Organization
- Brief site history
- Special attention to signs and symptoms of overexposure to known and suspected site contaminants
- Health effects of site contaminants
- Medical qualifications and medical surveillance
- Air monitoring description
- Work practices to minimize employee risk from hazards
- Safe use of engineering controls and equipment
- Physical hazards associated with project
- Selection, use and limitations of available safety equipment
- Heat/Cold stress management program
- Personal hygiene and decontamination
- Respirator face-piece fit testing [if required]
- PPE fitting to determine proper size for individuals
- Site rules and regulations
- Work zone establishment and markings

- Site communication and the “buddy system”
- Emergency preparedness, response, and evacuation procedures
- Decontamination activities
- Medical monitoring procedures
- Contingency Plan

9.4 Periodic Training

9.4.1 Daily Safety Briefings

A daily safety briefing will be held by all crews at the start of each workday. The foreman and/or supervisor will review the tasks planned for that day and any safety-related procedures required to perform those tasks safely.

9.4.2 Weekly Safety Meetings [Tool Box Talks]

A weekly safety meeting [Tool Box Talk] will be held for all site workers [including sub-contractors], once per week by the OSSR. The OSSR and the Project Superintendent will lead the meeting and discuss safety and health topics pertinent to the work practices and activities on this project, and, to discuss relevant topics raised by site personnel.

9.4.3 Review of HASP meetings

The HASP will be reviewed as needed by the OSSR and/or the Corporate Safety Director to review and discuss modifications and/or changes to the HASP. Any changes or modifications to the scope of the work will be addressed and incorporated into a revised HASP.

9.4.4 Hazard Communication Training

Prior to starting work, each employee will attend a health and safety orientation, and receive information and training on the following:

- Overview of the requirements contained in the Hazard Communication Standard, 29 CFR 1910.120;
- Chemicals present in their workplace operations;
- Location and availability of a Hazard Communication Program;
- Physical and health effects of the hazardous chemicals;
- How to lessen or prevent exposure to these hazardous chemicals through usage of control/work practices and PPE;
- Emergency procedures to follow if they are exposed to these chemicals;
- How to read labels and review MSDS to obtain appropriate hazard information;
- Location of the MSDS file and location of the hazardous chemical list in the TEI field office.

ATTACHMENT "A"

TOOL BOX TALK LIST

Anticipate Accident
Avoiding Concrete Burns
Back Supports 1, 2 & 3
Bad Safety Habits
Barricades and Warning Devices
Battery Charging Safety
Blood Pressure – Silent Killer
Caution – Gasoline
Chains
Clothing for Construction
Compressed Air
Concrete Hazards
Construction Equipment
Courtesy
Do You Know Safety?
Don't Take Chances
Electric Shock
Entering and Leaving the Work Area
Excavations and Trenching
Extension Cord Safety
Eye Safety
Eyes, A Priceless Possession
Falls
Fire Safety
First Aid
Foot Protection
General Rules for Safety at Work
Guardrails
Hand tools
Hard Hats
Hazard Communication
Head and Face Protection
Heat Survival
Heavy Equipment Backing
Housekeeping
Hurry-up can hurt
Ladder Safety
Lifting
Lock-out/Tag Out
Pave Your Way to Better Safety
Personal Protection
Personal Protection Equipment
Preventive Maintenance
Power Tool Safety
Respiratory Protection
Rigging
Safe Handling of Gas Cylinders
Safety and Skill Counts
Safety's Appeal
Safety Shoes
Same Old Alibis
Shortcuts
Slip and Falls
Suspended Load
Swing Radius
Teamwork Prevents Accidents
Ten Basic Safety Rules
Ten Little Fingers
Think – Then Look Before You Step
Trenching and Excavation Checklist
Vehicle Safety
Welding and Cutting
What's in it for me
What Safety Means
Worth Remembering
Whom Am I?
Your Are Responsible

10.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

10.1 Levels of Protection

Personal protective equipment (PPE) will be donned as described below for the tasks covered by this HASP to protect employees and subcontractors from physical and chemical hazards during the project.

10.1.1 Level D

- Long sleeved shirt/long sleeved pants, work clothes or coveralls
- Work boots or task appropriate foot-ware
- ANSI approved hard hat
- Safety glasses/goggles, face shields [as required]
- Leather or cotton work gloves
- Hearing protection [if requested by personnel, required by OSSR]
- Life vests/ PFDs [if working over or near the water].

10.1.2 Level D [modified]

- Long sleeved shirt/long sleeved pants, work clothes or coveralls
- Work boots or task appropriate foot-ware
- Neoprene over boots
- ANSI approved hard hat
- Safety glasses/goggles, face shields [as required]
- Leather or cotton work gloves
- Latex inner gloves
- Nitrile inner gloves
- Full-face APR with combination Organic Vapor/P100 filter/Acid gas cartridges
- Hearing protection [if requested by personnel or required by OSSR]
- Life vests/PFDs [if working over or near the water]
- Disposable Tyvek or Poly-Tyvek suits [if product saturated materials are encountered] or laundered cloth coveralls.

10.1.3 Level C

- ANSI approved hard hat
- Work boots or task appropriate foot-ware
- Long sleeve/long pants, work clothes
- Latex surgical inner gloves
- Nitrile outer-gloves
- Over the shoe booties [if product saturated material are encountered] or Neoprene over-boots.
- Canvas or leather gloves
- Hearing Protection
- Full-face APR
- Hearing protection
- Life vests or work vests [if working on or near the water]
- Disposable Tyvek suits.

10.1.4 Level B

- ANSI approved hard hat
- Work boots or task appropriate foot-ware
- Long sleeved pants and shirt, work clothes
- Latex surgical inner gloves
- Nitrile outer gloves
- Over-the-shoe booties, or,
- Neoprene over-boots
- Canvas or leather gloves
- Hearing protection
- Life vests
- NIOSH Certified Supplied Air Respirator [SCBA or air-line respirator with SCBAE, pressure demand regulator, full facepiece]
- Disposable Poly-Tyvek coveralls

10.1.4.1 Activity PPE Table

Activity/Task Initia	l Level Of Protection
Mobilization/Demobilization Initial Setup	D
Survey	D
Sampling	D
Asbestos Abatement	D
Asbestos Encapsulation	D
Dust Control	D
Installation of Metal Studs	D
Silt Fence Installation	D
Clearing & Grubbing	D
Installation of perimeter fencing	D
Bulk Excavation	D
Load Out	D
Traffic Control	D
Installation of 5/8" Sheetrock	D
Rough Grading	D
Finish Grading	D
Landscaping	D
Demobilization	D

10.2 Respiratory Protection

Purpose

The purpose of this policy is to establish, implement and maintain an appropriate Respiratory Protection Program so as to protect employees from respiratory hazards on all our jobsites/projects. Respiratory Protection is an area of Safety and Health that the contractor takes extremely seriously.

Through education and training, we believe that working in and around respiratory hazards and environm ents can be m anaged safely and effectively. As a company, we believe in engineering out or administratively controlling respiratory hazards and environments. When these controls cannot be instituted, we will use appropriate respiratory protection. Contractor shall ensure that respiratory hazards within our sites are evaluated and that information concerning these hazards is transmitted to all affected employees through the construction planning process.

Applicable Regulations: OSHA 29 CFR 1910.134

Responsibilities

Corporate shall:

The Safety Director is responsible for respiratory protection policy and has the authority to make necessary decisions to ensure its success. The Safety Director has the authorization to halt any company operation where there is danger of serious personal injury;

A corporate policy administrator shall be appointed and shall approve all site-specific respiratory programs prior to implementation at the site;

The policy shall be reviewed and evaluated on an annual basis, or when changes occur to 29 CFR 1910.134, that prompt revision of this document or when facility operational changes occur that require a revision to the policy;

The corporate policy administrator shall conduct routine evaluations to ensure the written policy is being followed. Topics to be considered during the evaluation shall consist of respirator fit, selection, maintenance, interference with job performance, discomfort, employee concerns; and

Provide a database of Medical evaluation questionnaire and Fit Test results of employees.

Project Staff shall:

Evaluate work activities for the presence of respiratory hazards; institute engineering and administrative controls, when feasible, as a first line of defense against respiratory hazards;

Shall appoint a qualified individual to be the site respiratory program administrator who shall prepare the Work Site Respiratory Programs (WSRP) for each substantially unique airborne exposure at the jobsite for any operations that may require the use of respirators. The site respiratory program administrator shall submit the WSRP(s) to the corporate respiratory administrator for approval before the use of respirators begins. And shall ensure the successful implementation of the WSRP on the jobsite;

Purchase respirators to protect employees from respiratory hazards when engineering and administrative controls have been found infeasible; the respirator provided shall be suitable for the intended use;

Train employees in topics identified in section 27.5 of this policy;

Project Staff shall [contd.]

Develop and maintain a site-specific respiratory protection program in accordance with section 27.4.1 of this policy;

Enforce the use of respirators,

Respirator training and medical evaluations shall be provided by the contractor at no cost to the employees participating in this program when necessary to protect employee health; and

Employee Fit Test records, a copy shall be sent to the corporate safety office.

Employee shall:

Correctly wear respirators in accordance with instructions and training during operations designated by their supervisor;

Not have facial hair of any type that interfered with the correct fit of a respirator;

Properly clean, store and maintain respirators according to the direction of their supervisor;

Guard against damage to the respirator and shall immediately replace suspect respirators and shall report such damage or malfunction of the respirator to their supervisor;

Who voluntarily wears a respirator when a respirator is not required is subject to the medical evaluation, cleaning, maintenance and storage elements of this policy. They must be provided with the appropriate information specified; and

Who voluntarily wear filtering face pieces (Dust Masks) is not subject to the above provisions of this policy.

Procedure

Site-Specific Respiratory Protection Program

In addition to meeting the requirements of this policy, all projects that use respirators will be required to have a site-specific respiratory protection program;
In order to have an effective program, address the following questions in the development stage:

Who is the program administrator?
What procedures are used to select respirators for use in the workplace?
Who will be doing the medical evaluations for the employees (which facility or facilities)?
What are the fit testing procedures for tight fitting respirators?
What are the procedures for proper use of respirators in normal and foreseeable emergencies?
What are the procedures and schedules for cleaning, disinfecting, storing, inspection, repairing, discarding and otherwise maintaining respirators?
What are the procedures to ensure adequate air quality, quantity and flow of breathing -for atmosphere supplying respirators?
What are the methods to be used to ensure that the employees are trained the in respiratory hazards to which they are potentially exposed during routine and emergency situations?
What are the methods of training employees in the proper use of respirators including, donning and removing a respirator, cleaning, positive/negative pressure fit testing, limitations of their use and maintenance and cleaning of a respirator?
What are the procedures of regularly evaluating the effectiveness of a program?

When respirator use is not required, but are provided at the request of the em ployees or permit employees to use their own respirat ors, (Including dust m asks -NIOSH approved N95 rating are the only dust masks to be used) the following criteria will be met:

Determine that such respirator use does not create a hazard;

Review 29 CFR 1926.134; and

Training on cleaning, storage and maintenance of the respirator to prevent it from being a hazard.

Surveillance of Work Area Conditions and Degree of Employee Exposure Stress

Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained;

Monitoring of air contaminants and the evaluation of contaminant concentration to which a person wearing a respirator may be exposed is an integral part of an effective respirator program;

Air sampling data is important in the selection of the proper respirator and should include:

Identification of the contaminant;

Nature of the hazard and concentration at the breathing zone.

The data is also helpful in estimating the possible levels of exposure that may have occurred during use of respirators;

Sampling should be carried out over at least one cycle of operation and preferably over several cycles when production activity varies;

Samples should be collected at the worker's breathing zone. However, when necessary, general air samples should be collected in the vicinity of the operation;

The sampling period will be determined by the sensitivity of the analytical method and the acceptable contaminant concentration;

The number of samples to be taken depends on the variation in contaminant generation rate during the operation. Sampling data should permit estimation of the worker's time weighted exposure;

The peak contaminant concentration should also be estimated to assure that the respirator selected would provide adequate protection against high transient air concern
Breathing zone sampling is important since significant variations in concentrations are noted between general air and the worker's breathing zone. Use of personal or lapel air samplers is encouraged since they have been shown to more closely identify the true exposure; and

It is recognized that emergency air sampling cannot be carried out as outlined above; every reasonable effort shall be made to evaluate conditions of exposure and to provide appropriate respiratory protection. Where a high hazard potential exists, a conservative estimate should be made.

Medical Evaluation:

Persons shall not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work and use the equipment;

The examining physician shall determine what health and physical conditions are pertinent by use of the Medical Examination Questionnaire. Further medical information may be required by the Physician based on the answers given by the Employee contained within the MEQ. At this time a consultation will be held between the Physician & the employee;

The MEQ is based on the format given in CFR 1910.134.;

The physician is to be provided with the following information to assist in his/her proper evaluation at the beginning of the project or beginning of the operation requiring the use of respirators;

- The type and weight of the respirator to be worn;
- The duration and frequency of use;
- The expected physical work effort;

Additional protective equipment or clothing to be worn;

- Temperature and/or humidity extremes that may be encountered

The examining physician will complete page 1 of Appendix A upon completion of the medical evaluation; & shall send an employer & employee copy to the corporate office. In addition the examining physician will email the result of the MEQ to the appropriate persons stating passed or failed.

Additional medical evaluations shall be provided when:

- An employee reports medical signs or symptoms that are related to ability to use a respirator; The physician states that the employee needs to be re-evaluated;
- Information from the site-specific respiratory protection program states a need for re- evaluation; and A change occurs in workplace conditions that may result in a substantial increase in the physiological burden placed on the employee.

If the employee is unable to use a negative pressure respirator and the physician determines that a PAPR would not create harm to the employee, a PAPR (Powered Air Purifying Respirator) shall be provided.

Selection of Respirators

Respirators will be selected based on the specific hazard involved (29 CFR 1910.1000) and shall be selected in accordance with the manufacturer's instructions or other related requirements (OSHA or ANSI Standards, NIOSH, etc.). Or results of air sampling data and the criteria specified in the following table:

Hazard	Respirator*
Oxygen Deficiency	Self-contained breathing apparatus. Hose mask with blower. Combination airline respirator with auxiliary self- contained air supply or an air- storage receiver with alarm.
Gas & Vapor (Contaminants immediately dangerous to life and health)	Self-contained breathing apparatus. Hose mask with blower. Air purifying full-face piece respirator with chemical canister (gas mask). Self rescue mouthpiece respirator (for escape only). Combination airline respirator with auxiliary self- contained air supply or an air- storage receiver with alarm.
Gas & Vapor (Contaminants NOT immediately dangerous to life and health)	Airline respirator. Hose mask without blower. Air purifying half- mask or mouthpiece respirator with chemical cartridge
Particulate Contaminants (Contaminants immediately dangerous to life and health)	Self-contained breathing apparatus. Hose mask with blower. Air purifying full-face piece respirator with chemical canister (gas mask). Self rescue mouthpiece respirator (for escape only). Combination airline respirator with auxiliary self- contained air supply or an air- storage receiver with alarm.
Particulate Contaminants (Contaminants NOT immediately dangerous to life and health)	Air-purifying half-mask or mouthpiece respirators with filter pad or cartridge. Airline respirator. Airline abrasive-blasting respirator.
Combination Gas, Vapor & Particulate (Contaminants immediately dangerous to life and health)	Self-contained breathing apparatus. Hose mask with blower. Air purifying full-face piece respirator with chemical canister (gas mask with filter). Self rescue mouthpiece respirator (for escape only). Combination airline respirator with auxiliary self-contained air supply or an air-storage receiver with alarm.

Hazard Respirator*	
Combination Gas, Vapor & Particulate (Contaminants NOT immediately dangerous to life and health) Hose mask without blower.	Airline respirator. Hose mask without blower. Air purifying half- mask or mouthpiece respirator with chemical cartridge and appropriate fitter.

For the purpose of this part, "*immediately dangerous to life and health"* is defined as a condition that either poses an imme diate threat to life and health or an immediate threat of severe exposure to contam inants, such as radioactive m aterials, w hich are likely to have adverse delayed effects on health.

All f ilter c artridges & canisters sh all be labeled with th e a ppropriate NlOSH app roval label that has been certified under the NlOSH 42 CFR Part 84. This label is not to be removed, obscured, or defaced while in service. The respirator furnish ed shall provide adequate respiratory protecti on against the particular hazard for which it is designed. Only series 100 filters certified under 42 CFR Part 84 shall be us ed when HEPA filters are called for;

Gas or Vapor protection

If a respirator with an End of Service Life Indicator (ESLI) is not available, a chang e-out schedule will be spec ified on a site specif ic ba sis. Every effort will be m ade to obtain objective information and data to as sure that the cartridges are changed out prior to end of service life;

The Health and Safety Representative (HSR) will make a reasonable estimate of employee exposure by conducting a hazard evaluation for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency.

The evaluation may include:

- Identification and review of a list of hazardous substances used in the work area;
- Review of work processes to determine source of potential hazardous substances;
- Review of process records;
- Employee interviews;
- Air Monitoring (m ay be mandatory if the contam inant is regulated by a separate OSHA Standard e.g. Asbestos, Lead, silica mercury, etc.);
- Published studies by trade associations, manufacturer, and historical data;
- Mathematical approaches using physical & chemical properties of the

contaminant;

- If a reasonable estimate cannot be obtained then IDLH atmosphere must be assumed; and
- The HSR will revise and update the hazard assessment as needed.

Air Quality

Compressed air, compressed oxygen, liquid air and liquid oxygen used for respiration shall be of high quality.

Oxygen shall meet the requirements of the United States Pharmacopoeia for medical or breathing oxygen.

Cylinders of purchased breathing air shall meet at least the requirements of the specification for Type 1-Grade D breathing air as described in Compressed Gas Association Commodity Specifications G-7.1-1989.

Cylinders of purchased breathing air should have certificate of analysis from the supplier that the breathing air meets the requirements of Type 1-Grade D air.

Compressed oxygen shall not be used.

Oxygen must never be used with airline respirators. Breathing air may be supplied to respirators from cylinders or air compressors.

Cylinders shall be tested and maintained as prescribed in the shipping Container Specification Regulations of the Department of Transportation (49CFR PART 173 &178).

Oxygen concentrations greater than 23.5 % are to be used only in equipment designed for oxygen service distribution.

Moisture content in the cylinder shall not exceed a dew point of -50 degrees F at I atmosphere.

Supplied Air compressors purchased by the contractor for supplying air shall be equipped with the necessary safety and standby devices. A breathing -air type compressor shall be used. The type compressor used shall be constructed and situated so as to-avoid entry of contaminated air in to the system and suitable inline air purifying absorbent beds and filters installed to further assure breathing air quality. The filter panel must have a tag indicating the last absorbent bed, filter change out and PM work, as well as the signature of the person authorized to perform the change. A receiver of sufficient capacity to enable the respirator wearer to escape from the contaminated atmosphere in the event of compressor failure, and alarms to indicate compressor failure & overheating shall be installed in the system. If an oil-lubricated compressor is used, it shall have a high -temperature or carbon monoxide alarm, or both. If only a high temperature alarm is installed in the system, the air from the compressor shall be frequently tested for carbon monoxide to ensure that levels are below the exposure limit for carbon monoxide (currently 10 ppm).

Airline couplings used shall be incompatible with outlets for other gas systems to prevent

inadvertent servicing of airline respirators with non-respirable gases or oxygen.

Compressor shall be set up to minimize moisture content.

Breathing gas containers shall be properly marked & stored in accordance with NIOSH respirator certification standard 29 CFR 1910.101.

Use of Respirators

The correct respirator shall be specified for each job. The respirator type shall be specified in the site specific respiratory plan, by the HSR or designated individual, who supervises the respiratory protection program

Dangerous Atmospheres. Written procedures and/or checklists for specific routine tasks/jobs shall be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies.

In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one additional person shall be present. Communications (visual, voice, or signal line) shall be maintained between both individuals present. Planning shall be such that one individual shall be unaffected by any likely incident and have the proper rescue equipment to be able to assist other(s) in case of an emergency.

When a self-contained breathing apparatus (SCBA) or hose masks with blowers are used in atmospheres immediately dangerous to life or health (IDLH), standby personnel must be present with suitable rescue equipment.

Respirators shall not be removed while inside a work area that requires respiratory protection. Employees shall be permitted to leave the work area to maintain, clean, change filters, replace parts, or to inspect their respirator if it is impeding their ability to work or if the respirator stops functioning as intended. Employees shall notify supervisor of when leaving the work area.

To assure the continuing respirator effectiveness, appropriate surveillance shall be maintained of the work area conditions and the degree of employee exposure or stress. This shall include a fit check evaluation to assure proper protection. The HSR shall accomplish this.

Hair Apparel. If hair growth or apparel interferes with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit.

Corrective Vision: If an employee wears corrective glasses or goggles or other personal protective equipment, a check shall be made to ensure that such equipment when worn does not interfere with the seal of the face piece to the face of the user. If the employees wear other safety equipment with their respirators, the employee must pass an appropriate fit test while wearing the equipment to determine a correct seal.

Corrective vision requirements: (Full -Face Respirators). Full -Face respirators having provisions for optical inserts shall be reviewed. These ins erts when used shall be used according to the manufacturer's specification. The face piece and lenses shall be fitted by qualified individuals to provide good vision, comfort & satisfactory face seal.

Conventional eyeglasses shall not be used with full-face respirators. A proper seal cannot be established if the temple bars of eyeglasses extend through the sealing edge of the full-face piece.

Contact lenses shall not be used with full -face respirators. Wearing contact lenses in contaminated atmospheres with a respirator shall not be allowed.

Identification of chemical cartridges is by means of its label. The secondary means is by color code. All cartridges purchased or used shall be properly labeled and/or color- coded in accordance with 29 CFR 1910.134 before they are placed into service. The labels and colors shall be properly maintained at all times until disposal.

Color-coding. Each cartridge is painted a distinctive color or combination of colors indicated in Table 1-1 below. All colors used are such that they are clearly identifiable by the user and clearly distinguishable from one another.

Table I-1 Based on 29 CFR 1910.134 [Cartridge color codes]

Atmospheric Contaminant[s]	Color[s] Assigned
Acid gases	**White**
Hydrocyanic acid gas	**White with ½-inch GREEN stripe completely Around the canister near the bottom**
Chlorine gas	**White with a ½ yellow stripe Completely around the canister near the bottom**
Organic Vapors	**Black**
Ammonia gas	**Green**
Acid gases and ammonia gas	**Green with ½ inch WHITE stripe completely Around the canister near the bottom**
Carbon monoxide	**Blue**
Acid gases and organic vapors	**Yellow**
Particulates [dusts, fumes, mists, fogs or smokes] in combination With any of the gases or vapors	**Canister color for contaminant as designated above, with ½-inch GRAY stripe completely around the canister near the top.**

NOTE: GRAY is not assigned as the m ain color for a canister designed to rem ove acids or vapors.

NOTE: ORANGE is u sed as a complete body or stripe color to represent gases not included in this table. The user shall need to ref er to the caniste r label to determine the degree of protection the canister shall afford.

Identification of Particulate Filters: The 42 CFR Part 84 standards create three new series of particulate filters ("disposable") designated by NIOSH as N, R, and P. The N series is tested against sodium chloride (NaCI) and is limited to use in atmospheres containing non-oil based particulates. Both the R and P series are tested against dioctyl-phthalate (DOP) and are intended for filtering any solid or oil-based liquid particulates.

Filter Series	Filter Type/Designation	Minimum Efficiency
"N" Series – **N**on-oil	N95	95%
	N99	99%
	N100	99.97%
"R" Series: Oil-**R**esistant	R95	95%
	R99	99%
	R100	99.97%
"P" Series: Oil-**P**roof	P95	95%
	P99	99%
	P100	99.97%

Face Piece Fit Tests and Procedure:

The procedures in Appendix *A* in section 29 CFR 1926.703 are to be followed. .A medical evaluation needs to be completed prior to fit testing an employee;

Each employee required to wear a respirator will receive fitting instructions including demonstrations and practice in how the respirator should work, how to adjust it, and how to determine if it fits properly;

Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skullcap that projects under the face piece or temple pieces on glasses;

The absence of one or both dentures can seriously affect the fit of a face piece. The worker's diligence in observing these factors shall be evaluated by periodic checks;

Fit tests will be done before using the respirator in the field and will be repeated annually, when a different type or brand of respirator is worn or when there is a significant physical difference in the employee such as body weight; and

To assure proper protection, the wearer shall check the face piece fit each time he puts on the respirator. Following the manufacturer's face piece fitting instructions may accomplish this.

Select respirators from a sufficient number of respirator models & sizes to assure that the respirator is acceptable to, and correctly fits, the user.

The contractor shall ensure that the respirator issued to the employee exhibits the least possible face piece leakage and that the respirator is fitted properly. For each employee wearing negative pressure respirators, contractor shall perform (or have performed) either quantitative or qualitative face fit tests at the time of initial fitting and at least annually thereafter. The qualitative fit tests may be used only for testing the fit of half mask respirators.

Half-Mask Respirators: Contractor shall perform (or have performed) qualitative fit test protocols in accordance with the specific standard listed in the *"Z"* tables to 29 CFR 1910.1000-1101. Where a specific OSHA standard protocol does not exist, the "NIOSH guide to Industrial Respiratory Protection", Publication No. 87-116 (or subsequent versions) shall be used.

Minimum Fit Factor. Employees shall not be permitted to wear a half mask or full-face piece mask if a minimum fit factor of 100 or 500, respectively, cannot be obtained.

Hair. Fit testing shall not be conducted if there is any hair growth between the skin and the face piece seal surface.

Respiratory Difficulty during Tests. If an employee exhibits difficulty in breathing during the tests, she or he shall be referred to a physician trained in respiratory diseases or pulmonary medicine to determine whether the test subject can wear a respirator while performing her or his duties.

Respirator Use Determination. The test subject shall be given the opportunity to wear the assigned respirator for one week. If the respirator does not provide a satisfactory fit during actual use, the test subject may request another fit test, which shall be performed immediately.

Respirator Fit Factor Card. A respirator fit factor card shall be issued to the test subject for each manufacturer, model number, and approval number for each respirator tested and achieving an acceptable fit factor (Quantitative). The fit factor card will contain the following information, as a minimum:

- *Name;*
- *Date of fit test;*
- *Protection fit factor obtained; and*
- *Name and signature of the person that conducted the test.*

Filter Replacement . Filters used f or qualitative or quantitative fit testin shall be replaced weekly, whenever increased breathi ng resistance is encountered, or when the test agent has altered the integrity of the filter media. The test agent shall replace organic vapor cartridges/canisters daily or sooner if there is any indication of breakthrough.

Quantitative Fit Test, Re-Test Requirements. Because the sealing of the respirator may be affected, quantitative f it testing sha ll be repeated immediately when the test subject has a:

- Weight change of 20 pounds or more;
- Significant facial scarring in the area of the face piece seal;
- Significant dental chan ges; i.e., multiple extractions without prosthesis, or acquiring dentures;
- Reconstructive or cosmetic surgery; and any other condition that may interfere with the face piece seal.

Fit Test R ecordkeeping Requirements . A summary of all test results shall be maintained for 3 years. The summary shall as minimum include:

Name of test subject;
Date of testing;
Name of the test conductor; and
Fit factors obtained from every respirator tested (indicate manufacturer, model, size and approval number).

Exclusive Use
Where practicable, the respirators should be assigned to individual workers for their exclusive use.

Cleaning and Disinfecting
Respirators shall be regularly cleaned and disinfected using the procedures in Appendix B-1 of the Respirator standard or in accordance with the manufacturers written instructions
Those issued for the exclusive use of one worker should be cleaned each day or more often if necessary;
Those used by more than one worker shall be thoroughly cleaned and disinfected after each use;
Respirators used in fit testing and training shall be cleaned and disinfected before and after each use.
Supplies for employees to clean their respirators shall be provided.

The following procedure is recommended for cleaning and disinfecting respirators:
Remove any filters, cartridges or canisters;
Wash face piece and breathing tube in cleaner-disinfectant or detergent solution (see following paragraphs). Use a hand brush to facilitate removal of dirt;
Rinse completely in clean, warm water;
Air dry in a clean area;
Clean other respirator parts as recommended by manufacturer;
Inspect valves, head straps and other parts, replace with new parts if defective;
Insert new filters, cartridges or canisters, make sure seal is tight; and
Place in plastic bag or container for storage.
Projects should consider having an individual assigned to perform maintenance and cleaning to ensure compliance. Cleaner-disinfectant solutions are available that effectively clean the respirator and contain a bactericidal agent. The bactericidal agent is generally a quaternary ammonium compound. The respirator may be immersed in the solution, rinsed in clean, warm water and air-dried; and
Strong cleaning and disinfecting agents can damage respirator parts. Temperatures above 185 degrees Fahrenheit and vigorous mechanical agitation should not be used. Solvents, which affect elastomer or rubber parts, should be used with caution.

Storage ---Respirators shall be stored in a convenient, clean and sanitary location;

- After inspection, cleaning and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture or damaging chemicals;
- Respirators placed at stations and work areas for emergency use should be stored in compartments built for the purpose, be quickly accessible at all times and be clearly marked;
- Routinely used respirators such as dust respirators may be placed in plastic bags;
- Respirators should not be stored in such places as lockers or toolboxes unless they are in carrying cases or cartons;
- Respirators should be packed or stored so that the face piece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position; and
- Instructions for proper storage of emergency respirators, such as gas masks and self- contained breathing apparatus, are found in "use and care" instructions usually mounted inside the carrying case lid.
- Emergency use respirators placed at stations and work areas for emergency use shall be immediately accessible at all times and shall be stored in compartments built for the purpose and in accordance with the manufacturer's recommendations. These compartments shall be clearly marked. Instructions for proper storage of emergency respirators, such as gas masks and SCBA, can be found in use and care instructions typically mounted inside the carrying case lid.

Routine Inspections

All respirators shall be inspected routinely before and after each use. The manufacturer's inspection criteria shall be used as the basis for the inspection. Routinely used respirators shall be collected, cleaned and disinfected as frequently as necessary to insure that proper protection is provided for the wearer.

Emergency escape respirators shall be inspected routinely before and after each use. A respirator that is not routinely used but is kept ready for emergency use shall be inspected after each use and at least monthly to assure that it is in working condition. Emergency escape only respirators shall also be inspected before being carried in to the work area. The respirator manufacturer's inspection criteria shall be used as the basis for the inspections. A record shall be kept of inspection dates and findings for respirators maintained for emergency use.

Self-contained breathing apparatus shall be inspected monthly; Air and oxygen cylinders shall be fully charged according to the manufacturer's instructions. It shall be determined that the regulator and warning devices function properly.

Respirator inspection shall include a check of the tightness of connections and the condition of the face piece, headband, valves, connecting tube and canisters;

Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber of elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage;

Random inspections shall be conducted to assure that respirators are properly selected, used, cleaned and maintained. The respirator manufacturer's inspection criteria shall be used as the basis for inspections. Each jobsite will identify and document the employees who will perform random inspections; and

Replacement or repair. Only the Health and Safety Representative or designated individual, with NIOSH approved parts designed for the respirator, shall do replacement or repairs. No attempt shall be made to replace components or make adjustments or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair. Respirators that have failed inspection will be taken out of service.

Respirator Training
General

For safe use of any respirator, it is essential that the user be properly instructed in his/her selection, use and maintenance and use.
Training shall be provided to each affected employee:
Before the employee is first assigned duties that require respiratory protection and at a minimum, annually thereafter;
before there is a change in assigned duties.
Whenever there is a change in operations that present a hazard for which an employee as not previously been trained;
Whenever there is a reason to believe that there are deviations from established respiratory procedures required by this instruction or inadequacies in the employee's knowledge or use of these procedures; and
The training shall establish employee proficiency in the duties required by this instruction and shall introduce new or revised procedures, as necessary, for compliance with this instruction or when future revisions occur.
Training topics shall include, as a minimum:

Respiratory Protection Policy;
The OSHA Respiratory Protection standard
Respiratory hazards encountered within the scope of work and their health effects;
whether acute, chronic or both, and an honest appraisal of what may happen if the respirator is not used;
Need for respiratory protection and the consequences of improper fit, use, or maintenance;
Proper selection and use of respirators;
Inspection and seal checking of respirators;
Limitations and capabilities of respirators;
Respirator donning and user seal (fit) checks;
Fit testing.

Emergency use procedures: Classroom and field training to recognize and cope with emergencies. This will include situations where the respirator malfunctions;

Maintenance and storage procedures;

Medical signs and symptoms limiting the effective use of respirators;

Explanation of why more control that is positive is not immediately feasible. This shall include recognition that every reasonable effort is being made to reduce or eliminate the need for respirators; and

Fit Evaluation: the wearer shall be trained how to check the face piece's fit each time they put on the respirator by conducting a positive/negative pressure seal check as specified In appendix B -1 of the respiratory protection standard.

Certification: shall certify that the training required by this section has been accomplished. The certification shall contain each employee's name, the signatures or initials of the trainers, and the dates of training. The certification shall be available for inspection by employees and their authorized representatives

Appendices

Appendix A: Worksite Specific Respiratory Plan

Appendix B: Medical Evaluation Questionnaire

APPENDIX A

Worksite Specific Respiratory Plan

Jobsite: Site Respiratory Program Administrator:
Task Description: Evaluate present conditions of site and equipment.

Atmospheric Hazards:

What is the oxygen content of the atmosphere and how was it determined? **NA**

What is the nature and concentration of the atmospheric contaminant(s) requiring the use of respirators and how was it determined? **Dust/Precautionary**

What monitoring and/or sampling procedures will be used to ensure that the respirators provide adequate ongoing protection during the course of the work? **Daily fit tests, replacement of all defective equipment.**

What is the OSHA PEL for the contaminant(s)? **NA** Is an MSDS for the contaminant(s) on site?**NA**

Engineering Controls:

Respirators:

Type of respirator(s): **HEPA Dust Masks**

Assigned Protection Factor: **General**

Maximum Use Concentration: **NA**

Cartridges to be used and replacement criteria: **NA**

Procedures for use and maintenance of respirators (cleaning, inspecting, storing, etc.): **Inspect/Replace**

Authorized Employees (MEQ passed, fit tested, respirator trained, and activity trained):

Emergency recognition and response:
Signs and symptoms of overexposure: **Dizziness, excessive coughing, irritated eyes, throat, nose**

First aid/evacuation procedures: **First aid kits and fresh water are stored in on site trailer office with a list of emergency contact phone numbers and procedures**

Signatures
Site Respiratory Program Administrator:

Site Foreman:

Respiratory Program Administrator:

APPENDIX C

MEDICAL EVALUATION QUESTIONAIRE

11.0 DISCIPLINARY ACTION

11.1 DISCIPLINARY ACTIONS FOR WILLFUL UNSAFE ACTS

Employee safety is paramount at this jobsite. The willful commitment of an unsafe act cannot be condoned. Employees who willfully jeopardize their own or coworker safety will be disciplined. The type of discipline can range from a verbal warning to dismissal. The Health and Safety Representative (HSR) and supervisory personnel in the administrative chain of any employee may give employees a verbal warning for a known unsafe act or procedural or operational infraction. The Project Manager must review disciplinary action other than a release from shift without pay.

11.2 FORMS OF DISCIPLINE

Verbal Warning. The HSR and supervisory personnel in the administrative chain of any employee may give employees a verbal warning for a known unsafe act, procedural, or operational infraction. A second verbal warning in the same shift will be grounds for release from the current work shift without pay. The immediate supervisor will be consulted in all cases and will make the determination for release.

Written Warning. A written warning will be issued automatically for a second verbal warning for an unsafe act. The written warning will become part of the employee's permanent personnel record.

Retraining. It must be considered that the possibility exists that lack of proper training may be a cause of the unsafe act. Supervisors will review the need for employee remedial training in their job skill code to enable them to better accomplish their jobs.

Dismissal. An employee dismissed for a safety infraction will not be allowed employment for the duration of the project. No dismissal will take place without the consent of the employee's Project Manager and/or Superintendent. The immediate supervisor will be consulted to determine if a lesser form of discipline is warranted.

11.3 UNSAFE ACT PRIORITY CLASSIFICATION SYSTEM

Unsafe acts will be rated according to the following rating system. Where it is unclear where an unsafe act should be rated, the next higher priority classification will be assumed. While any unsafe act is serious, this classification system will be used to gauge the severity of an unsafe act for use in determining the appropriate level of disciplinary action.

Priority 1 Unsafe Act. The most serious type of unsafe act or unsafe work practice that could cause loss of life, permanent disability, the loss of a body part (amputation or crippling injury), or extensive loss of structure, equipment, or material.

Priority 2 Unsafe Act. Unsafe act or work practices that could cause serious injury, industrial illness, or disruptive property damage.

Priority 3 Unsafe Act. Unsafe act or work practices that might cause a recordable injury or industrial illness or non-disruptive property damage.

Priority 4 Unsafe Act. Minor unsafe work practice infraction with little likelihood of injury or illness

12.0 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

12.1 First Aid Equipment and Supplies

The following is a list of required first aid equipment and supplies that will be on site at the start of work:

- 50 [unit] First Aid kit
- Burn Kit
- Eyewash bottles
- Fire Extinguishers
- Spill Containment Kit

12.1.1 Emergency Eyewash

Emergency eyewash station and/or bottles will be made available at the field office/trailer. Eyewash stations and/or bottles will be provided meeting ANSI specifications [15 minute duration].

12.2 Fire Extinguishers

Sufficient number of fire extinguishers will be present on site. Qualified personnel will service them yearly. They will be inspected monthly for operational readiness. Workers will be trained in the proper use of fire extinguishers. Fire extinguishers that have been discharged should be laid on the ground until they can be recharged.

12.2.1 Support Area

Each trailer will be equipped with at least one 20-lb ABC dry chemical extinguisher. Each trailer door will have a fire extinguisher mounted adjacent to the doorway.

12.2.2 Equipment

All heavy equipment, vehicles and trucks will be equipped with one 5lb-ABC extinguisher. All site vehicles will also be equipped with one 5lb ABC extinguisher.

Fumex Sanitation Site
Garden City Park, New York

13.0 EMERGENCY ACTION PLAN FOR FUMEX

I. PURPOSE AND SCOPE

With the understanding that it is the responsibility of project management to prevent the types of occurrences addressed herein, the purpose of this Emergency Action Plan (EAP) is to provide all Project personnel with a set of instructions for responding to and controlling further harm resulting from any accidental event that must be immediately managed by the persons directly involved or witness thereto.

In addition, this EAP has been developed to comply with the requirements of OSHA 29CFR 1926.35 "Employee Emergency Action Plans". This EAP includes specific actions that must be followed to ensure safety during site emergencies such as fire, personal injury, motor vehicle accident, and environmental spill or leak. This Plan applies to all on site personnel, including visitors.

II LOCATION AND GEOGRAPHY

All of the activity for the Fumex Sanitation Site will take place within the limits of the property located in Garden City Park, New York

Ill. RESPONSIBILITY AND AUTHORITY

The Health and Safety Representative (HSR) has the primary responsibility for responding to emergency situations, and with the Project Manager, will ensure that control action for any emergency is immediately initiated. This includes taking appropriate measures to ensure the safety of site personnel and the public, such as evacuation from the site. The HSR must also ensure that the appropriate authorities have been notified, and follow-up reports have been completed. The HSR or designee(s) will also respond to any medical emergency and initiate first aid. The Project Manager must ensure that corrective measures have been implemented in order to prevent a recurrence of the same type of emergency.

IV. INITIAL RESPONSES TO EMERGENCY SITUATIONS

The most important thing in handling emergencies is protecting personnel from initial or further harm. The immediate control and correction of unsafe conditions or the rescue of injured personnel must take place only if these activities do not seriously endanger the rescuer. The rescuer may become part of the problem instead of part of the solution if

they become injured. Exposures to falls, cros sing active highways, or entry into suspect confined spaces are ex amples of well- m eaning rescue activ ities that frequently turn rescuers into victims themselves.

If the scene of the incident is reasonably safe, immediate action should be taken to prevent further harm from taking place. It is important however, th at persons only perform ope rations for which they have rece ived specific training. Extinguishing fires, performing first aid, stopping tr affic, entering co nfined spaces are exam ples of activities that require specific training to perfor m. A list of persons who have received training required under this EAP will be published.

HANDLING SPECIFIC EMERGENCIES

BODILY INJURY

In the event of a bodily injury, care for the victim should only be provided under the supervision of someone who has been trained and is currently certified in First Aid/CPR.

All injuries MUST be reported to your supervisor immediately, no matter how minor they may seem. The supervisor will then notify the HSR.

All inju ries, no m atter how m inor they may s eem, MUST BE REPORTED so that management can be made aware of a possible exposure in the workplace and take corrective action BEFORE the exposure becomes a major accident.

All work areas authorized for open fl ame, welding or burning operations shall be done by a qualified welder. A fire extinguisher is to be provided in the case of fire, as required by the OSHA. A com petent person is to rem ain at the open flam e, welding or burning location for a m inimum of one half hour after thes e operations have been com pleted. All jobsite trailers, flamm able and combustible material sto rage areas, heavy equip ment, trucks, and cranes are to also have a minimum of a 5ib ABC extinguisher. These are to be inspected o n a monthly basis. W ater supplie s/fire hydrants will be identified and kept clear for use by the fire department.

The decisio n to attempt to control a hostile fire is based on the training and experience of the indiv idual, the a vailability of an appro priate extinguisher, and the level of danger involved. Only persons trained in the pro per use of fire extinguishers should attempt to use them, and only when there is no danger to this person.

For Fire Extinguisher Operation, Remember:

P Pull the Pin

A Aim at the base of the Fire

S Squeeze the Handle

S Sweep the Fire

If the fire is beyond the beginning stage and cannot be safely put out with a portable extinguisher, help must be summoned at once:

The affected persons o r Guard Post shall no tify the nearest forem an, Superintendent or HSR carrying a radio. The shop steward can also be notified at this time.

The forem an or Superintendent sh all no tify th e HSR f or imm ediate assis tance a t the specific field location of the emergency.

If a person requires first aid treatm ent, safe& should be notified to m eet the person and foreman at the field first aid trailer.

The HSR shall decide as to the severity of the injury and the level of em ergency assistance, if any, is required by outside EMS agencies.

If the fire has been put out, the supervisor must still be notif ied so that a report can be written and the cause can be identified and corrected to prevent recurrence.

If an evacu ation is called for, leave the work area and p roceed to the prim ary muster point. Muster points have been identified. See Work Area Evacuation Pro cedure. No one shall leave the site or return to work unless authorized by their direct supervisor.

BOMB THREAT

The threat can arrive over the telephone, in the mail, or a written m essage. All threats must be taken seriously.

Any person or security guard in receipt of a threat shall notify the nearest foreman, superintendent or HSR.

Be specific of the site location of the threat.

If there is a suspicious package or object, **DO NOT ATTEMPT TO MOVE, OPEN OR OTHERWISE DISTURB THE ITEM.**

Specific procedures of how to handle bom b th reats and other th reats are detailed in CARP Crisis Management Program . Evacuation of the threat area will take place in the same way as with any other causes o f an emergency outlined in this Plan. Persons will be told which mustering points to report to base on the area of threat.

SPILLS AND LEAKS

The fluids that will be stored, dispensed and used on site will range from motor oils and hydraulic fluids to diesel fuel and gasoline. These fluids must be stored and handled according to the Safety, Health and Environmental Management System.

Containers shall be inspected and their integrity assured prior to being moved. On-site operations will be organized so as to minimize the amount of container movement. Where spills, leaks, or ruptures may occur, adequate quantities of spill containment equipment (absorbent pillows, etc.) will be stationed in the immediate area.

Spill Kits (a.k.a., "Attack Packs") are maintained in the conex boxes. Each kit includes rubber gloves, safety goggles, absorbent pads, boom s and plastic bags. Chemical protective suits are available from the Labor Steward and Safety Department.

The hazards faced in a spill can be significant and cause harm to people and the environment. Persons should always protect themselves by using proper PPE, including safety glasses and gloves, hard hats, and chemical protective suits if necessary. Extinguish all cigarettes before attempting to clean up the spill. Helpful reminders of what should be done are:

Do "THE SPILL DRILL -***REACT***"!

REMOVE THE SOURCE

ENVELOP THE SPILL

ABSORB/ACCUMULATE

CONTAINERIZE THE SORBENT

TRANSMIT A REPORT

After persons have been protected from exposure:

__R__EMOVE THE SOURCE

If it is dripping: stop the drip with a plug or putty.

If it is from a leaky connection: tighten the connection or replace the broken parts.

__E__NVELOP THE SPILL

If it is flowing, put an absorbent sock or pad down to catch the flow.

Use a shovel to build a small dam or berm.
__A__BSORB/ACCUMULATE

On a hard surface put down dry sweep.

On dirt, gravel, or mud surface, lay an absorbent pad on the spill.

CONTAINERIZE IT

Place used absorbent material in a plastic bag or container.

Use a shovel to dig up the contaminated soil and place it in a container or plastic bag. Be sure to bring the container or bag to a location where it can be disposed of properly.

TRANSMIT A REPORT

Tell the nearest supervisor what was spilled and what was done about it.

By reacting quickly, the hazards that could cause injury can be reduced. The spill is also given less of a chance to seep into the ground, which makes cleanup easier and helps protect the environment.

In the event of a reportable spill or hazardous discharge, the HSR will notify the DEP.

WORK AREA EVACUATIONS

The need may arise to call for an evacuation of the work area surrounding an incident, and perhaps the entire site. This will serve the dual purpose of removing site personnel in an orderly fashion from dangerous conditions and to enable us to count all personnel to determine if anyone is missing (and possibly injured and unable to self-rescue).

The need to evacuate shall be determined by the Project Manager or the HSR (or alternates as appropriate).

Evacuation Alarm and Signal

The Primary Evacuation/Emergency Alarm Signal at the Fumex Sanitation Site will be the air canister horn. Should this alarm not be operable, the secondary alarm will be a vehicle horn. **The signal to evacuate the work area is a 10 second blast, followed by a 5 second pause, which will continue for approximately 2 minutes. A megaphone is available in the safety Office to issue further instructions if radio systems are down.**

Site Evacuation Instructions

Any specific instructions will be delivered by jobsite radio to all affected foremen and work crews.

Upon hearing the evacuation signal:

Walk swiftly (do not run) to the closest Muster Point.

Routes of travel from work areas to the muster point must be chosen based on:

Designated mustering point locations (Primary, Secondary and Auxiliary)
Location of the specific emergency
Prevailing wind direction. Stay crosswind and upwind if possible.
The need to decontaminate PPE and to go through the decon station.
The shortest travel distance to minimize walking distance.

The safest walking route. Keep to well-traveled roads or paths if possible.
Before leaving the work area:
No equipment will be allowed to operate after the evacuation signal has sounded.
Turn off all equipment.
All generators, welding units, and oxyacetylene cutting rigs and compressed gas cylinders must be shut down/turned off.
Office personnel shall leave their office equipment as is, and only if time allows shut down computers.
Office personnel shall use a "last person out" approach to check individual offices for personnel unaware that the signal for an emergency evacuation has sounded.

Evacuation Muster Areas:
There are two mustering points designated for this site:
Evacuation assembly point "A is located across main entrance of the site on Herricks Road at the field office, at the sign marked “Evacuation Assembly Area”
Evacuation assembly point “**B”** is located outside the main gate at an area to be determined.

The selection of muster point will be based on the prevailing wind direction. If the prevailing wind will carry smoke/dust/vapors towards the Primary muster point, the Secondary muster point will be announced via radio.

The communication to announce the decision to release personnel to either return to their work areas after the "All Clear Signal" has sounded or to allow personnel to go home for the day shall be coordinated and authorized between the contractor and DEC.

A personnel count will be conducted as follows:

The contractor Site Safety Team will be responsible for validating the personnel head count and establishing a list of missing personnel, if any. When arriving at the muster point, all personnel are to be sure that they check in with their foreman or direct supervisor so that everyone can be accounted for.

Contractor Safety Team members shall be designated duties as follows:

The HSR will be the Team Leader for coordination of the Evacuation Action Plan.

A designated safety person shall be assigned "Head Count Administrator".

All secu rity, contractor, subcontractors and office coordinators shall provide head counts' and unaccounted for personnel to the Head Count Administrator.

Personnel verification shall be m ade availabl e to the Head Count Adm inistrator based upon:

a) Daily log for visitors (visitor sponsor responsible for guest verification against log)

b) Daily crew rosters or time sheets (dependent upon size of contracted workforce

Site management and office personnel shall be included in the above rosters.

c) All subcontractors or Site Safety Representative shall verify personnel head counts and report results to the TEI Head Count Administrator.

Unaccounted for Personnel

Personnel that cannot be verified as having left the site shall be contacted by a Safety Team member ASAP through their company business office.

The HSR shall request EMS personnel to re-enter the emergency area to search for and locate any person(s) believed to be in need of assistance when there is a life threatening emergency event.

Contractor supervision may re-enter the emergency area if there is not a life threatening emergency event to search for and locate any unaccounted personnel.

All Clear -Return to work directions

Once the emergency has passed, one 30 second blast of the Evacuation Alarm will deliver the "all clear" signal.

The all-clear signal will be issued through mutual agreement between the DEC and the HSR after a thorough analysis of the situation and consultation with police and fire authorities.

No personnel will be allowed to leave the muster point to return to their work area until the all clear signal has been given.

EMERGENCY NUMBERS

POLICE / SECURITY EMERGENCY	LOCAL POLICE DEPARTMENT	911
FIRE EMERGENCY	FIRE DEPARTMENT	911
AMBULANCE EMERGENCY	LOCAL AMBULANCE SERVICE	911
HOSPITAL	Winthrop Hospital Mineola, New York	
POISON CONTROL	NY POISON CONTROL CENTER	(800) POI-SONS
SITE SUPERINTENDENT		
PROJECT MANAGER		
SITE SAFETY REPRESENTATIVE		

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14.0 Maintenance and Protection of Traffic [MPT]

The policy of the contractor will be to follow MPT procedures outlined by the specifications. Plan will be developed.

- Copy of current specifications
- Duration of plan
- Traffic conditions (volume, speed, etc.)
- Existing traffic control measures
- Photos and/or video of existing conditions along with periodic photos as the plan changes.

Traffic Control Warning and Guidance Devices

Effective warning & guidance devices are planned out in advance, and should be uniformly placed and well maintained. There are six categories of devices: signs, barricades, delineators, high level warning devices, warning light/illumination, and flashing arrow/message boards.

1. Traffic signs warn, guide and regulate traffic flow and are classified into four (4) functional groups: Construction, warning, guidance and regulatory.

    a. Construction signs are used only for construction or maintenance work on or adjacent to the roadway.

    b. Warning signs generally apply to permanent situation, but have some applications on temporary construction sites.

    c. Guidance signs are similar to warning signs.

    d. Regulatory signs are used for posting speed limits, are enforced by local law enforcement agencies and are maintained by the contractor when place within or adjacent to the work area.

Sign location depends on alignment, grade, location of street intersections and posted speed limits. They must face and be visible to oncoming traffic and be mounted to resist displacement.

Advance warning signs are located on the right-hand side of traffic lanes. On divided highways, supplemental advance warning signs shall be placed on the divider.

Messages conveyed during hours of darkness must be on reflector or illuminated signs.

Signs must be installed before work begins and will be removed or covered immediately after work has been completed. If at any time a sign is not required, it shall remain covered or be removed/

2. Barricades are used to mark or block off a specific hazard or to channel traffic. They may not be place in a moving lane of traffic without advance warning, such as high level warning devices (i.e., flashing arrow signs, etc.) and appropriate delineators.

   When closing off a street, barricades should be placed to prevent vehicles from passing through, except where access is necessary for local traffic or emergency vehicles.

   Marking barricade rails is done by alternating orange and white stripes on a downward slant at 45 degrees. The entire area of white and orange must be reflectorized for nighttime use. The width of stripes depends on the size of the rails. Rails less than three (3) feet require four (4) inch wide stripes; all other rails require six (6) inch stripes. Barricades shall have a minimum of 270 square inches of retro reflective area facing traffic when used on freeways, expressways, and other high speed highways. Barricades with stripes that begin in the upper rights side and slope downwardly to the lower left are designated right barricades. Barricades with stripes that begin in the upper left side and slope downwardly to the lower right are designated left barricades. Barricades should slope with the direction of traffic.

   On high speed highways or in situations where barricades are susceptible to overturning in the wind, sandbags should provide ballasting. Sandbags may be placed on lower parts of the frame or stays to provide the required ballast but shall not be placed on top of any striped rail.

3. Delineators are markers which aid a driver determine the location and alignment of the traffic lane. During daylight, delineator effectiveness is determined by position, spacing, form, texture, size and color. During night time, effectiveness is determined by position and visibility. All delineators used at night must have adequate reflector properties.

   Delineators are used for the following instance:
   - To channel and divert traffic in advance of work zones;
   - To define traffic lanes through work zones;
   - To define a change in the position of the existing lane around work zones;
   - To define curves and edges of the roadway on detours.

Delineators shall be constructed to withstand impact without appreciable damage to the device, the striking vehicle or passing traffic, including damage from knockdown by wind or turbulence from passing vehicles.

Minimum Recommended Delineator and Sign Placement

Traffic Speed	Taper Length	Delineator	Spacing	Sign Spacing
	(Each Lane)	(Taper)	(Tangent)	(Advance of Taper & between Signs)
25 MPH	150 FEET	25 FEET	50 FEET	150 FEET
30 MPH	200 FEET	30 FEET	60 FEET	200 FEET
35 MPH	250 FEET	35 FEET	70 FEET	250 FEET
40 MPH	350 FEET	40 FEET	80 FEET	350 FEET
45 MPH	550 FEET	45 FEET	90 FEET	550 FEET
50 MPH	600 FEET	50 FEET	100 FEET	600 FEET
55+MPH	1000 FEET	50 FEET	100 FEET	1000 FEET

4. Flashing Arrow/Message Signs are panels with a matrix of electric lights, capable of sequential arrow displays or messages. They are intended to supplement, not replace, other work area traffic control devices by providing additional, high level, advance warning of lane closures. They are effective for all lane closures and should be considered for all high speed situations.

   Flashing Arrow/Message Signs should be repaired immediately or taken out of service if:
   a. Any of the lamps are out.
   b. The panel is not dimming properly.
   c. Lamps are out of alignment.

Flagger Control

Flaggers are required:

- When workers or equipment intermittently block a traffic lane.
- When plans call for one lane to be used for two directions of traffic with a Flagger at each end.
- When safety determines there is a need.
- When required by the owner.

Flaggers shall be alert, intelligent, and neat in appearance, have food hearing and eyesight and trained in the techniques of flagging traffic before placement in this position. They must be far enough away from the work to slow or stop traffic before it enters the work zone.

All Flaggers must wear a protective clothing to include an orange vest during daylight hours and a reflecting garment at night; hard hats; safety glasses; sign paddles, and when

necessary, carry two-way radios. From sunset to sunrise, Flagger stations must be illuminated so the Flagger is clearly visible to approaching traffic.

When communicating through radios, a spare battery pack should be readily available. If, for some reason communication breaks down between the Flaggers, the operation is to be shut down immediately until the situation is remedied.

Night Closures
During night operations, a “back-up”, “shadow”, or “protection” vehicle should be used and should be positioned 100 feet or more behind the “cone” truck as the first signs are placed. This process is to be followed for set-up and tear-down.

All crews working in or around the closure need to be outfitted with personal protective equipment, including bright clothes, hard-hats, safety glasses and reflectorized orange vests. All workers should be visible at a distance of 1,000 feet and, if working together, should all be wearing the same clothing to prevent confusing approaching motorists.

Other applicable accessories include:
1. Retro reflective striping on hard-hats.
2. Eight (8) hour snap light sticks pinned to clothing.
3. Hard-hat mini-light attachments.

Before making night time closures, all materials and equipment must be inspected and in good working order. All message boards and flashing arrow signs shall be tested to insure all lights and switches are functioning properly and that the equipment is fueled and fully charged. All inspections and maintenance procedures shall be documented daily and/or nightly.

Devices maintained in project inventory must be kept clean, stored properly to avoid marring and organized to verify that all items are in stock and readily retrievable. Devices shall be inspected when they are returned to inventory. Any devices that are nonstandard or in poor condition shall be retired modified or repaired. Equipment on work sites must be in good operating condition to avoid breakdowns and delays.

Day Closures

The largest number of vehicle accidents involved on construction sites occurs during daylight hours. It is vital that all closures begin well in advance of the area where work is conducted to provide a strong cushion of worker safety.

Devices should be installed in the direction of traffic in the following order:

1. First Advance Warning Sign
2. Advance Warning Zone
3. Transition Zone
4. Buffer Zone
5. Work Zone
6. Termination Zone

When signs and channeling devise are installed and removed several times during an operation, a spot should be painted or marked where each sign or device is located to minimize time required to reset the signs or devices. Drivers do NOT expect to see workers in the roadway setting up a traffic control zone. Since the goal is to make the entire operation safe, flashing vehicle lights should be used to warn the drivers of the presence of workers.

All aspects of the closure should provide clear, concise direction to all drivers. Be sure of positioning and visibility of all signs, flashing arrow/message signs, barricades and delineators. Any part of the pattern that has been disturbed should be reset as soon and as quickly as possible.

Specialized Vehicles

Projects that require extensive traffic control may set up specific traffic control vehicles with flashing/rotating lights or beacons, sign racks, cone racks, worker platforms, protective railing and impact absorption capabilities.

1. The cone truck should be a 1-ton flat bed outfitted with two warning beacons visible from all direction and a Type II flashing arrow sign controlled from within the cab.
   There should be two platforms on the truck for workers to stand while setting out the cone pattern, one on each side built into the bed and frame. These can be a stand-in type cages so that the worker can stand upright while placing or removing the cones. This design will help to ensure the safety of the worker while reducing the possibility of an injury due to excessive bending.

2. The crash truck should be a 5-ton flat bed, outfitted with the same warning devices as the cone truck (check with local authorities for your area as some require Type I arrow signs on crash trucks). There should be an approved Truck Mounted Crash Cushion (TMCC) attached to the rear of the truck for added protection against vehicle impacts. Crash cushions offer some protection to errant vehicles by slowing the vehicle to a stop when hit head-on or by altering their direction away from the hazards in the work zone.

   If used, the crash truck must always be the last vehicle in the traffic control procession. There will be two-way communication between all vehicles and the Superintendent in charge of traffic control.

Documentation

One person should be responsible for documenting traffic control. Two logs should be maintained, one for Class A signing and another for actual closure activity. Routine inspections of the traffic control installation should be completed and signed every day by the designated traffic control person and included with the documentation.

Further documentation should include a camera (available in the glove box of the truck) for recording any accidents or incidents. These pictures should be in a successive series from advance warning, all the way up to and including termination of the traffic pattern.

Documentation record should include:

1. Starting and ending times of work.
2. Location of work.
3. Names of crew members.
4. Types of equipment used.
5. Changes in temporary or permanent regulatory devices.
6. Installation, change and removal of traffic control devices.
7. Drawing of working closure to include all devices.

When an inspection requires correction to include maintenance, the documentation should include:

1. Description of the corrections needed, when it was noted and by whom.
2. Corrections made or deferred and why.
3. Replacements made or deferred and why.
4. Any other needed actions.

15.0 EXCAVATION

I. SITE EVALUATION AND PLANNING

A. Before any digging begins the site must be checked for potential hazards.
   1. Check for electrical power lines (ove rhead and buried), natural gas and water line. Contact the utility company (ies) and call the following numbers to have utilities m arked out. For any job in New York State north of NY City, the number is 1-800-962-7926.
      For New York City and Long Island the number is: 1-800-272-4480.
   2. Check for hazardous atmosphere and possible contaminated soils containing hazardous materials.

B. Develop a written activity plan using the chec klist prov ided in this bulle tin as guidance.

II. EXEMPTION FROM EXCAVATION REQUIREMENTS

A. There are two situations where adheren ces to excavation requ irements DO NOT apply.

   1. If the excavation is made entirely in "stable rock".
   2. If the exc avation is less than f ive (5) feet in depth and exam ination by a competent person provides no indication of a potential cave in.

III. SOIL CLASSIFICATIONS

A. Soils are classified into four (4) types:

   1. NATURAL solid mineral material (rock).
   2. Type A soil.
   3. Type B soil.
   4. Type C soil.

B. VISUAL AND M ANUAL TEST S should be conducted as specified in OSH A Regulations to determine soil type.

C. However, most soil conditions we encounter are the worst case, type C. If we follow the m aximum allowable lim its specified (table B-1.3 attached) for sloping, benching, shielding or shori ng VISUAL and MANUAL tests are not necessary.

NOTE: If it is not possible to follow table B-1.3 in perform ing your excavation activities, refer to OSHA 1926.650 Subpart P for soil class descriptions and visual and manual test guidelines.

IV. SLOPING/BENCHING AND SHIELDING/SHORING OPTIONS

A. Maximum allowable OSHA limits for sloping require an angle not steeper than one and a half (1.5) horizontal to one (1) vertical [34 ^{o} (thirty-four degrees)]. This 34^{o} sloping is normally used for protection in type C soils.

B. Lesser slopes and benching require visual and manual soil type identification. Competent persons can conduct soil testing.

C. Other protection systems (shielding/shoring) require approval and/or designs by a registered professional engineer.

V. EXCAVATION PLANNING CHECKLIST

[X] 1. Identify/assign competent person
[X] 2. Is excavation exempt from OSHA standards? (NO)
[X] 3. Identify soil conditions/type.(Contaminated Fill)
[X] 4. Are site plans available?(YES)
[X] 5. Identify and locate underground/overhead utilities.(DONE)
[X] 6. Consider weather conditions for excavation duration.(DONE)
[X] 7. Surface water or high ground water table.(NA)
[X] 8. Identify protective systems needed.(DONE)
[X] 9. Shall professional engineer be needed?(OTHER)
[X] 10. Is excavation considered a confined space?(NO)
[X] 11. Shall water accumulation require dewatering?(YES)
[X] 12. Identify stability of adjacent structures.(NA)
[X] 13. Check for surface encumbrances (signs, poles).(DONE)
[X] 14. Consider exposure to equipment and traffic.(DONE)
[X] 15. Competent person to conduct and document daily inspections.
[X] 16. Plan access and egress points, (minimum 25' from employees)(DONE)
[X] 17. Materials, equipment, loose rocks/soil are 2' from excavation edge.(DONE)
[X] 18. Detailed written emergency procedure.(DONE)

VI. DEFINITIONS

Benching (Benching Systems):
Method of protecting employees form cave-ins by excavating the sides of excavation to form one or a series of horizontal levels or steps, usually with vertical or near vertical surfaces between levels.

Cohesive Soil:
Clay (fine grained soil), soil with high clay content, which has cohesive strength. Cohesive soil does not crumble, can be excavated with vertical side slopes, and is plastic when moist, Cohesive soil is hard to break up when dry and sticks together when submerged. Cohesive soils include clay silt, sandy clay, silty clay, clay and organic clay.

Competent Person:
Capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. Must be experienced and knowledgeable in OSHA excavation standards.

Confined Space:
A confined space is any space having limited means of egress, not normally employee occupied, which could be subject to accumulation of toxic or flammable contaminants or has an oxygen deficient atmosphere. Confined spaces include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines and open top spaces more than four (4) feet in depth such as excavations, pits, tubs, vaults and vessels.

Excavation:
Any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal.

Fissured:
A soil material that has a tendency to break along definite planes or fracture with little resistance, or a material that exhibits open cracks, such as tension cracks in an exposed surface.

Granular:
Gravel, sand or silt (coarse grained soil) with little or no clay content. Granular soil has no cohesive strength. Some moist granular soils exhibit apparent cohesion. Granular soil cannot be molded when moist and crumbles easily when dry.

Layered System:
Two or more distinctively different soil or rock types arranged in layers. Seams or weakened planes in rock or shale are considered layered.

Table B-1: Maximum Allowable Slopes

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V) FOR EXCAVATION LESS THAN 20 FT DEEP (3)
STABLE ROCK	VERTICAL (90 ^{o})
TYPE A (2)	3/4 : 1 (53 ^{o})
TYPE B	1 : 1 (45 ^{o})
TYPE C	1 1/2 : 1 (34 ^{o})

NOTES:

1. Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.
2. A short-term maximum allowable slope of 1/2H:1V (63^{o}) is allowed in excavations in Type A soil that are 12 feet (3.67 m) or less in depth. Short-term maximum allowable slopes from excavations greater than 12 feet (3.67 m) in depth shall be 3/4H : 1V (53 ^{o}).
3. Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

16.0 TEI REPORTS & FORMS

QUALITATIVE FIT TEST RECORD

Employee Name: _____

Employee Number [Last 4 digits SS#]: _____

Trade: _____ Local: _____

Contractor: _____

Has employee been medically evaluated and cleared by PLHCP? _____ Yes _____ No
Has employee received respirator safety, usage and limitation training? _____ Yes _____No
Type of respirator used: Half-face_____ Full-face _____ Other _____
Respirator manufacturer: North_____ MSA _____ 3M _____ Other _____
Size issued: Small _____ Medium _____ Large _____ Other _____
Type of fit test used: Bitrex _____ Saccharin _____ Irritant Fume _____ Other _____
Test Results:

A. Facial Hair Assessment:
   a. Does employee have facial hair growth [beard, mustache, sideburns, stubble, etc.] that will interfere with mask seal? ___ Yes [automatic failure] ___ No [proceed]

B. Sensitivity Test: Passed ____ Failed____ Squeezes: ___10 ____ 20 _____ 30

C. Fit Test

1. Normal breathing	Passed _____	Failed _____
2. Deep breathing	Passed _____	Failed _____
3. Head turning	Passed _____	Failed _____
4. Head Moving	Passed _____	Failed _____
5. Talking Passed	_____ Failed	_____
6. Bending/Moving	Passed _____	Failed _____
7. Normal breathing	Passed _____	Failed _____
Final Results:	Passed _____	Failed _____

Expiration Date: _____

_____ _____
Test Administrator Signature/Date Em ployee Signature/Date

Note: This document provides recording of fit test results of named subject under controlled conditions as established by OSHA protocol 29CFR1910.134. Test administrator cannot guarantee test results are reproducible under any other condition other than testing conditions

Employee Disciplinary Action

Name: _____ Project: _____

Trade: _____ Date: _____

Employer: _____ Foreman: _____

Offense/Reason [Explain below, use back of form or separate sheet if needed]

_____

_____

_____

_____

Type of Disciplinary Action Taken:

1. Oral Warning _____ 2. Written Warning _____
3. Suspension _____ 4. Discharge _____

I have discussed the above cited disciplinary action with the above named employee, effective this date:

_____ _____
Supervisor Date

_____ _____
Employee Date

_____ _____
Superintendent Date

Comments:_____

_____

_____

Appendix D

Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN

FUMEX SANITATION SITE

SITE NO. 130041

GARDEN CITY PARK

NASSAU COUNTY, NEW YORK

INSTRUMENTATION

- TSI Dusttrak™ Aerosol Monitor Model 8520.
- MiniRAE 3000 Portable VOC Monitor (Model number PGM-7320)

SPECIFIC SAMPLING PARAMETERS

PARTICULATE DUST MONITORING

Particulate monitoring will be performed using real-time particulate monitors with the following performance standards:

1. Particulate matter size in the range of 0-10 microns diameter
2. Objects to be measured: Dust, Mists, Aerosols
3. Measurement Ranges: 0.001 to 400 mg/M^3
4. Precision (2-sigma) at constant temperature:
   +/-10 $\mu g/ M^3$ for one second averaging; +/-1.5 $\mu g/ M^3$ for sixty second averaging
5. Accuracy:
   +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 µg, g= 2.5, as aerosolized)
6. Resolution: 0.1% of reading or 1 $\mu g/ M^3$, whichever is larger
7. Particle Size Range of Maximum Response: 0.1 - 10 µ
8. Total Number of Data Points in Memory: 10,000
9. Run Summary:
   Overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number.

SPECIFIC SAMPLING PARAMETERS - CONTINUED

PARTICULATE DUST MONITORING - CONTINUED

10. Alarm Averaging Time: 15 minute Averages

Two (2) monitoring devices shall be utilized for this project.

Particulate levels will be monitored and integrated over a period of 15 minutes. At the beginning of each shift, the air will be monitored for 15 minutes upwind of the work site to establish the background level for the day. Upon conclusion of this sampling, one instrument shall be placed upwind of the work area, and one shall be placed downwind of the work area. Samples will be collected continuously, during the normal work hours when activities are occurring on site. The instruments shall be monitored throughout the shift, and actions will be taken as indicated in the "Action Levels and responses" section of this sampling plan.

TOTAL VOC MONITORING

The sampling will be performed using a MiniRAE 3000 Portable VOC Monitor or equivalent.

The MiniRAE 3000 Portable VOC Monitor is a compact monitor designed as a broadband VOC gas monitor and datalogger for work in hazardous environments. It monitors VOC's using a Photo-lonization Detector (P1D) with a gas discharge lamp.

The MiniRAE 3000 monitor uses a newly developed electrodeless discharge UV lamp as the high-energy photon source for the PID. As organic vapors pass by the lamp, they are photo-ionized and the ejected electrons are detected as a current. The PID sensor with a standard 10.6 eV lamp detects a broad range of organic vapors. In principle, any compound with an ionization energy lower than that of the lamp photons can be measured.

The PID sensor for the MiniRAE 3000 monitor is constructed as a small cavity in front of the UV lamp. A diaphragm pump draws the gas sample into the sensor and then pumps it out through the side of the instrument.

A single chip microcomputer is used to control the operation of the alarm buzzer, LED, pump and light sensor. It measures the sensor readings and calculates the gas concentrations based on calibration to known standard gases. The data are stored in non-volatile memory so that they can be sent to a PC for record keeping. RS-232 transceivers provide a serial interface between the monitor and the serial port of a PC. An LCD display consisting of a single row of eight alpha/numeric characters is used to display the readings.

Three (3) monitoring devices shall be utilized for this project. One instrument will be placed upwind of the work area, one will be placed downwind of the work area, and one will be placed inside the work area in the area of activity.

Total VOC's shall be monitored by the instrument and integrated over a period of one (1) minute. The instruments shall be monitored throughout the shift, and actions will be taken as indicated in the "Action Levels and responses" section of this sampling plan.

ACTION LEVELS AND RESPONSES

The following action levels for particulates will be established for the work area and the perimeter monitoring of particulates. If the following levels are attained at the perimeter of the exclusion zone, then work will cease until engineering controls bring levels down to acceptable limits.

PARAMETER	ACTION LEVEL	ACTION
Total Particulates	Alarm Level - 100 µg/m^3	Warn supervisor and investigate possible causes.
Total Particulates	2.5 times background and/or greater than 150 µg/m^3	Work ceases until mitigated
Visible Dust	Visible dust as determined by the Engineer	Work ceases until mitigated

The following action levels shall be used as minimum action levels for organic vapors and odors:

PARAMETER	ACTION LEVEL	ACTION
Total Organic Vapors	Alarm Level - 3.7 ppm	Warn supervisor and investigate possible causes.
Total Organic Vapors	5 ppm at the work zone	Workers wear respirators
	25 ppm at the work zone	Work ceases until mitigated
Odors	Noticeable odors outside the exclusion zone as determined by the Engineer	Work ceases until mitigated

Appendix E

Groundwater Monitoring Plan

GROUNDWATER MONITORING PLAN

Revised September 19, 2014

FUMEX SANITATION SITE

SITE NO. 130041

131 HERRICKS ROAD

GARDEN CITY PARK

NASSAU COUNTY, NEW YORK

1.0 Scope

The Groundwater Monitoring Plan (GMP) is a component of the *Site Management Plan* (SMP) for the Fumex Sanitation Site (the "Site") as required by the March 2001 Record of Decision (ROD). As detailed in the SMP, the purpose of this groundwater monitoring program is to monitor the effectiveness of the remedial actions completed at the Site and to demonstrate that groundwater at the Site has not been negatively impacted as a result of remedial construction activities.

The original GMP which was included with the March 2012 SMP (which was last revised by the NYSDEC in June 2014) required, among other things, low-flow sampling methods and the collection of groundwater samples for the analysis of pesticides, volatile organic compounds (VOCs), semi-VOCs, metals and cyanide at 14 monitoring wells. On August 8, 2014, the New York State Department of Environmental Conservation (NYSDEC or the "Department") approved several deviations to the original SMP/GMP based on the information provided in the *Periodic Review Report Addendum*, dated May 30, 2014 prepared by Groundwater & Environmental Services, Inc (GES) and the Consent Order dated August 4, 2014 by and between the Site Owner and the NYSDEC.

Specifically, the primary deviation to the original GMP is that groundwater sampling shall be conducted at the expense of the Site Owner for up to five (5) sampling events occurring annually or at such longer time period as the Department may determine at 10 of the 14 existing monitoring wells for analysis of pesticides only with an option for the Site Owner's consultant to perform groundwater sampling via passive methods (i.e., no purge methods) via Snap Samplers®.

This revised GMP has been prepared to incorporate all of the NYSDEC-approved deviations to the original GMP contained in the Consent Order and as approved on August 8, 2014, and to ensure that the GMP requirements are consistent with the requirements in the SMP.

The first sampling event using the revised groundwater monitoring protocols as detailed in the revised GMP is scheduled for Fall 2014.

2.0 Sampling Program

2.1 Monitoring Well Network

A summary of the monitoring well network is presented in the table below.

Well ID	Shallow/Deep	Location
MW-1	Shallow	On-site
MW-2	Shallow	On-site
MW-3	Shallow	On-site
MW-4	Shallow	On-site
MW-5	Shallow	On-site
MW-6	Deep	On-site
MW-7S	Shallow	Downgradient, on Broadway
MW-7D	Deep	Downgradient, on Broadway
MW-10R	Shallow	Downgradient, on Park Ave
MW-11R	Shallow	Downgradient, on Park Ave

Note: Monitoring wells MW9S, MW-9D, MW-8S, and MW-8D have been removed from the sampling well network as approved by the NYSDEC.

The next round of groundwater sampling for the above-referenced well network is for Fall 2014.

2.2 Monitoring Well Inspection

Inspection of the monitoring wells during the sampling events will focus on the following areas:

- Concrete surface seal;
- Protective outer casing and lid;
- Locks and locking well caps; and
- Excessive silt in the well.

The integrity of the concrete surface seal will be visually assessed at each well location, and any loss of integrity, such as cracks, will be noted. At each well, the protective outer casing and lid will be checked for damage. Any pooling of water or evidence of pooling of water adjacent to the protective outer casing will be noted. The wells will be checked to verify that they are locked and the integrity of the locking cap will be assessed. Any cracks in the locking caps or broken or missing locking caps will be noted.

Excessive silt collected in the bottom of a well may affect the ability to collect a representative groundwater sample. Each sampling event will include an evaluation of the amount of silt collected in the bottom of the wells from which groundwater samples are collected. Measurements of the depth to silt will be taken after the sample collection process at each monitoring well.

Monitoring wells will be considered excessively silted if the depth of the silt in the well equals or exceeds ten percent of the screened length. For example, a well that contains one foot of silt and a well screen ten feet in length would be calculated to have exactly ten percent silt in the well and would require redevelopment. The well will be redeveloped using a submersible pump, or other sufficient means, to remove as much silt as possible upon approval by the Site Owner or the NYSDEC. Redevelopment of the well will be conducted after all required samples have been collected for the monitoring period.
Any problems noted during the inspection of the monitoring well system will be noted in the field notebook

and be reported immediately to the Site Owner and the NYSDEC project manager. Repairs will be made as soon as possible and no later than 45 calendar days from when a problem is reported. This maintenance schedule will not allow a detected problem to exist for more than one inspection. The data and nature of any repairs will be recorded in the project field notebook.

2.3 Water Level Monitoring

Following the completion of the well inspection and prior to collecting groundwater samples, water levels will be obtained from each monitoring well using a hand held electronic water level indicator. The indicator probe will be gradually lowered into the well until the point at which the indicator light or audible alarm indicates that the probe has reached water. The water level will then be obtained by measuring the depth from this point to the top of the well's inner casing or surveyed reference mark. The water level measurement will be to the nearest 0.01 foot and recorded in the field logbook.

The depth to the bottom (DTB) of the well will not be collected at this time to avoid disturbing any sediment that may have accumulated on the bottom of the well. Should this information be necessary, well construction logs or previous measurements can be used. Otherwise DTB information will be collected after the sample is collected at each monitoring well.

2.4 Monitoring Well Sampling

Since the onset of post-remediation groundwater monitoring in July 2011, the groundwater sampling was conducted using low-flow sampling methods. The low-flow sampling methods require purging groundwater via a downhole pump and measuring in-situ field measurements including pH, conductivity, temperature, dissolved oxygen and turbidity to ensure a representative sample of the aquifer is being collected. On August 8, 2014, the NYSDEC approved future sampling events (first event is planned for Fall 2014) to be conducted via passive methods (i.e., no purge methods) using Snap Samplers®.

The Snap Sampler® is a device that allows for the collection of groundwater samples which are in dynamic equilibrium with the aquifer through a simple, no purge/passive technique (ProHydro, Inc). In other words, the Snap Sampler® eliminates the need for purging groundwater and evaluating in-situ field measurements by taking advantage of "naturally purged" wells by capturing a whole water sample after a period of sampler deployment in the well. Details of the sampling protocols via the use of Snap Samplers® are provided under Section 3.6.

If for some reason the Snap Sampler® methods cannot be employed due to well construction or broken equipment, the original sampling protocols using low-flow methods via a submersible or bladder pump shall be used. Details of low-flow sampling methods are provided under Section 3.6.

3.0 Quality Assurance Project Plan

3.1 Project Identification

Project Name: Fumex Sanitation Site, Groundwater Monitoring Program
Project Requested By: New York State Department of Environmental Conservation
Project Manager: To Be Determined (Insert company name)
Quality Assurance Officer: To Be Determined (Insert company name)
Field Operations Manager: To Be Determined

3.2 Objective and Scope

The groundwater monitoring program is intended to monitor the remedial activities at the Fumex Sanitation Site and will continue by the Site Owner and/or the NYSDEC until the remedial action objectives for the project are met and the Site is closed out. The purpose of the GMP is to describe the measures for monitoring and documenting the effectiveness of the remedial action in achieving Site RAOs, both short-term and long-term. The purpose of this Quality Assurance Project Plan (QAPP) is to develop and describe a detailed sample collection and analytical procedures that will ensure high quality, valid data for use in the groundwater monitoring program.

3.3 Data Usage

Data generated from the groundwater monitoring program will be used to evaluate the performance and effectiveness of the remedial action to ensure that the remedy meets the remedial action objectives for the Site.

3.4 Analytical Methods

Environmental sample analysis conducted at the Site as part of the groundwater monitoring program will be performed in accordance with the NYSDEC Analytical Services Protocol (ASP). The groundwater samples will be submitted for analysis of target compound list (TCL) Pesticides via Environmental Protection Agency (EPA) Method 8081A/8081B. Groundwater monitoring for VOCs, semi-VOCs, metals and cyanide are no longer required as approved by the NYSDEC.

3.5 Data Quality Requirements and Assessments

Data quality requirements and assessments are provided in the NYSDEC ASP, which includes the contract-required detection limits for each analyte and sample matrix. The quantification limits, estimated accuracy, accuracy protocol, estimated precision and precision protocol are determined by the laboratory and will be in conformance with the requirements of the NYSDEC ASP, where applicable. Specific details on the method detection limits (MDL) and reporting limits (RL) for pesticides are detailed in the below table which have been approved by the NYSDEC for the Site.

Analyte Description	Chemical Abstract Service Number	RL - Limit	MDL - Limit	Units
Aldrin	309-00-2	0.05	0.01	ug/L
alpha-BHC	319-84-6	0.05	0.01	ug/L
alpha-Chlordane	5103-71-9	0.05	0.008	ug/L
beta-BHC	319-85-7	0.05	0.011	ug/L
delta-BHC	319-86-8	0.05	0.009	ug/L
gamma-BHC (Lindane)	58-89-9	0.05	0.012	ug/L
Chlordane	57-74-9	0.5	0.333	ug/L
4,4'-DDD	72-54-8	0.05	0.011	ug/L
4,4'-DDE	72-55-9	0.05	0.009	ug/L
4,4'-DDT	50-29-3	0.05	0.01	ug/L
Dieldrin	60-57-1	0.05	0.005	ug/L
Endosulfan I	959-98-8	0.05	0.009	ug/L
Endosulfan II	33213-65-9	0.05	0.01	ug/L
Endosulfan sulfate	1031-07-8	0.05	0.016	ug/L
Endrin	72-20-8	0.05	0.01	ug/L
Endrin aldehyde	7421-93-4	0.05	0.009	ug/L
Endrin ketone	53494-70-5	0.05	0.011	ug/L
gamma-Chlordane	5103-74-2	0.05	0.009	ug/L
Heptachlor	76-44-8	0.05	0.01	ug/L
Heptachlor epoxide	1024-57-3	0.05	0.01	ug/L
Methoxychlor	72-43-5	0.05	0.013	ug/L
Toxaphene	8001-35-2	0.5	0.199	ug/L

Note: ug/L = micrograms per liter. The method detection limits and reporting limits cited above have been approved by the NYSDEC for all previous sampling events.

The laboratory methods of analysis will be in accordance with the NYSDEC ASP. Specific analytical procedures and laboratory QA/QC descriptions are not included in this QAPP, but will be available upon request from the laboratory selected to perform the analysis. The laboratory will be New York Department of Health (NYSDOH) Environmental Laboratory Approved Program (ELAP) certified for organic and inorganic analyses and also NYSDOH Contract Laboratory Protocol (CLP) certified.

In addition to meeting the requirements provided in the NYSDEC ASP, the data must also be useful in evaluating the effectiveness of the remedial action. Data obtained during the groundwater monitoring program will be compared to Standards, Criteria, and Guidance values (SCGs) identified in the remedial action objectives. The SCG to be used for groundwater is the *NYSDEC Division of Water - Technical and Guidance Series* (TOGS) (1.1.1) – *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*.

3.5.1 Data Representativeness

Representative samples will be collected as follows:

- Groundwater (Monitoring Well) - Samples will be obtained using passive methods via Snap Samplers®. If Snap Sampler® methods cannot be employed, then groundwater samples will be collected using low-flow sampling methods. Sampling procedures for both methods are detailed in Section 3.6.

- Equipment Calibration - Field equipment (e.g., multi-meter) will be calibrated daily before use according to the manufacturer's procedures.

3.5.2 Data Comparability

All data will be presented in the units designated by the methods specified by a NYSDOH ELAP and CLP certified laboratory and the NYSDEC ASP. In addition, sample locations, collection procedures and analytical methods from earlier studies will be evaluated for comparability with current procedures/methods.

3.5.3 Data Completeness

The acceptability of 100% of the data is desired as a goal for the project. The acceptability of less than 100% complete data, meeting all QA/QC protocols/standards, will be evaluated on a case-by-case basis.

3.6 Detailed Sampling Procedures

As detailed in Section 2.0, groundwater samples will be collected at 10 of the 14 existing monitoring wells related to the Site. The location of each monitoring well to be sampled is described in Section 2.0. A map depicting the approximate location of each monitoring well is also provided in the figures attached with the SMP. Details of the sampling collection procedures and handling are provided in the below sections.

3.6.1 Sample Collection Procedure via Snap Samplers Methods

The Snap Sampler® is intended to be a dedicated, in-well groundwater sampling tool that is deployed at the desired position in the screened interval. The Snap Sampler® bottles seal under the water surface by simply pulling the mechanical trigger line, pushing the electric trigger button, or pressuring up the pneumatic trigger system. The trigger releases "Snap Caps" that seal the double-ended bottles. The end caps are comprised of Teflon and are specially designed to seal the water sample within the bottles with no headspace vapor. Once the sample is retrieved from the well, the bottles are prepared with standard septa screw caps and labeled for laboratory submittal (ProHydro, Inc).

Below are specific sample collection procedures for this passive sampling method:

a) Prior to the first sampling event, the Snap Sampler® will be installed at each well to be sampled as detailed in Section 2.0. In order to achieve dynamic equilibrium and retain a representative sample of the aquifer, it is recommended that the sampling be conducted two week after the initial setup. Standard operating procedures for installing the Snap Samplers® is provided as **Attachment 1**.

b) Prior to collecting a sample, the depth to water (DTW) will be measured using an electronic water level device and will be recorded in the field logbook. The depth to the bottom (DTB) of the well will not be collected to avoid disturbing the Snap Sampler® and any sediment that may have accumulated at the bottom of the well.

c) Upon measuring and recording the DTW, a sample shall be collected using the trigger lines. The standard operating procedures for the Snap Sampler® has been provided as **Attachment 1** which details this process.

d) Sample Collection: Analysis of pesticides require 250 ml of sample volume which must be containerized in an amber glass with Teflon-lined caps. The amber glassware ensures that the sample is not degraded by sunlight. Currently, the Snap Sampler® collects samples in 125ml semi-opaque plastic bottleware. Therefore, the recovered sample water will have to be transferred to the laboratory supplied bottleware to ensure sample integrity. While alternative sample collection protocols may be approved by the NYSDEC, the protocol for sample collection will require transferring the sample from the Snap Sample bottleware to

the laboratory-supplied bottleware (250 ml amber glass). This transfer should be done out of the sunlight to minimize/eliminate photodegradation of pesticides. Upon sample collection, Teflon-lined caps will be used to seal the sample.

e) Upon completion of sampling, sample identification, preservation, handling and shipment requirements will be followed as detailed under Section 3.6.3 and 3.6.4.

f) Prior to reinstalling the Snap Sampler® at each well, the well depth to bottom (DTB) will be collected after the sample is collected and will be recorded in the field book. This data will be useful in evaluating silt accumulation and assess if any well will need to be developed (see Section 2.2).

g) Prior to reinstalling the Snap Sampler® at each well, the well depth to bottom (DTB) will be collected after the sample is collected and will be recorded in the field book. This data will be useful in evaluating silt accumulation and assess if any well will need to be developed (see Section 2.2)

h) After collecting the DTB at each well, the condition of the Snap Sampler® will be inspected. If in good condition, the Snap Sampler® with new bottleware (or existing bottleware if in good condition) will be installed at each well for the future sampling event. Standard operating procedures for reinstalling the Snap Sampler® is provided as **Attachment 1.**

3.6.2 Sample Collection Procedure via Low Flow Methods

If Snap Sampler® methods cannot be employed at any monitoring well for some reason, low-flow methods will be necessary to retain a sample. Alternative methods to low-flow sampling methods may be approved by the NYSDEC, however.

The low flow purge and sample method consists of using a submersible or bladder pump to purge the well at a very low flow rate (0.5 to 1.5 liter/minute is the standard flow rate). The pump intake is set approximately in the middle of the well screen, with a stagnant water column over the top of the pump. The well is purged at the low rate until the field parameters (temperature, pH, specific conductivity, turbidity, dissolved oxygen, and oxidation reduction potential) have stabilized in the flow-through-cell. The sample is then collected directly from the flow-through cell discharge point. Details of the sampling collection methods are provided below:

a) The bladder/submersible pump will be lowered slowly to a desired sampling depth.

b) A multi-meter (e.g., Horiba, Yellow Spring Instrument [YSI], etc) will be setup so that purged groundwater passes through the flow-through cell. Any generated waste will be containerized in a 55-gallon drum for future off-Site disposal.

c) The low-flow pump will be operated so that the least amount groundwater is purged (pumping rate should be anywhere from 0.5 to 1.5 liter/minute). Depth to water (DTW) will be periodically monitored to ensure drawdown in the monitor well is limited (less than 0.25 feet).

d) During purging, field parameters (temperature, pH, specific conductivity, turbidity, dissolved oxygen, and oxidation reduction potential) will be monitored approximately every 3 to 5 minutes. Monitoring will be continued until the water level stabilizes and field parameters have stabilized to within 10 percent (plus or minus 5 percent) over a minimum of three readings. Turbidity and dissolved oxygen are typically the last parameters to stabilize.

Note: once turbidity readings get below 10 NTUs, then the stabilization range can be amended to 20 percent (plus or minus 10 percent) over a minimum of three readings. Readings should be taken in a clean container (preferably a less beaker) and the monitoring instrument allowed to stabilize before collection of the next sample. The multi-meter takes the readings consecutively and therefore the process to record all the measurements may take longer than 5 minutes. If so, measurements will be recorded as often as practicable.

e) Once field parameters and water levels are stable, a sample will be collected. Currently, the minimum volume requirement is 250 ml per well to analyze the sample for TCL Pesticides via EPA Method 8081. The laboratory should supply amber glass bottleware to minimize/eliminate photodegradation of pesticides.

f) Upon completion of collecting the sample at each well, sample identification, preservation, handling, and shipment requirements will be followed as detailed under Section 3.6.3 and 3.6.4.

g) Well depth to bottom (DTB) will be collected after the sample is collected and will be recorded in the field book. This data will be useful in evaluating silt accumulation and assess if any well will need to be developed (see Section 2.2).

3.6.3 Sample Identification

Each sample container will have a label of durable material affixed to it, which specifies the following sample information:

• Sample location;
• Sample type;
• Sample identification number (including well designation);
• Name(s) of sampler(s);
• Date and time of sample collection;
• Container number for that sample, if more than one container is used (e.g., #1 of 4); and
• Laboratory analyte
• Preservative

Each sample collected will be designated by an alphanumeric code that will identify the type of sampling location, matrix sampled, and the specific sample designation (identifier). The sample identification for all samples will begin with the Site ID for the Site. The following terminology shall be used for the groundwater sample identification: SITE ID - MONITORING WELL ID – DEPTH

Trip blank samples will be designated as follows: SITE ID-TB-DATE

3.6.4 Sample Preservation, Handling and Shipment

All analytical samples will be placed in the appropriate sample containers as specified in the NYSDEC ASP. The holding time criteria for pesticides is 5 days for extraction and 40 days for analysis.

Prior to packaging any sample for shipment, the sample containers will be checked for proper identification and compared to the field logbook for accuracy. The samples will then be wrapped with a cushioning material. Sample containers will be placed in a cooler with ice immediately after sample collection and maintained at 4°C throughout the duration of the sampling event and subsequent shipment to and storage at the analytical laboratory until analysis.

All necessary documentation required to accompany the sample during shipment will be placed in a sealed plastic bag and taped to the underside of the cooler lid. The cooler will then be sealed with packaging tape and custody seals will be placed in such a manner that any opening of the cooler prior to arrival at the laboratory can be detected.

All samples will be shipped to ensure laboratory receipt within 48 hours of sample collection in accordance with NYSDEC requirements. The laboratory will be notified prior to the shipment of the samples.

3.7 Decontamination Procedure for Sampling Equipment

All field sampling equipment should be sterile and dedicated to a particular sampling point. In instances where this is not possible, a field decontamination procedure will be used to reduce the chances of cross-contamination between sample locations. As an additional measure of quality control, sampling activities will start in the area of the Site with the lowest contaminant concentrations and proceed to the area of highest contaminant concentrations.

All non-disposable equipment will be decontaminated prior to initial use, prior to moving to a new sampling location and prior to leaving the Site. The first step will be an anionic detergent (e.g., Alconox®) and water wash to remove all visible particulate matter and residual oil and grease. This will be followed by a generous tap water rinse and a distilled and deionized water rinse to remove the detergent.

Material and equipment that will be used within the monitoring well for the purpose of well development and purging will also be decontaminated. If a submersible pump needs to be used, the pump will be placed in a five-gallon bucket containing an anionic detergent (A1conox®) and water solution. The outside of the pump will be washed with a stiff bristled brush. The wash solution will then be pumped through the pump. The pump will then be placed in five-gallon bucket containing clean water. The water will be pumped through the pump. The pump and cable will be wiped down with deionized water and a paper towel.

3.8 Laboratory Sample Custody Procedures

A NYSDOH ELAP and CLP certified laboratory meeting the requirements for sample custody procedures including cleaning and handling sample containers and analytical equipment will be used. The laboratory's standard operating procedures will be available upon request.

3.9 Field Management Documentation

Proper management and documentation of field activities is essential to ensure that all necessary work is conducted in accordance with the GMP and in an efficient and high quality manner. Field management procedures include following proper chain of custody procedures to track a sample from collection through analysis, noting when and how samples are to be composited (if required), completing sample information record forms, chain of custody forms and maintaining a daily field logbook. Proper completion of these forms and the field log book are necessary to support the consequent actions that may result from the sample analysis. This documentation will support that the evidence was gathered and handled properly. Field forms (e.g., drum tracking logs, low-flow sampling log sheets, sampling screening tracking logs, synoptic water level measurements, etc) which can be used to facilitate the field documentation process is provided as **Attachment 2.**

3.9.1 Field Logbook

All pertinent information regarding the Site and sampling procedures must be documented in field logbooks. Field logbooks must be bound and should have consecutively numbered, water resistant pages. Notations should be made in logbook fashion, noting the time and date of all entries. Information

recorded in this notebook should include, but not be limited to, the following:

The first page of the logbook contains the following information:

• Project name and address;
• Name, address and phone number of field contact. Daily entries are made for the following information:

• Purpose of sampling;
• Location of sampling point;
• Number(s) and volume(s) of sample(s) taken;
• Description of sampling point and sampling methodology;
• Date and time of collection, arrival and departure;
• Collector's sample identification number(s);
• Sample distribution and method of storage and transportation;
• References, such as sketches of the sampling Site or photographs of sample collection;
• Field observations, including results of field analyses (e.g., pH, temperature, turbidity, etc.)
• Signature of personnel responsible for completing the log entries.

3.9.2 Sample Information Record

At each sampling location, a sample information record form is filled out and maintained including, but not limited to, the following information:

• Site name;
• Sample crew;
• Sample location;
• Field sample identification number;
• Date;
• Time of sample collection;
• Weather conditions;
• Temperature;
• Sample matrix;
• Method of sample collection and any factor that may affect its quality adversely;
• Well information (groundwater only);
• Field test results;
• Constituents sampled; and
• Remarks (Sample Compositing Information).

3.9.3 Chain of Custody

The chain of custody is initiated at the laboratory with bottle preparation and shipment to the Site. The chain of custody remains with the sample at all times and bears the name of the person assuming responsibility for the samples. This person is tasked with ensuring secure and appropriate handling of the bottles and samples. When the form is complete, it should indicate that there were no lapses in sample accountability.

A sample is considered to be in an individual's custody if any of the following conditions are met:
• It is in the individual's physical possession; or
• It is in the individual's view after being in his or her physical possession; or
• It is secured by the individual so that no one can tamper with it; or
• The individual puts it in a designated and identified secure area.

In general, chain of custody forms are provided by the laboratory contracted to perform the analytical services. At a minimum, the following information shall be provided on these forms:

- Project name and address;
- Project number;
- Sample identification number;
- Date;
- Time;
- Sample location;
- Sample type;
- Analysis requested;
- Number of containers and volume taken;
- Remarks;
- Type of waste;
- Sampler(s) name(s) and signature(s); and
- Spaces for relinquished by/received by signature and date/time.

The chain of custody form is filled out and signed by the person performing the sampling. The original of the form travels with the sample and is signed and dated each time the sample is relinquished to another party, until it reaches the laboratory or analysis is completed. The field sampler keeps one copy and a copy is retained for the project file. The sample container must also be labeled with an indelible marker with a minimum of the following information:

- Sample number;
- Analysis to be performed;
- Date of collection; and
- Compositing information.

A copy of the completed form is returned by the laboratory with the analytical results.

3.10 Calibration Procedures and Preventative Maintenance

The following information regarding equipment will be maintained for the project:

1. Equipment calibration and operating procedures which will include provisions for documentation of frequency, conditions, standards and records reflecting the calibration procedures, methods of usage and repair history of the measurement system. Calibration of field equipment will be done daily at the sampling Site so that any background contamination can be taken into consideration and the instrument calibrated accordingly.
2. Critical spare parts, necessary tools and manuals will be on hand to facilitate equipment maintenance and repair.

Calibration procedures and preventive maintenance, in accordance with the NYSDEC ASP, for laboratory equipment is contained in the laboratory's standard operating procedures and is available upon request.

3.11 Data Validation

Summary documentation regarding data validation will be completed by the laboratory using NYSDEC forms and submitted with the data package.

Data validation will be performed in order to define and document analytical data quality in accordance with NYSDEC requirements that project data must be of known and acceptable quality. The validation processes will be conducted in conformance with the USEPA Contract Laboratory Program National Functional Organic Data Review and Inorganic Analyses while ensuring that the QC requirements for the NYSDEC ASP have been met.

Because the NYSDEC ASP is based on the USEPA CLP, the USEPA Functional Guidelines for Evaluating Organics and Inorganics Analyses for the CLP will assist in formulating standard operating procedures for the data validation process. The data validation process will ensure that all analytical requirements specific to this GMP, including the QA/QC are followed. Procedures will address validation of routine analytical services results based on the NYSDEC TCL for standard sample matrices.

The data validation process will provide an informed assessment of the laboratory's performance based upon contractual requirements and applicable analytical criteria. The report generated as a result of the data validation process will provide a base upon which the usefulness of the data can be evaluated by the end user of the analytical results. The overall level of effort and specific data validation procedure to be used will be equivalent to a "100% validation" of all analytical data in any given data package.

During the review process, it will be determined whether the contractually required laboratory submittals for sample results are supported by sufficient back-up data and *QA/QC* results to enable the reviewer to conclusively determine the quality of data. Each data package will be checked for completeness and technical adequacy of the data. Upon completion of the review, the reviewers will develop a QA/QC data validation report for each analytical data package.

"Qualified" analytical results for anyone field sample are established and presented based on the results of specific QC samples and procedures associated with its sample analysis group or batch. Precision and accuracy criteria (i.e., QC acceptance limits) are used in determining the need for qualifying data. Where test data have been reduced by the laboratory, the method of reduction will be described in the report. Reduction of laboratory measurements and laboratory reporting of analytical parameters shall be verified in accordance with the procedures specified in the NYSDEC program documents for each analytical method (i.e., recreate laboratory calculations and data reporting in accordance with the method specific procedure). The standard operating guideline manuals and any special analytical methodology required are expected to specify documentation needs and technical criteria and will be taken into consideration in the validation process. Copies of the complete data package and the validation report, including the laboratory results data report sheets, with any qualifiers deemed appropriate by the data reviewer, and a supplementary field QC sample result summary statement, will be submitted to the NYSDEC.

The following is a description of the two-phased approach to data validation to be used in this project. The first phase is called checklisting and the second phase is the analytical quality review, with the former being a subset of the latter.

• Checklisting - The data package is checked for correct submission of the contract required deliverables, correct transcription from the raw data to the required deliverable summary forms and proper calculation of a number of parameters.

• Analytical Quality Review - The data package is closely examined to recreate the analytical process and verify that proper and acceptable analytical techniques have been performed. Additionally, overall data quality and laboratory performance is evaluated by applying the appropriate data quality criteria to the data to reflect conformance with the specified, accepted QA/QC standards and contractual requirements.

At the completion of the data validation, a Summary Data Validation/Usability Report will be prepared and submitted to the NYSDEC.

3.12 Matrix Spikes/Matrix Spike Duplicates and Spiked Blanks

Matrix spike samples and blanks are quality control procedures, consistent with NYSDEC ASP specifications, used by the laboratory as part of its internal QA/QC program. The matrix and matrix spike duplicates are aliquots of a designated sample (water or soil) which are spiked with known quantities of specified compounds. They are used to evaluate the matrix effect of the sample upon the analytical methodology as well as to determine the precision of the analytical method used.

A matrix spike blank is an aliquot of analyte-free water, prepared in the laboratory, and spiked with the same solution used to spike the MS and MSD. The Matrix Spike Blank (MSB) is subjected to the same analytical procedure as the MS/MSD and used to indicate the appropriateness of the spiking solution by calculating the spike compound recoveries. The procedure and frequency regarding the MS, MSD and MSB are defined in the NYSDEC ASP. Site specific MS and MSDs should be collected at a frequency of one per 20 samples or every 7 days (one for each sample delivery group), for each sample matrix collected (i.e., water, soil, etc.). The laboratory is required to analyze an MSB at the same frequency as the MS/MSD.

3.13 Method Blanks

A method blank is an aliquot of laboratory water or soil which is spiked with the same internal and surrogate compounds as the samples. Its purpose is to define and determine the level of laboratory background contamination. Frequency, procedure and maximum laboratory containment concentration limits are specified in the NYSDEC ASP as follows:

The laboratory shall prepare and analyze one laboratory reagent blank (method blank) for each group of samples of a similar matrix (for water or soil samples), extracted by a similar method (separatory funnel, continuous liquid extraction or sonication) and a similar concentration level (for volatile and semivolatile soil samples only) for the following, whichever is most frequent:

- Each case of field samples received; or
- Each 20 samples in a case, including matrix spikes and reanalyses; or
- Each 7 calendar day period during which field samples in a case were received (said period beginning with the receipt of the first sample in that sample delivery group); or
- Whenever samples are extracted.

Pesticide method blanks shall be carried through the entire analytical process from extraction to final GC/MS or GC/EC analysis, including all protocol performance/delivery requirements.

ATTACHMENT 1

Snap Sampler ® Standard Operating Procedures

Standard Operating Procedure for the Snap Sampler®
Passive Groundwater Sampling Method (March 2011)

2011 UPDATE

The 2011 update includes graphics and descriptions of three different Snap Sampler® trigger options plus new citations for US Army Corps of Engineers and peer-reviewed journal papers. There are also highlighted sections which point out important aspects of the Snap Sampling approach. This Standard Operating Procedure (SOP) should be used to familiarize the user with the application and protocol for use the Snap Sampler® passive groundwater monitoring system. *The laminated picture instruction cards contain step-by-step field instructions. The Appendices, rather than the SOP itself, should be the primary field tool for Snap Sampler® operation.* The SOP is designed for overall understanding and rationale for passive groundwater sampling with the Snap Sampler®, and for regulatory submittal with Sampling and Analysis Plans. Should the user require information beyond that included in this SOP, additional information can be found on the Snap Sampler® website SnapSampler.com or by contacting your Snap Sampler representative.

SNAP
WWW.SNAPSAMPLER.COM

FORWARD

This SOP was adapted from SOPs in USEPA's groundwater guidance for RCRA and Superfund project managers (U.S. Environmental Protection Agency 2002). Portions of the applicable text are repeated here. With this forward, the authors and USEPA are acknowledged in sincerest appreciation. Edited and supplemental text is included to detail application information and procedures for use and deployment of the Snap Sampler® passive groundwater sampling device and method.

INTRODUCTION

The goal of groundwater sampling is to collect samples that are representative of *in situ* groundwater conditions and to minimize changes in groundwater chemistry during sample collection and handling. Experience has shown that groundwater sample collection and handling procedures can be a source of variability in water quality concentrations due to differences in sampling personnel, sampling procedures, and equipment (U.S. Environmental Protection Agency 1995; McHugh *et al.* 2010; Parker and Britt, *in review*).

Traditionally, the collection of representative water samples from wells is neither straightforward nor easily accomplished. Groundwater sample collection through pumping or bailing can be a source of variability through differences in sampling personnel and their individual sampling procedures, the equipment used, and ambient temporal variability in subsurface and environmental conditions. Many site inspections and remedial investigations require the sampling at groundwater monitoring wells within a defined criterion of data confidence or data quality, which necessitates that the personnel collecting the samples are trained and aware of proper sample collection procedures.

The purpose of this SOP is to provide a description of the Snap Sampler® passive groundwater sampling method. The method and specialized equipment is designed to minimize the impact the sampling process on groundwater chemistry. This is accomplished through deployment and passive re-equilibration of the monitoring well to ambient groundwater flow and/or diffusive contaminant flux within the well/aquifer system. The Snap Sampler® method eliminates well purging prior to sample collection.

As a passive groundwater sampling device, the Snap Sampler® is a proven, cost-effective alternative to well purge and low-flow sampling (Parker *et al.* 2011; Britt *et al.* 2010). Historical and recent research shows that most if not virtually all well screen zones exhibit ambient flow-through under natural

groundwater gradients (Gillham 1982; Pankow *et al.* 1985; Robin and Gillham 1987; Powell and Puls 1993; Puls and Barcelona 1996; Vroblesky *et al.* 2001a; ASTM 2002; ITRC 2004, 2007). The screen sections of these wells are "naturally purged" without pumping. Ongoing research suggests that natural ambient flow can induce mixing within wells (Britt *et al.* 2011; Britt 2005, 2007, 2008; Martin-Hayden and Britt 2006; Vroblesky *et al.* 2006; Britt and Calabria 2008). This mixing effect results in a flow-weighted averaging effect in the well *without purging*. Though not all wells are thoroughly mixed, many wells show relatively narrow ranges of vertical concentrations when vertically profiled (Vroblesky *et al.* 2001b; Parsons 2003; Britt and Calabria 2008). These studies and others indicate flow-weighted contaminant concentration averaging within wells may be common. The Snap Sampler® takes advantage of "naturally purged" wells by capturing a whole water sample after a period of sampler deployment in the well.

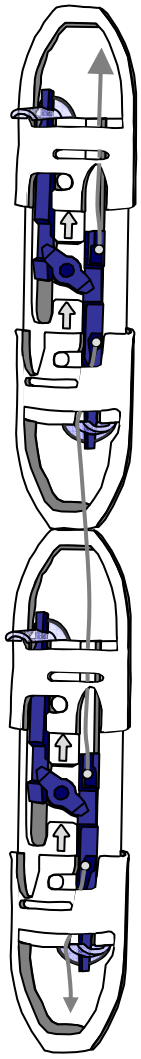

Figure 1

Wells in poor yielding formations with slow recharge during pumping have always been problematic for pumping methods. Wells with short water column are also problematic for some of the same reasons. Passive sampling of poorly yielding wells has been suggested as a better method than purging to dryness in VOC impacted wells (McAlary and Barker 1987; Puls and Powell 1993; Puls and Barcelona 1996). The Snap Sampler® can be deployed in low yield and short water column wells to take advantage of the non-purge technology.

The Snap Sampler® (Figure 1) passive groundwater sampling method limits sample collection variables by sealing the sample while it is still in the well, at the same position in the well during each sampling event. Where appropriate, the sample is maintained in the same sample container that is transmitted to the laboratory rather than pouring into sample bottles at the ground surface. Using this approach, sampling personnel are essentially prevented from introducing error, variability, or bias during the sample collection process. Sample collection is virtually the same for any collector because the sample is captured downhole the same way every event, without impact from user technique, and in many cases, not exposed to the ambient air from the well to the laboratory. Recent research shows that variable reduction may improve long-term data trend analysis (Britt *et al.* 2011; McHugh *et al.* 2010; Britt *et al.* 2010; Britt 2008).

SCOPE AND APPLICATION

This SOP should be used primarily for monitoring wells that have a screen or an open interval with a length of ten feet or less and can accept a downhole device of 1.8 inches (46mm) in diameter. Longer screen interval sampling may be conducted, but stratification testing may be warranted if previous information about aquifer and/or well contaminant stratification is not available. Vertical profiling requirements depend on site-specific data quality objectives (DQO's) and site-specific requirements (Vroblesky 2001a; ITRC 2004, 2007).

Groundwater samples that are collected using this procedure are useable for the analyses of groundwater contaminants that may be found at Superfund and RCRA contamination sites, as well as sites with a variety of contamination types. The analytes may be volatile organic compounds, semi-volatile organic compounds, pesticides, PCBs, metals, and other inorganic compounds, including perchlorate and other emerging contaminants such as explosive compounds, 1,4-dioxane, 1,2,3-TCP, NDMA and others.

For contaminant plume monitoring, the sampler should be placed within the screened interval of the well. For consistency and comparability of results over time, the sampler should be placed in same location and

depth for each subsequent sampling event. To accommodate this preference, dedicated sampling devices with dedicated trigger lines should be used whenever possible. The Snap Sampler® should not be placed resting on the bottom well to avoid disturbing any sediment at the bottom of the well during deployment or when the sampler is triggered.

The Snap Sampler® relies on natural flow-through and/or diffusion of contaminants from the aquifer to the well (Powell and Puls 1993; ASTM 2002; ITRC 2004, 2007). Well purging is not conducted before sampling, therefore, *measurement of water-quality-indicator parameters is not a prerequisite to sample collection*. If parameters are required for certain monitoring programs independent of sampling method (e.g. for monitored natural attenuation assessment), parameters can be collected by utilizing one of the deployed Snap Sampler® bottles or post-sampling by another method (e.g. a downhole probe).

Samples collected for metals, semi-volatile organic compounds, pesticides, and other analytes may be impacted by sample turbidity. They also may be subject to transport by colloidal flow in the natural groundwater regime (Kearl *et al.* 1992; Puls and Powell 1992). Deployment and re-equilibrium of the Snap Sampler® allows natural colloidal flow to be monitored within the well. This is a distinct advantage over sampling methods such as the polyethylene diffusion bag (PDB), where colloidal particles are excluded from the sample; and an advantage over purge methods where colloids may be artificially mobilized (Britt *et al.* 2010). Field filtering is not required for samples collected with the Snap Sampler® but can be conducted if required by the site Sampling and Analysis Plan.

Proper well construction, development, and maintenance are essential for any groundwater sampling procedure. Prior to conducting field work, information on the construction of the well and well development should be obtained and that information factored into the site specific sampling procedure. This SOP is not to be used where non-aqueous phase liquids (NAPL) (immiscible fluids) are present in the monitoring well.

MATERIALS AND EQUIPMENT

- Approved Field Sampling and Quality Assurance Project Plan.
- Site Health and Safety Plan with specifications for personal protective equipment and air monitoring equipment.
- Personal protective equipment in good working order as specified in the site Health and Safety Plan.
- Air monitoring equipment in good working order as specified in the Site Health and Safety Plan.
- Site access/permission documentation for site entry.
- Well keys and map of well locations.
- Tool box - All needed tools for all site equipment used.
- Snap Samplers® - Dedicated samplers are recommended in most applications.
- Snap Sampler® Trigger lines, – Dedicated trigger lines are recommended in most applications. Trigger lines may be manual, with a mechanical wire connection from surface to sampler; electric, with a wireline from surface to sampler; or pneumatic, with an airline from surface to sampler.
- Snap Sampler® Well Docking Station – Lockable well caps for Snap Sampler® - deployed wells—includes a support ring to hang Snap Sampler equipment.
- Sample bottles, sample preservation supplies, sample tags or labels, and chain-of-custody forms.
- Well construction, field, and water quality data from the previous sampling event.
- Field notebook, groundwater sampling logs, and calculator.
- Polyethylene sheeting placed on ground around the well head.
- Depth-to-water measuring device - An electronic water-level indicator or steel

tape and chalk, with marked intervals of 0.01 foot. Interface probe for determination of liquid products (NAPL) presence, if needed.

- Steel tape and weight - Used for measuring total depth of well.

- Multi-parameter meter, if required. The water-quality-indicator parameters that may be monitored under common monitoring programs include pH, ORP/Eh, (ORP) dissolved oxygen (DO), turbidity, specific conductance, and temperature. Turbidity readings, if required, must be collected from a sacrificed Snap Sampler® bottle because retrieving the sampler may agitate the well, increasing turbidity values not present in the actual samples. Calibration fluids for all instruments should be NIST-traceable and there should be enough for daily calibration throughout the sampling event.

- Decontamination supplies - Including a reliable and documented source of distilled water and any solvents (if used). Pressure sprayers, buckets or decontamination tubes for pumps, brushes and non-phosphate soap will also be needed.

- A suitable container for excess sample and decontamination water, as needed or required.

Construction materials of the sampling equipment (samplers, tubing, and other equipment that comes in contact with the sample) should be limited to stainless steel, Teflon®, glass, and other inert material. This will reduce the chance that sampling materials alter the groundwater where concentrations of the site contaminants are expected to be near the detection limits. The tendency of organics to sorb into and desorb out of plastic materials makes dedicated equipment preferable where possible.

It should be noted that plastic materials used in the Snap Sampler® are not usually problematic for sorption. Using methods described in this SOP, the sampler is deployed for one to two weeks (or more). This deployment period allows materials prone to sorption to achieve equilibrium with groundwater before the sample is collected.

DEPLOYMENT/SAMPLING PROCEDURES

The following describes the deployment and sampling procedures for the Snap Sampler® passive groundwater sampling method. These procedures describe steps for dedicated and non-dedicated systems.

Pre-Sampling Activities

1. Well location maps, construction information, keys and sampling equipment should be assembled and transported to the site.

2. Water level monitoring and sampling must begin at the monitoring well with the least contamination, generally up-gradient or farthest from the site or suspected source. Then proceed systematically to the monitoring wells with the most contaminated ground water.

3. Check and record the condition of the monitoring well for damage or evidence of tampering. Lay out polyethylene sheeting around the well to minimize the likelihood of contamination of sampling equipment from the soil.

4. Unlock well head. Record location, time, date, and appropriate information in a field logbook or on the groundwater sampling log.

5. Remove inner casing cap.

6. Monitor the headspace of the monitoring well at the rim of the casing for volatile organic compounds (VOC) with a photo-ionization detector (PID) or flame ionization detector (FID) and record in the logbook. If the existing monitoring well currently has or has a history of positive headspace readings, then the sampling must be conducted in accordance with the Health and Safety Plan.

7. Measure the depth to water (water level must be measured to nearest 0.01 feet) relative to a reference measuring point on the well casing with an electronic water level indicator or steel tape and record in logbook or groundwater sampling log. If no reference point is found, measure relative to the top of the inner casing, then

mark that reference point and note that location in the field logbook. Record information on depth to ground water in the field logbook or groundwater sampling log. Measure the depth to water a second time to confirm initial measurement; measurement should agree within 0.01 feet or re-measure.

8. Check the available well information or field check for the total depth of the monitoring well.

Deployment Activities

Selection of the deployment depth within the screen interval is dependent on site specific DQO's. Normally, deployment depth is targeted at the center of the well screen.

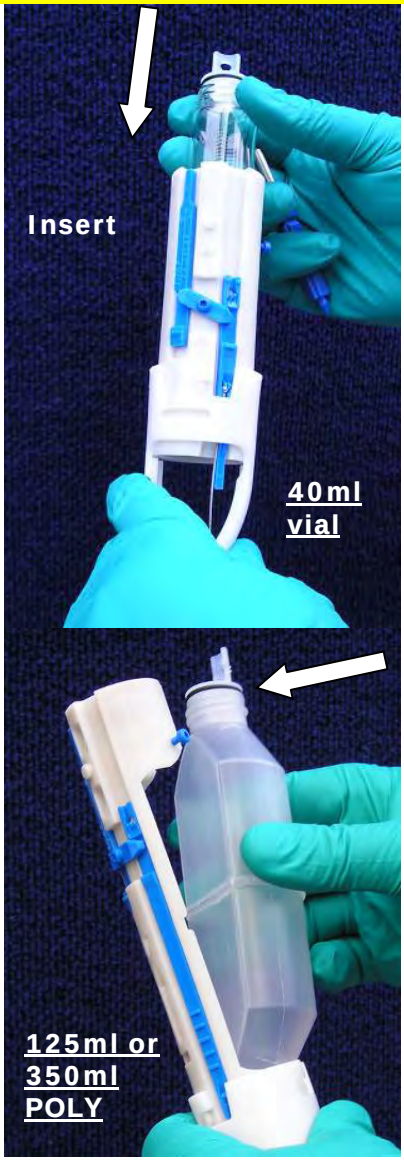

FIGURE 2

If depth-specific monitoring is desired, multiple samplers may be deployed at intervals appropriate for the sampling objective.

If multiple sample zones within a well, zone isolation using a packer or baffle device to limit in-well mixing can be used (Britt 2006; Britt and Calabria 2008). These can be attached to the Snap Sampler® trigger line or deployed separately. Installation of an upper baffle designed to isolate the unscreened well casing or well headspace may be desired. The upper baffle will limit mixing of "stagnant" casing water with screen-interval water, an/or gas exchange with the headspace air.

1. Remove the Snap Sampler bottle(s) from its packaging.

2. Turn the translucent (PFA) vial cap on each end of the bottle slightly to release the o-ring.

3. Insert the bottle into the upper end of the sampler as shown in Figure 2.

4. Place the sampler connector onto each end of the sampler; turn clockwise to align the set pins/screw (Figure 3); then gently tighten the set screw with the Snap Driver Tool (Figure 4).

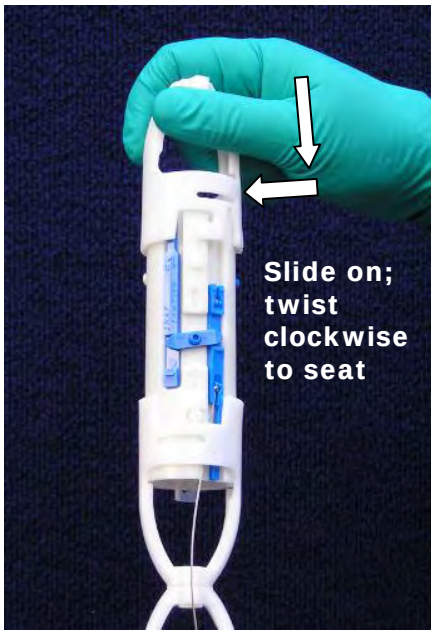

FIGURE 3

FIGURE 4

5. Pivot the vial cap (Snap Cap) into its seat with the Snap driver. Push up the retainer pin through the lower hole in the vial cap. Repeat for all Snap Caps (Figure 5). If an O-ring should dislodge from its seat during setting, remove the sample bottle and carefully replace it in the o-ring groove; repeat setting procedure.

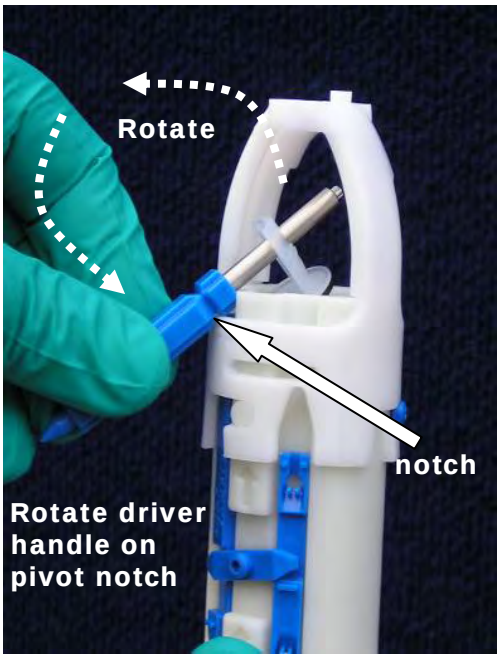

FIGURE 5

6. For the manual trigger, feed ball-fitting end of trigger cable through lower release pin groove; click tube fitting into connector (Figure 6).

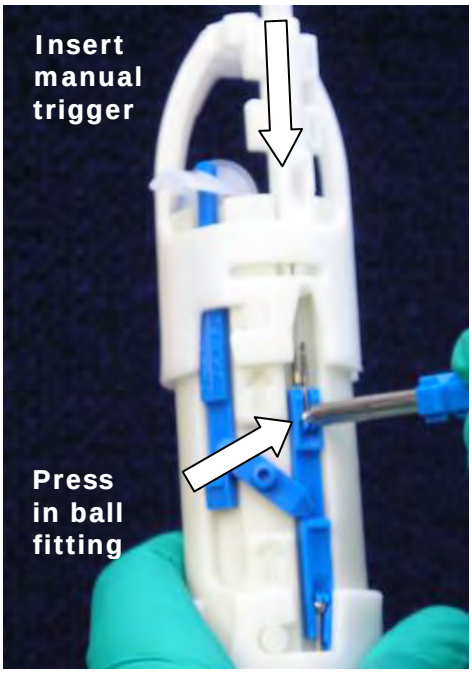

FIGURE 6

7. Press in the ball fitting to attach to lower release pin (Figure 6).

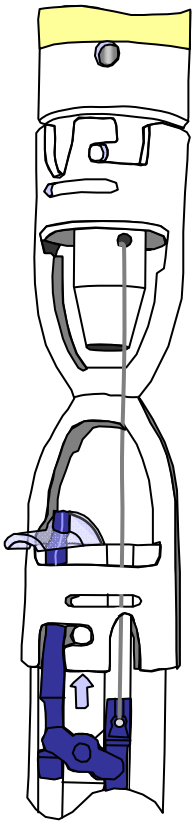

Figure 7

8. For the electric or pneumatic trigger system, attach the wireline from the plunger (Figure 7).

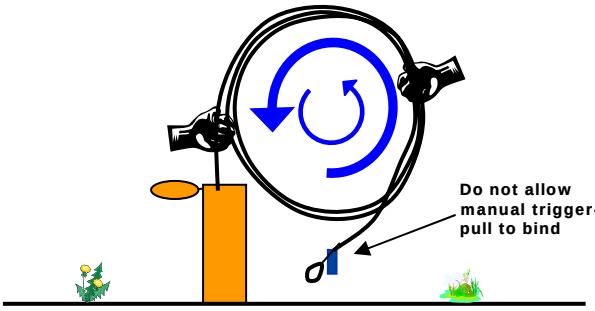

Figure 8

9. Deploy to selected depth with trigger cable/tubing and attach to well head docking station (Figure 8, Figure 9).

FIGURE 9

10. Additional Snap Samplers® can be deployed with separate trigger tubing cables or in series with a single trigger. If separate triggers are used, the ID tags should be marked at the surface for later reference.

11. The recommended minimum deployment period is two weeks. There may be hydrogeologic conditions where a shorter deployment is possible, but two weeks would generally assure a return of the well to its steady-state condition (Vroblesky, 2001a, 2001b).

12. The Snap Sampler® can be deployed for extended periods. It is suggested that quarterly or semi-annual sampling can be done with one mobilization per event, with one set of bottles collected and the following event's bottles deployed immediately afterward. With this approach all equipment is stored in the well and no special deployment activities are required in advance of routine monitoring.

Sample Collection Activities

When the deployment interval is completed, the sampler should be triggered from the well head without disturbing the sampler position. For the manual trigger, the cable end should be pulled with sufficient force to move the cable up the tubing. Depending on the length of the cable, closure of the samplers usually can be felt through the trigger line when the samplers trip. If more than one triggering line is present, closure should proceed from the deepest to the shallowest sampler position to limit capture of sediment re-suspended by closure of the first sampler.

After the sampler is triggered and retrieved, the upper connector should be removed by loosening the retainer screw and turning the connector. The bottom connector piece does not need to be disassembled to remove the bottles.

While the bottles should not leak with reasonable handling, they should not be agitated (to check for headspace, for example) until after the screw caps are tightened. Under most circumstances there will be no air in the vials at retrieval. However, some field conditions, including deep groundwater, natural effervescence, or other causes, may allow some small air bubbles to be present in the bottle or on the spring when retrieved. This is not a concern if the air was entrained while deployed. Air adhering to the vial during deployment would be in equilibrium with the sample water upon sampler closure. Therefore it is not

"headspace air" into which sample VOCs could volatilize. Deployment air could be attached to the spring or cap, and should not be larger than 1-2 mm upon retrieval. Pankow (1986) showed that small headspace air from these or other causes do not substantially impact results for most common volatiles. If air bubbles are larger than 5 mm before placing the screw cap, or water is clearly leaking from the vial, the sample may not have sealed properly and should be discarded. (A failure rate of less than 1% should be anticipated).

There are no special laboratory preparation procedures for Snap Sample bottles. The bottles can be analyzed using common 40-ml autosamplers. The spring inside the VOAs is PFA Teflon-coated and will deflect out of the way of the extraction needle during insertion.

The appendices include step-by-step instructions for deployment and bottle preparation procedures.

Appendix A contains step-by-step field procedures for deployment of both 40 ml Snap Sampler VOAs and 125 ml Snap Sampler POLY bottles.

Appendix B contains step-by-step procedures for preparation of both 40 ml Snap Sampler VOAs and 125 ml Snap Sampler POLY bottles.

DECONTAMINATION PROCEDURES

The electronic water level indicator probe/steel tape, the water-quality field parameter sensors and Snap Sampler® groundwater sampling device should be decontaminated by the following procedures:

1. The water level meter will be hand washed with phosphate-free detergent and a scrubber, then thoroughly rinsed with distilled water.

2. Water quality field parameter sensors with distilled water between sampling locations where utilized. No other decontamination procedures are necessary or recommended for these probes since they are sensitive. After the sampling event, the sensors must be cleaned and maintained per the manufacturer's requirements.

3. For non-dedicated applications, the Snap Sampler® and trigger tubing must be pressure-sprayed or bristle-brush scrubbed with soapy water, tap water, and distilled water. Depending on the condition of the Snap Sampler®, the release pin mechanism may need to be disassembled to effectively clean the pins and grooves. Disassembly can be accomplished by removing the lever screw.

FIELD QUALITY CONTROL

Quality control (QC) samples must be collected to verify that sample collection and handling procedures were performed adequately and that they have not compromised the quality of the groundwater samples. The appropriate EPA or other appropriate program guidance must be consulted in preparing the field QC sample requirements for the site-specific Quality Assurance Project Plan (QAPP).

There are five primary areas of concern for quality assurance (QA) in the collection of representative groundwater samples:

1. Obtaining a groundwater sample that is representative of the aquifer or zone of interest in the aquifer. Verification is based on the field log documenting that the field procedures were followed appropriately during sample deployment and collection.

2. Ensuring that the sampling devices are made of materials, and utilized in a manner that will not interact with or alter the analyses.

3. Ensuring that results generated by these procedures are reproducible; therefore, the sampling scheme should incorporate co-located samples (duplicates).

4. Preventing cross-contamination. Sampling should proceed from least to most contaminated wells, if known. Field equipment blanks should be incorporated for all sampling, and decontamination of the equipment is therefore required.

5. Properly preserving, packaging, and shipping samples.

All field QC samples must be prepared the same as regular investigation samples with regard to sample volume, containers, and preservation. The chain-of custody procedures for the QC samples will be identical to the field groundwater samples. The following are QC samples that should be collected during the sampling event:

Field duplicates	1 per 20 samples
Matrix spike	1 per 20 samples
Matrix spike dup.	1 per 20 samples
Equipment blank	per requirements
Trip blank (VOCs)	1 per sample cooler
Temperature blank	1 per sample cooler

HEALTH AND SAFETY CONSIDERATIONS

Depending on the site-specific contaminants, various protective programs must be implemented prior to sampling the first well. The site Health and Safety Plan should be reviewed with specific emphasis placed on the protection program planned for the sampling tasks. Standard safe operating practices should be followed, such as minimizing contact with potential contaminants in both the liquid and vapor phase through the use of appropriate personal protective equipment.

Depending on the type of contaminants expected or determined in previous sampling efforts, the following safe work practices should be employed:

Particulate or metals contaminants

1. Avoid skin contact with, and incidental ingestion of sample water.

2. Use protective gloves and splash protection.

Volatile organic contaminants

1. Avoid breathing constituents venting from well.

2. Pre-survey the well head space with an appropriate device as specified in the site Health and Safety Plan.

3. If monitoring results indicate elevated organic constituents, sampling activities may be conducted in elevated protective equipment (e.g. level C protection). At a minimum, skin protection will be afforded by disposable protective clothing, such as Tyvek®, appropriate gloves and face protection.

General practices should include avoiding skin contact with water from preserved sample bottles, as this water will have pH less than 2 or greater than 10. Also, when field acidifying VOA bottles, hydrochloric acid fumes may be released and should not be inhaled. Acid should not contact skin, eyes, or unprotected clothing.

POST-SAMPLING ACTIVITIES

Several activities need to be completed and documented once groundwater sampling has been completed.

These activities include, but are not limited to the following:

1. Ensuring that all field equipment has been decontaminated and returned to proper storage location. Once the individual field equipment has been decontaminated, tag it with date of cleaning, site name, and name of individual responsible.

2. Processing all sample paperwork, including copies provided to the appropriate sample handling and tracking facility.

3. Compiling all field data for site records.

4. Verifying all analytical data processed by the analytical laboratory against field sheets to ensure all data has been returned to sampler.

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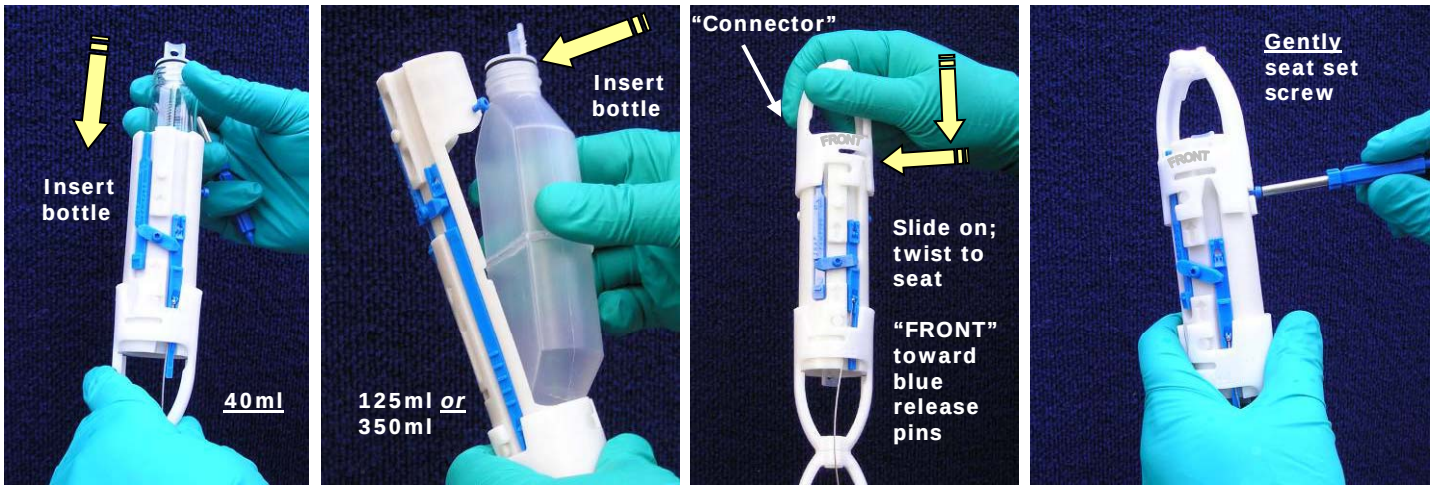
SNAP SAMPLER DEPLOYMENT (PAGE 1 OF 2)

INSERTING AND SECURING BOTTLES

Version 02-2011

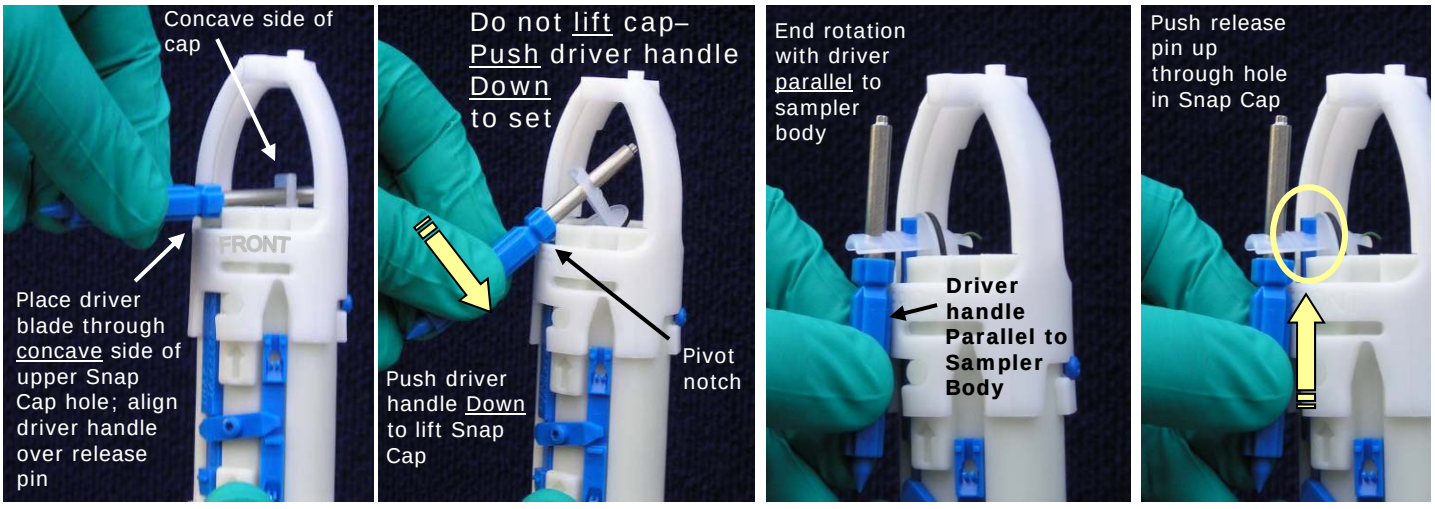


(A) (B) (C) (D)

A) Insert 40 ml VOA into top of 40 ml Snap Sampler…
B) Insert 125ml or 350ml POLY into back side of 125 ml Snap Sampler.
C) Slide twist-on "Connector" over sampler and twist clockwise to seat—the word "FRONT" should appear above the blue release pins.
D) Gently secure connector with blue set screw.
E) Set All Snap Caps. Insert Snap Driver blade into the upper hole of the concave side of Snap Cap; align driver over the release pin that you will set the Snap Cap.
F) Push down on Snap driver handle to lift Snap Cap; grasp driver or use thumb to push driver down; keep fingers clear of the under-side of the driver tool.
G) Pivot on the notch in the driver handle until driver handle is flush/parallel with sampler body and Snap Cap is in its seat.
H) Push release pin up through lower hole in the Snap Cap; repeat "E" through "H" for each Snap Cap and all Samplers.

SETTING SNAP CAPS

(E) (F) (G) (H)



SNAP SAMPLER DEPLOYMENT (PAGE 2 OF 2)

ATTACHING MANUAL TRIGGER

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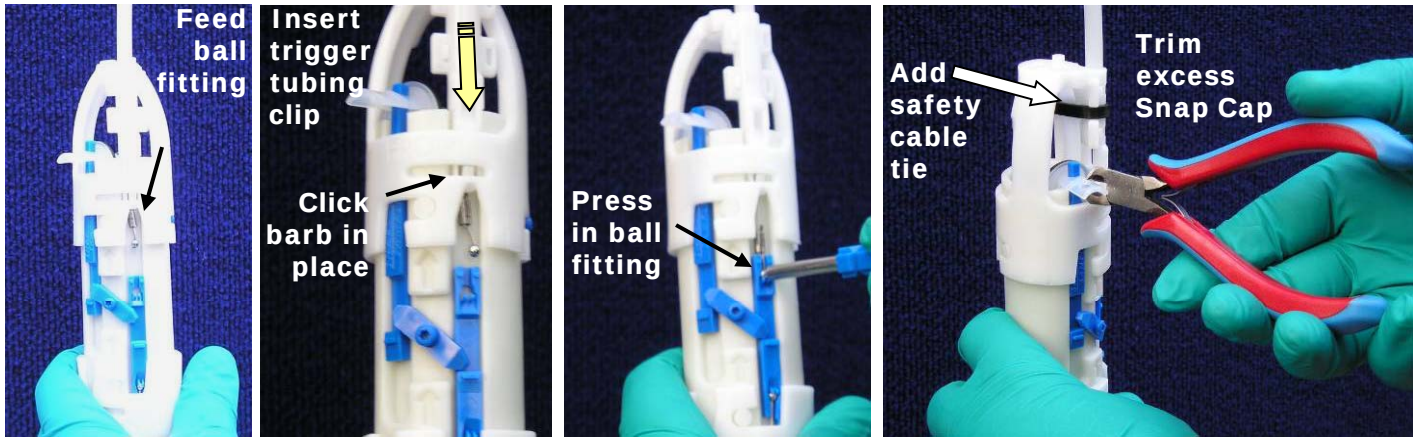


(A) (B) (C) (D) (E)

A) ***Insert trigger in right/upper release pin groove—feed ball fitting first.***

B) ***With trigger barb facing out, insert trigger until barb clicks into position.***

C) ***Press ball fitting into release pin using Snap Driver Tool.***

D) ***Attach safety cable tie.***

E) ***Trim protruding Snap Caps between ribs (required for smaller diameter wells). Where more than one sampler is attached to one trigger, connect ball-end connector cables between each sampler (not shown).***

F) ***Lower Sampler to depth; seat trigger clip into ramp on Dock Ring.***

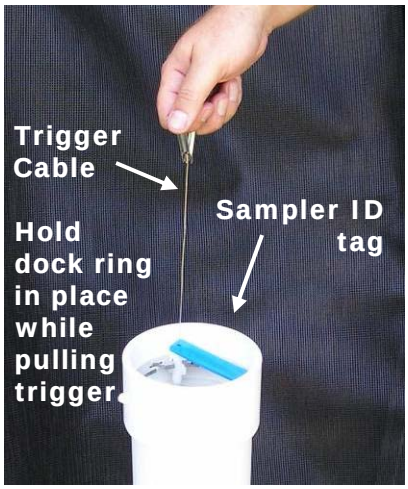
G) ***Close and lock well cap.***

H) ***To sample, pull trigger cable while holding Dock Ring in place; remove trigger from dock and retrieve samplers.***

WELL HEAD DOCK ATTACHMENT

(F) (G) (H)

Slide trigger clip onto Dock Ring. Dock Ring "ramp" should face upward.

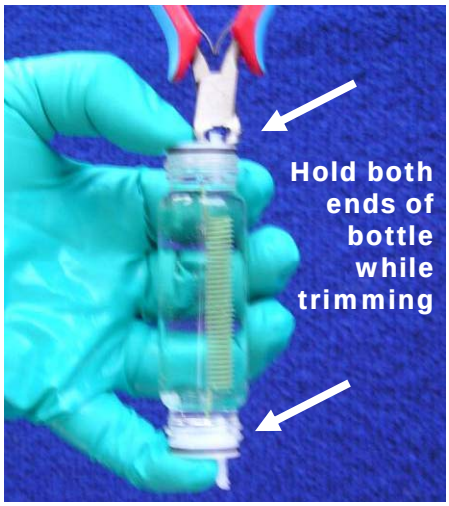


Snap Sampler Bottle Preparation
40 ml VOA

Trim Snap Caps

Version 01-2011

(A)



(B)

(C)

A) ***Snap Sampler VOA, removed from Snap Sampler.***

B) ***[UNPRESERVED] Carefully trim Snap Caps as flush as possible. To trim first Snap Cap, hold ends with finger and thumb; clip carefully--making sure not to dislodge seal. Carefully screw on first septa cap. Trim second Snap Cap; clip carefully--making sure not to dislodge seal; screw on second septa cap, then re-tighten both septa caps to secure.***

C) ***Prepared, unpreserved bottle.***

D) ***[PRESERVED] After securing the first end of the Snap Cap, trim the second Snap Cap; add 2-3 drops of preservative to the cavity in the Snap Cap.***

E) ***[PRESERVED] Pierce the Snap Cap membrane with the pointed end of the Driver Tool to allow preservative to mix with the sample; add preservative to form a meniscus, then secure the second septa cap.***

F) ***Prepared, preserved bottle.***

Add Preservative (as required)

(D)

(E)

(F)

Snap Sampler Bottle Preparation
125 ml Poly

(For analytes where air exposure after collection is not a concern,
Otherwise follow preparation procedure for 40 ml VOA on reverse)

Trim/Remove Snap Caps

Version 01-2011

(A)

(B)

(C)

A) ***Remove Snap POLY Bottle from Snap Sampler.***

B) ***Trim tabs on one Snap Cap (see step "B" on reverse); SECURE SEPTA CAP ON THIS END (you will remove it in step "E" below). This is an important step or you will lose your sample in step D!***

C) ***Invert bottle and remove second Snap Cap from the spring by hooking the internal Spring over the lip of the bottle.***

D) ***Using lip of septa cap, lift the spring hook form the edge of the bottle and release into the bottle; secure septa cap.***

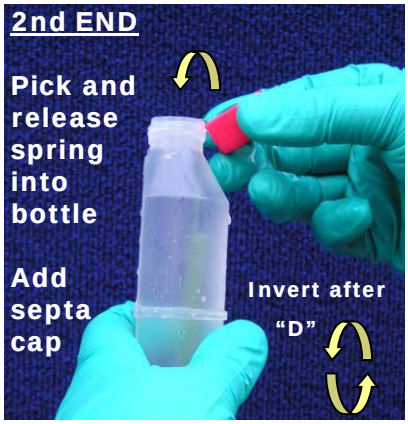
E) ***Re-invert the bottle; remove septa cap; remove the Snap Cap and spring.***

F) ***Add preservative (if required), secure septa cap.***

G) ***Prepared bottle***

Remove spring

(D)



(E)

(F)

(G)

ATTACHMENT 2

Field Documentation Forms

DRUM TRACKING LOG

SITE NAME: Fumex Sanitation Site

Drum #	Boring/MW#	Date Drilled/ Sampled	Related Sample #	Description of Drum Contents	Signature

LOW FLOW SAMPLING SHEETS

SITE NAME: Fumex Sanitation Site

DATE: **WELL #:**

SAMPLE TIME: **DEPTH OF PUMP:**

WEATHER CONDITIONS: **SAMPLERS:**

TIME	VOLUME PURGED (GALS)	DEPTH TO WATER (FT TIC)	FLOW RATE (ml/min)	DRAWDOWN FEET	ph (+/- 0.1 SU)	SPECIFIC COND. mS/cm (+/- 3%)	TURBIDITY NTUs (+/- 10%)	DISSOLVED OXYGEN mg/L (+/- 10%)	TEMP ^{0}C (+/- 10%)	REDOX POTENTIAL mV (+/- 10 mv)

The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

SAMPLE SCREENING TRACKING LOG

SITE NAME: Fumex Sanitation Site

SAMPLE ID	SAMPLE DATE	SAMPLE TIME	MATRIX	DUPLICATE (Y/N)	OFFSITE (Y/N)	COMMENTS

SAMPLE TRACKING LOG

SITE NAME/SAMPLE EVENT: Fumex Sanitation Site

LDL VOC LAB: _____ INORGANIC CLP LAB: _____

CLP CASE NO: _____ ORGANIC CLP LAB: _____ SUBCONTRACT LAB: _____

SAMPLE ID	SAMPLE DATE	SAMPLE TIME	MATRIX	DEPTH (feet)	ORGANIC CLP NO.	INORGANIC CLP NO.	SUBCONTRACT ANALYSIS	QA/QC

ANALYSIS SUMMARY: _____

_____

SYNOPTIC WATER LEVEL MEASUREMENTS

SITE NAME: Fumex Sanitation Site

DATE: _____

Time	Well Number	Depth to Water	Total Depth	Product/ Thickness	HNu Headspace Readings	Notes/Well Condition

All readings are from Top of Inner Casing (TIC)

Appendix F

Site-Wide Inspection Form

Fumex Sanitation Site-Wide Inspection Form
Site Number: 130041

Inspection Type: ☐ Annual ☐ Emergency

Institutional Control Compliance

Current Site Use: ☐ Commercial ☐ Industrial ☐ Unused Other: _____

Engineering Control Compliance

Asphalt Cover

General Condition ☐ As New ☐ Satisfactory ☐ Poor

Cracks ☐ No
☐ Yes (describe extent and locations): _____
_____
_____
_____
_____

Depressions/ Bird-baths ☐ No
☐ Yes (describe extent and locations): _____
_____
_____
_____
_____

Other Irregularities ☐ No
☐ Yes (describe extent and locations): _____
_____
_____
_____
_____

Storm Water Trench Drain

☐ Trench Drain is in good condition with no blockages.
If not, describe: _____
_____
_____
_____
_____

Fencing and Gate

☐ Fence and gate are in good condition and fully intact. Gate lock is in place and functional.
If not, describe: _____
_____
_____
_____
_____

Garage Interior Epoxy Resin Floor Coating and Industrial Matting

☐ Epoxy and Matting are in good condition and fully intact.
If not, describe: _____
_____
_____
_____
_____

Garage Interior Sheetrock Walls

☐ Sheetrock walls covering remaining ACM mastic are intact.
If not, describe: _____
_____
_____
_____
_____

Building

Describe the general condition of the building. Note any roof leaks, vandalism, etc.
_____
_____
_____
_____
_____

Appendix G

Consent Order

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Settlement For the Reimbursement of Administrative Costs for Inactive Hazardous Waste Disposal Site, Under Article 27, Title 13, and Article 71, Title 27 of the Environmental Conservation Law of the State of New York by AJM RE Holdings XI, LLC, Settling Respondent.	**ORDER ON CONSENT** **and** **ADMINISTRATIVE** **SETTLEMENT** Index # W1-1184-14-06 Site # 130041

WHEREAS,

1. A. The New York State Department of Environmental Conservation (the "Department") is responsible for enforcement of the Environmental Conservation Law of the State of New York ("ECL") and the New York State Finance Law ("SFL") and such laws provide the Department authority to enter into this Order on Consent and Administrative Settlement (the "Order").

B. The Department is responsible for carrying out the policy of the State of New York to conserve, improve and protect its natural resources and environment and control water, land, and air pollution consistent with the authority granted to the Department and the Commissioner by Article 1, Title 3 of the ECL.

C. The Department also asserts that it has the authority, *inter alia*, to provide for the prevention and abatement of all water, land, and air pollution. *See, e.g.*, ECL 3-0301.1.i.

D. This Order is issued pursuant to the Department's authority under, *inter alia*, ECL Article 27, Title 13, ECL Article 71, Title 27, and ECL 3-0301 and Section 97-b of the SFL, and resolves Settling Respondent's liability to the State under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA") 42 U.S.C. § 9601 *et seq.*, to the extent set forth herein. Accordingly, to the extent set forth in Subparagraph XIII.E, pursuant to CERCLA § 113(f)(3)(B), 42 U.S.C. § 9613(f)(3)(B), Respondent may seek contribution from persons who are not parties to this Order.

E. The Commissioner of the New York State Department of Environmental Conservation is the designated Trustee for Natural Resources in accordance with applicable state and federal law.

F. 6 NYCRR 375-2.11(c)(1)(ii) authorizes the Department to expend money of the hazardous waste remedial fund provided for at SFL section 97-b to pay for the cleanup or

restoration to its original state of any area where contaminants were disposed of or possessed unlawfully contrary to ECL 27-0914. 6 NYCRR 375-2.11(c)(1)(iii) authorizes the Department to expend moneys of the hazardous waste remedial fund provided for as SFL section 97-b to pay for site identification, classification, and investigation activities including, but not limited to testing, analyses, and record searches and the Department's related administrative activities.

2. AJM RE Holdings XI, LLC is the owner, having taken title on July 1, 2014 of that certain property located at 131 Herricks Road, Garden City Park, Town of North Hempstead, Nassau County and more specifically identified as Tax Map Section 33, Block 174, Lot 58 (hereinafter, the "Site"). Exhibit "A" is a map of the Site showing its general location.

3. The Site is currently listed in the *Registry of Inactive Hazardous Waste Disposal Sites in New York State* as "Fumex Sanitation" Site No. 130041, with a Class "4" classification, pursuant to ECL 27-1305, indicating that the site is "properly closed – requires continued management."

4. AJM RE Holdings XI, LLC ("Settling Respondent") is a domestic limited liability company with a mailing address at P.O. Box 234800, Great Neck, NY 11023-4800. Settling Respondent maintains that neither it, nor its members, officers, or directors have any relationship to other persons that have liability for the Site, other than the contractual arrangement for purchase of the Site by AJM RE Holdings XI, LLC.

5. Pursuant to the legal authorities stated herein, the Department has, and anticipates the need to spend additional monies of the hazardous waste remedial fund for the implementation of a Remedial Program,[1] including the investigation and remediation of hazardous wastes and/or substances identified on or in proximity to the Site. These expenditures are authorized by and in conformance with relevant and applicable state and federal law.

6. The Department alleges for purposes of this Order only that Settling Respondent is liable for the reimbursement of the Department's administrative response costs (including any legally accrued interest) for the investigation and remediation of hazardous wastes and/or substances existing on the Site in accordance with applicable state and federal law.

7. Settling Respondent denies any liability for the reimbursement of the Department's administrative response costs for this Site. Furthermore, Settling Respondent, in entering into this Order, does not admit any liability or fault with respect to any matter arising out of or relating to the Site.

8. The goals of this Order are for (i) Settling Respondent to undertake the obligation for groundwater monitoring, as set forth below; (ii) Settling Respondent to undertake the maintenance of engineering controls on the Site, as set forth below; (iii) Settling Respondent to grant a replacement Environmental Easement to the Department for the Site as provided for in ECL Article 71, Title 36, as set forth below; (iv) the Department to amend, consistent with this

---

[1] As the term is defined in 6 NYCRR §375-1.2(ap).

Order, that certain Site Management Plan dated March 2012, as previously amended and approved by the Department; (v) the Department to release and covenant not to sue the Settling Respondent for the investigation and remediation of the Site and for the reimbursement of Site related response costs upon the execution of this Order; and (vi) the Department to provide Settling Respondent with contribution protection provided by CERCLA Section 113(f)(2), 42 U.S.C. § 9613(f)(2), and/or any other applicable federal or state law for matters addressed by this Order.

9. Settling Respondent consents to the Department's issuance of this Order without an admission or finding of liability of any kind. The parties recognize that the implementation of this Order will expedite the cleanup of the Site, and that this Order is mutually acceptable, fair, reasonable, and in the public interest.

10. Solely with regard to the matters set forth herein, the Settling Respondent hereby waives any right to a hearing as may provided by law, consents to the issuance and entry of this Order, and agrees to be bound by its terms. Settling Respondent consents to and agrees not to contest the authority or jurisdiction of the Department to issue or enforce this Order, and agrees not to contest the validity of this Order or its terms.

NOW, having considered this matter and being duly advised, **IT IS ORDERED THAT**:

I. Site Specific Definitions

Unless otherwise expressly provided herein, terms used in this Order which are defined in ECL Article 27 or in regulations promulgated thereunder shall have the meaning assigned to them under said statute or regulations, or amendments thereto. The following terms shall have the following meaning:

A. The Site: The real property designated by the Department as New York State Inactive Hazardous Waste Site Number 130041, approximately 0.5 acres in size, known as the "Fumex Sanitation" located at 131 Herricks Road, Garden City Park, Town of North Hempstead, Nassau County and more specifically identified as Tax Map Section 33, Block 174, Lot 58. Exhibit "A" is a map of the Site showing its general location.

B. Covered Contamination: Any release, as that term is defined in 6 NYCRR § 375-1.2(am), on or under the Site or that has or is emanating from the Site of hazardous waste, as that term is defined in 6 NYCRR § 375-1.2(w) which occurred prior to the effective date of this Order.

II. Monitoring and Maintenance in lieu of Settlement Payment

A. Settling Respondent will undertake at its cost and expense groundwater monitoring consisting of sampling of 10 wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7S/7D, MW-10R, and MW-11R) for pesticides only for up to five (5) sampling events occurring annually or at such longer time period as the Department may determine. Such groundwater monitoring shall commence with the 2014 sampling to occur in late September – early October timeframe. Further, at the conclusion of groundwater monitoring, as determined

by the Department, Settling Respondent will properly decommission all 14 wells in the monitoring well network for the Site.

B. Settling Respondent will undertake at its cost and expense the maintenance of the following engineering controls as they are described in the Site Management Plan: soil and asphalt cover system, epoxy resin coating and industrial matting, bridging encapsulant, and fencing, consistent with those engineering controls present at the Site on the date hereof.

III. Appropriate Care/Cooperation

Settling Respondent shall exercise appropriate care[2] at the Site with respect to the Covered Contamination and shall comply with all applicable local, State, and federal laws and regulations. Settling Respondent shall cooperate fully with the Department in the implementation of any additional response[3] actions needed to address Covered Contamination at the Site and shall not interfere with such response actions. Settling Respondent shall affirmatively ensure that any development activities on the Site are in compliance with all applicable local, State, and federal laws and regulations, including but not limited to 6 NYCRR §§ 375-1.11(d) and 375-2.11(a).

IV. Certification

By entering into this Order, Settling Respondent certifies that it has not caused or contributed to the release or threatened release of a hazardous waste from or onto the Site, nor generated, transported, or disposed of, arranged for, or caused the generation, transportation, or disposal of hazardous waste from or onto the Site.

V. Environmental Easement

A. Settling Respondent shall submit to the Department for approval a replacement Environmental Easement ("EE") to run with the land in favor of the State which complies with the requirements of ECL Article 71, Title 36, and 6 NYCRR § 375-1.8(h)(2) for the Site.

B. The EE for the Site must, *inter alia*, limit the use and development of the property to commercial use as defined in 6 NYCRR § 375-1.8(g)(2)(iii) or to industrial use as defined in 6 NYCRR § 375-1.8(g)(2)(iv); require compliance with the Department-approved Site Management Plan; restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by New York State Department of Health or Nassau County Department of Health and without the Department's written approval;

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[2] As the term is defined in 42 U.S.C. § 9601(40)(D).

[3] As that term is defined in 42 U.S.C. § 9601(25).

and require the property owner to complete and submit to the Department a periodic certification of the institutional and engineering controls.

C. Upon acceptance of the EE by the State, Settling Respondent shall file, and record the EE in compliance with ECL 71-3605.8.

VI. Access

A. Settling Respondent hereby consents, upon reasonable notice under the circumstances presented, to grant entry upon the Site by any duly designated officer or employee of the Department or any State agency having jurisdiction with respect to the hazardous wastes/substances on the Site; by any agent, consultant, contractor, or other person so authorized by the Commissioner for assuring compliance with the Site Management Plan.

B. Settling Respondent shall ensure that lessees, and sublessees of the Site provide the same access.

VII. Release and Covenant Not to Sue

A. The Department and the Trustee of New York State's natural resources ("Trustee"), hereby release and covenant not to sue, and shall forbear from bringing any action, proceeding, or suit pursuant to the Environmental Conservation Law, or the State Finance Law, and from referring to the Attorney General any claim for recovery of costs incurred by the Department, against the Settling Respondent, its secured creditors and insurers, and its successors and assigns who are additional signatories to this Order, for the further investigation and remediation of the Site, including but not limited to an action pursuant to Section 9607(a) of CERCLA, 42 U.S.C. § 9607(a), and for natural resource damages, based upon the release or threatened release of Covered Contamination, provided that: (a) Settling Respondent commences and implements groundwater monitoring in accordance with Paragraph II; (b) a replacement Environmental Easement that is approved by the Department as satisfying the requirements of Paragraph V is recorded on title of the Site property; (c) Settling Respondent continues to exercise appropriate care and cooperation as required in Paragraph III; and (d) Settling Respondent continues to allow access as required by Paragraph VI. Nonetheless, the Department and the Trustee hereby reserve all of their respective rights concerning, and such release and covenant not to sue shall not extend to any further investigation or remedial action the Department deems necessary:

- due to off-Site migration of petroleum;[4]
- due to environmental conditions or information related to the Site which was unknown at the time this Order was issued and which indicate that this Order cannot be implemented with sufficient protection of human health and the environment;
- due to Settling Respondent's failure to implement the Order to the Department's satisfaction; or

[4] As that term is defined in Navigation Law § 172[15].

- due to fraud committed by Settling Respondent in entering into or implementing the Order.

Additionally, the Department and the Trustee hereby reserve all of their respective rights concerning, and any such release and covenant not to sue shall not extend to any Settling Respondent who causes or allows a release or a threat of release at the Site of any hazardous waste (as that term is defined at 6 NYCRR § 375-1.2(w)) or petroleum (as that term is defined in Navigation Law § 172[15]), other than Covered Contamination; nor to any Settling Respondent who is otherwise responsible under law for the remediation of the Covered Contamination independent of any obligation that party may have respecting same resulting solely from the execution of this Order on Consent and Administrative Settlement.

Notwithstanding the above, however, with respect to any claim or cause of action asserted by the Department or the Trustee, the one seeking the benefit of this release and covenant not to sue shall bear the burden of proving that the claim or cause of action, or any part thereof, is attributable solely to the Covered Contamination.

Notwithstanding any other provision in this release, covenant not to sue, and forbearance,

- if with respect to the Site there exists or may exist a claim of any kind or nature on the part of the New York State Environmental Protection and Spill Compensation Fund against any party, nothing in this order shall be construed or deemed to preclude the State of New York from recovering such claim.

- except as provided in this Order, nothing contained in this Order shall be construed as barring, diminishing, adjudicating, or in any way affecting any of the Department's or Trustee's rights (including, but not limited to, the right to recover natural resources damages) with respect to any party, including Respondent.

- nothing contained in this Order shall prejudice any rights of the Department or Trustee to take any investigatory or remedial action it deems necessary if Settling Respondent fails to comply with the Order or if contamination other than Covered Contamination is encountered at the Site.

- nothing contained in this Order shall be construed to prohibit the Commissioner or his duly authorized representative from exercising any summary abatement powers.

- nothing contained in this Order shall be construed to affect the Department's right to terminate the Order and this "Release and Covenant Not to Sue" under the terms of the Order at any time during its implementation if Settling Respondent fails to comply substantially with the Order's terms and conditions.

This release and covenant not to sue shall be null and void, *ab initio*, in the event of fraud relating to the execution or implementation of this Order or in the event of the Settling Respondent's failure to materially comply with any provision of this Order.

Nothing herein shall be construed as barring, diminishing, adjudicating, or in any way affecting any legal or equitable rights or claims, actions, suits, causes of action or demands

whatsoever that: (i) Settling Respondent may have against anyone other than the Department, including but not limited to rights of contribution under § 113(f)(B)(3) of CERCLA, 42 U.S.C. § 9613(f)(B)(3); and (ii) the Department may have against anyone other than the Settling Respondent and its directors, officers, employees, agents, and servants that were not responsible under law for the development and implementation of a Remedial Program at the Site prior to the effective date of this Order, and their respective secured creditors.

B. Successors and assigns of Settling Respondent who duly execute and deliver the Consent of Additional Signatory form attached hereto as Exhibit "B" to the Department along with proof that the person executing such form is authorized to bind the party on whose behalf he/she is signing are entitled to the benefits of the Release and Covenant Not to Sue in Subparagraph VII.A.

C. The benefits of the Release and Covenant Not to Sue set forth in Subparagraph VII.A. shall survive termination of this Order pursuant to Subparagraph XII.A.

VIII. Indemnification

Respondent shall indemnify and hold the Department, the State of New York, the Trustee of the State's natural resources, and their representatives and employees harmless as provided by 6 NYCRR § 375-2.5(a)(3)(i).

IX. Transfer of Ownership Interest

A. If the Settling Respondent proposes to convey the whole or any part of its ownership interest in the Site, or become aware of such conveyance, the Settling Respondent shall, not fewer than forty-five (45) days before the date of conveyance, or within forty-five (45) days after becoming aware of such conveyance, notify the Department in writing of the identity of the transferee and of the nature and proposed or actual date of the conveyance, and shall notify the transferee in writing, with a copy to the Department, of the applicability of this Order. However, such obligation shall not extend to a conveyance by means of a corporate reorganization or merger or the granting of any rights under any mortgage, deed, trust, assignment, judgment, lien, pledge, security agreement, lease, or any other right accruing to a person not affiliated with the Settling Respondent to secure the repayment of money or the performance of a duty or obligation.

B. In the event of an assignment or transfer of the Site or an assignment or transfer of an interest in the Site, the assignee or transferee must consent in writing to be bound by the terms of this Order, and upon delivery to the Department of a validly executed Consent of Additional Signatory, the transferor's obligations hereunder shall terminate.

X. Reservation of Rights

A. The release and covenant not to sue set forth in Subparagraph VII.A does not pertain to any matters other than those expressly specified in Subparagraph VII.A. The Department reserves and this Order is without prejudice to all rights against Settling Respondent with respect to all other matters, including but not limited to, (a) claims based on a failure by

Settling Respondent to meet a requirement of this Order, including but not limited to Paragraph II (Monitoring and Maintenance in lieu of Settlement Payment), Paragraph VI (Access), Paragraph III (Appropriate Care/Cooperation), and Paragraph V (Environmental Easement).

B. Except as provided in the release and covenant not to sue in Subparagraph VII.A after its issuance and except as otherwise provided in this Settlement Agreement, nothing contained in this Order shall be construed as barring, diminishing, adjudicating, or in any way affecting any of the Department's or the Trustee's rights or authorities, including, but not limited to, the right to recover natural resource damages, the right to take any investigatory or remedial action deemed necessary, and the right to exercise summary abatement powers with respect to any person, including Settling Respondent.

C. Except as otherwise provided in this Order, Settling Respondent specifically reserves all rights and defenses under applicable law respecting any Departmental assertion of remedial liability and/or natural resource damages against Settling Respondent, and further reserves all rights respecting the enforcement of this Order, including the rights to notice, to be heard, to appeal, and to any other due process. The existence of this Order or Settling Respondent's compliance with it shall not be construed as an admission of any liability, fault, wrongdoing, or breach of standard of care by Settling Respondent, and shall not give rise to any presumption of law or finding of fact, or create any rights, or grant any cause of action which shall inure to the benefit of any third party. Further, Settling Respondent reserves such rights as it may have to seek and obtain contribution, indemnification, and/or any other form of recovery from its insurers and from other potentially responsible parties or their insurers for past or future response and/or cleanup costs or such other costs or damages arising from the contamination at the Site as may be provided by law, including but not limited to rights of contribution under section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B).

XI. Communications

A. All written communications required by this Order shall be transmitted by United States Postal Service, by private courier service, or hand delivered as follows:

1. Communications from the Settling Respondent shall be sent to:

David J. Chiusano
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, New York 12233-7017
djchiusa@gw.dec.state.ny.us

Rosalie K. Rusinko, Esq.
Office of General Counsel
New York State Department of Environmental Conservation
100 Hillside Avenue, Suite 1W
White Plains, New York 10603-2860
rkrusink@gw.dec.state.ny.us
Correspondence only.

2. Communications from the Department to the Settling Respondent shall be sent to:

AJM RE Holdings XI, LLC
PO Box 234800
Great Neck, NY 11023-4800
Attn: Mr. Adam Mann

Mark A. Chertok, Esq.
Sive Paget & Riesel, P.C.
460 Park Avenue
New York, NY 10022
mchertok@sprlaw.com

XII. Termination

A.

Should the release and covenant not to sue set forth in Subparagraph VII.A herein become null and void, *ab initio*, in the event of fraud in the execution or implementation of this Order, or in the event of Settling Respondent's failure to materially comply with any provision of this Order then neither this Order nor its termination shall affect any liability of Settling Respondent for payment of State Costs, including implementation of removal and remedial actions, interest, enforcement, and any and all other response costs as defined in CERCLA.

XIII. Miscellaneous

A. The Settling Respondent's successor and assigns shall be bound by this Order and the terms of this Order shall inure to the benefit of the Settling Respondent and the Successors. Any change in ownership or corporate status of any Respondent including, but not limited to, any transfer of assets or real or personal property, shall in no way alter such Respondent's responsibilities under this Order.

B. The paragraph headings set forth in this Order are included for convenience of reference only and shall be disregarded in the construction and interpretation of any provisions of this Order.

C. 1. The terms of this Order shall constitute the complete and entire agreement between the Department and the Settling Respondent concerning the actions required by this Order. No term, condition, understanding or agreement purporting to modify or vary any term of this Order shall be binding unless made in writing and subscribed by the party to be bound. No

informal advice, guidance, suggestion, or comment by the Department shall be construed as relieving Settling Respondent of their obligation to obtain such formal approvals as required by this Order.

2. i. Except as set forth herein, if the Settling Respondent desires that any provision of this Order be changed, they shall make timely written application to the Commissioner with copies to the parties listed in Paragraph XI herein. The Commissioner or the Commissioner's designee shall timely respond.

ii. Changes to a time frame set forth in this Order shall be accomplished by a written request to the Department's project attorney and project manager, which request shall be timely responded to in writing.

D. 1. If there are multiple parties signing this Order, the terms "Settling Respondent" and "Respondent" shall be read in the plural where required to give meaning to this Order. Further, the obligations of Settling Respondent under this Order are joint and several and the insolvency of or failure by any Settling Respondent to implement any obligations, as required under this Order, shall not affect the obligations of the remaining Settling Respondent(s) to carry out the obligations under this Order.

2. If Settling Respondent is a partnership, the obligations of all general partners, including limited partners who act as general partners, to finance and perform obligations under this Order and pay amounts owed to the Department under this Order are joint and several. In the event of the insolvency of or the failure of any of the general partners to implement the requirements of this Order, the remaining general partners shall complete all such requirements.

3. If a party duly executes the "Consent of Additional Signatory", the terms "Settling Respondent" and "Respondent" shall be read to be inclusive of such additional signatory.

E. To the extent authorized under Section 113 of CERCLA (42 U.S.C. § 9613), New York General Obligations Law § 15-108, and any other applicable law, Settling Respondent and Successors shall be deemed to have resolved their liability, if any, to the State for purposes of contribution protection provided by CERCLA Section 113(f)(2), for "matters addressed" pursuant to and in accordance with this Order. "Matters addressed" in this Order shall mean all response actions taken by Respondent to implement this Order for the Site, including but not limited to payments required under this Order, and all response costs incurred or to be incurred by any person or party in connection with the work performed under this Order, which costs have been paid by the Settling Respondent, including reimbursement or any other payment of State Costs pursuant to this Order. Furthermore, to the extent authorized under CERCLA Section 113(f)(3)(B), by entering into this administrative settlement of liability, if any, for some or all of the removal and/or response action and/or for some or all of the costs of such action, Settling Respondent are entitled to seek contribution from any person except those who are entitled to contribution protection under CERCLA Section 113(f)(2). Settling Respondent shall include the named individuals and partnerships, their officers, directors, agents, employees, successors, parents and assigns, all of whom are entitled to the full extent of protection from contribution claims or actions as provided by CERCLA Section 113(f)(2) including but not

limited to rights of contribution under section 113(f)(3)(B) of CERCLA, 42 U.S.C. 9613(f)(3)(B).

F. All activities undertaken by the Settling Respondent pursuant to this Order shall be performed in accordance with the requirements of all applicable Federal and State laws, regulations and guidance documents.

G. Unless otherwise expressly provided herein, terms used in this Order which are defined in ECL Article 27, Title 13 or in regulations promulgated under such statutes shall have the meaning assigned to them under such statutes or regulations.

H. The Settling Respondent's obligations under this Order represent payment for or reimbursement of removal or response costs, and shall not be deemed to constitute any type of fine or penalty.

I. This Order shall be filed in the Office of the Nassau County Clerk at the expense of the Settling Respondent within Five (5) days of receipt of an original signed document. Proof of recording shall be provided to the Department within thirty (30) days of the actual filing.

J. This Order may be executed for the convenience of the parties thereto, individually or in combination, in one or more counterparts, each of which for all purposes shall be deemed to have the status of an executed original and all of which shall together constitute one and the same.

K. The effective date of this order is the date on which the Commissioner or the Commissioner's designee signs this Order.

DATED:

AUG 04 2014

JOSEPH J. MARTENS
COMMISSIONER
NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

By:

Robert W. Schick, P.E., Director
Division of Environmental Remediation

CONSENT BY SETTLING RESPONDENT

Settling Respondent hereby consents to the issuing and entering of this Order on Consent and Administrative Settlement, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Order on Consent and Administrative Settlement.

AJM RE Holdings XI, LLC

By: AJM Member, LLC
Sole Member

By: _____
Adam Mann

Title: Managing Member

Date: July 11, 2014

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

On the 11th day of July, in the year 2014, before me, the undersigned, personally appeared ADAM MANN, 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.

_____
Signature and Office of individual
taking acknowledgement

BARBARA D. GOODMAN
Notary Public, State of New York
No. 30-5002830
Qualified in Nassau County
Commission Expires Oct. 13, 2014

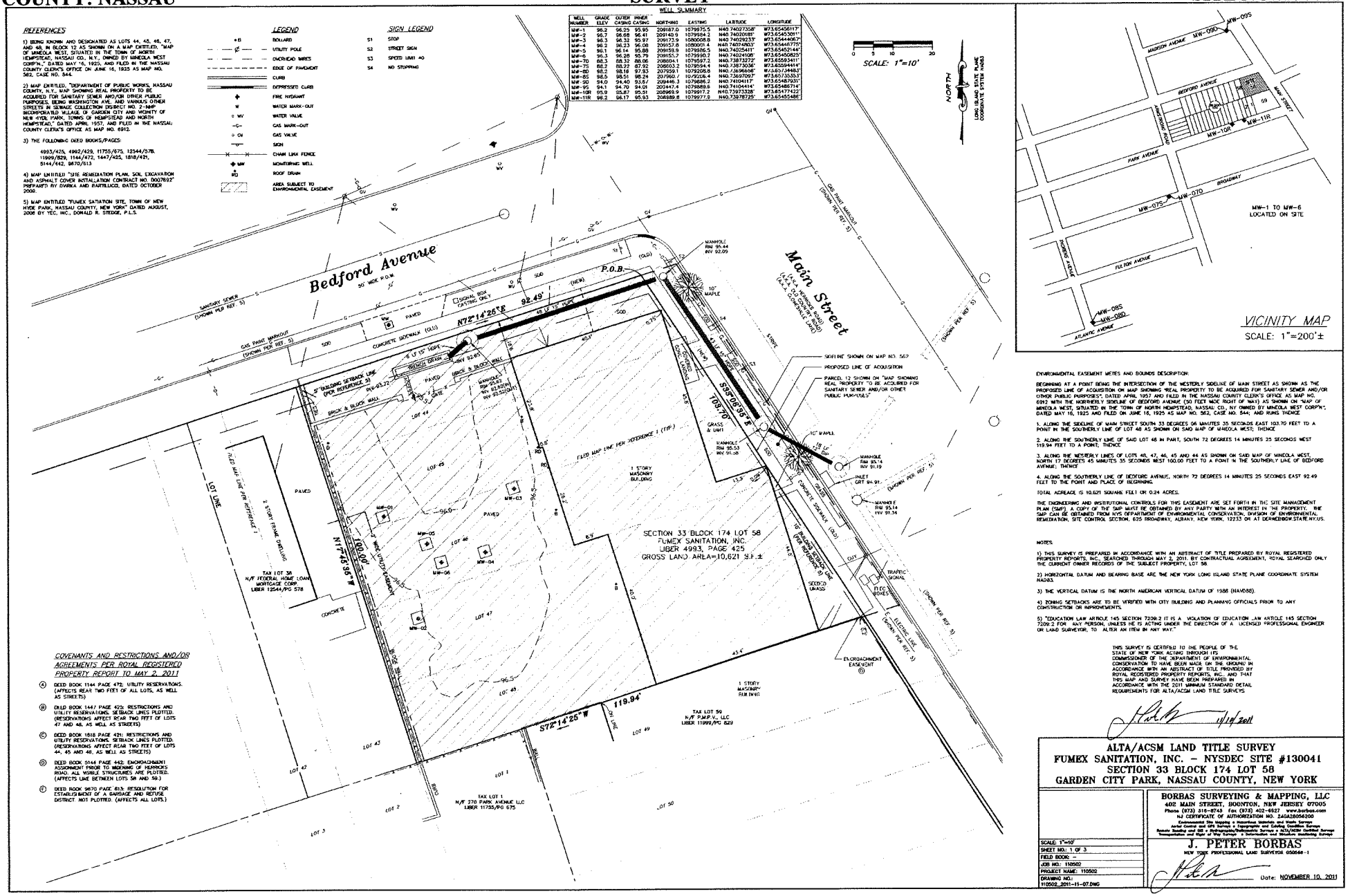
Exhibit "A"

Site Map

COUNTY: NASSAU

SURVEY

SITE NO.:130041



VICINITY MAP
SCALE: 1"=200'±

ENVIRONMENTAL EASEMENT METES AND BOUNDS DESCRIPTION:

BEGINNING AT A POINT BEING THE INTERSECTION OF THE WESTERLY SIDELINE OF MAIN STREET AS SHOWN AS THE PROPOSED LINE OF ACQUISITION ON MAP SHOWING REAL PROPERTY TO BE ACQUIRED FOR SANITARY SEWER AND/OR OTHER PUBLIC PURPOSES", DATED APRIL 1957 AND FILED IN THE NASSAU COUNTY CLERK'S OFFICE AS MAP NO. 6912 WITH THE NORTHERLY SIDELINE OF BEDFORD AVENUE (50 FEET WIDE RIGHT OF WAY) AS SHOWN ON "MAP OF MINEOLA WEST, SITUATED IN THE TOWN OF NORTH HEMPSTEAD, NASSAU CO., NY OWNED BY MINEOLA WEST CORP'N", DATED MAY 16, 1925 AND FILED ON JUNE 16, 1925 AS MAP NO. 582, CASE NO. 544; AND RUNS THENCE

1. ALONG THE SIDELINE OF MAIN STREET SOUTH 33 DEGREES 06 MINUTES 35 SECONDS EAST 103.70 FEET TO A POINT IN THE SOUTHERLY LINE OF LOT 48 AS SHOWN ON SAID MAP OF MINEOLA WEST; THENCE

2. ALONG THE SOUTHERLY LINE OF SAID LOT 48 IN PART, SOUTH 72 DEGREES 14 MINUTES 25 SECONDS WEST 119.94 FEET TO A POINT; THENCE

3. ALONG THE WESTERLY LINES OF LOTS 48, 47, 46, 45 AND 44 AS SHOWN ON SAID MAP OF MINEOLA WEST, NORTH 17 DEGREES 45 MINUTES 35 SECONDS WEST 100.00 FEET TO A POINT IN THE SOUTHERLY LINE OF BEDFORD AVENUE; THENCE

4. ALONG THE SOUTHERLY LINE OF BEDFORD AVENUE, NORTH 72 DEGREES 14 MINUTES 25 SECONDS EAST 92.49 FEET TO THE POINT AND PLACE OF BEGINNING.

TOTAL ACREAGE IS 10,621 SQUARE FEET OR 0.24 ACRES.

THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THIS EASEMENT ARE SET FORTH 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 CAN BE OBTAINED FROM NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NEW YORK, 12233 OR AT DERWEB@DW.STATE.NY.US.

NOTES:

1) THIS SURVEY IS PREPARED IN ACCORDANCE WITH AN ABSTRACT OF TITLE PREPARED BY ROYAL REGISTERED PROPERTY REPORTS, INC., SEARCHED THROUGH MAY 2, 2011. BY CONTRACTUAL AGREEMENT, ROYAL SEARCHED ONLY THE CURRENT OWNER RECORDS OF THE SUBJECT PROPERTY, LOT 58.

2) HORIZONTAL DATUM AND BEARING BASIS ARE THE NEW YORK LONG ISLAND STATE PLANE COORDINATE SYSTEM NAD83.

3) THE VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

4) ZONING SETBACKS ARE TO BE VERIFIED WITH CITY BUILDING AND PLANNING OFFICIALS PRIOR TO ANY CONSTRUCTION OR IMPROVEMENTS.

5) "EDUCATION LAW ARTICLE 145 SECTION 7209.2 IT IS A VIOLATION OF EDUCATION LAW ARTICLE 145 SECTION 7209.2 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY."

THIS SURVEY IS CERTIFIED TO THE PEOPLE OF THE STATE OF NEW YORK ACTING THROUGH ITS COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION TO HAVE BEEN MADE ON THE GROUND IN ACCORDANCE WITH AN ABSTRACT OF TITLE PROVIDED BY ROYAL REGISTERED PROPERTY REPORTS, INC. AND THAT THIS MAP AND SURVEY HAVE BEEN PREPARED IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS

11/10/2011

ALTA/ACSM LAND TITLE SURVEY
FUMEX SANITATION, INC. – NYSDEC SITE #130041
SECTION 33 BLOCK 174 LOT 58
GARDEN CITY PARK, NASSAU COUNTY, NEW YORK

BORBAS SURVEYING & MAPPING, LLC
402 MAIN STREET, BOONTON, NEW JERSEY 07005
Phone (973) 316-8743 fax (973) 402-6527 www.borbas.com
NJ CERTIFICATE OF AUTHORIZATION NO. 24GA28056200
Professional Land Surveying & Topographic Mapping, Wetland Delineation, Site Planning, Property Boundary and GIS • Photogrammetric/Hydrographic Surveys • ALTA/ACSM Certified Surveys Transportation and Right of Way Surveys • Deformation and Structural Monitoring Surveys
J. PETER BORBAS
NEW YORK PROFESSIONAL LAND SURVEYOR 050648-1

SCALE:	1"=10'
SHEET NO.:	1 OF 3
FIELD BOOK:	
JOB NO.:	110502
PROJECT NAME:	110502
DRAWING NO.:	110502_2011-11-07.DWG

Date: NOVEMBER 10, 2011

Exhibit "B"

Consent of Additional Signatory

The party executing this form, _[name of party]_____, hereby consents to being added as a Respondent to the Order on Consent and Administrative Settlement, Index # W1-1184-14-06 regarding Site # 130041 and further consents to the issuing and entering of the referenced Order, waives Respondent's right to a hearing herein as provided by law, and agrees to be bound by this Order.

By: _____

Title: _____

Date: _____

STATE OF NEW YORK)
) s.s.:
COUNTY OF)

On the _____ day of _____, in the year 20 __, before me, the undersigned, personally appeared _____, 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.

_____
Signature and Office of individual
taking acknowledgment

Appendix H

Environmental Easement