CARDWELL CONDENSER CORPORATION SITE

SUFFOLK COUNTY

LINDENHURST, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: 152035

Prepared for:

Buccino Realty, LLC

80 East Montauk Highway

Lindenhurst, NY

Prepared by:

FPM Group, Ltd.

640 Johnson Avenue, Suite 101

Bohemia, NY 11716

(631) 737-6200

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

JANUARY 2024

CERTIFICATION STATEMENT

I, STEPHANIE O. DAVIS, PG, certify that I am currently a Qualified Environmental Professional as in defined in 6 NYCRR Part 375 and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Stephanie O Davis, PG QEP

1-4-2024 DATE

CARDWELL CONDENSER CORPORATION SITE

SUFFOLK COUNTY

LINDENHURST, NEW YORK

SITE MANAGEMENT PLAN

Table of Contents

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS

AS	Air Sparging
ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CAMP	Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
CLP	Contract Laboratory Program
CO2	Carbon Dioxide
CP	Commissioner Policy
DER	Division of Environmental Remediation
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EWP	Excavation Work Plan
GHG	Green House Gas
GWE&T	Groundwater Extraction and Treatment
HASP	Health and Safety Plan
IC	Institutional Control
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations

LIST OF ACRONYMS (Continued)

O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Remedial Party
RSO	Remedial System Optimization
SAC	State Assistance Contract
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SOP	Standard Operating Procedures
SOW	Statement of Work
SPDES	State Pollutant Discharge Elimination System
SSD	Sub-slab Depressurization
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VCP	Voluntary Cleanup Program

ES EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan (SMP):

Site Identification:	NYSDEC Site No. 152035, Cardwell Condenser Corporation Site, 80 East Montauk Highway, Lindenhurst

Institutional Controls:	• The property may be used for industrial use; • All Engineering Controls must be operated and maintained as specified in the Site Management Plan; • All Engineering Controls must be inspected at a frequency and in a manner defined in the Site Management Plan; • The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Suffolk County Department of Health Services to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department. • Groundwater and other environmental or public health monitoring must be performed as defined in the SMP; • Data and information pertinent to site management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP; • All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP; • Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP; • Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in the SMP; and • Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.

Site Identification: NYSDEC Site No. 152035, Cardwell Condenser Corporation Site, 80 East Montauk Highway, Lindenhurst

Engineering Controls:	1. Cover over LP-1 area
	2. Monitoring well system.
Inspections:	Frequency
1. Site-wide inspection (including cover)	Annually
Monitoring:	
1. Groundwater Monitoring Wells MW-8, MW-9, MW-12, MW-13 and MW-14	Once per 5 quarters
Reporting:	
1. Inspection Report	Annually
2. Monitoring Report	Within 60 days of the monitoring event
3. Periodic Review Report	Annually, or as otherwise determined by the Department

Further descriptions of the above requirements are provided in detail in the latter sections of this SMP.

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the Cardwell Condenser Corporation Site located in Lindenhurst, New York (hereinafter referred to as the "Site"). See Figure 1.1.1 for the Site location. The Site is currently in the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program (Site No. 152035), which is administered by New York State Department of Environmental Conservation (NYSDEC).

Normilt Realty Corporation and Cardwell Condenser Corporation (Remedial Party) entered into a Consent Decree on August 18, 1999 with the State of New York to remediate the Site. The Site location and boundaries of this Site are provided in Figure 1.1.2. The boundaries of the Site are more fully described in the metes and bounds Site description that is part of the Environmental Easement provided in Appendix A.

After completion of the remedial work, some contamination was left at this Site, which is hereafter referred to as "remaining contamination". Institutional Controls (ICs) have been incorporated into the Site remedy to control exposure to the remaining contamination to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Suffolk County Clerk, requires compliance with this SMP and all ECs and ICs placed on the Site. It should be noted that any applicable penalties that arise from failure to comply with the Site's NYSDEC-approved remedial program remain with the Remedial Party unless a successor Remedial Party enters an Order on Consent with the NYSDEC.

This SMP was prepared to manage the remaining contamination at the Site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. This SMP has been approved by the NYSDEC, and compliance with this SMP 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.

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;

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2

1000 500 0 METERS 1000 2000

1 0.5 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

FPM GROUP

FIGURE 1.1.1
SITE LOCATION MAP

CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By:H.C.	Checked By: S.D.	Date: 7/27/17

SOURCE: TOWN OF BABYLON TAX ASSESSOR MAP, 2017

APPROXIMATE SCALE IN FEET

0 100 200

LEGEND

SITE BOUNDARY

FPM GROUP

FIGURE 1.1.2
SITE LOCATION AND BOUNDARIES

CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By:H.C.	Checked By: S.D.	Date: 7/27/17

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the Consent Decree (Civil Action No. 97-5121; Site #152035) for the Site, and thereby subject to applicable penalties.

All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the Site is provided in Appendix B of this SMP.

This SMP was prepared by FPM Group, Ltd. (FPM), on behalf of the purchaser of the Site, Buccino Realty, LLC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the Site.

It is understood that Buccino Realty, LLC, which now owns the Site, will implement the remedial program described herein. Buccino Realty, LLC has executed an Environmental Easement for the Site.

1.2 Revisions

Revisions to this SMP will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, post-remedial removal of contaminated soil, or other significant changes to the Site conditions. 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.

1.3 Notifications

Notifications will be submitted by the property owner, Buccino Realty, LLC, to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

- 60-day advance notice of any proposed changes in Site use that are required under the terms of the Consent Decree, 6NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the groundwater monitoring wells or cover that reduces or has the potential to reduce the effectiveness of the wells or cover, 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 the monitoring wells or cover 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 submitted to the NYSDEC within 45 days describing and documenting actions taken.

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/Remedial Party has been provided with a copy of the Consent Decree 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 to the NYSDEC.

Table 1.3.1 (below) includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of Site-related contact information is provided in Appendix B.

Table 1.3.1: Notifications*

Name	Contact Information
NYSDEC Project Manager Jared Donaldson	(518) 402-9176 Jared.Donaldson@dec.ny.gov
NYSDEC Regional HW Engineer Gerish Desai, PE	(631) 444-0243 Gerish.desai@dec.ny.gov
NYSDEC Site Control Kelly Lewandowski	(518) 402-9553 Kelly.lewandowski@dec.ny.gov
NYSDOH Project Manager Jacquelyn Nealon	(518) 402-7880 Jacquelyn.nealon@health.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The Site is located at 80 East Montauk Highway in Lindenhurst, Suffolk County, New York and is identified as Section 19, Block 3, and Lot 48.001 on the Suffolk County Tax Map (see Figure 2.1.1). The Site is an approximately 1.43-acre area and is bounded by an undeveloped parcel owned by the Village of Lindenhurst to the north, Montauk Highway to the south, a commercial property (car sales) to the east, and Lincoln Avenue to the west (see Figure 2.1.2 – Site Plan). The boundaries of the Site are more fully described in Appendix A – Environmental Easement. The owner of the Site parcel at the time of issuance of this SMP is:

- Viking 80 East Properties, LLC

The Site is planned to be purchased from the current owner by Buccino Realty, LLC, which will undertake the site management activities.

2.2 Physical Setting

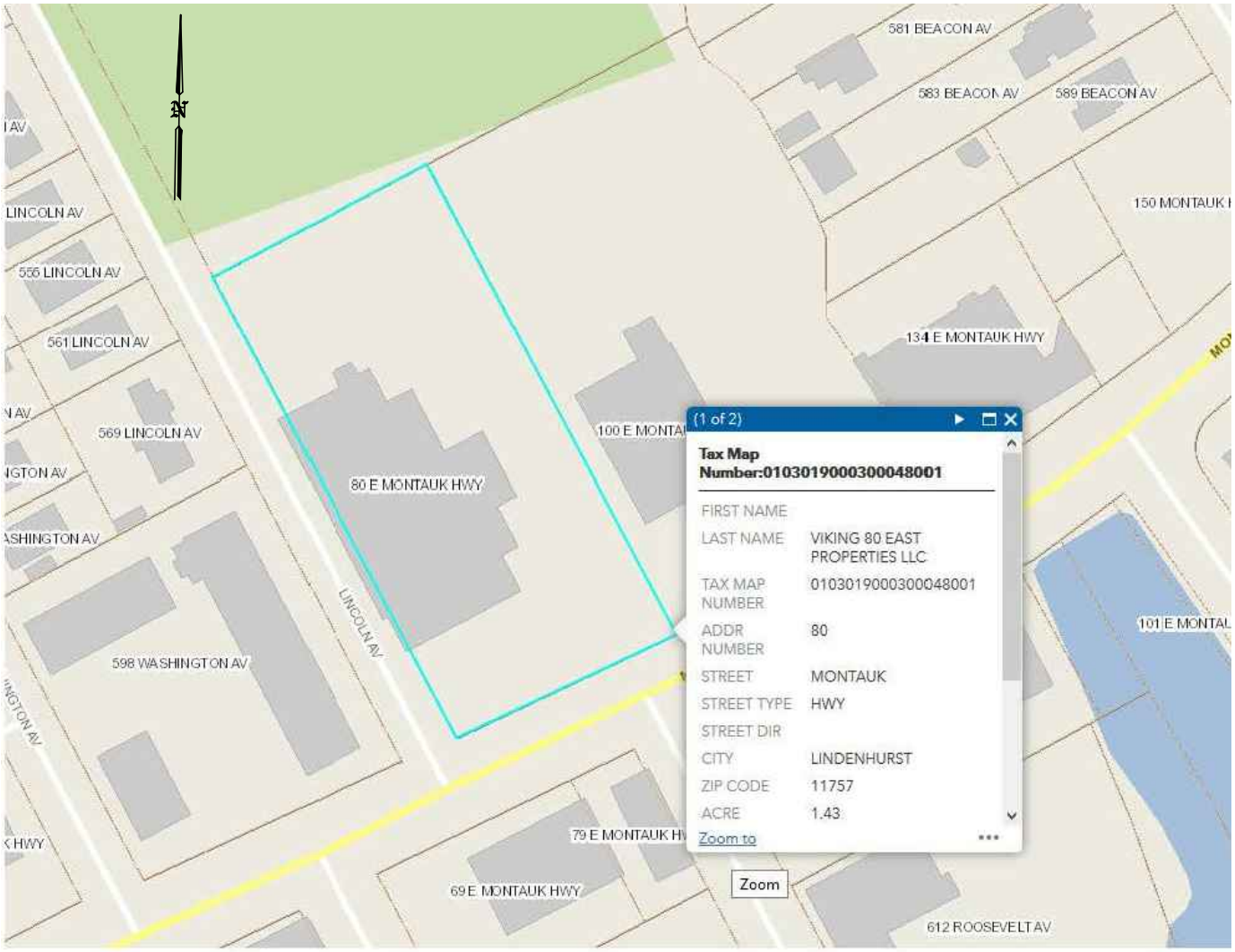
2.2.1 Land Use

The Site consists of the following: an industrial building, paved parking areas to the south, east, and northeast of the building, and unpaved landscaped areas to the south and northwest of the building. The Site is zoned industrial and is currently utilized for manufacturing and associated office uses. The Site occupant is a clothing embroidery, screen printing and digital printing business.

The properties adjoining the Site and in the neighborhood surrounding the Site primarily include commercial and residential properties. The properties immediately south of the Site include commercial business properties; the properties immediately north of the Site include a vacant and vegetated parcel owned by the Village of Lindenhurst; the properties immediately east of the Site include a commercial automobile sales business; and the properties to the west of the Site include multi-family and single-family residential properties.

2.2.2 Geology

The regional and site-specific geology are typical of Long Island; glacial deposits of Pleistocene age overlie Cretaceous deposits, which rest on Precambrian crystalline bedrock. The Cretaceous deposits consist of the Raritan Formation and the Magothy Formation, which collectively extend from about 86 to 1,650 feet below grade at the Site. The Magothy Formation, which underlies the Pleistocene deposits, consists of interbedded fine sands, silts, and clays, with discontinuous zones of sand and gravel. The Magothy Formation is not affected by Site-related constituents and is not further considered herein.



SOURCE: SUFFOLK COUNTY TAX MAP, 2017

APPROXIMATE SCALE IN FEET

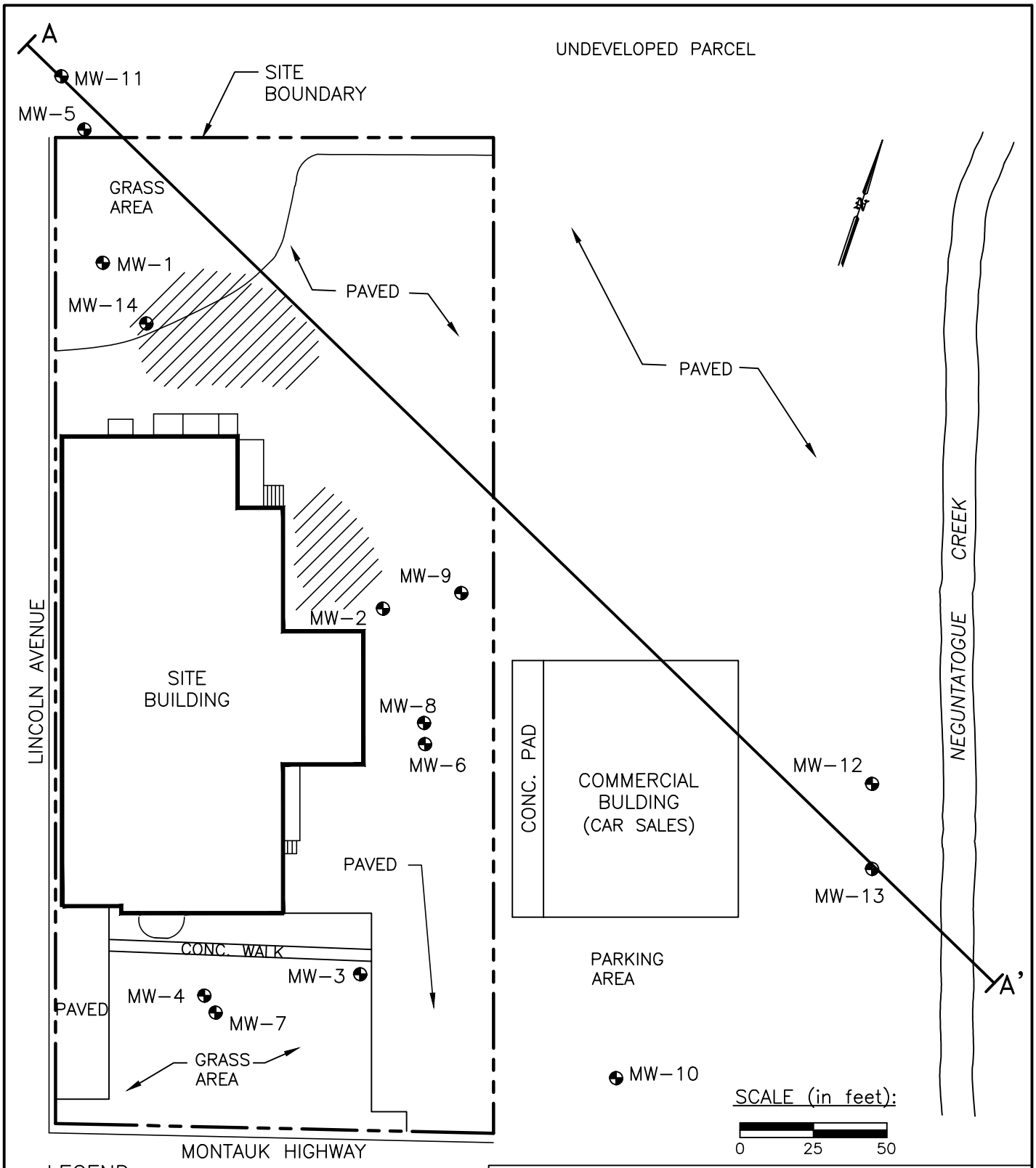
0 100 200

FPM GROUP

FIGURE 2.1.1
SITE TAX MAP INFORMATION

CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By:H.C.	Checked By: S.D.	Date: 7/27/17



FPM GROUP

FIGURE 2.1.2
SITE PLAN
CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By:H.C.	Checked By: S.D.	Date: 7/27/17

The Pleistocene Gardiners Clay overlies the Magothy Formation and is present from approximately 65 to 86 feet below the Site. The Gardiners Clay is composed primarily of a marine clay that acts as confining unit. The Pleistocene Upper Glacial deposits consist of fine to very coarse sand and gravel that overlie the Gardiners Clay and extend from at or near the ground surface to 65 feet below the ground surface at the Site.

A geologic cross section is shown in Figure 2.2.2.1; the cross section location is shown on Figure 2.1.2. Site-specific boring logs are provided in Appendix C.

2.2.3 Hydrogeology

At the Site the hydrogeologic units correspond to the stratigraphic units. Of primary interest is the Upper Glacial Aquifer which is present in the Pleistocene Upper Glacial deposits and has a hydraulic conductivity in the range of 800 to 1,200 gallons per day per square foot. The Gardiners Clay acts as a confining unit between the Upper Glacial Aquifer and the underlying Magothy Aquifer.

The Upper Glacial Aquifer is a water table aquifer and depth to groundwater at the Site is approximately five feet below grade. Regional groundwater flow in the Upper Glacial Aquifer in the Site area is generally to the east-southeast. Groundwater levels have been measured during several events at Site monitoring wells and consistently indicate an east to east-southeast groundwater flow direction toward Neguntatogue Creek.

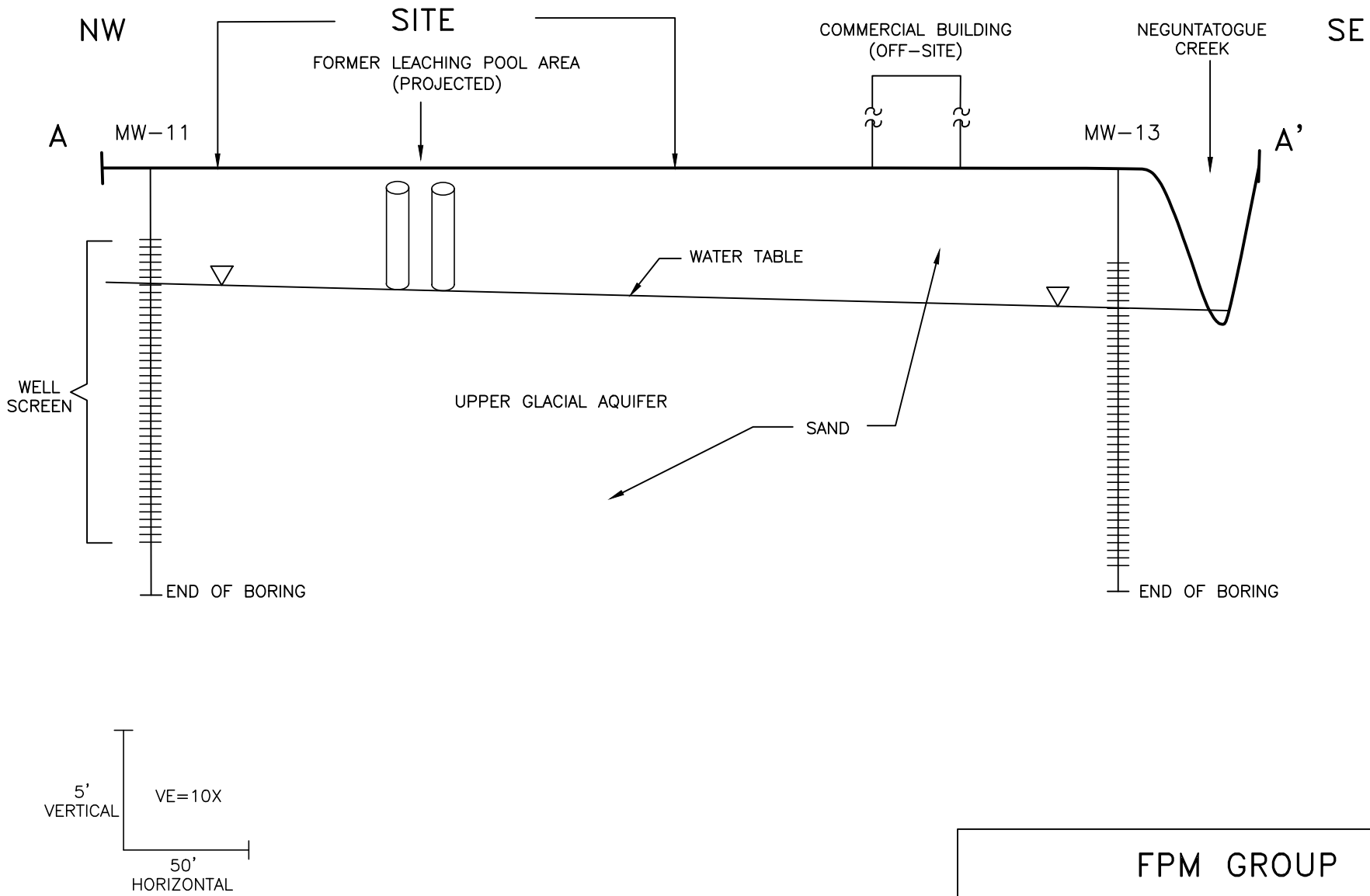
A groundwater contour map is shown in Figure 2.2.3.1. Groundwater relative elevation data are provided in Table 2.2.3.1. The available groundwater monitoring well construction logs are provided in Appendix C.

As noted in the Record of Decision (ROD) for the Site, a survey of public and private water supply wells within one mile downgradient of the Site did not identify any supply wells. All residences in the vicinity of the Site are connected to the public water supply. The former onsite water supply well was removed from service in 1993 and the Site was connected to the public water supply in 1994.

2.3 Investigation and Remedial History

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 - References.

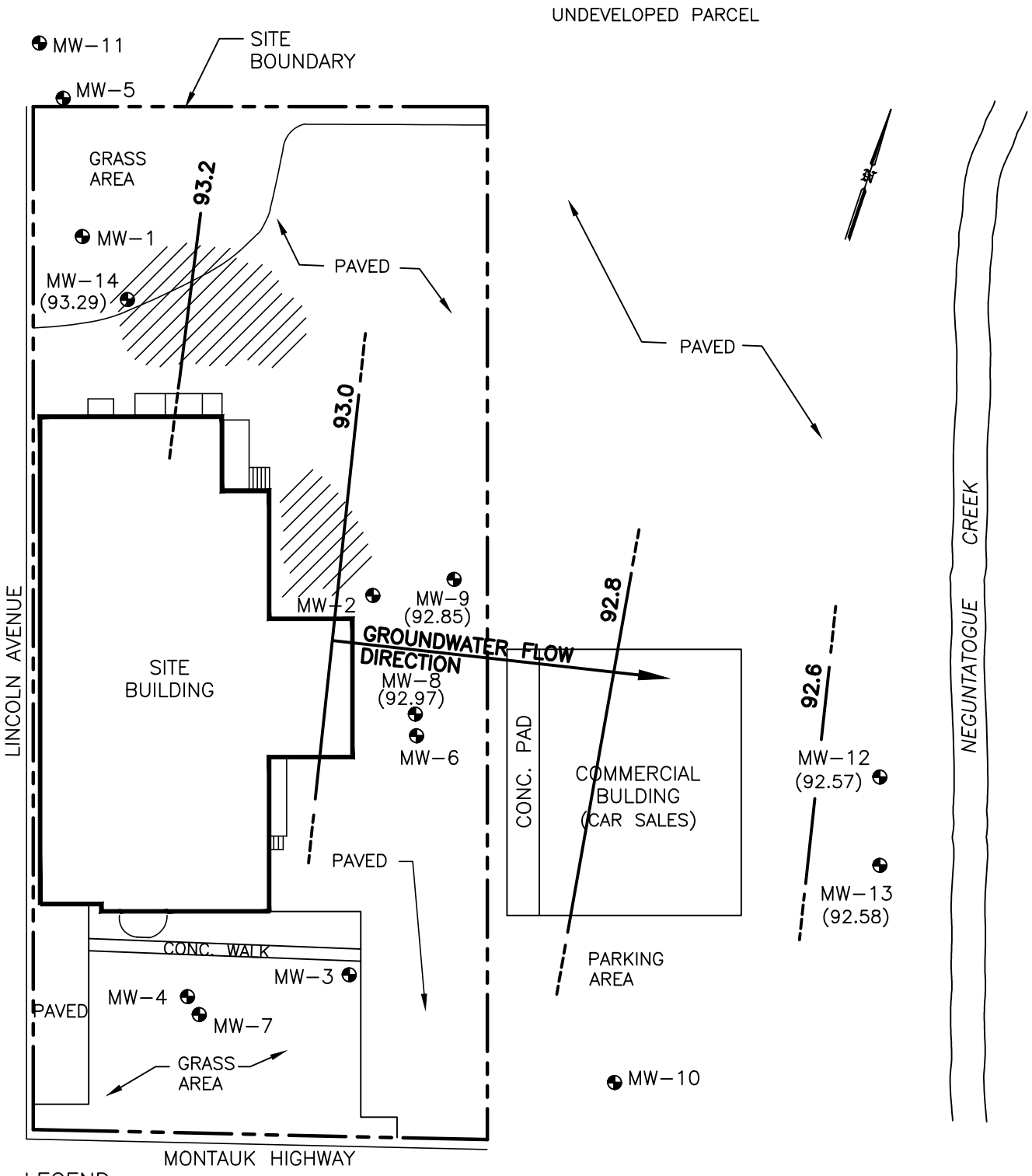
Information regarding the Site history and investigation results from prior to the Remedial Investigation (RI) was obtained from a Phase I Investigation report prepared by Woodward-Clyde Consultants, Inc. (WCC) in 1986, a Phase II Investigation report prepared by Lawler, Matusky & Skelly



FPM GROUP

FIGURE 2.2.2.1
GEOLOGICAL CROSS-SECTION
CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By: H.C.	Checked By: S.D.	Date: 7/27/17



LEGEND:

- MW-8 (92.97) — GROUNDWATER MONITORING WELL (WATER TABLE RELATIVE ELEVATION) JUNE 2017
- SITE BOUNDARY
- FORMER LEACHING POOL AREA
- 92.0 — GROUNDWATER RELATIVE ELEVATION

SCALE (in feet): 0 25 50

FPM GROUP

FIGURE 2.2.3.1
GROUNDWATER FLOW DIRECTION

CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By: H.C.	Checked By: S.D.	Date: 7/27/17

TABLE 2.2.3.1
GROUNDWATER RELATIVE ELEVATION DATA
CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Well No.	Top of Casing Relative Elevation (ft)	Depth to Water (ft) 6/8/17	Water Table Relative Elevation (ft)
MW-8	97.34	4.37	92.97
MW-9	96.70	3.85	92.85
MW-12	96.99	4.42	92.57
MW-13	96.95	4.37	92.58
MW-14	97.89	4.60	93.29

Engineers (LMS) in December 1993, the Groundwater and Soil Investigation Report prepared by FPM in January 1995, the IRM Work Plan prepared by FPM in August 1999, and the IRM Report prepared by FPM in October 2000.

2.3.1 Site Operational History

The Site includes an approximately 17,000-square-foot manufacturing and office building that was used by the Cardwell Condenser Corporation for manufacturing from 1957 until recently. Prior to Cardwell Condenser's operations, the Site was used by the Lindenhurst Brewery, which operated a brewery at the Site from 1933 until the mid-1950s.

Cardwell Condenser manufactured electrical components, including waveguides, variable air capacitors, and microwave equipment. The manufacturing process included chrome plating of the brass and/or aluminum components. Based on information from a waste disposal permit application, the plating baths included copper cyanide, silver cyanide, cadmium cyanide, nickel sulfate, chromic acid, other acids (hydrochloric, nitric, and nitric/sulfuric), and sodium cyanide. Cadmium iridite and aluminum iridite were also used as a coating on some parts and volatile and semivolatile organic compounds (VOCs and SVOCs) were used onsite.

Process wastewater from the plating operations was discharged to a shallow leaching pool located to the north of the manufacturing building. This leaching pool overflowed into several eight-foot-diameter leaching pools located within about 30 feet of the shallow leaching pool. To the east of the manufacturing building, additional eight-foot-diameter leaching pools were used for sanitary waste disposal.

In June 1972 the Suffolk County Department of Environmental Control (SCDEC, now the Suffolk County Department of Health Services, or SCDHS) informed Cardwell Condenser that industrial waste treatment facilities were required at the Site. Donnelly Engineering subsequently designed a wastewater treatment system that was approved by the SCDEC in August, 1974. Between 1974 and 1985 treated plating wastewater was discharged to the onsite leaching pools. Additional leaching pools were added as the useful life of the existing leaching pools was exceeded. A Site plan from 1980 shows six industrial leaching pools and eight sanitary leaching pools. The pools were eight or ten feet in diameter and were located at a maximum of four feet below grade due to the shallow groundwater at the Site.

Plating wastewater discharged to the industrial leaching pools (collectively identified as outfall 001) was regulated under State Pollutant Discharge Elimination System (SPDES) permits issued in 1975 and 1980. Industrial and sanitary wastewater discharges at the Site were connected to the Suffolk County

Sewer District (SCSD) in June 1987. Cardwell's SPDES permit was deleted in March 1988 due to the cessation of onsite industrial wastewater discharges. Due to changes in operations at the Site since the connection to the municipal sewer, industrial wastewater is no longer generated.

With the exception of two leaching pools, it was reported that all onsite leaching pools had been backfilled. The remaining operating leaching pools were reported to receive only non-contact cooling water (500 gallons per day).

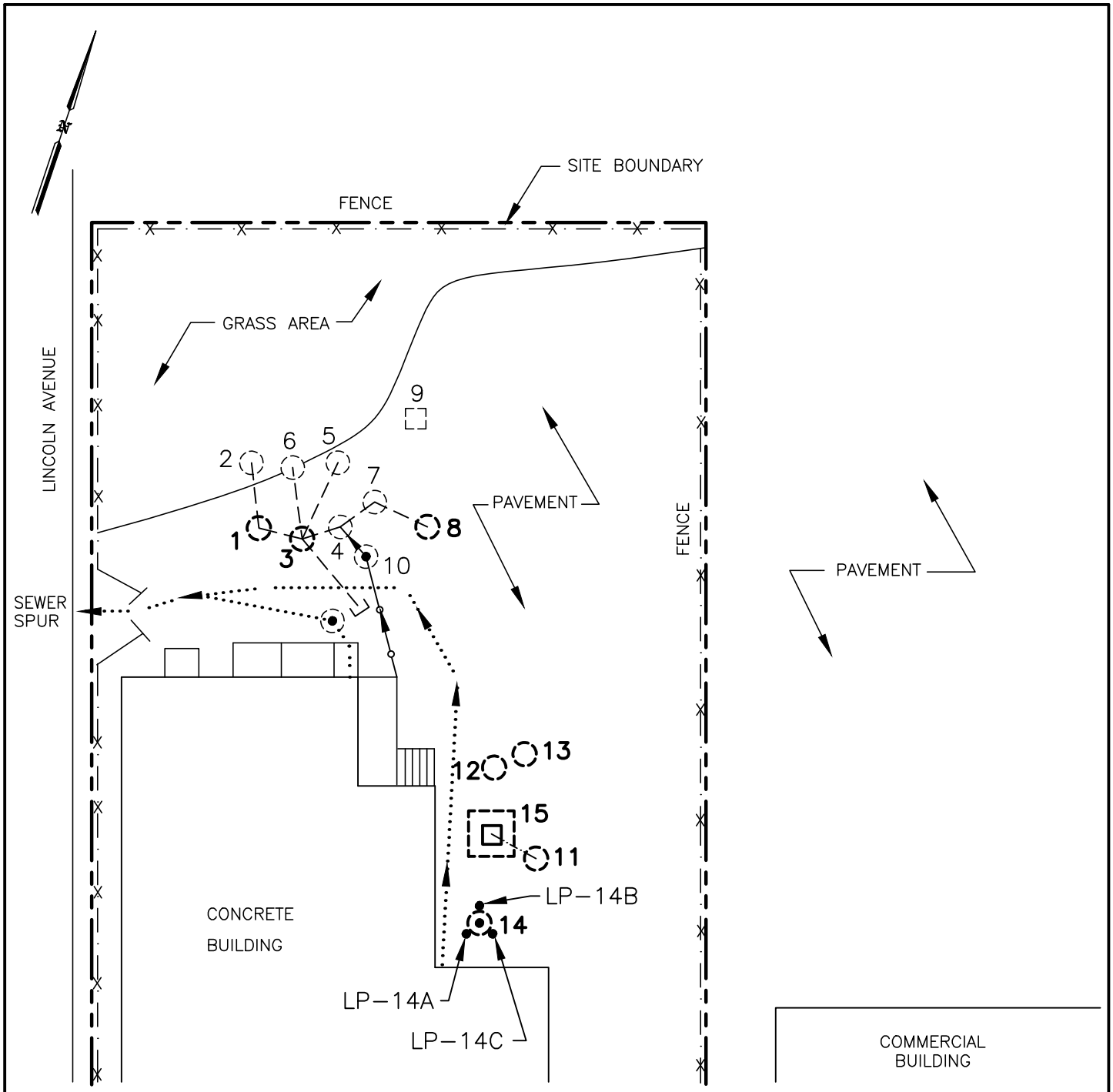
2.3.2 Summary of Investigations

Several investigations have been performed at the Site. For reference, the locations of the Site leaching pools are shown on Figure 2.3.2.1 and groundwater sampling locations are shown on Figure 2.3.2.2.

- 1986 Investigations

In 1986, WCC was contracted by the NYSDEC to perform a Phase I Investigation of the Site. This investigation included data collection and review, preliminary Hazard Ranking Score (HRS) preparation, responsible party interviews, preliminary hydrogeologic model preparation, work plan development, cost estimation, and summary report preparation. Results from previous analyses of leaching pools indicated the presence of metals, VOCs, acid-extractable SVOCs, and total dissolved solids. The report concluded that the potential existed for contamination of groundwater.

Gibbs & Hill, Inc. was contracted by the NYSDEC in 1986 to conduct a Phase II Investigation of the Site. Four shallow groundwater monitoring wells (MW-1 through MW-4) were installed and samples were obtained and analyzed for VOCs, SVOCs, metals, pesticides, and polychlorinated biphenyls (PCBs). The samples contained concentrations of VOCs in excess of the NYSDEC Class GA Ambient Water Quality Standards (Standards). However, the upgradient well showed the highest concentrations of VOCs and the results of the groundwater blind duplicate sample were inconsistent. Therefore, the chemical analytical results are considered suspect. No SVOCs, pesticides, or PCBs were detected in the groundwater samples. The groundwater flow direction was found to be to the east-southeast. Two soil samples were also collected and the results indicated that similar VOCs were detected in the soil and groundwater samples. SVOCs were detected in one soil sample and pesticides were detected in the other soil sample. No PCBs were detected in the soil samples.



LEGEND

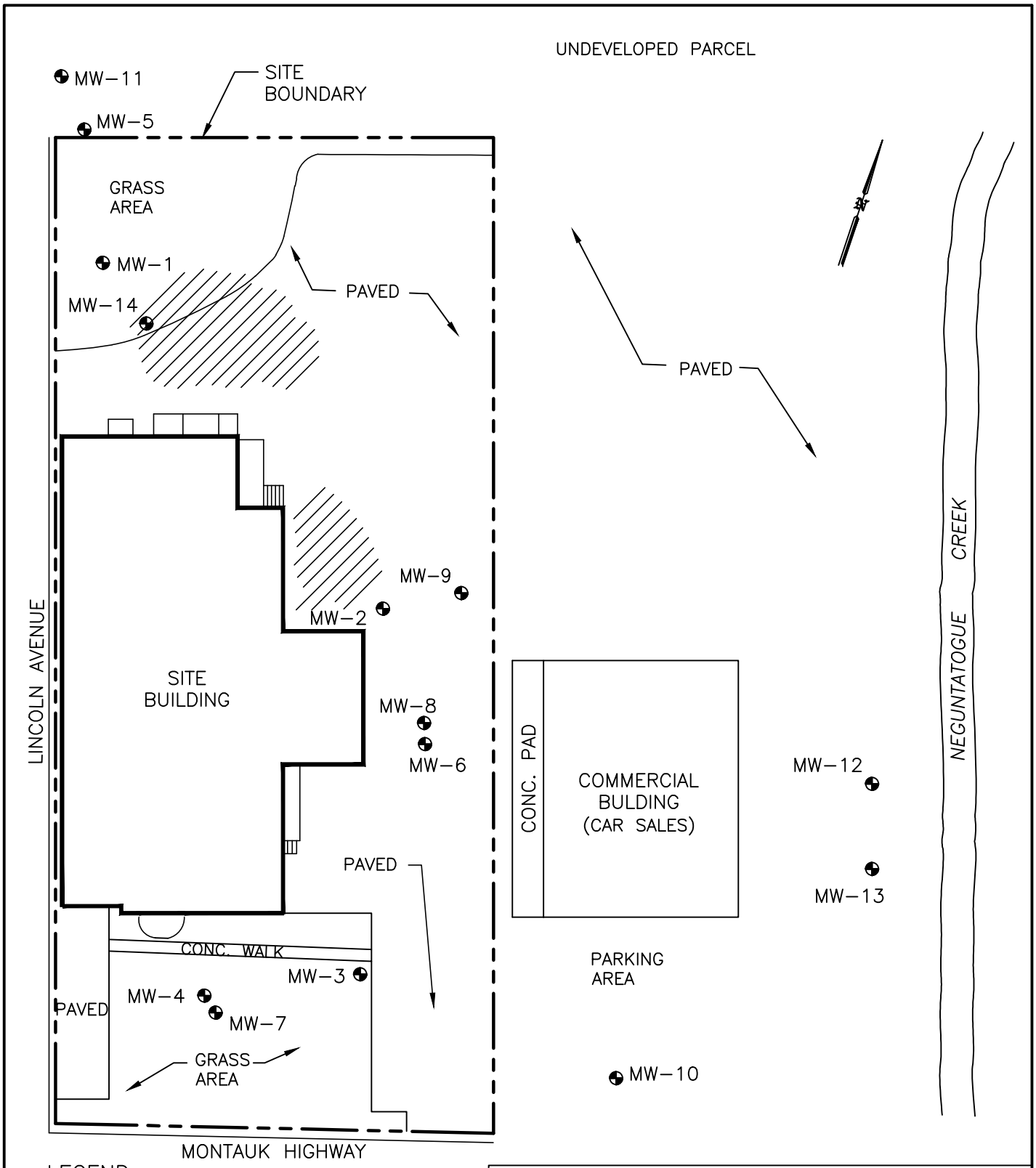
- 15 — FORMER SEPTIC TANK
- 9 — CATCH BASIN ASSOCIATED WITH A FORMER ROOF DRAIN
- 2 — LEACHING POOLS (REMEDIATED LEACHING POOLS AND NUMBERS SHOWN IN BOLD)
- NON-CONTACT COOLING WATER
- FORMER CONNECTIONS
- SEWER CONNECTION
- LP-14A ● — SOIL SAMPLE LOCATIONS

SCALE (in feet): 0 20 40

FPM GROUP

FIGURE 2.3.2.1
FORMER LEACHING POOL LOCATIONS
CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By: H.C.	Checked By: S.D.	Date: 7/27/17



FPM GROUP

FIGURE 2.3.2.2
GROUNDWATER MONITORING WELL LOCATIONS

CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By: H.C.	Checked By: S.D.	Date: 7/27/17

- 1992 Investigation

In 1992, LMS was contracted by the NYSDEC to conduct a Supplemental Phase II Investigation to collect additional information needed to classify the Site. An additional soil sample was collected and analyzed for total Target Analyte List (TAL) metals and Extraction Procedure (EP) Toxicity metals. Concentrations of cadmium, copper, and lead exceeding Eastern U.S. background soil concentration ranges were detected; however, the duplicate analyses were not within control limits. Iron and zinc concentrations were estimated due to matrix interference. No metals concentrations were detected in exceedance of the EP Toxicity standards. The Site background levels for metals were not established.

Three additional wells (MW-5 through MW-7) were installed at the base of the Upper Glacial Aquifer (60-65 feet below grade). All of the groundwater monitoring wells and the two former process/potable water wells were sampled. The results showed concentrations of four VOCs, including 1,2-dichloroethylene (1,2-DCE), tetrachloroethylene (PCE), vinyl chloride (VC) and trichloroethylene (TCE), in exceedance of NYSDEC Standards in well MW-2. Estimated concentrations of 1,1,1-trichloroethane (1,1,1-TCA) slightly exceeded the NYSDEC Standard at the two former potable/process wells. No significant concentrations of SVOCs were detected in any of the samples. The only metals exceeding the NYSDEC Standards were iron, manganese, and sodium, which were detected in all of the seven wells. It was concluded that the metals detections were likely to be due to naturally-occurring conditions. No pesticides or PCBs were detected in any of the wells.

In November 1992, the shallow monitoring wells (MW-1 through MW-4) were resampled by the NYSDEC contractor. The results show that no VOCs or SVOCs were detected in any of the wells above the NYSDEC Standards. Numerous metals were detected above the natural ambient groundwater ranges. However, only iron and manganese exceeded the NYSDEC Standards in the filtered samples.

A third sampling effort included collection of groundwater samples from three of the shallow monitoring wells (MW-1 through MW-3) and from six temporary locations at varying depths within the aquifer. No VOCs were detected in any of the three monitoring wells. The results from the temporary locations indicated concentrations of the VOCs PCE, TCE, 1,2-DCE, 1,1-dichloroethane (1,1-DCA), ethylbenzene, toluene, xylenes, and VC exceeding the NYSDEC Standards in the shallow interval at several locations. Based on the vertical profiling, it was concluded that groundwater contamination at the Site was limited to the shallow groundwater. Also, there was no evidence of a release of dense non-aqueous-phase liquid (DNAPL) and it was concluded that the plume consisted solely of dissolved VOCs. The Long Island Regional Planning Board's "208 Study" has characterized the site and vicinity as within Hydrogeologic Zone VII, which is a groundwater discharge area, or an area of an upward vertical component of flow that would inhibit the downward migration of dissolved contaminants.

Two surface water samples were collected from Neguntatogue Creek to determine if groundwater contamination had migrated from the Site to the creek. The samples were analyzed for TCL VOCs and SVOCs, TAL metals, and cyanide. It was reported that low levels of several VOCs (PCE, TCE, 1,2-DCE, 1,1,1-TCA, and 1,1-DCA) were detected. However, these results were inconclusive as to the source of the low-level VOC contamination due to the selection of sampling locations and the similarity in the concentrations detected. No significant SVOC or metals contamination was detected in either surface water sample.

One water sample was collected from the active industrial leaching pool, with the results compared to the NYSDEC Standards. The results showed that 1,1,1-TCA exceeded the NYSDEC Standard, no SVOCs exceeded Standards, and the metals iron and manganese exceeded the NYSDEC Standards. One sediment sample was collected from the same leaching pool. Numerous constituents were detected in the leaching pool sediment at trace concentrations.

The results of the investigation indicated that a VOC plume was present in the shallow groundwater beneath the Site. LMS recommended that the Site be classified as a Class 2 (significant threat to public health or environment) and that an RI be conducted to delineate the nature and extent of contamination.

- 1994 Investigation

FPM performed a soil and groundwater investigation at the Site in October 1994. Four soil samples were obtained and analyzed for VOCs and metals. The chemical analytical results indicated that soil in the vicinity of an area where empty drums were stored may have been a source for VOC groundwater contamination. Minor amounts of VOCs were identified in soil in the area to the north of the building. Two groundwater wells (MW-8 and MW-9) were also installed and sampled and the results showed exceedances of the NYSDEC Standards for several VOCs. It was concluded that solvents, primarily PCE, were present in the shallow groundwater beneath the Site. Additional investigation was recommended and was performed as an RI.

- Remedial Investigation

The RI included a geophysical investigation, soil and sediment sampling, groundwater monitoring well installation and sampling, and Geoprobe groundwater sampling. Based on the geophysical investigation, 13 leaching pools (LP-1 through LP-8 and LP-11 through LP-14), one former septic tank, and one catch basin associated with a former roof drain (LP-9) were identified. Sediment samples from

leaching pools LP-1 through LP-14 were obtained and sediment that appeared to be impacted was encountered in most of the leaching pools. TCL VOCs and/or total VOCs exceeded the NYSDEC Recommended Soil Cleanup Objectives (TAGM-4046 Objectives) in LP-1, LP-3, LP-8, LP-11, LP-12, LP-13, and LP-14. Exceedances of the Objectives for select metals (arsenic, chromium, copper, lead, and zinc) were detected in all of the leaching pool sediment samples. Based on the groundwater chemical analytical data (discussed below), it was recommended that the leaching pools exhibiting exceedances of the Objectives for VOCs be remediated as an IRM. This remediation would also address the leaching pools with the highest metals concentrations.

Two sediment samples were collected from two locations within a former drum storage area at the Site. Both soil samples appeared to be impacted on the basis of visual or PID data. Low concentrations of two VOCs were detected in these samples; however, none of the detected concentrations exceeded their respective Objectives. None of the detected concentrations of select metals exceeded their respective Objectives, with the exception of zinc and copper at both locations. No remediation was recommended for these soils, since metals contamination of groundwater was not an issue at this Site.

Two shallow groundwater monitoring wells (MW-10 and MW-11) were also installed at the Site during the RI. Water level data obtained from all of the Site wells indicated that groundwater flow was toward the east and east-southeast. Groundwater sample results showed that the two wells with the highest concentrations of total VOCs were MW-8 and MW-9. Detected VOCs in the groundwater included PCE and its breakdown products, as well as relatively minor amounts of benzene, toluene, chlorobenzene. Both of these wells were located downgradient of the leaching pools at the Site. MW-11, which was an upgradient well, did not show any detections of VOCs. It was concluded that the groundwater had been impacted by VOCs as a result of the leaching pools. One or more of the select metals were detected in all of the groundwater samples. However, only one detection, chromium at well MW-9, slightly exceeded the Standard.

After determining the groundwater flow direction and evaluating the well sampling data, four groundwater samples were obtained to the east of the Site boundary to evaluate the extent of VOC groundwater contamination downgradient of wells MW-8 and MW-9. These samples indicated that VOC groundwater contamination decreases downgradient of the Site source area. The highest concentration of total VOCs, 880 ug/l, was detected downgradient of well MW-9 and approximately 30 to 50 feet from Neguntatogue Creek.

It was concluded that elevated concentrations of several TCL VOCs were present at several locations, including wells MW-2, MW-8, and MW-9 and nearby temporary locations GP-7, GP-8, GP-9, and GP-10, all of which were located downgradient of the impacted leaching pools. Remediation of the VOC-impacted leaching pools was recommended to reduce the potential for impacts to groundwater and Neguntatogue Creek. Additional investigation, including installation and sampling of two downgradient groundwater monitoring wells adjacent to Neguntatogue Creek and sampling of Neguntatogue Creek, was also recommended. The scope of work for remediation and additional investigation was detailed in the August 1999 IRM Work Plan. The NYSDEC, in a September 15, 1999 letter, also required soil sampling in the vicinity of leaching pool LP-14.

- Interim Remedial Measure

The IRM remediation and additional investigation were performed in 1999 and 2000; the results were included in the FPM October 2000 IRM Report. During the IRM, leaching pools LP-1, LP-3, LP-5, LP-8, and LP-11 through LP-15 were successfully remediated. Soil samples collected from the outside perimeter of one of the previously-impacted leaching pools (LP-14) indicated that significant VOC-impacted soil is not present outside of the leaching pool structures in the vicinity of the water table.

Two groundwater monitoring wells (MW-12 and MW-13) were installed and sampled during the IRM. Based on the sampling results, it appeared that the center of the groundwater VOC plume was located in the vicinity of sampling location GP-9 and that the leaching pools that were remediated were the source of the plume. Biannual monitoring of Site wells MW-8, MW-9, MW-12, and MW-13 was recommended to confirm the anticipated decrease in plume concentrations following remediation. Neguntatogue Creek was also sampled and it was found that no significant impact to the creek appeared to originate from the Site.

- Record of Decision

The NYSDEC issued a ROD for the Site in March 2002. The ROD states that the Site no longer poses a significant threat to human health or the environment and that the selected remedy for the Site is No Further Action with continued groundwater monitoring. No engineering controls (ECs) were required for the Site and, once the Operation and Maintenance Plan was prepared for the Site, the NYSDEC would reclassify the Site to a Class 4.

- Operation and Maintenance Plan

An Operation and Maintenance (O&M) Plan was prepared in 2002 (FPM, October 2002) and received NYSDEC approval. The Site has since been reclassified to a Class 4 site.

- Recent Activities

Routine groundwater monitoring activities have been conducted at the Site in general compliance with the O&M Plan and subsequent NYSDEC recommendations. Groundwater monitoring procedures and results have been documented in Periodic Review Reports (PRRs) in April 2010 and October 2015. These results document that the remedial program was effective, as evidenced by a significant reduction of VOC concentrations in groundwater following the removal of impacted sediments from Site leaching pools in 1999 and 2000, followed by a gradual improvement thereafter.

A soil vapor intrusion (SVI) evaluation was performed at the Site in December 2009 and the results were documented in the April 2010 PRR. Although the results indicated the potential for SVI to impact indoor air quality in the building, the detected constituents were in use within the building at that time. The NYSDOH recommended that if the property use should change or the use of chlorinated solvents cease at the facility, then an additional SVI investigation should be performed.

An additional SVI evaluation was performed in 2015 and was documented in the 2015 PRR. Soil vapor beneath the Site building remained impacted by VOCs that were associated with the former source area. Residual concentrations of VOCs remained present in soil in one former leaching pool in this area following remediation (see Section 2.5.1) and likely affect soil vapor conditions. Soil vapor conditions also appear to have been affected by recent paving of the former source area and by the lower water table observed in 2015. Soil vapor samples previously collected from locations outside of the Site building did not contain elevated levels of VOCs, indicating that soil vapors dissipate away from the Site building. There did not appear to be a potential for SVI other than at the Site building. Indoor air quality did not appear to be affected by SVI, but did appear to be affected by ambient air conditions and the use of certain chemicals within the building. Although “Mitigate” and “Monitor” responses were indicated for the Site building based solely on the paired sub-slab soil vapor and indoor air data, the apparent absence of SVI and the ongoing use of certain chemicals within the Site building suggested that mitigation was not warranted at that time.

Groundwater monitoring was conducted in June 2017 and was reported to the NYSDEC on August 23, 2017. These results are discussed in Section 2.5.2 below.

2.4 Remedial Action Objectives

Remedial Action Objectives (RAOs) were not listed in the Record of Decision for the Site. Site-specific RAOs, based on the remaining contamination at the Site (see Section 2.5), are as follows:

Groundwater

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.

Soil

RAOs for Public Health Protection

- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater contamination.

Soil Vapor

RAOs for Public Health Protection

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

2.5 Remaining Contamination

2.5.1 Soil

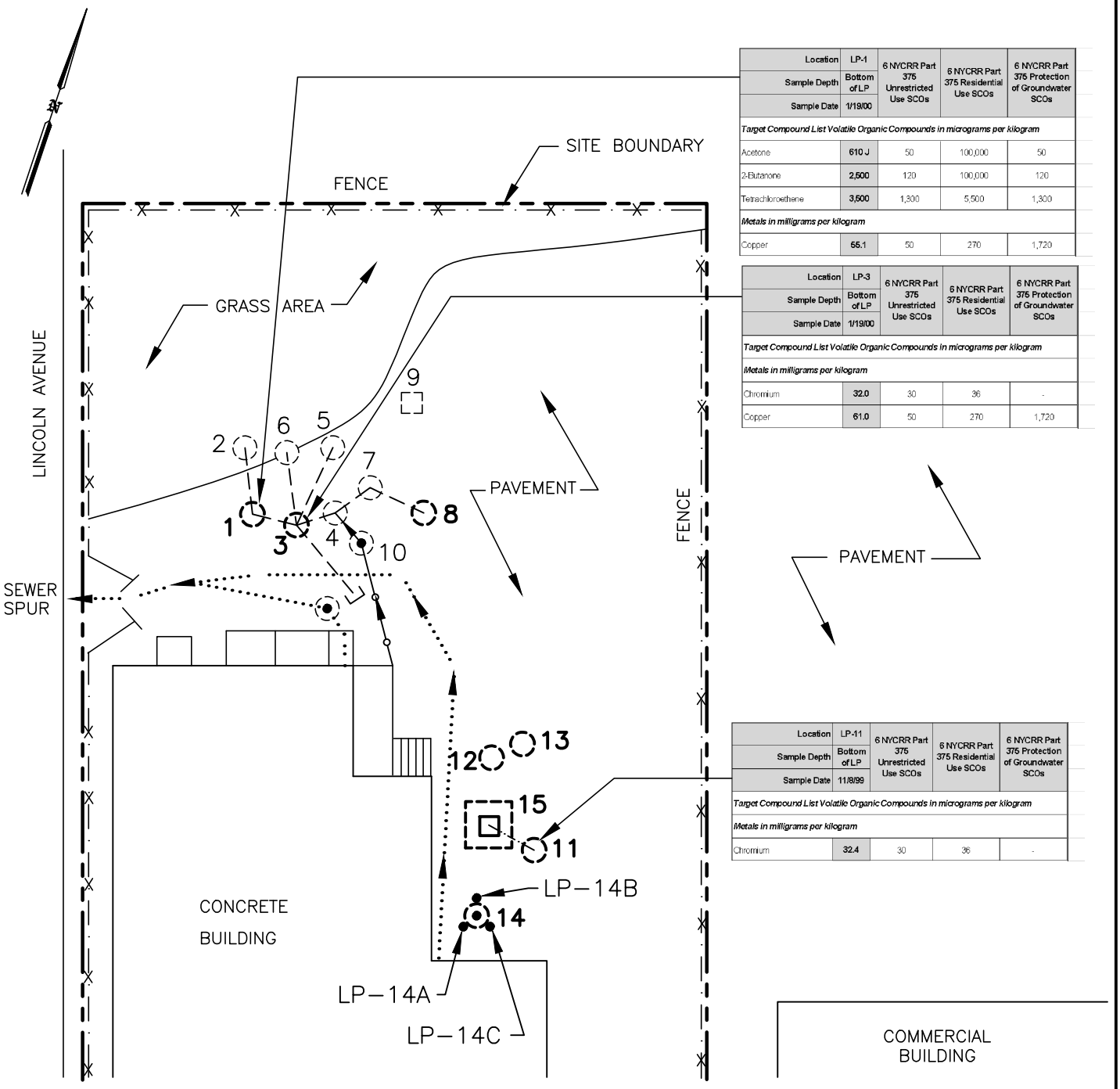
Soil sampling was conducted in the remedial areas following the IRM remedial activities. At the time of the IRM Report, these results were compared to the NYSDEC's TAGM 4046 Recommended Soil Cleanup Objectives and it was determined that no further remedial efforts were required. Since that time, the NYSDEC has implemented Soil Cleanup Objectives (SCOs) under 6 NYCRR Part 375. Table 2.5.1.1 and Figure 2.5.1.1 summarize the results of all post-remediation soil samples collected that exceed the Unrestricted Use SCOs at the Site. These exceedances include three VOCs (acetone, 2-butanone, and PCE) at LP-1, and chromium and/or copper at LP-1, LP-3, and LP-11. The impacted soil is found at depth

TABLE 2.5.1.1
POST-REMEDIATION SOIL CHEMICAL ANALYTICAL DATA
CARDWELL CONDENSER SITE
LINDENHURST, NEW YORK

Location	LP-1	LP-3	LP-8	LP-11	LP-12	LP-13	LP-14	LP-14A	LP-14B	LP-14C	LP-15	6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Residential Use SCOs	6 NYCRR Part 375 Protection of Groundwater SCOs
Sample Depth	**Bottom of LP**	**Bottom of LP**	**Bottom of LP**	**Bottom of LP**	**Bottom of LP**	**Bottom of LP**	**Bottom of LP**	**4-6 feet**	**4-6 feet**	**4-6 feet**	**Bottom of LP**			
Sample Date	**1/19/00**	**1/19/00**	**11/9/99**	**11/8/99**	**11/8/99**	**11/8/99**	**11/8/99**	**11/8/99**	**11/8/99**	**11/8/99**	**1/19/00**			
Target Compound List Volatile Organic Compounds in micrograms per kilogram														
Methylene Chloride	ND	2 J	1 J	ND	1 J	1 J	1 J	2 J	1 J	1 J	1 J	50	51,000	50
Acetone	**610 J**	ND	12	9 JB	35 B	8 JB	27 B	15 B	14 B	17 B	6 JB	50	100,000	50
Carbon Disulfide	ND	ND	ND	ND	ND	2 J	ND	ND	ND	ND	ND	-	-	-
1,2-Dichloroethene (total)	ND	ND	ND	ND	1 J	1 J	3 J	ND	ND	2 J	14	250	59,000	250
1,1-Dichloroethane	ND	ND	ND	ND	0.5 J	ND	0.6 J	ND	ND	ND	ND	270	19,000	270
2-Butanone	**2,500**	ND	2 J	2 J	4 J	ND	3 J	ND	2 J	ND	3 J	120	100,000	120
1,1,1-Trichloroethane	ND	ND	ND	ND	12	2 J	7 J	ND	ND	3 J	ND	680	100,000	680
Trichloroethene	ND	ND	3 J	0.6 J	9 J	2 J	10 J	2 J	2 J	3 J	4 J	470	10,000	470
Benzene	ND	0.2 J	ND	ND	ND	ND	ND	ND	ND	ND	0.5 J	60	2,900	60
Tetrachloroethene	**3,500**	4 J	48	2 J	67	26	210	17	4 J	130	76	1,300	5,500	1,300
Toluene	ND	0.5 J	0.5 J	ND	2 J	ND	0.5 J	0.5 J	0.5 J	0.3 J	0.4 J	700	100,000	700
4-Methyl-2-pentanone	ND	ND	1 J	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-
Ethylbenzene	ND	ND	ND	ND	1 J	ND	ND	ND	0.4 J	0.3 J	ND	1,000	30,000	1,000
Xylene (total)	ND	ND	ND	ND	3 J	ND	ND	ND	0.4 J	0.2 J	0.3 J	260	100,000	1,600
Metals in milligrams per kilogram														
Arsenic	0.75 B	ND	ND	ND	ND	ND	ND	NA	NA	NA	ND	13	16	16
Chromium	20.6	**32.0**	12.4	**32.4**	1.6	1.0 B	7.4	NA	NA	NA	9.5	30	36	-
Copper	**55.1**	**61.0**	26.3	18.5	10.8	16.8	11.8	NA	NA	NA	14.3	50	270	1,720
Lead	4.5	4.9	5.4	2.0	4.0	ND	ND	NA	NA	NA	1.4	63	400	450
Zinc	13.2	16.2	18.7	10.7	53.8	8.0	14.7	NA	NA	NA	15.1	109	2,200	2,480

Notes:

ND = Not detected at or above instrument detection limit.
NA = Not analyzed
J = Estimated concentration less than the quantitation limit but greater than the instrument detection limit.
B = Compound detected in an associated blank sample.
- = Not established.
NYSDEC = New York State Department of Environmental Conservation.
Bold shaded values exceed the 6 NYCRR Part 375 unrestricted use SCOs.



Location	LP-1	6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Residential Use SCOs	6 NYCRR Part 375 Protection of Groundwater SCOs
Sample Depth	Bottom of LP			
Sample Date	1/19/00			
Target Compound List Volatile Organic Compounds in micrograms per kilogram				
Acetone	610 J	50	100,000	50
2-Butanone	2,500	120	100,000	120
Tetrachloroethene	3,500	1,300	5,500	1,300
Metals in milligrams per kilogram				
Copper	55.1	50	270	1,720

Location	LP-3	6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Residential Use SCOs	6 NYCRR Part 375 Protection of Groundwater SCOs
Sample Depth	Bottom of LP			
Sample Date	1/19/00			
Target Compound List Volatile Organic Compounds in micrograms per kilogram				
Metals in milligrams per kilogram				
Chromium	32.0	30	36	-
Copper	61.0	50	270	1,720

Location	LP-11	6 NYCRR Part 375 Unrestricted Use SCOs	6 NYCRR Part 375 Residential Use SCOs	6 NYCRR Part 375 Protection of Groundwater SCOs
Sample Depth	Bottom of LP			
Sample Date	11/8/99			
Target Compound List Volatile Organic Compounds in micrograms per kilogram				
Metals in milligrams per kilogram				
Chromium	32.4	30	36	-

LEGEND

- 15 — FORMER SEPTIC TANK
- 9 — CATCH BASIN ASSOCIATED WITH A FORMER ROOF DRAIN
- 2 — LEACHING POOLS (REMEDIATED LEACHING POOLS AND NUMBERS SHOWN IN BOLD)
- NON-CONTACT COOLING WATER
- FORMER CONNECTIONS
- SEWER CONNECTION
- LP-14A ● — SOIL SAMPLE LOCATIONS

SCALE (in feet): 0 20 40

FPM GROUP

FIGURE 2.5.1.1
RESIDUAL SOIL LOCATIONS
CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By: H.C. | Checked By: S.D. | Date: 7/27/17

beneath the closed leaching pools and the Site surface is paved over these closed structures. None of the results exceed any of the residential, restricted residential, commercial or industrial Use SCOs. The lowest of these SCOs (residential) are shown on Table 2.5.1.1 for reference. However, the results for three VOCs at LP-1 exceed the protection of groundwater SCOs.

Sub-slab soil vapor sampling (discussed below in Section 2.5.3) shows elevated VOC levels in soil vapor beneath the existing building slab. As no sub-slab soil sampling has been conducted, it is possible that impacted soil remains present beneath the slab.

2.5.2 Groundwater

The data from the most recent groundwater sampling event (June 2017) for the wells included in the O&M Plan are summarized in Table 2.5.2.1; the data from the two most recent previous sampling events are also shown for comparison purposes. The data are evaluated with respect to the NYSDEC Standards, exceedances of which are shown in bold. It should be noted that the groundwater flow direction at this Site, as evaluated from the depth-to-water measurements, is generally easterly towards Neguntatogue Creek; the most recent groundwater flow direction contours are shown on Figure 2.5.2.1, together with the data from the recent samples that exceed the SCGs.

At well MW-14, located in the immediate vicinity of the former source area, VOC concentrations remained below the NYSDEC Standards with the exception of a low concentration of PCE (19 micrograms per liter, or µg/l) in June 2017. PCE was detected below the NYSDEC Standard in October 2013 and was detected slightly above the Standard in August 2015. Previously PCE concentrations were up to 300 µg/l in this well. No other VOCs were detected in well MW-14 in excess of NYSDEC Standards since at least 2013.

At well MW-9, located somewhat downgradient of the former source area, no exceedances of the NYSDEC Standards were noted for any VOCs during any of the monitoring events from 2013 to 2017. Previously PCE concentrations were up to 279 µg/l in this well and other chlorinated VOCs previously exceeded NYSDEC Standards.

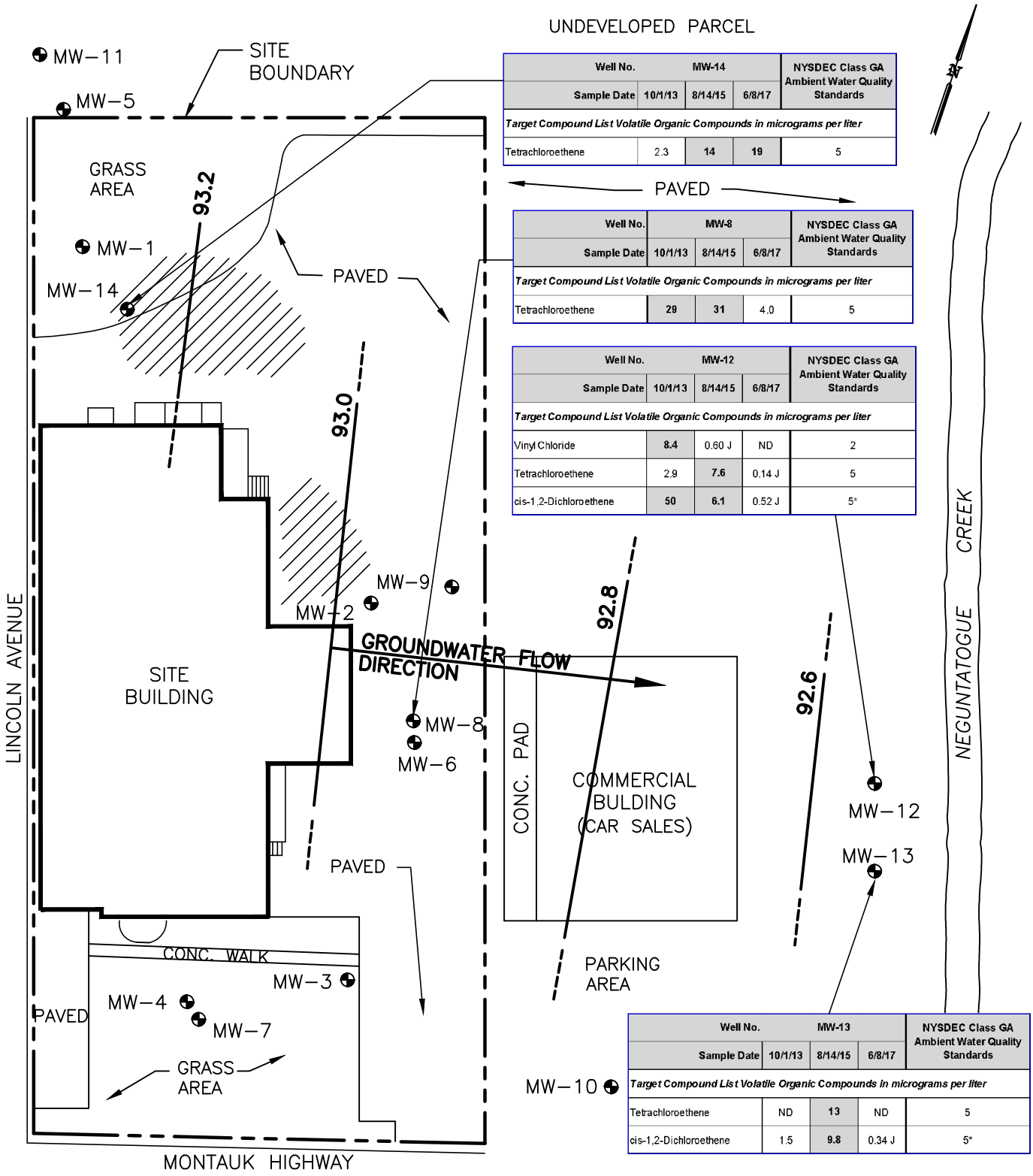
At well MW-8, located further downgradient of the former source area, VOC concentrations remained below the NYSDEC Standards. Low concentrations of PCE were previously detected in October 2013 and August 2015 (29 and 31 µg/l, respectively). Previously PCE concentrations were up to 368 µg/l in this well. No other VOCs were detected in well MW-8 in excess of NYSDEC Standards since at least 2013.

TABLE 2.5.2.1
GROUNDWATER CHEMICAL ANALYTICAL DATA
CARDWELL CONDENSER SITE
LINDENHURST, NEW YORK

Well No.	MW-8			MW-9			MW-10			MW-12			MW-13			MW-14			NYSDEC Class GA Ambient Water Quality Standards
Sample Date	10/1/13	8/14/15	6/8/17	10/1/13	8/14/15	6/8/17	10/1/13	8/14/15	6/8/17	10/1/13	8/14/15	6/8/17	10/1/13	8/14/15	6/8/17	10/1/13	8/14/15	6/8/17	
Target Compound List Volatile Organic Compounds in micrograms per liter																			
Vinyl Chloride	ND	ND	ND	ND	ND	ND	NS	NS	NS	**8.4**	0.60 J	ND	0.70 J	0.82 J	ND	ND	ND	ND	2
Methylene Chloride	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	ND	ND	ND	0.25 J	ND	ND	ND	5*
Acetone	ND	ND	ND	39	ND	4.1 J	NS	NS	NS	ND	ND	2.3 J	ND	ND	1.7 J	ND	ND	2.2 J	-
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	NS	NS	NS	0.16 J	ND	ND	ND	ND	ND	ND	ND	ND	5
1,4-Dichlorobenzene	ND	ND	1.7	0.49 J	0.47 J	ND	NS	NS	NS	0.37 J	0.64 J	1.7	0.40 J	0.41 J	1.7	0.75 J	ND	ND	5
Chloroform	0.12 J	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	0.35 J	ND	ND	0.33 J	ND	ND	ND	7
Methyl tert butyl ether	ND	ND	ND	0.32 J	ND	ND	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	ND	ND	ND	NS	NS	NS	ND	ND	0.18 J	ND	ND	ND	ND	ND	ND	50
Trichloroethene	1.1	0.82 J	1.1	ND	ND	ND	NS	NS	NS	2.5	1.8	0.23 J	0.24 J	3.0	ND	0.21 J	1.2	1.1	5
Benzene	ND	ND	ND	0.087 J	ND	ND	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
Tetrachloroethene	**29**	**31**	4.0	ND	ND	ND	NS	NS	NS	2.9	**7.6**	0.14 J	ND	**13**	ND	2.3	**14**	**19**	5
Toluene	ND	ND	ND	0.16 J	ND	ND	NS	NS	NS	0.88 J	ND	ND	ND	ND	ND	0.22 J	ND	ND	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	NS	NS	NS	0.92 J	ND	ND	ND	0.38 J	ND	ND	ND	ND	5
cis-1,2-Dichloroethene	0.66 J	ND	0.59 J	ND	ND	ND	NS	NS	NS	**50**	**6.1**	0.52 J	1.5	**9.8**	0.34 J	ND	ND	ND	5*
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	NS	NS	NS	0.48 J	ND	ND	ND	ND	ND	ND	ND	ND	5*

Notes:

ND = Not detected at or above instrument detection limit.
NS = Not sampled
J = Estimated concentration less than the quantitation limit but greater than the instrument detection limit.
B = Compound detected in an associated blank sample.
- = Not established.
* = The principal organic contaminant standard for groundwater of 5 ug/l applies to this substance.
NYSDEC = New York State Department of Environmental Conservation.
Bold shaded values exceed the NYSDEC Class GA Ambient Water Quality Standard.



Well No.	MW-14			NYSDEC Class GA Ambient Water Quality Standards
Sample Date	10/1/13	8/14/15	6/8/17	
Target Compound List Volatile Organic Compounds in micrograms per liter				
Tetrachloroethene	2.3	14	19	5

Well No.	MW-8			NYSDEC Class GA Ambient Water Quality Standards
Sample Date	10/1/13	8/14/15	6/8/17	
Target Compound List Volatile Organic Compounds in micrograms per liter				
Tetrachloroethene	29	31	4.0	5

Well No.	MW-12			NYSDEC Class GA Ambient Water Quality Standards
Sample Date	10/1/13	8/14/15	6/8/17	
Target Compound List Volatile Organic Compounds in micrograms per liter				
Vinyl Chloride	8.4	0.60 J	ND	2
Tetrachloroethene	2.9	7.6	0.14 J	5
cis-1,2-Dichloroethene	50	6.1	0.52 J	5*

Well No.	MW-13			NYSDEC Class GA Ambient Water Quality Standards
Sample Date	10/1/13	8/14/15	6/8/17	
Target Compound List Volatile Organic Compounds in micrograms per liter				
Tetrachloroethene	ND	13	ND	5
cis-1,2-Dichloroethene	1.5	9.8	0.34 J	5*

LEGEND:

- MW-8 GROUNDWATER MONITORING WELL
- SITE BOUNDARY
- FORMER LEACHING POOL AREA
- 93.0 GROUNDWATER RELATIVE ELEVATION

SCALE (in feet): 0 25 50

FPM GROUP

FIGURE 2.5.2.1
GROUNDWATER FLOW DIRECTION & ANALYTICAL RESULTS
CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By:H.C. | Checked By: S.D. | Date: 7/27/17

Wells MW-12 and MW-13 in the vicinity of Neguntatogue Creek showed no exceedances of the NYSDEC Standards in June 2017. Previously generally low concentrations of vinyl chloride (8.4 µg/l), cis-1,2-dichloroethylene (up to 50 µg/l), and PCE (up to 7.6 µg/l) were detected in well MW-12, and cis-1,2-DCE (9.8 µg/l) and PCE (13 µg/l) were detected in well M-13 in 2015. Previously, these constituents have been sporadically detected in these wells at generally low concentrations.

The concentrations of Site-related VOCs in each well for the most recent monitoring events (2013 to 2017) are shown on Figure 2.5.2.1. These data indicate that generally low VOC impacts remain present at the Site, primarily in proximity to and somewhat downgradient of the former source area. VOC concentrations decrease further downgradient in the vicinity of Neguntatogue Creek. Site-related VOC levels are very low, with only one detection exceeding a NYSDEC Standard in 2017. These data indicate that the remaining residual concentrations are limited and anticipated to continue to decline.

2.5.3 Soil Vapor

Sub-slab soil vapor and indoor air were sampled in December 2009 and August 2015. Tables 2.5.3.1 and 2.5.3.2 summarize the results of the 2009 and 2015 sampling events, respectively. Figure 2.5.3.1 shows the combined results from both sampling events. The results and conclusions from each event are described below.

The results of the December 2009 sampling event, which was performed during the heating season, were evaluated with respect to the guidance current at that time as follows:

- Although low levels of several VOCs, including PCE, were noted in the ambient air sample, the detections appeared to be consistent with outdoor air background levels for commercial buildings and did not appear to present a concern;
- Several VOCs, including petroleum-related compounds, acetone, 1,4-dichlorobenzene, cyclohexane, ethyl acetate, heptane, hexane, and methylene chloride, were present in the indoor air of the building at levels greater than those observed in the sub-slab soil vapor sample. Some of these VOCs, particularly cyclohexane, heptane, and methylene chloride, were also noted at somewhat elevated levels in the sub-slab soil vapor and, therefore, at least a portion of the concentrations of these VOCs observed in the indoor air could result from soil vapor intrusion. However, these VOCs were also present in the various lubricants, cleaners, and other products stored and used in the first floor of the building. Therefore, at least a portion of these detections appeared to result from onsite operations rather than soil vapor intrusion;
- 1,1,1-trichloroethane (1,1,1-TCA) was detected in the sub-slab soil vapor but was not detected in

TABLE 2.5.3.1
SOIL VAPOR/INDOOR AIR ANALYTICAL DATA
CARDWELL CONDENSER SITE, LINDENHURST, NEW YORK
DECEMBER 11, 2009

Sample Location	Building	Indoor Air - Building		Outside			Indoor Air Background Levels, Commercial*	Outdoor Air Background Levels, Commercial*
Sample Type	Sub-Slab	Primary Air Sample	Duplicate Air Sample	Ambient	Soil Gas	Soil Gas		
Sample Number	SG-2	IA	IA-DUP	AMB	SG-1	SG-3		
Volatile Organic Compounds in micrograms per cubic meter								
1,1,1-Trichloroethane	**540**	**ND**	**ND**	ND	ND	ND	2.6 - 33.0	ND-3.8
1,1-Dichloroethane	1.3	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	**1.1**	**ND**	**ND**	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	5.7	90	210	0.90	1.1	0.90	1.7 - 13.7	ND-7.1
1,3,5-Trimethylbenzene	1.2	23	38	ND	ND	ND	ND - 4.6	ND - 3.3
1,4-Dichlorobenzene	2.8	36	61	ND	ND	ND	ND - 12.5	ND - 1.7
2,2,4-Trimethylpentane	2.9	ND	ND	ND	0.90	0.52 J	-	-
4-Ethyltoluene	1.3	25	45	ND	ND	ND	ND - 5.9	ND - 3.3
Acetone	1,500	4,800	4,900	48	29	61	32.4 - 120.2	15.4-56.0
Benzene	3.8	0.78	1.4	0.42 J	0.49	0.65	2.1 - 12.5	1.2-9.6
Carbon disulfide	7.3	ND	ND	ND	ND	1.3	ND - 6.4	ND - 8.3
Carbon tetrachloride	**2.9**	**ND**	**ND**	ND	ND	ND	ND - 0.7	ND - 0.7
Chloroform	79	ND	ND	ND	ND	ND	ND - 1.4	ND - 0.7
Chloromethane	ND	0.44	0.50	0.46	0.27 J	0.76	2.1 - 4.4	2.0 - 4.0
cis-1,2-Dichloroethene	**0.40 J**	**ND**	**ND**	ND	ND	0.81	ND	ND
Cyclohexane	64	740	600	1.4	4.9	3.1	-	-
Ethyl acetate	1.9	28	31	ND	ND	ND	ND - 9.5	ND - 1.9
Ethylbenzene	1.0	9.7	15	ND	ND	ND	ND - 7.6	ND - 4.3
Freon 11 (Trichlorofluoromethane)	3.9	0.63 J	0.69 J	0.91	1.6	23	ND - 54.0	ND - 5.6
Freon 113	6.3	ND	ND	ND	ND	ND	-	-
Freon 12 (Dichlorodifluoromethane)	1.7	1.3	1.4	1.7	1.7	1.5	4.8 - 32.9	3.8 - 12.2
Heptane	180	1,500	1,200	3.3	9.2	5.4	ND - 3.1	ND -26.8
Hexane	ND	4.7	5.1	ND	2.5	3.8	1.6 - 15.2	ND-11.4
Isopropyl alcohol	ND	ND	ND	ND	ND	3.9	-	-
Xylene (m,p)	3.0	47	79	0.53 J	0.75 J	0.71 J	4.1 - 28.5	ND-16.1
Methyl Ethyl Ketone	58	9.6	16	0.57 J	1.0	2.4	3.3 - 13.5	2.2-14.8
Methyl Isobutyl Ketone	16	ND	ND	ND	ND	ND	-	-
Methylene chloride	400 J	1,800	2,500	4.1	5.2	4.5	ND - 16.0	ND - 10.3
Xylene (o)	1.3	21	35	ND	ND	ND	ND - 11.2	ND - 6.0
Tetrachloroethylene	**680**	**730 J**	**610 J**	1.9	35	2.8	ND - 25.4	ND - 10.4
Toluene	11	32	47	1.6	2.6	2.5	10.7 - 70.8	5.9-49.2
trans-1,2-Dichloroethene	3.3	ND	ND	ND	ND	ND	-	-
Trichloroethene	**630**	**16**	**21**	ND	1.7	1.4	ND - 6.5	ND - 2.6
Vinyl chloride	**ND**	**ND**	**ND**	ND	ND	17	ND	ND

Notes:

Only compounds detected in one or more samples are reported. See laboratory report for complete data.
ND = Not detected.
J = Analyte detected at or below quantitation limits.
* = Background indoor and outdoor air levels from a USEPA study of offices, 25th to 95th percentiles, (EPA 2001).

- = Background concentration not established.
Green highlight = No further action response on NYSDOH Matrix 1 or 2
Orange highlight = Monitor response on NYSDOH Matrix 1 or 2.
Red highlight = Mitigate response on NYSDOH Matrix 1 or 2.

FPM

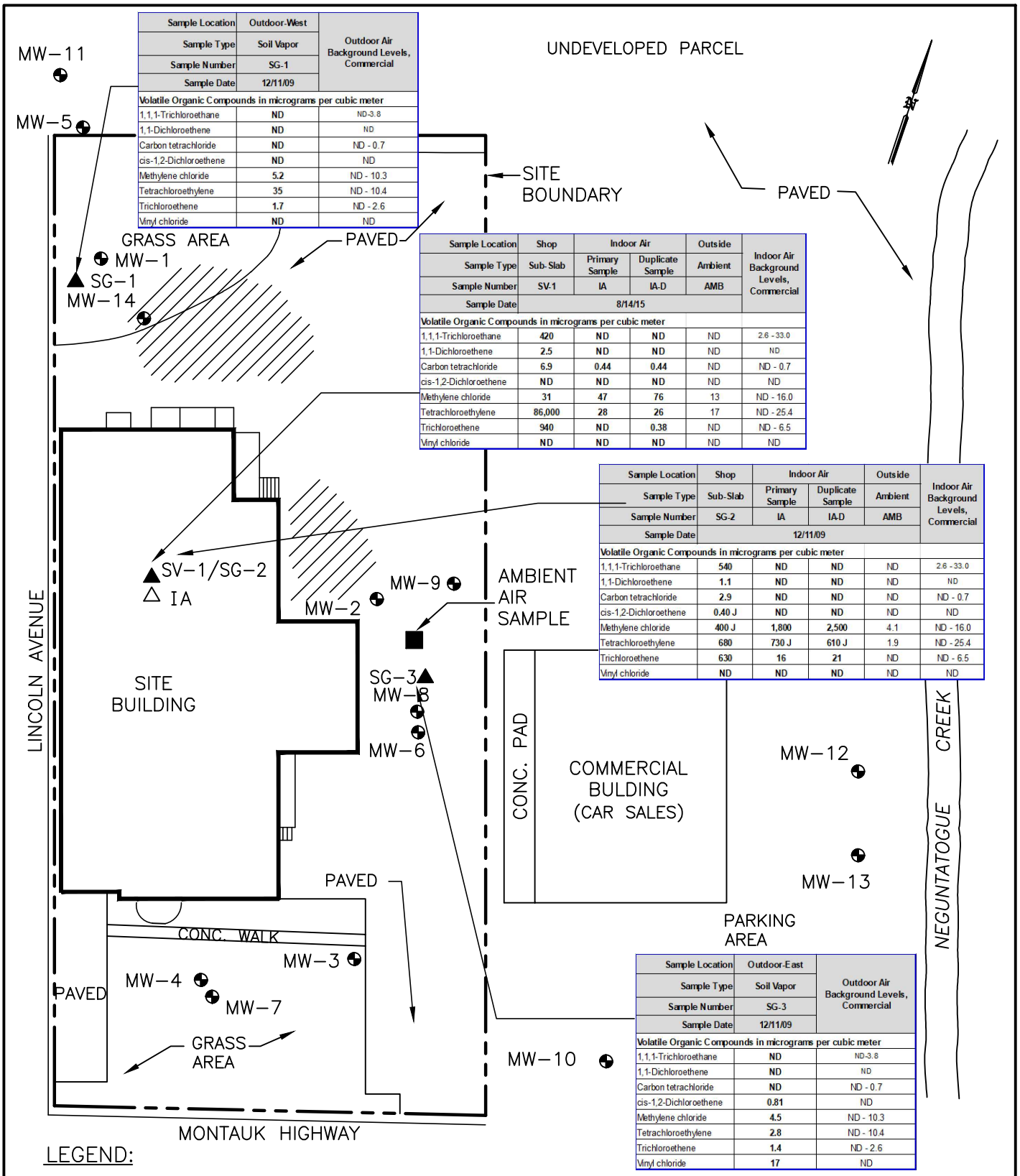
TABLE 2.5.3.2
SUB-SLAB SOIL VAPOR/INDOOR AIR ANALYTICAL DATA
AUGUST 14, 2015
CARDWELL CONDENSER CORPORATION SITE

Sample Location	Shop	Indoor Air		Outside	Indoor Air Background Levels, Commercial*
Sample Type	Sub-Slab	Primary Sample	Duplicate Sample	Ambient	
Sample Number	SV-1	IA	IA-D	AMB	
Volatile Organic Compounds in micrograms per cubic meter					
1,1,1-Trichloroethane	**420**	**ND**	**ND**	ND	2.6 - 33.0
1,1-Dichloroethane	1.6	ND	ND	ND	ND
1,1-Dichloroethene	**2.5**	**ND**	**ND**	ND	ND
1,2,4-Trimethylbenzene	3.1	1.3	1.8	1.2	1.7 - 13.7
1,3,5-Trimethylbenzene	2.5	0.84	1.0	0.88	ND - 4.6
1,4-Dichlorobenzene	85	ND	ND	ND	ND - 12.5
2,2,4-Trimethylpentane	1.6	1.5	1.6	1.6	-
4-Ethyltoluene	0.84	ND	ND	ND	ND - 5.9
Acetone	310	23	28	27	32.4 - 120.2
Benzene	4.2	0.99	1.0	0.83	2.1 - 12.5
Carbon disulfide	4.1	0.68	0.68	0.65	ND - 6.4
Carbon tetrachloride	**6.9**	**0.44**	**0.44**	ND	ND - 0.7
Chloroform	320	ND	ND	ND	ND - 1.4
Chloromethane	ND	1.1	1.2	1.2	2.1 - 4.4
cis-1,2-Dichloroethene	**ND**	**ND**	**ND**	ND	ND
Cyclohexane	7.6	3.2	3.5	1.8	-
Ethyl acetate	2.6	4.6	5.7	2.3	ND - 9.5
Ethylbenzene	1.6	0.78	2.2	0.65	ND - 7.6
Freon 11 (Trichlorofluoromethane)	8.2	1.9	1.9	1.9	ND - 54.0
Freon 113	6.0	0.77	0.84	ND	ND - 9.4
Freon 12 (Dichlorodifluoromethane)	3.2	2.8	3.0	2.9	4.8 - 32.9
Heptane	4.3	1.7	1.8	1.5	ND - 3.1
Hexane	ND	3.1	3.4	2.9	1.6 - 15.2
Isopropyl alcohol	17	37	57	35	-
Xylene (m,p)	5.3	2.6	12	1.9	4.1 - 28.5
Methyl Ethyl Ketone	13	2.6	2.5	2.1	3.3 - 13.5
Methyl Isobutyl Ketone	4.6	2.9	3.0	2.1	-
Methylene chloride	**31**	**47**	**76**	13	ND - 16.0
Xylene (o)	1.9	1.0	3.7	0.82	ND - 11.2
Tetrachloroethylene	**86,000**	**28**	**26**	17	ND - 25.4
Toluene	9.0	6.8	7.1	6.0	10.7 - 70.8
trans-1,2-Dichloroethene	ND	ND	ND	ND	-
Trichloroethene	**940**	**ND**	**0.38**	ND	ND - 6.5
Vinyl chloride	**ND**	**ND**	**ND**	ND	ND

Notes:

Only compounds detected in one or more samples are reported. See laboratory report for complete data.
ND = Not detected.
- = Not established.
Green highlight = No further action response
Yellow highlight = Identify sources and resample or mitigate
Orange highlight = Monitor response
Red highlight = Mitigate response
* = Background indoor air levels from a USEPA study of offices, 25th to 95th percentiles, (EPA 2001).

FPM



Sample Location	Outdoor-West	Outdoor Air Background Levels, Commercial
Sample Type	Soil Vapor	
Sample Number	SG-1	
Sample Date	12/11/09	
Volatile Organic Compounds in micrograms per cubic meter		
1,1,1-Trichloroethane	ND	ND-3.8
1,1-Dichloroethene	ND	ND
Carbon tetrachloride	ND	ND - 0.7
cis-1,2-Dichloroethene	ND	ND
Methylene chloride	5.2	ND - 10.3
Tetrachloroethylene	35	ND - 10.4
Trichloroethene	1.7	ND - 2.6
Vinyl chloride	ND	ND

Sample Location	Shop	Indoor Air		Outside	Indoor Air Background Levels, Commercial
Sample Type	Sub-Slab	Primary Sample	Duplicate Sample	Ambient	
Sample Number	SV-1	IA	IA-D	AMB	
Sample Date	8/14/15				
Volatile Organic Compounds in micrograms per cubic meter					
1,1,1-Trichloroethane	420	ND	ND	ND	2.6 - 33.0
1,1-Dichloroethene	2.5	ND	ND	ND	ND
Carbon tetrachloride	6.9	0.44	0.44	ND	ND - 0.7
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
Methylene chloride	31	47	76	13	ND - 16.0
Tetrachloroethylene	86,000	28	26	17	ND - 25.4
Trichloroethene	940	ND	0.38	ND	ND - 6.5
Vinyl chloride	ND	ND	ND	ND	ND

Sample Location	Shop	Indoor Air		Outside	Indoor Air Background Levels, Commercial
Sample Type	Sub-Slab	Primary Sample	Duplicate Sample	Ambient	
Sample Number	SG-2	IA	IA-D	AMB	
Sample Date	12/11/09				
Volatile Organic Compounds in micrograms per cubic meter					
1,1,1-Trichloroethane	540	ND	ND	ND	2.6 - 33.0
1,1-Dichloroethene	1.1	ND	ND	ND	ND
Carbon tetrachloride	2.9	ND	ND	ND	ND - 0.7
cis-1,2-Dichloroethene	0.40 J	ND	ND	ND	ND
Methylene chloride	400 J	1,800	2,500	4.1	ND - 16.0
Tetrachloroethylene	680	730 J	610 J	1.9	ND - 25.4
Trichloroethene	630	16	21	ND	ND - 6.5
Vinyl chloride	ND	ND	ND	ND	ND

Sample Location	Outdoor-East	Outdoor Air Background Levels, Commercial
Sample Type	Soil Vapor	
Sample Number	SG-3	
Sample Date	12/11/09	
Volatile Organic Compounds in micrograms per cubic meter		
1,1,1-Trichloroethane	ND	ND-3.8
1,1-Dichloroethene	ND	ND
Carbon tetrachloride	ND	ND - 0.7
cis-1,2-Dichloroethene	0.81	ND
Methylene chloride	4.5	ND - 10.3
Tetrachloroethylene	2.8	ND - 10.4
Trichloroethene	1.4	ND - 2.6
Vinyl chloride	17	ND

LEGEND:

- MW-8 GROUNDWATER MONITORING WELL
- SITE BOUNDARY
- FORMER LEACHING POOL AREA
- SOIL VAPOR SAMPLE LOCATION
- INDOOR AIR SAMPLE LOCATION

SCALE (in feet): 0 25 50

FPM GROUP

FIGURE 2.5.3.1
SOIL VAPOR & INDOOR AIR RESULTS– DECEMBER 2009 & AUGUST 2015
CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By:H.C. | Checked By: S.D. | Date: 3/7/18

the indoor air. Therefore, there was not presently an impact to indoor air quality at this Site from 1,1,1-TCA. NYSDOH Matrix 2 indicated that "Monitor" was the appropriate response;

- PCE was detected in both the sub-slab soil vapor and indoor air. NYSDOH Matrix 2 indicated that "Mitigate" was the appropriate response for the detected concentrations. It was noted that a solvent containing PCE and used for screen printing processes (Safety Kleen 105 Solvent Recycled) was stored and used within the first floor of the building. It was likely that the use of this product contributed to the PCE concentration observed in the indoor air as the indoor air concentration was higher than the sub-slab soil vapor PCE concentration;
- Trichloroethylene (TCE) was detected in the sub-slab soil vapor and in the indoor air. NYSDOH Matrix 1 indicated that "Mitigate" was the appropriate response;
- The concentrations of methylene chloride, PCE, and TCE in the indoor air exceeded the then-current NYSDOH Air Guideline Values of 60, 100 and 5 ug/m^3, respectively, for these VOCs. The TCE concentration appeared to be related solely to soil vapor intrusion. However, the methylene chloride and PCE concentrations appeared to be related to a combination of soil vapor intrusion and onsite chemical storage/usage. Therefore, in addition to mitigation measures to reduce soil vapor intrusion, additional steps were recommended to reduce methylene chloride and PCE concentrations in indoor air; and
- The results for soil vapor samples SG-1 and SG-3 collected outside of the Site building indicated that only low concentrations of several VOCs were detected. The concentrations detected at these locations were much lower than those detected beneath the Site building and were generally within the ranges of background levels for indoor and outdoor air shown in Table 2.5.3.1. These detections did not present a concern for soil vapor intrusion and indicated that soil vapors dissipate rapidly away from the Site building.

Although a "mitigate" response was indicated based on the PCE and TCE concentrations in sub-slab soil vapor and indoor air in the Site building, it was noted that the sub-slab soil vapor levels were not highly elevated. These data suggested that the soil vapor levels noted in 2009 were a residual condition. This conclusion was supported by the groundwater monitoring data, which were also indicative of the absence of source material, and by the soil vapor data from the sampling locations outside of the Site building, which also did not indicate the presence of a source. The above information was documented in the April 2010 Periodic Review Report for the Site, which was accepted by the NYSDEC and NYSDOH.

The results of the 2015 sampling event, when compared to current NYSDOH guidance (updated in May 2017) indicated the following:

- Several VOCs, including PCE and methylene chloride, were noted in the ambient air sample and were representative of ambient air quality in the Site vicinity. These data are useful in evaluating potential impacts to indoor air quality;
- PCE was detected in both the sub-slab soil vapor and indoor air. The levels detected in both the indoor air sample and its duplicate did not exceed the NYSDOH Air Guideline Value for PCE (30 ug/m^3) and were slightly elevated above the ambient air PCE concentration (17 ug/ m^3). It was noted that solvents containing PCE (Safety Kleen 105 Solvent Recycled and Saati Remove TSR) are used onsite for cleaning purposes associated with the screen printing processes and are stored and actively used within the first floor of the building in proximity to the indoor air sample location. Thus, although the NYSDOH Matrix B indicates that "Mitigate" is the appropriate response for the detected PCE concentrations, based on the associated observations and considerations, it appears likely that the PCE detected in the indoor air may result from the ambient air condition and be influenced by ongoing chemical use within the building. This interpretation is supported by the data for the other VOCs;
- 1,1,1-TCA was detected in the sub-slab soil vapor but was not detected in the indoor air or in ambient air. Therefore, SVI by 1,1,1-TCA is not presently occurring at this Site. NYSDOH Matrix B indicates that "No Further Action" is the appropriate response;
- TCE was detected in the sub-slab soil vapor but was not detected in the indoor air sample and was detected at a very low concentration (well below the NYSDOH Air Guideline Value of 2 ug/m^3) in the indoor air sample duplicate. TCE was not detected in the ambient air sample. Based on these results, although SVI by TCE does not appear to be occurring at this Site, we note that the NYSDOH Matrix A indicates that "Mitigate" is the appropriate response;
- Carbon tetrachloride was detected in the sub-slab soil vapor and in the indoor air at very low levels, but was not detected in the ambient air. NYSDOH Matrix A indicates that "Monitor" is the appropriate response;
- 1,1-DCE was detected in the sub-slab soil vapor at a low level but not in the indoor or ambient air. NYSDOH Matrix A indicates that "No further action" is the appropriate response;
- Methylene chloride was detected in the sub-slab soil vapor, indoor air, and ambient air samples. The concentrations detected in the indoor air samples were somewhat above both the ambient air and sub-slab soil vapor levels, and the concentration in the indoor air duplicate sample somewhat

exceeded the NYSDOH Air Guideline Value of 60 ug/m^3. Based on these results, it appears likely that the methylene chloride in indoor air may result from the ambient air condition and is influenced by ongoing chemical use within the building. It was noted that a solvent containing 55 to 85% methylene chloride (Remove TSR by Saati) is used onsite for cleaning purposes associated with the screen printing processes and is stored and actively used within the first floor of the building in proximity to the indoor air sample location. NYSDOH Matrix B indicates that "Identify source(s) and resample or mitigate" is the appropriate response; and

- Several VOCs for which no NYSDOH guidance is provided were detected in the indoor air. The detected concentrations were within the range of typical background levels in commercial buildings and are not further considered herein.

In comparing the August 2015 SVI data relative to the previous (December 2009) SVI data, we noted the following two factors that likely affected soil vapor conditions:

- The formerly unpaved area behind the Site building (former source location) was paved in June 2010. Pavement now covers approximately 75% of this area and is likely to at least partially confine soil vapors in proximity to the building; and
- The depth to groundwater onsite during August 2015 was between 0.38 and 0.76 feet greater than during December 2009. This condition may have resulted in exposure of residual soil in the former source area (PCE at 3.5 mg/kg in LP-1, which is below the NYSDEC's residential use soil cleanup objective, but above the NYSDEC's unrestricted use SCO, and TCE in several former leaching pools at up to 0.01 mg/kg, well below all NYSDEC SCOs for TCE). Although this residual soil meets NYSDEC criteria for the use of the property, it may affect soil vapor conditions. The residual soil does not appear to significantly impact groundwater conditions, as indicated by the continued gradual improvement in groundwater quality.

In general, both the PCE and TCE levels in sub-slab soil vapor were higher in August 2015 than in December 2009. Despite this condition, both the PCE and TCE levels in indoor air were lower in August 2015 than in December 2009. These observations suggest that soil vapor conditions are affected by the changed surface conditions (added pavement and lowered water table) in August 2015 and that indoor air conditions are improved, likely due to improved chemical management. These observations also support the conclusion that SVI is not occurring; if SVI were occurring, one would expect greater impacts to indoor air quality in August 2015 due to the greater levels of PCE and TCE in soil vapor at that time.

The methylene chloride data for these two sampling events were also evaluated. Methylene chloride was formerly present in the Site's leaching pools prior to remediation. Following remediation, it appears that the methylene chloride was essentially completely removed, as the highest concentration noted in confirmatory samples was 1 ug/kg (1 ppb). The soil vapor data from December 2009 and August 2015 are consistent with this observation as no increase was noted in the soil vapor methylene chloride concentration in August 2015 despite the additional pavement and lowered water table. In fact, the methylene chloride level in soil vapor decreased from 400 to 31 ug/m^3 between 2009 and 2015, indicating the absence of a subsurface source of methylene chloride.

1,1,1-TCA continues to remain present in sub-slab soil vapor at a concentration comparable to that noted in 2009, but continues to remain absent from indoor air in the Site building. The 1,1,1-TCA observations indicate that SVI is not occurring.

We note that the December 2009 soil vapor data from onsite locations outside of the building footprint were low (PCE at a maximum of 35 ug/m^3) and indicate that SVI does not present a concern in these areas, both of which are onsite and closer to the former source area than the building on the adjoining property to the east (car sales business) or the residential buildings on the properties to the west (across Lincoln Avenue). The higher concentrations were noted in closest proximity to the former source location and are not associated with the impacted groundwater. These data suggest that the remaining impacted groundwater is not a significant source of soil vapors.

As summarized in the 2015 PRR, soil vapor beneath the Site building continues to be impacted by chlorinated solvents, primarily PCE, TCE and 1,1,1-TCA, all of which were formerly present in the source area. Residual concentrations of PCE (meeting applicable NYSDEC SCOs for the use of the property) remained present in soil in one former leaching pool in this area following remediation and likely contribute to soil vapor conditions. Soil vapor conditions appear to have been affected by recent paving of the former source area in proximity to the building and by the lower water table observed in 2015. Indoor air quality does not appear to be affected by SVI, but does appear to be affected by ambient air conditions and the use of certain chemicals containing PCE and/or methylene chloride within the building. The 2015 indoor air data indicate improved conditions relative to 2009 and none of the 2015 indoor air concentrations exceeded the applicable NYSDOH Air Guideline Values, with the sole exception of one methylene chloride detection in the indoor air duplicate sample. Although "Mitigate" and "Monitor" responses are indicated for the Site building based solely on the paired sub-slab soil vapor and indoor air

data, the apparent absence of SVI and the ongoing use of certain chemicals within the Site building suggest that mitigation is not warranted at this time. Should the use of certain chemicals cease, the Site use change, or additional data indicate that SVI is occurring, then mitigation may be warranted.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

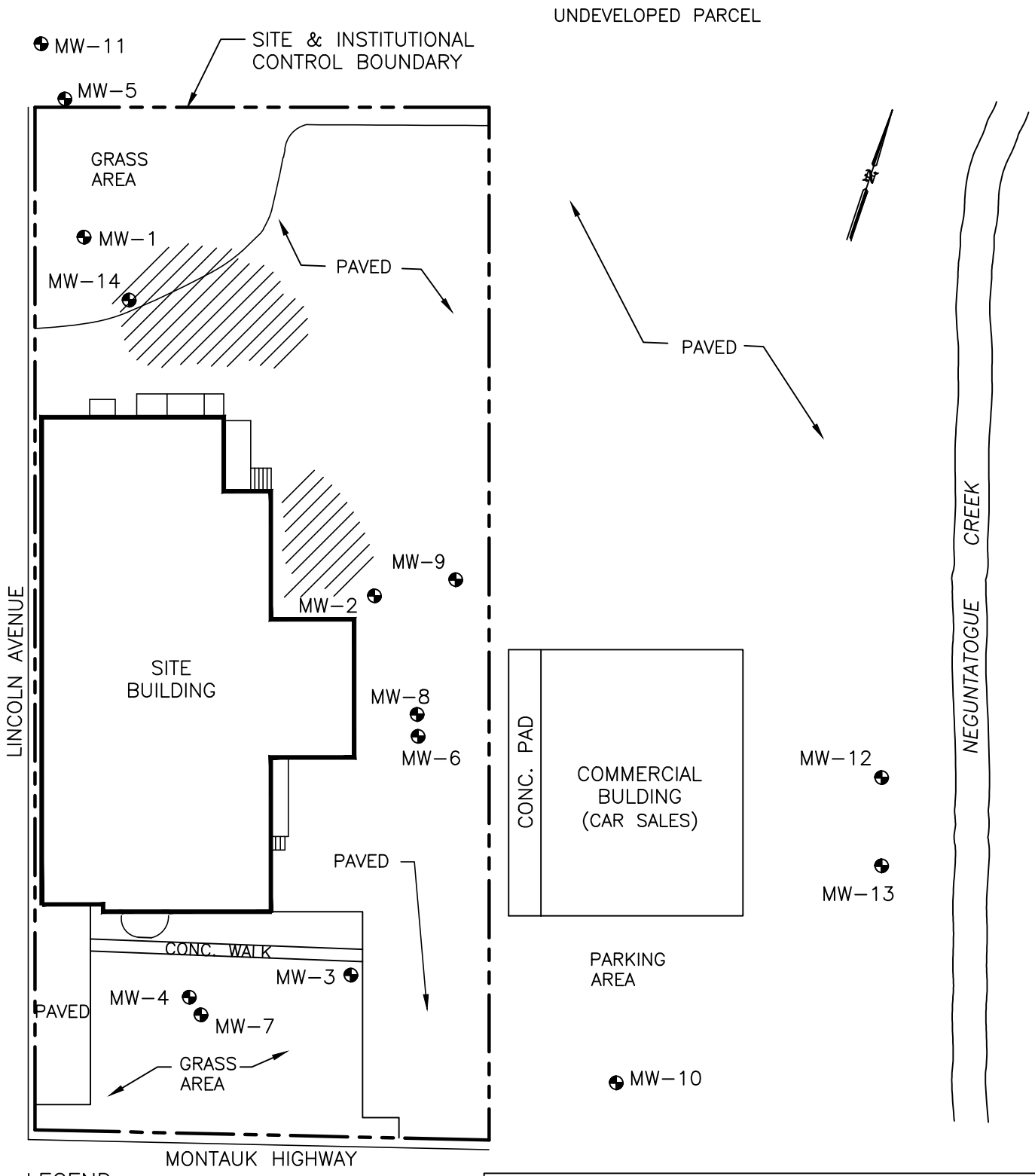
Since remaining contamination exists at the Site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the Site. The IC/EC Plan is one component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

This plan provides:

- A description of all IC/ECs on the Site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP, as provided in Appendix D) 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 IC/ECs required by the site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

A series of ICs is required to: (1) implement, maintain and monitor EC systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the Site to industrial uses only. Adherence to these ICs on the site is required by the Environmental Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries are shown on Figure 3.2.1.



FPM GROUP

FIGURE 3.2.1
INSTITUTIONAL CONTROL BOUNDARY

CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By:H.C.	Checked By: S.D.	Date: 7/27/17

These ICs are:

- The property may be used for industrial use;
- All Engineering Controls must be operated and maintained as specified in the Site Management Plan;
- All Engineering Controls must be inspected at a frequency and in a manner defined in the Site Management Plan;
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Suffolk County Department of Health Services to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
- Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;
- Data and information pertinent to site management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in the SMP; and
- Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.

3.3 Engineering Controls

There is no EC for this Site established in the ROD, as discussed in the NYSDEC-approved PRRs. However, the existing pavement over the former LP-1 location functions as an EC to limit stormwater infiltration, thus reducing the potential for the residual soil to impact groundwater conditions and the existing building slab functions as an EC to prevent contact with sub-slab soil and reduce the potential for SVI. The groundwater monitoring well system also functions as an EC to allow ready access to

groundwater for the required monitoring. Thus, these physical features are considered as ECs for the purpose of this SMP, as described below.

3.3.1 Cover

Soil exceeding the NYSDEC SCOs for protection of groundwater remains present below the former LP-1 location to the north of the Site building. Pavement over this area presently reduces the potential for groundwater impacts by limiting stormwater infiltration. This pavement cover is comprised of asphalt pavement. Figure 3.3.1.1 presents the location of the pavement cover in the former LP-1 area.

VOC-impacted soil may also be present beneath the slab of the onsite building. The existing cover in this area consists of the concrete slab of the building, which presents contact with sub-slab soil and reduces the potential for SVI. Figure 3.3.1.1 shows the location of the concrete building slab cover.

Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP. The Excavation Work Plan (EWP) provided in Appendix D outlines the procedures required to be implemented in the event that excavation is conducted onsite, including if the cover is breached, penetrated or temporarily removed in these areas, and any underlying remaining contamination is disturbed. 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 associated Community Air Monitoring Plan (CAMP) prepared for the Site and provided in Appendix E.

3.3.2 Monitoring Well System

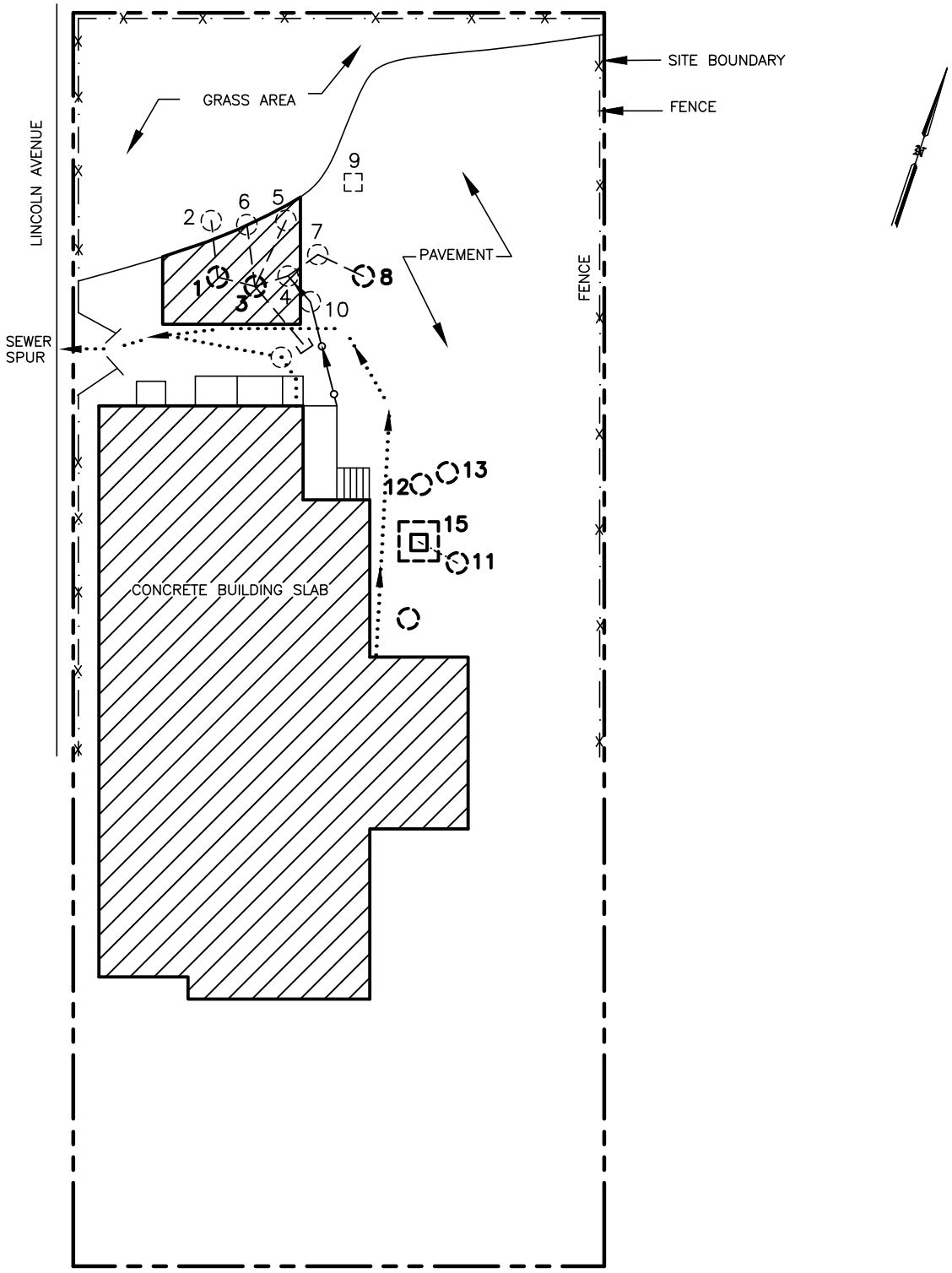
Groundwater monitoring wells remain in place at the Site and are used to confirm that the levels of VOCs continue to decline following the remediation of the source area. Figure 3.3.2.1 shows the locations of the Site's monitoring wells. Procedures for groundwater monitoring are included in the Monitoring and Sampling Plan in Section 4.0 of this SMP. Any groundwater monitoring and sampling work must also be conducted in accordance with the procedures defined in a HASP prepared for the Site and provided in Appendix E.

3.3.3 Criteria for Completion of Remediation

Generally, remedial processes are considered completed when 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.

3.3.3.1 Cover

The pavement and building slab covers will be considered as a permanent EC for this Site unless the soil exceeding the NYSDEC SCOs for protection of groundwater that is present below the former



LEGEND

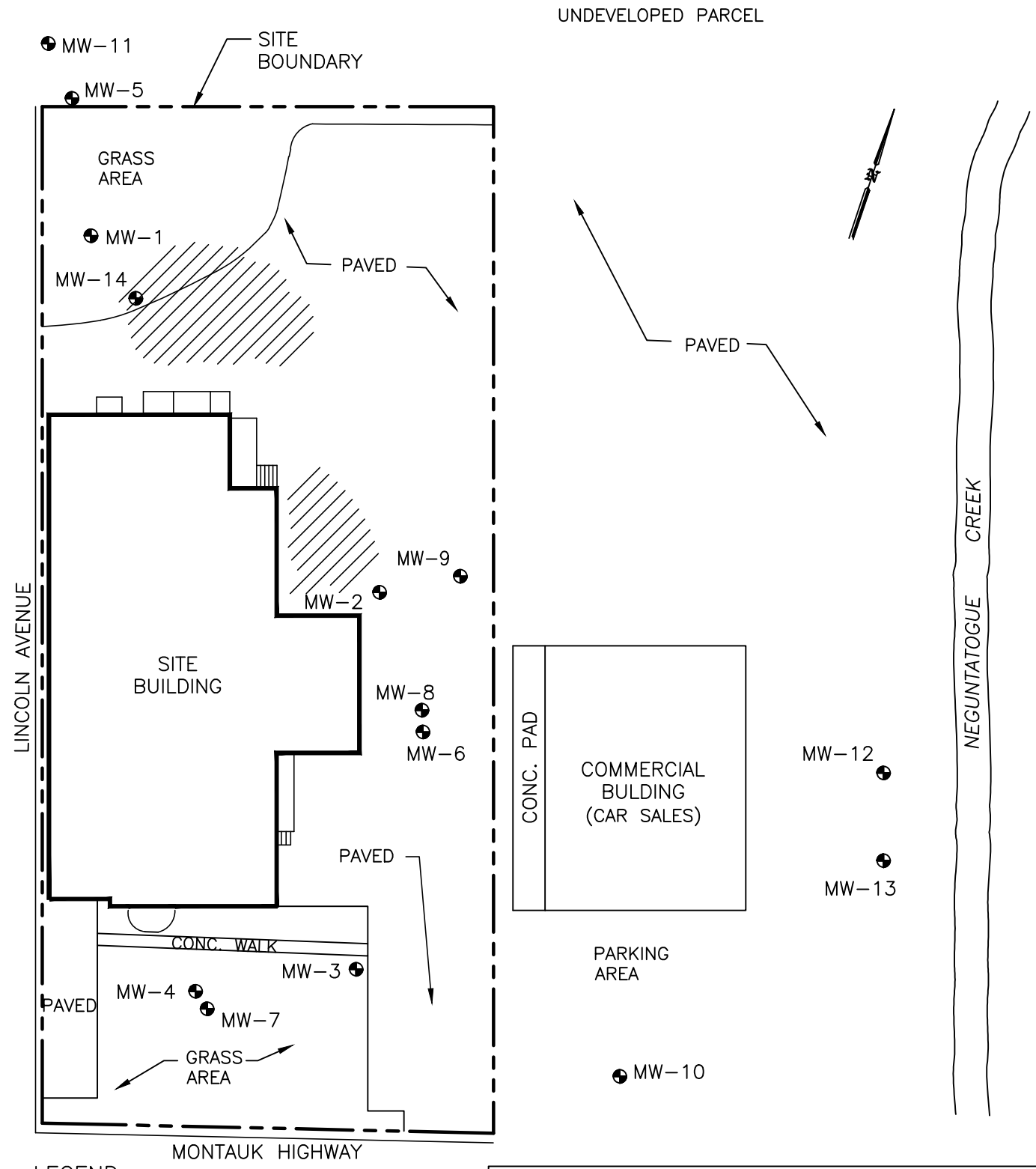
15	FORMER SEPTIC TANK
9	CATCH BASIN ASSOCIATED WITH A FORMER ROOF DRAIN
2	LEACHING POOLS (REMEDIATED LEACHING POOLS AND NUMBERS SHOWN IN BOLD)
	NON-CONTACT COOLING WATER
	FORMER CONNECTIONS
	SEWER CONNECTION
	COVER AREAS

SCALE (in feet): 0 20 40

FPM GROUP

FIGURE 3.3.1.1
COVER AREAS
CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By: H.C.	Checked By: S.D.	Date: 9/6/18



FPM GROUP

FIGURE 3.3.2.1
GROUNDWATER MONITORING WELL LOCATIONS
CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By: H.C.	Checked By: S.D.	Date: 7/27/17

LP-1 location to the north of the Site building is removed and/or the building slab is removed and it is confirmed that impacted soil does not remain present below the slab. The quality and integrity of these covers will be inspected at defined, regular intervals in accordance with this SMP unless the impacted soil is removed or it is confirmed that impacted soil is not present. In the event that the impacted soil is removed or it is confirmed that impacted soil is not present, a proposal to discontinue the pavement and/or building slab cover will be submitted by the remedial party. The covers in these areas will be maintained until permission to discontinue the covers is granted in writing by the NYSDEC in consultation with the NYSDOH.

3.3.3.2 Monitoring Wells

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC in consultation with NYSDOH, until residual groundwater concentrations are found to be consistently below ambient water quality standards, the Site SCGs, or have become asymptotic at an acceptable level over an extended period. In the event that monitoring data indicates that monitoring for natural attenuation may no longer be required, a proposal to discontinue the monitoring well system will be submitted by the remedial party. Monitoring will continue until permission to discontinue the monitoring well system is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC in consultation with the NYSDOH. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the site are included in the Quality Assurance Project Plan provided in Appendix F.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards and Part 375 SCOs for soil; and
- Evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment;

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

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site-wide Inspection

Site-wide inspections will be performed at a minimum of once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC in consultation with the NYSDOH. Site-wide inspections will also be performed after all severe weather conditions that may affect the ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix G – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including Site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General Site conditions at the time of the inspection;

- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that Site records are up to date.

Inspections of all remedial components installed at the Site will be conducted. A comprehensive site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. Reporting requirements are outlined in Section 7.0 of this SMP. 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; and
- If Site records are complete and up to date; and

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the site by a qualified environmental professional, as determined by the NYSDEC. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 Post-Remediation Media Monitoring and Sampling

The removal of the source material at the Site was completed during the IRM and the NYSDEC selected No Further Action with continued groundwater monitoring as the remedial action for the Site, as per the ROD. The post-remedial groundwater monitoring requirements and schedule are detailed below.

In the event that the pavement cover over the LP-1 area is removed and soil removal is performed, or the existing building slab is removed, then soil sampling will be conducted. Information pertinent to cover and soil removal is included in the EWP in Appendix D.

In the event that VOC-containing materials are no longer used within the building, or if the use of the building were to change, then sampling of indoor air and/or sub-slab soil vapor would be needed to further assess the potential for SVI. Soil vapor and indoor air sampling procedures are summarized below and detailed sampling procedures are presented in the Field Sampling Plan (Appendix H).

Samples will be collected from the groundwater on a routine basis. Samples of other media will be collected as needed. Sampling locations, required analytical parameters, and the schedule are provided in Table 4.3.1 – Post-Remediation Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC in consultation with the NYSDOH.

Table 4.3.1 – Post Remediation Sampling Requirements and Schedule

Sampling Location	Schedule			
	TCL VOCs (Method 8260)	TAL Metals (Method 6010B)	VOCs (Method TO-15)	Frequency
Monitoring Wells MW-8, MW-9, MW-12, MW-13, and MW-14	X			Once per 5 quarters
Subsurface Soil – LP-1 area	X	X		If cover over LP-1 is breached and soil is removed
Soil beneath existing building slab	X	X		If existing building slab is breached or removed
Sub-slab Soil Vapor and Indoor Air			X	If VOC use ends or Site use changes

Detailed sample collection and analytical procedures and protocols are provided in Appendix H – Field Sampling Plan and Appendix F – Quality Assurance Project Plan. The sections below include brief descriptions of sample collection methods, sampling equipment, and waste management.

4.3.1 Groundwater Sampling

The groundwater monitoring frequency was established as semiannual in the ROD. Routine groundwater monitoring was suspended in 2007 with NYSDEC concurrence. Additional groundwater monitoring was performed in 2011, 2013, 2015, and 2017 to further evaluate groundwater quality. As the rate of change in groundwater conditions is slow at this Site, and groundwater has nearly completely reached the NYSDEC Standards, groundwater monitoring will be performed on a once-per-five-quarters basis under the SMP to continue to assess the performance of the remedy. Modification to the frequency or sampling requirements will require approval from the NYSDEC in consultation with the NYSDOH. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

The network of monitoring wells has been installed to monitor groundwater conditions at the former onsite source area and downgradient. The network of wells has been designed based on the following criteria:

- MW-14 is sampled to assess groundwater quality in the former source area vicinity;
- MW-8 and MW-9 are sampled to assess groundwater quality onsite and downgradient of the former source area; and
- MW-12 and MW-13 are sampled to assess groundwater quality offsite, further downgradient in the area near Neguntatogue Creek.

Figure 4.3.1.1 shows the monitoring well locations and Table 4.3.1.1 summarizes the well identification numbers, as well as the purpose, location, depths, diameter and screened intervals of all of the Site wells. For groundwater monitoring, 3 onsite wells and 2 offsite downgradient wells are sampled to evaluate the effectiveness of the source removal. Monitoring well construction logs are included in Appendix C of this document.

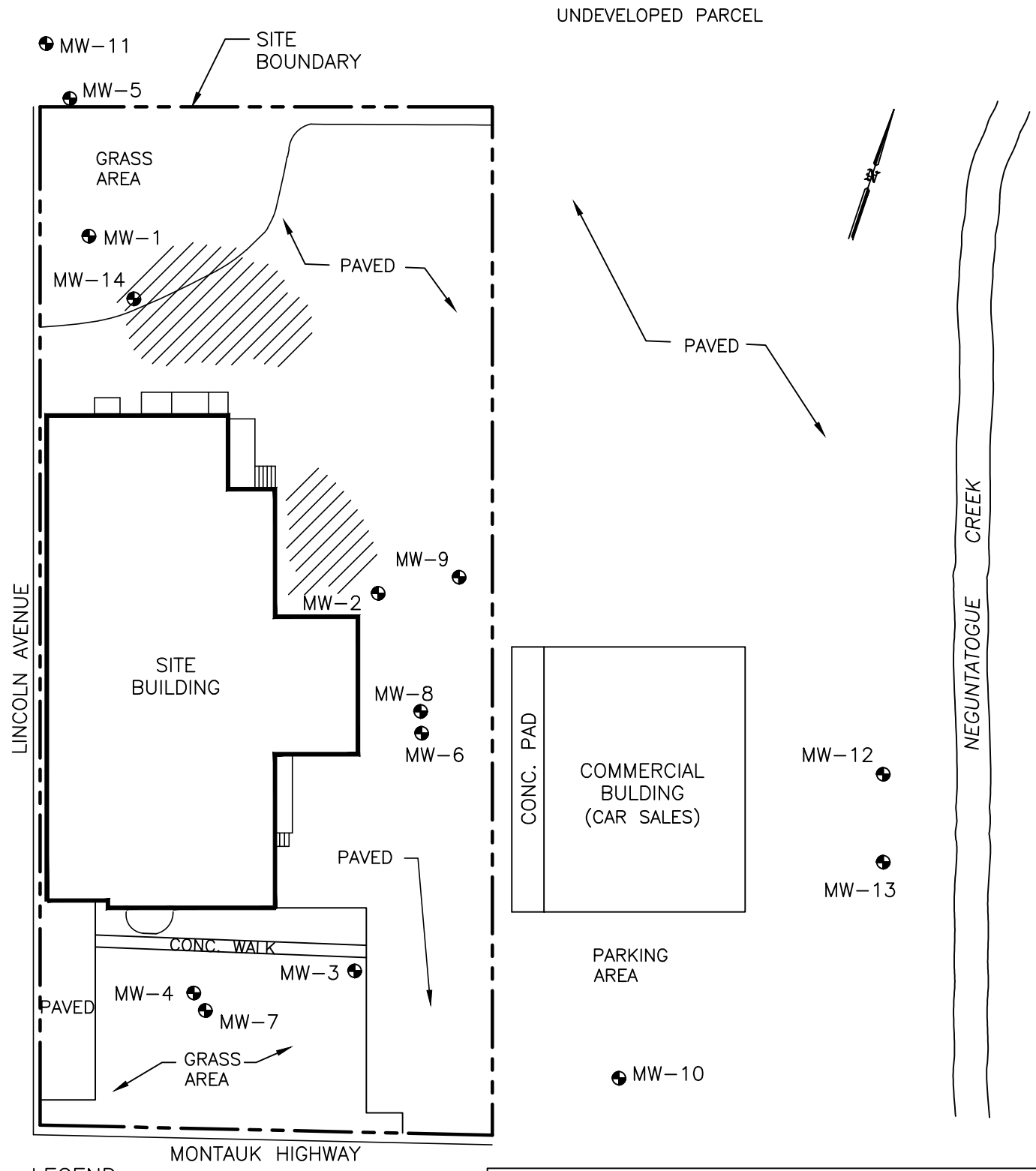
If biofouling or silt accumulation occurs in the monitored onsite and/or offsite monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, active monitoring wells will be properly decommissioned and replaced, if an event renders the wells unusable. Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC. Well abandonment will be performed in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC.

Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

4.3.2 Soil Sampling

Soil sampling will be performed if the pavement cover in the area of the former LP-1 structure is removed and soil removal is conducted in this area. Soil sampling will also be performed if the concrete slab of the existing building (cover) is breached or removed. Cover and/or soil removal would be performed following the procedures in the EWP (Appendix D). The results of this sampling will be used to assess the quality of the soil under the former building slab and/or following completion of soil removal. Modification to the soil sampling frequency or requirements will require approval from the NYSDEC.



FPM GROUP

FIGURE 4.3.1.1
GROUNDWATER MONITORING WELL LOCATIONS
CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By:H.C.	Checked By: S.D.	Date: 7/27/17

Table 4.3.1.1 – Monitoring Well Construction Details

Monitoring Well ID	Well Location	Coordinates (longitude and latitude)	Well Diameter (inches)	Relative Elevation (feet)		
				Top of Casing	Screen Top	Screen Bottom
MW-1	Upgradient	40°40’47.78”N, 73°21’45.56”W	2	100.89*	90.89*	70.89*
MW-2	Downgradient	40°40’47.36”N, 73°21’43.72”W	2	100.00	91.50*	71.50
MW-3	Down and Crossgradient	40°40’46.09”N, 73°21’43.12”W	2	98.70	88.70*	68.70*
MW-4	Crossgradient	40°40’45.70”N, 73°21’43.71”W	2	100.33	90.88*	80.88
MW-5	Upgradient	40°40’48.44”N, 73°21’46.19”W	4	98.01*	53.01*	33.01*
MW-6	Downgradient	40°40’46.97”N, 73°21’43.21”W	4	97.24	52.24*	32.24*
MW-7	Crossgradient	40°40’45.69”N, 73°21’43.62”W	4	100.33*	55.33*	35.33*
MW-8	Downgradient	40°40’47.06”N, 73°21’43.27”W	4	97.34	93.34	83.34
MW-9	Downgradient	40°40’47.57”N, 73°21’43.36”W	4	96.70	92.50	82.50
MW-10	Down and Crossgradient	40°40’46.28”N, 73°21’41.66”W	4	95.58	94.08	82.58
MW-11	Upgradient	40°40’48.62”N, 73°21’46.35”W	4	98.01	95.60	83.10
MW-12	Downgradient	40°40’47.72”N, 73°21’41.11”W	2	96.99	92.99	80.99
MW-13	Downgradient	40°40’47.42”N, 73°21’40.84”W	2	96.95	92.95	80.95
MW-14	Former Source Area	40°40’47.90”N, 73°21’45.38”W	2	97.89	93.89	88.89

Notes:

* = Estimated (either not surveyed, or well log unavailable)

The network of soil sample locations has been designed based on the following criteria:

- Proximity to the former LP-1 structure;
- Depth of remediation of LP-1; and
- Analytical parameters that exceeded the NYSDEC SCOs for groundwater protection (VOCs and select metals).

Soil sampling rationale is provided in the EWP (Appendix D). Soil sampling protocols are described in Appendix H – Field Sampling Plan and Appendix F – Quality Assurance Project Plan. The sampling frequency may only be modified with the approval of the NYSDEC. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

Deliverables for the soil sampling program are specified in Section 7.0 – Reporting Requirements.

4.3.3 Sub-slab Soil Vapor and Indoor Air Sampling

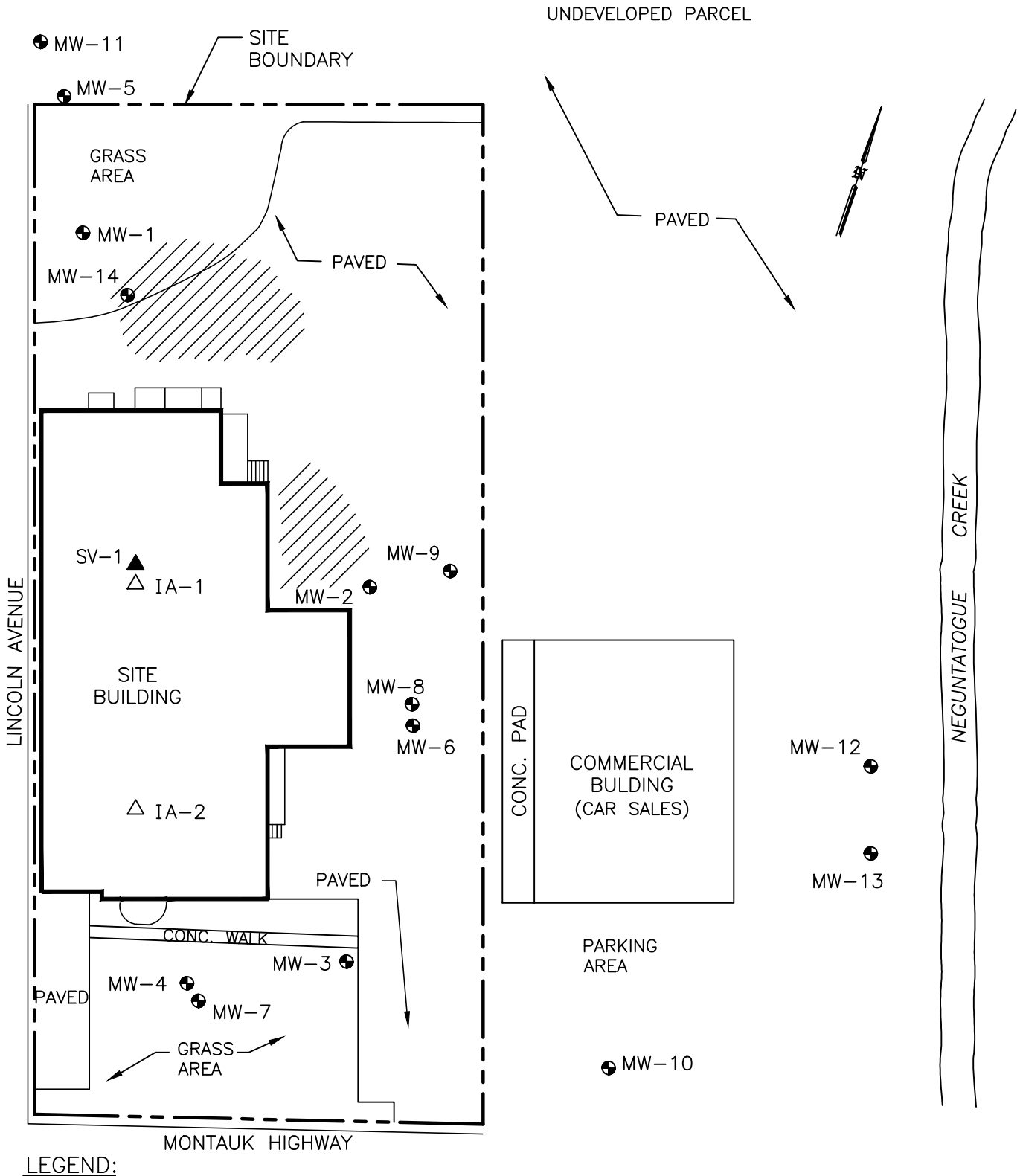
Sub-slab soil vapor and indoor air sampling will be performed if the Site use changes or if chlorinated VOC-containing chemicals are no longer used in the onsite operations. The results of this sampling will be used to assess the potential for SVI and/or to assess if SVI is occurring.

The network of onsite sub-slab soil vapor and indoor air sample locations for the existing Site building and use is shown on Figure 4.3.3.1 and has been designed based on the following criteria:

- Characterize indoor air in both the manufacturing and office areas;
- Characterize sub-slab soil vapor in proximity to the former source area;
- Perform sub-slab vapor samples in areas where the slab is on grade; and
- Avoid penetrating the portion of the slab that likely extends into the water table (basement area).

In the event that the Site use is to be changed, if chlorinated VOCs are no longer used onsite, or a new Site building is proposed, then an appropriate network of soil vapor and indoor air sample locations will be proposed for NYSDEC and NYSDOH review and approval. Modification to the frequency or sampling requirements will require approval from the NYSDEC in consultation with the NYSDOH. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC and NYSDOH.

Deliverables for the soil vapor sampling program are specified in Section 7.0 – Reporting Requirements.



FPM GROUP

FIGURE 4.3.3.1
SOIL VAPOR & INDOOR AIR SAMPLE LOCATIONS

CARDWELL CONDENSER CORPORATION SITE
LINDENHURST, NEW YORK

Drawn By:H.C.	Checked By: S.D.	Date: 7/27/17

4.3.4 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix G - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity, etc.) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional detail regarding monitoring and sampling protocols are provided in the site-specific Field Sampling Plan provided as Appendix H of this document.

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

The Site remedy does not rely on any mechanical systems, such as groundwater treatment systems, sub-slab depressurization systems, or air sparge/soil vapor extraction systems, to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP. In the event that installation and operation of a mechanical system, such as a sub-slab depressurization system, becomes necessary, an Operation and Maintenance Plan will be prepared and submitted for NYSDEC approval, in consultation with the NYSDOH. This SMP will be modified to reflect any changes to this Operation and Maintenance Plan approved by the NYSDEC in consultation with the NYSDOH.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

This section provides a summary of vulnerability assessments that will be conducted for the Site during periodic assessments, and briefly summarizes the vulnerability of the Site to severe storms/weather events and associated flooding.

A vulnerability assessment has not yet been prepared for the Site as the risk to the only physical remedial features (monitoring wells and cover over LP-1 and building slab areas) is low. Although the Site is located in a low-lying area in proximity to Neguntatogue Creek, the Site has not experienced any significant flooding. During Superstorm Sandy on October 29, 2012, floodwater entered the southern-most part of the Site from the south (Montauk Highway) and covered the south lawn, but did not enter further onto the property or cause any damage. Several of the Site's monitoring wells are located in this area but were not flooded as they are protected by well boxes equipped with seals. As the Site stratigraphy is conducive to recharge, floodwater that did not recede overland simply recharged into the lawn area. The Site surface is relatively level and erosion does not present a concern. If high winds occur it is unlikely that damage may result as the Site does not include large trees in proximity to the building and there is no above-grade remedial or monitoring equipment. Interruption of electric power by severe weather does not present any concern as the implemented remedy does not include any powered equipment. There is not anticipated to be a reasonable possibility of a spill or other contaminant release associated with severe weather that could affect the completed remedial measures; the Site building is heated by natural gas, petroleum storage does not occur onsite, and the ongoing manufacturing operations do not include any outdoor storage of materials that might be considered contaminants.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program, including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the SMP provides a summary of any green remediation evaluations to be completed for the site during site management and reported in the PRR.

6.2.1 Green Remediation Assessment

The assessment to be included in the PRRs will include, but not be limited to, a discussion of items listed below in relation to the monitoring and maintenance of the selected remedy. Where appropriate, quantification of these items will be provided:

- Waste Generation (describe the management of waste associated with the Site monitoring and any waste reduction projects implemented);
- Emissions (fuel usage for transportation to and from the Site for inspections and/or sampling);
- Water usage (identify sources of water used for decontamination purposes); and
- Land (describe any disturbances and restoration of land as part of monitoring or maintenance of the remedy).

Methods proposed to reduce energy consumption, resource usage, waste generation, water usage, etc., if applicable, will be included in the PRR.

6.2.2 Frequency of Sampling and Other Periodic Activities

Transportation to and from the Site and use of consumables in relation to visiting the Site to conduct inspections and/or collect samples and shipping samples to a laboratory for analyses have direct and/or inherent energy costs. The schedule and/or means of these periodic activities will be prepared so that these tasks can be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources.

In the case of this Site consideration shall be given to:

- Reduced sampling frequencies;
- Reduced site visits; and
- Coordination/consolidation of activities to maximize labor time.

6.2.3 Metrics and Reporting

Information on energy usage, solid waste generation, transportation and shipping, water usage, and land use during site management will be recorded to facilitate and document implementation of green remediation during site management and to identify corresponding benefits. This information will be reported in the PRRs.

6.2.4 Timing of Green Remediation Evaluations

Green remediation evaluations and corresponding modifications will be undertaken as part of a formal Remedial System Optimization (RSO), or at any time that the Project Manager feels appropriate, e.g. during significant maintenance events or in conjunction with storm recovery activities.

Modifications resulting from green remediation evaluations will be routinely implemented and scheduled to occur during planned/routine operation and maintenance activities. Reporting of these modifications will be presented in the appropriate PRR.

6.3 Remedial System Optimization

An RSO Study will be conducted any time that the NYSDEC or the remedial party requests in writing that an in-depth evaluation of the remedy is needed. An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated in the ROD;
- The monitoring of the completed remedial measures is exceeding the estimated costs;
- The remedial measures are not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;
- There is an anticipated transfer of the site management to another remedial party or agency; and/or
- A new and applicable remedial technology becomes available.

An RSO will provide a critique of a Site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the Site's cleanup goals, gather additional performance or media-specific data and information, and provide recommendations for improvements to enhance the ability of the completed remedial measures to reach RAOs or to provide a basis for changing the remedial strategy.

The RSO study will focus on overall Site cleanup strategy and process optimization and management, with the intent of identifying impediments to cleanup and improvements to Site operations to increase efficiency, cost-effectiveness and remedial time frames. Green remediation technology and principals are to be considered when performing the RSO. An example Table of Contents for an RSO study is shown in Appendix I and provides an outline of the typical RSO process and contents.

7.0 REPORTING REQUIREMENTS

7.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix G. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data and maintenance reports, generated for the Site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 7.1.1 and summarized in the Periodic Review Report.

Table 7.1.1: Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Inspection Report	Annually
Monitoring Report	Within 60 days of the monitoring event
Periodic Review Report	Annually, or as otherwise determined by the Department

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

All interim monitoring/inspection reports will include, at a minimum:

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc.);
- 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 (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

Routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting maintenance activities;
- Description of maintenance activities performed;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Description of non-routine activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html

7.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the Department beginning sixteen (16) months after the approval for this SMP is issued. After submittal of the initial PRR, the next PRR shall be submitted to the Department at a frequency to be requested by the NYSDEC. In the event that the Site is subdivided into separate parcels with different ownership, a single PRR will be prepared that addresses the Site described in Appendix A - Environmental Easement. The PRR will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the PRR. The PRR will include:

- Identification, assessment and certification of all ICs required by the remedy for the Site and all ECs described in the SMP;
- Results of the required site inspections and severe condition inspections, if applicable;
- All applicable site management forms and other records generated for the Site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted;
- A summary of any information generated during the reporting period, with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), 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 in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html
- A Site evaluation that includes the following:
  - The compliance of the remedy with the requirements of the site-specific ROD and SMP;
  - The operation and the effectiveness of all monitored wells or other physical remedial features, 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 and Sampling Plan for the media being monitored;
  - Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan;

- Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the ROD; and
- The overall performance and effectiveness of the remedy.

7.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State will prepare, and include in the PRR, the following certification as per the requirements of NYSDEC DER-10:

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

- *The inspection of the Site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the Site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *If a financial assurance mechanism is required under the oversight document for the Site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *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 (if appropriate); 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/Remedial Party or Owner's/Remedial Party's Designated Site Representative] for the site."

The signed certification will be included in the PRR.

The PRR will be submitted, in electronic format, to the NYSDEC Central Office, the NYSDEC Regional Office in which the Site is located, and the NYSDOH Bureau of Environmental Exposure Investigation. The PRR may need to be submitted in hard-copy format, as requested by the NYSDEC project manager.

7.3 Corrective Measures Work 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 Work Plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC.

7.4 Remedial Site Optimization Report

In the event that an RSO is to be performed (see Section 6.3), upon completion of an RSO, an RSO report must be submitted to the Department for approval. A general outline for the RSO report is provided in Appendix I. The RSO report will document the research, investigation, and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual site model, and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and an update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC Central Office, the NYSDEC Regional Office in which the Site is located, Site Control, and the NYSDOH Bureau of Environmental Exposure Investigation.

8.0 REFERENCES

6NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

Fanning, Phillips and Molnar. August 1999. *Interim Remedial Measures Work Plan for Cardwell Condenser, Lindenhurst, New York, NYSDEC Registry #1-52-035.*

Fanning, Phillips & Molnar. October 1998. *Focused Remedial Investigation Report for Cardwell Condenser, Lindenhurst, New York.*

Fanning, Phillips and Molnar. January 1995. *Groundwater and Soil Investigation Report for the Cardwell Condenser Site, Lindenhurst, New York.*

FPM Group. October 2015. *Periodic Review Report January 2010 through August 2015, Cardwell Condenser Site, 80 Montauk Highway Lindenhurst, New York.*

FPM Group. April 2010. *Periodic Review Report, January 2008 through December 2009, Cardwell Condenser Site, 80 Montauk Highway, Lindenhurst, New York.*

FPM Group. October 2002. *Operation and Maintenance Plan for Cardwell Condenser, Lindenhurst, New York.*

FPM Group. August 2001. *Focused Feasibility Study for Cardwell Condenser, Lindenhurst, New York*

FPM Group. October 2000. *Interim Remedial Measures Report for Cardwell Condenser, Lindenhurst, New York.*

Gibbs and Hill, Inc. February 1990. *Phase II Investigation, Cardwell Condenser Site No. 152035, Village of Lindenhurst, Suffolk County.*

Lawler, Matusky & Skelly Engineers, December 1993. *Phase II Investigation, Cardwell Condenser Corporation, Site No. 152035, Village of Lindenhurst, Suffolk County.*

New York State Department of Environmental Conservation. March 2002. *Record of Decision, Cardwell Condenser Site, Lindenhurst, Suffolk County, Site Number 1-52-035.*

New York State Department of Environmental Conservation, September 15, 1999 letter from Robert Filkins to Peter Dermody, Fanning, Phillips and Molnar

New York State Department of Health. October 2006, update May 2017. Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation".

NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

U.S. Geological Survey, 1964. *Hydrology of the Babylon-Islip Area, Suffolk County, Long Island, New York. U.S. Geological Survey Water-Supply Paper 1768.*

United States District Court, Eastern District of New York. August 18, 1999. *Consent Decree for Final Settlement of the Claims by the State of New York and John P. Cahill as Trustee of the Natural Resources against Cardwell Condenser Corporation and Normilt Realty Corp.*

Woodward-Clyde Consultants, Inc., January 1986. *Phase I Investigation, Cardwell Condenser Corporation, Town of Lindenhurst, Suffolk County, New York, NYSDEC Site No. 152035.*

APPENDIX A
ENVIRONMENTAL EASEMENT

This Appendix includes a copy of the Environmental Easement for the Site. A survey showing the Site boundary and a metes and bounds description are also included in this Appendix.

CERTILMAN BALIN
ATTORNEYS

90 MERRICK AVENUE, 9TH FLOOR
EAST MEADOW, NY 11554
PHONE: 516.296.7000 • FAX: 516.296.7111
www.certilmanbalin.com

BARRY S. COHEN
PARTNER
DIRECT DIAL 516.296.7044
bcohen@certilmanbalin.com

April 10, 2023

VIA FEDERAL EXPRESS

Jennifer Andaloro
DEC Project Attorney
Office of General Counsel
New York State Department
of Environmental Conservation
625 Broadway
Albany, New York 12233-1010

Re: *Environmental Easement Package*
Site Name: Cardwell Condenser Corporation
DEC Site No.: 152035

Dear Jen:

Attached please find proof that the above-referenced Environmental Easement was recorded with the Suffolk County Clerk's Office on April 5, 2023, and proof that the required Municipal Notice was provided to the Town of Babylon.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Barry S. Cohen

BSC/gnm
Enclosures
cc: Cheryl Salem (w/enc.) (via email)
Jared Donaldson (w/enc.) (via email)

CC # : C23-11928

COUNTY CLERK'S OFFICE

STATE OF NEW YORK
COUNTY OF SUFFOLK

The Clerk of the County of Suffolk and the Court of Record thereof do hereby certify that I have compared the annexed with the original

EASEMENT

recorded in my office on **04/05/2023** under Liber **D00013196** and Page **201** and, that the same is a true copy thereof, and of the whole of such original.

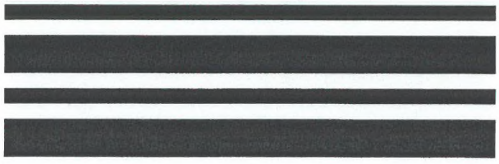
In Testimony Whereof, I have hereunto set my hand and affixed the seal of said County and Court this **04/05/2023** .

SUFFOLK COUNTY CLERK

V Puleo

VINCENT PULEO

SEAL



SUFFOLK COUNTY CLERK
RECORDS OFFICE
RECORDING PAGE

Type of Instrument: EASEMENT
Number of Pages: 10
Receipt Number : 23-0046615
TRANSFER TAX NUMBER: 22-23381

Recorded: 04/05/2023
At: 09:44:36 AM

LIBER: D00013196
PAGE: 201

District:	Section:	Block:	Lot:
0103	019.00	03.00	048.001

EXAMINED AND CHARGED AS FOLLOWS

Deed Amount: $0.00

Received the Following Fees For Above Instrument

		Exempt			Exempt
Page/Filing	$0.00	YES	Handling	$0.00	YES
COE	$0.00	YES	NYS SRCHG	$0.00	YES
TP-584	$0.00	YES	Notation	$0.00	YES
Cert.Copies	$0.00	YES	RPT	$0.00	YES
Transfer tax	$0.00	YES			
			Fees Paid	$0.00	

TRANSFER TAX NUMBER: 22-23381

THIS PAGE IS A PART OF THE INSTRUMENT
THIS IS NOT A BILL

Vincent Puleo
County Clerk, Suffolk County

1 | 2

Number of pages 10

This document will be public record. Please remove all Social Security Numbers prior to recording.

RECORDED
2023 Apr 05 09:44:36 AM
Vincent Puleo
CLERK OF
SUFFOLK COUNTY
L D00013196
P 201
DT# 22-23381

Deed / Mortgage Instrument	Deed / Mortgage Tax Stamp	Recording / Filing Stamps

3 FEES

Page / Filing Fee	50	Mortgage Amt.	
Handling	20. 00	1. Basic Tax	
TP-584	5	2. Additional Tax	
Notation		Sub Total	
EA-52 17 (County)		Spec./Assit. or Spec. /Add.	
EA-5217 (State)		TOT. MTG. TAX	
R.P.T.S.A.	200	Dual Town ____ Dual County ____ Held for Appointment ____	
Comm. of Ed.	5. 00	Transfer Tax	0
Affidavit		Mansion Tax	
Certified Copy			
NYS Surcharge	15. 00		
Other			
Sub Total			
Grand Total	Exempt		

The property covered by this mortgage is or will be improved by a one or two family dwelling only.

YES ____ or NO ____

If NO, see appropriate tax clause on page # ____ of this instrument.

3/21/23

4 Dist. 0103

5053091

0103 01900 0300 048001

Real Property Tax Service Agency Verification

PTS
R RAK A
05-APR-23

5 Community Preservation Fund

Consideration Amount $ 0

CPF Tax Due $ ____

Improved ____
Vacant Land ____
TD ____
TD ____
TD ____

6 Satisfactions/Discharges/Releases List Property Owners Mailing Address
RECORD & RETURN TO:

Certilman Balin Adler & Hyman, LLP
Attn: Barry Cohen, Esq.
90 Merrick Avenue
East Meadow, New York 11554

Mail to: Judith A. Pascale, Suffolk County Clerk
310 Center Drive, Riverhead, NY 11901
www.suffolkcountyny.gov/clerk

7 Title Company Information

Co. Name

Title #

8 Suffolk County Recording & Endorsement Page

This page forms part of the attached Environmental Easement made by: (SPECIFY TYPE OF INSTRUMENT)

Buccino Realty, LLC

The premises herein is situated in SUFFOLK COUNTY, NEW YORK.

TO

The People of the State of New York, acting through their Commissioner of the NYSDEC

In the TOWN of Babylon

In the VILLAGE or HAMLET of Incorporated Village of Lindenhurst

BOXES 6 THRU 8 MUST BE TYPED OR PRINTED IN BLACK INK ONLY PRIOR TO RECORDING OR FILING.

(over)

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

THIS INDENTURE made this 21st day of March, 2023, between Owner Buccino Realty, LLC, having an office at 80 E. Montauk Highway, Lindenhurst, County of Suffolk, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

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

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

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

WHEREAS, Grantor, is the owner of real property located at the address of 80 East Montauk Highway in the Incorporated Village of Lindenhurst, Town of Babylon, County of Suffolk and State of New York, known and designated on the tax map of the County Clerk of Suffolk as tax map parcel number: District 0103 Section 019.00 Block 03.00 Lot 048.001, being the same as that property conveyed to Grantor by deed dated June 21, 2021 and recorded in the Suffolk County Clerk's Office in Liber and Page D00013182/906. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 1.42 +/- acres, and is hereinafter more fully described in the Land Title Survey dated August 19, 2002 and last revised October 24, 2019 prepared by John A. Robinson, L.L.S., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is

extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of that Consent Decree dated August 5, 1999 and So Ordered by the Judge for the United States District Court, Eastern District of New York in Civil Action # 97-5121, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

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

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

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

Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

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

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

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Suffolk County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

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

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

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

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

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

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

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

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

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

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

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

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

Law.

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

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

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

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

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

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

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

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

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

(7) the information presented is accurate and complete.

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

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

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

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

5. Enforcement

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

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

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

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

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

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

Parties shall address correspondence to:

Site Number: 152035
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

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

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

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

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

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

11. Consistency with the SMP. To the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

Remainder of Page Intentionally Left Blank

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

Buccino Realty, LLC:

By: _____

Print Name: PETER J BUCCINO

Title: Pres Date: 3-1-23

Grantor's Acknowledgment

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

On the 01 day of March in the year 2023 before me, the undersigned, personally appeared Peter J Buccino, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of New York

THERESA COSTANZA
Notary Public - State of New York
NO. 01CO5039074
Qualified in Nassau County
My Commission Expires Feb 13, 2027

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

By: Andrew Guglielmi
Andrew O. Guglielmi, Director
Division of Environmental Remediation

Grantee's Acknowledgment

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

On the 21st day of March, in the year 2023 before me, the undersigned, personally appeared Andrew O. Guglielmi, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Jennifer Andaloro
Notary Public - State of New York

JENNIFER ANDALORO
Notary Public, State of New York
No. 02AN6098246
Qualified in Albany County
Commission Expires January 14, 2024

SCHEDULE "A" PROPERTY DESCRIPTION

All that certain plot, piece or parcel of land, situate, lying and being in the Incorporated Village of Lindenhurst, Town of Babylon, County of Suffolk and State of New York bounded and described as follows:

BEGINNING at a point marked by a monument, formed by the intersection of the northerly side of East Montauk Highway (SR 27A) with the easterly side of Lincoln Avenue;

RUNNING THENCE North 16 degrees 47 minutes 30 seconds West along the said easterly side of Lincoln Avenue a distance of 363.83 feet to a point marked by a monument;

RUNNING THENCE North 73 degrees 12 minutes 30 seconds East a distance of 169.00 feet to a point marked by a stake;

RUNNING THENCE South 16 degrees 47 minutes 30 seconds East a distance of 371.45 feet to a point on the northerly side of said East Montauk Highway;

RUNNING THENCE South 75 degrees 47 minutes 20 seconds West 169.17 feet along the said northerly side of East Montauk Highway to the point or place of BEGINNING.

This property includes about 62,131 square feet or 1.42 acres of land in area.

7014 2120 0000 7344 9347

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL USE

Postage	$ 1.74
Certified Fee	4.15
Return Receipt Fee (Endorsement Required)	3.35
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 9.24

EAST MEADOW POST OFFICE EAST MEADOW NY 11554-9998 APR - 6 2023

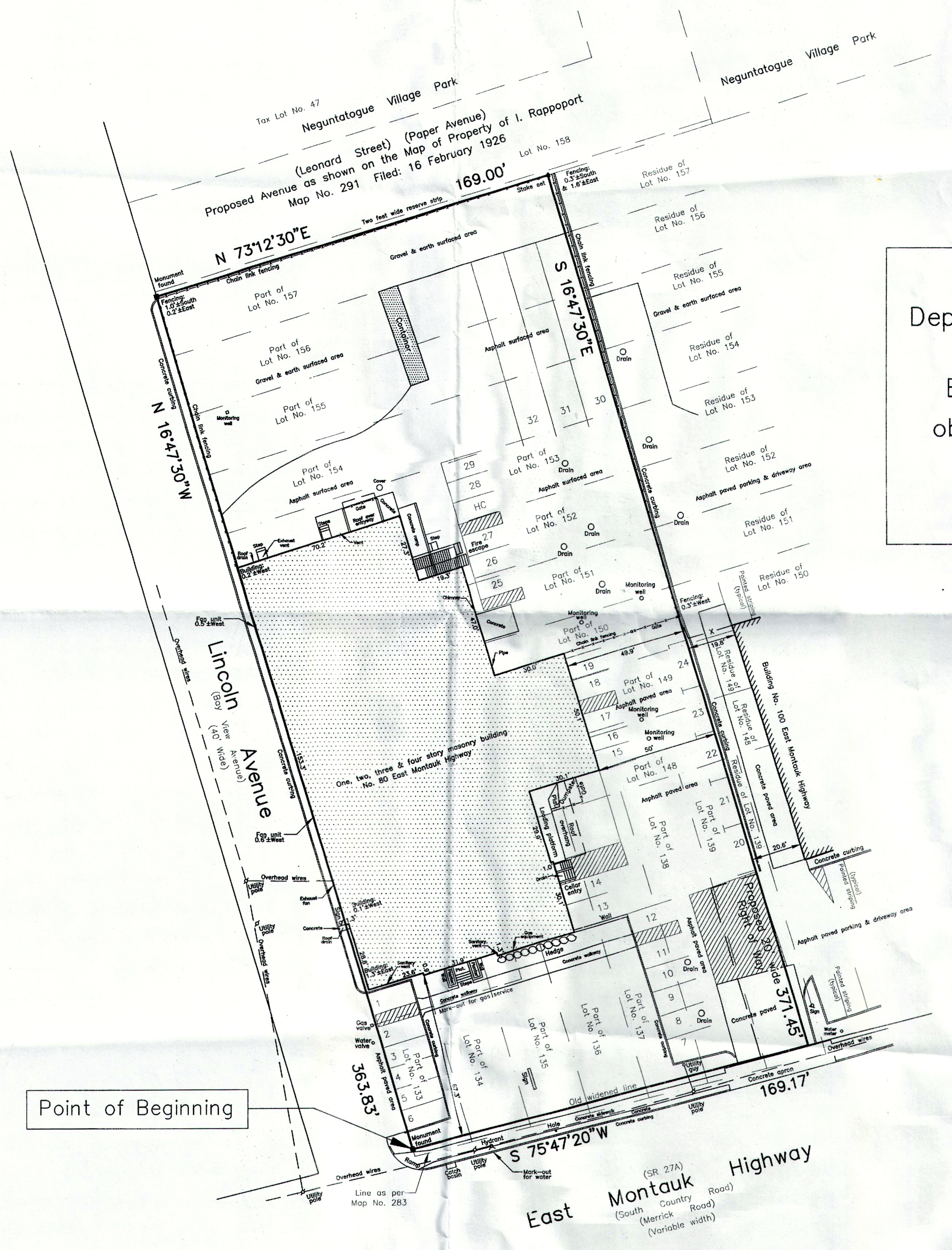
Postmark Here

B. Cohen

Sent To: Rich Schaffer, Town of Babylon
Street & Apt. No., or PO Box No.: 200E. Sunrise Hwy
City, State, ZIP+4: Lindenhurst NY 11757

PS Form 3800, July 2014 — See Reverse for Instructions

COUNTY OF SUFFOLK DISTRICT 0103 SECTION 019 BLOCK 3 LOT No. 48.1



"This property is subject to an environmental easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law. The engineering and institutional controls for 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, NY 12233 or at derweb@dec.ny.gov".

Metes & bounds description of Easement Area

All that plot, piece or parcel of land situated, lying and being in the Incorporated Village of Lindenhurst, within the Town of Babylon, and the County of Suffolk and the State of New York shown on the Real Property Tax Service Agency Map of the County of Suffolk as District 0103 Section 019 Block 3 Lot No. 48.1 being more particularly bounded and described as follows:

Beginning at a point, marked by a monument, formed by the intersection of the northerly side of East Montauk Highway, (South Country Road) (Merrick Road) (SR 27A) with the easterly side of Lincoln Avenue, (Bay View Avenue);

Running thence, North 16 degrees 47 minutes 30 seconds West along the said easterly side of Lincoln Avenue a distance of 363.83 feet to a point marked by a monument;

Running thence, North 73 degrees 12 minutes 30 seconds East a distance of 169.00 feet to a point marked by a stake;

Running thence, South 16 degrees 47 minutes 30 seconds East a distance of 371.45 feet to a point on the northerly side of said East Montauk Highway;

Running thence, South 75 degrees 47 minutes 20 seconds West along the said northerly side of East Montauk Highway to the point or place of beginning.

This property includes 62,131± square feet or 1.42± acres of land in area.

NOTES:

1. PLOT AREA = 62,131± SQUARE FEET TO DESCRIPTION LINES AS SHOWN OR 1.42± ACRES.
2. SUB-SURFACE CONDITIONS ARE NOT SHOWN, OR ARE NOT CERTIFIED, IF SHOWN.
3. THIS PROPERTY INCLUDES PARTS OF LOTS 133 THRU 139 BOTH INCLUSIVE AND PARTS OF LOTS 148 THRU 157 BOTH INCLUSIVE AS SHOWN ON THE MAP OF "BABYLON PARK" SECTION III (Three) Map No. 283 Filed: 2 November 1910
4. THIS PROPERTY IS LOCATED WITHIN THE INCORPORATED VILLAGE OF LINDENHURST, THE TOWN OF BABYLON, THE COUNTY OF SUFFOLK AND THE STATE OF NEW YORK.
5. 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 EMBOSSED SEAL SHALL NOT BE CONSIDERED TO BE A VALID TRUE COPY. CERTIFICATIONS INDICATED HEREON SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED, AND ON HIS/HER BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
6. OFFSETS SHOWN HEREON SHOULD NOT BE USED AS A BASIS FOR CONSTRUCTION OF FENCES OR OTHER PERMANENT STRUCTURES.
7. CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR LAND SURVEYS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS.
8. WIDENINGS, IF ANY, ARE NOT SHOWN AND THE EXISTANCE OF RIGHT-OF-WAYS AND/OR EASEMENTS OF RECORD, IF ANY, NOT SHOWN ARE NOT CERTIFIED.

SURVEYED FOR & CERTIFIED TO:
① VIKING 80 EAST MONTAUK, Ltd.
CERTIFIED TO:
① THE INCORPORATED VILLAGE OF LINDENHURST
② THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SURVEYED: 20 MARCH 1976 (Tax LOTS 49 & 50)
SURVEY BROUGHT TO DATE & PART OF TAX LOT No. 48 ADDED: 20 FEBRUARY 1982
PARKING LAYOUT ONLY: 29 SEPTEMBER 2000
SURVEY BROUGHT TO DATE & REMAINDER OF TAX LOT No. 48 ADDED: 9 SEPTEMBER 2002
MAP FOR PLOT "A" DRAWN: 10 SEPTEMBER 2002
SURVEY BROUGHT TO DATE: 8 OCTOBER 2009
SURVEY BROUGHT TO DATE: 19 MAY 2011
SURVEY BROUGHT TO DATE: 19 JULY 2017

No.	DESCRIPTION	BY	DATE
2	GENERAL UPDATED SURVEY	BRB	19 JULY 2017
1	GENERAL UPDATED SURVEY	AM	19 MAY 2011

REVISIONS

Viking Athletics, Ltd.
No. 80 East Montauk Highway
Lindenhurst, New York 11757

Title Survey

DATE 19 August 2002
SCALE 1"= 30'
DWG. No. 5

EMBOSSED SEAL AND SIGNATURE

John A. Robinson
Land Surveyor N.Y.S. License No. 49059
1003 Park Boulevard, Massapequa Park, N.Y. 11762
(516) 798-1290 (Fax) 541-1117

Metes and Bounds Description

for

Cardwell Condenser Corporation Site
80 East Montauk Highway, Lindenhurst, New York
NYSDEC Site # 152035

Suffolk County Tax Map: District 0103 Section 19, Block 3, Lot 48.001

Beginning at a point marked by a monument, formed by the intersection of the northerly side of East Montauk Highway (SR 27A) with the easterly side of Lincoln Avenue; running thence North 16 degrees 47 minutes 30 seconds West along the said easterly side of Lincoln Avenue a distance of 363.83 feet to a point marked by a monument; running thence North 73 degrees 12 minutes 30 seconds East a distance of 169.00 feet to a point marked by a stake; running thence South 16 degrees 47 minutes 30 seconds East a distance of 371.45 feet to a point on the northerly side of said East Montauk Highway; running thence South 75 degrees 47 minutes 20 seconds West along the said northerly side of East Montauk Highway to the point or place of beginning.

This property includes about 62,131 square feet or 1.42 acres of land in area.

APPENDIX B
LIST OF SITE CONTACTS

This Appendix includes a listing of all Site contacts.

Site Owner and Remedial Party: Buccino Realty, LLC
Contact: Peter Buccino, (631) 957-8000
Email Address: peter.buccino@mrshirt.com

Qualified Environmental Professional: FPM Group
Contact: Stephanie O. Davis, PG, (631) 737-6200, ext. 228
Email Address: s.davis@fpm-group.com

Remedial Party Attorney: Barry Cohen, Esq.
Phone: (516) 296-7044
Email Address: bsc@cbah.com

NYSDEC DER Project Manager: Jared Donaldson
Phone: (518) 402-9176
Email Address: Jared.Donaldson@dec.ny.gov

NYSDEC Regional HW Engineer: Gerish Desai, PE
Phone: (631) 444-0243
Email Address: gerish.desai@dec.ny.gov

NYSDEC Site Control: Kelly Lewandowski
Phone: (518) 402-9553
Email Address: Kelly.lewandowski@dec.ny.gov

APPENDIX C
MONITORING WELL BORING AND CONSTRUCTION LOGS

This Appendix includes copies of the available monitoring well boring and construction logs for the Site. The logs for the older wells were not available at the time this SMP was prepared.

DRILLING LOG

Fanning, Phillips & Molnar
Engineers
Rancho Cordova, New York

PROJECT CARDWELL CONDENSER POWER PROJECT — KJELDSEN
LOCATION LINDENHURST — W.O. No. 370-94-02
WELL No. MW-10 — TOTAL DEPTH 13' — DIAMETER 4"
SURFACE ELEV. — WATER LEVEL INITIAL 3.6' — 24-hrs 3.21'
SCREEN DIA. 4" — LENGTH 11.5' — SLOT SIZE 10
CASING DIA. 4" — LENGTH 1.5' — TYPE PVC
DRILLING COMP. LAWES — DRILLING METHOD HOLLOW STEM AUGER 6 3/4"
DRILLER C. PEDERSON — LOG BY L. BUCK — DATE DRILLED 5-28-98

SKETCH MAP

NOTES

DEPTH (FEET)	SAMPLE NUMBER / PID (ppm)	WELL CONSTRUCTION	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0				1" SW GRAY SAND WITH SOME GRAVEL DRY
1				1"-5' SW YELLOWISH-RED SAND WITH SOME GRAVEL MOIST TO SATURATED
2				
3	0.7			
4				
5	1			5'-13' SW DARK BROWN SAND WITH SOME GRAVEL SATURATED
6				
7				
8	1.8			
9				
10				
11				
12				
13				
14				
15	1.8			

DRILLING LOG

Fanning, Phillips & Molnar Engineers
Rockaway New York

PROJECT CARDWELL CONDENSER Project KJELDSEN
LOCATION LINDENHURST W.O. No. 370-94-02
WELL No. MW-11 TOTAL DEPTH 15' DIAMETER 4"
SURFACE ELEV. — WATER LEVEL INITIAL 5' 24-hrs 4.44'
SCREEN DIA. 4" LENGTH 12.5' SLOT SIZE 10
CASING DIA. 4" LENGTH 2.5' TYPE PVC
DRILLING COMP. LAWES DRILLING METHOD HOLLOW STEM AUGER 6 3/8"
DRILLER C. PEDERSEN LOG BY L. BUCK DATE DRILLED 5-28-98

SKETCH MAP

NOTES

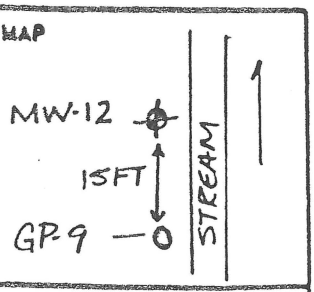
DEPTH (FEET)	SAMPLE NUMBER	(PPM)	WELL CONSTRUCTION	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0					0'-1' OL FINE TO MEDIUM LOAMY SAND
1					
2					0'-4' SW BROWNISH-YELLOW, MEDIUM SAND, TRACE GRAVEL
3					
4					4'-5' SW LIGHT BROWN, MEDIUM SAND MOIST
5		0			▽
6					5'-17' SP COARSE TO MEDIUM SAND WITH SOME GRAVEL
7					
8					
9					
10		0			
11					
12					
13					
14					
15		0			
16					
17					

DRILLING LOG

Fanning, Phillips & Molnar
Engineers
Rochester, New York

PROJECT: CARDWELL
LOCATION: LINDENHURST — W.O. No.: 370-94-02
WELL No.: MW-12 — TOTAL DEPTH: 16 FT — DIAMETER: 8 IN
SURFACE ELEV.: – — WATER LEVEL INITIAL: – — 24-hrs: –
SCREEN DIA.: 2 IN — LENGTH: 12 FT — SLOT SIZE: 0.02 IN
CASING DIA.: 2 IN — LENGTH: 4 FT — TYPE: SCH 40 PVC
DRILLING COMP.: — DRILLING METHOD: HSA
DRILLER: Bob — LOG BY: GSM/FPM — DATE DRILLED: 12/16/99

SKETCH MAP



NOTES

DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUCTION	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
1–20			Sp. / Sp. / Sp.	0-6 FT Sp. Brown. Poorly graded fine sand with fine gravel. Trace coarse gravel-sized concrete blocks. Moist. No solvent or petroleum odors or staining. 6-19 FT Sp. Brown. Fine sand, trace medium to coarse sand. Wet. No staining or odors. DTW = 6 FT BGS. 1.5 bags of well gravel (#2) screened interval 4-16 FT Riser 0-4 FT well gravel from 3-19 FT Bentonite From 2-3 FT (hydrated) Lock P761 Developed well Backfill 0.5-2 Ft Concrete surface seal, flush manhole

DRILLING LOG

Fanning, Phillips & Molnar
Engineers
Rochester New York

PROJECT Cardwell
LOCATION Cinderhurst W.O. No. 370-94-02
WELL No. MW-13 TOTAL DEPTH 16FT DIAMETER 8IN
SURFACE ELEV. – WATER LEVEL INITIAL – 24-hrs –
SCREEN DIA. 2IN LENGTH 12FT SLOT SIZE 0.02IN
CASING DIA. 2IN LENGTH 4FT TYPE SCH 40 PVC
DRILLING COMP. DRILLING METHOD HSA
DRILLER Bob LOG BY GSM/FPM DATE DRILLED 11/16/99

SKETCH MAP
GP-9
15FT
MW-13
STREAM

NOTES

DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUCTION	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
1–20			SP. SP. SP. SP.	0-6 FT Sp. Brown. Poorly Graded Fine Sand with trace fine to medium gravel. Moist. No solvent or petroleum staining or odors. 6-17.5 FT Sp. Brown. Fine sand. Trace medium to coarse sand. Wet. no stains or odors. DTW = 6FT 1 bag of #2 well gravel 1 bag of Bentonite chips - hydrated Screen - 4-16 FT Riser - 0-4 FT well gravel 3-17.5 Ft bentonite 2-3 Ft backfill 0.5-2 Ft concrete surface seal & flush manhole Lock #P761 Developed well

APPENDIX D
EXCAVATION WORK PLAN

As noted in the Site Management Plan (SMP) for this Site, the post-remedial sample collected from the excavation beneath the former LP-1 structure indicated concentrations of volatile organic compounds (VOCs) exceeding the 6 NYCRR Soil Cleanup Objectives (SCOs) for protection of groundwater, but not exceeding any of the 6 NYCRR SCOs for use of the Site. This soil is identified as residual soil. None of the other post-remedial samples showed exceedances of the 6 NYCRR SCOs for the use of the Site or protection of groundwater.

However, as noted in the SMP soil sampling has not been performed beneath the slab of the existing building. Sub-slab soil vapor sampling has documented the presence of VOCs in soil vapor beneath the building slab and it is possible that VOC-impacted soil is present beneath the slab.

The residual soil in the former LP-1 area is presently covered by asphalt pavement, which restricts infiltration of stormwater, thereby reducing the potential for groundwater impacts. The soil beneath the existing onsite building is presently covered by the concrete building slab, which isolates the soil from contact and reduces the potential for soil vapor intrusion (SVI). The SMP includes provisions for maintaining the pavement cover over the former LP-1 area, and for removal of residual soil if the cover is removed and the former LP-1 area is excavated. The SMP also includes provisions for maintaining the existing concrete slab of the onsite building and for conducting soil sampling if the concrete slab is breached or removed.

This Excavation Work Plan (EWP) will be applicable for removal of residual soil if such soil is exposed via an excavation in the former LP-1 area and removal of VOC-impacted soil (residual soil) if such soil is identified when the existing building slab is breached or removed.

The presence of utilities and easements on the portion of the Site where excavation is planned will be investigated prior to intrusive activities. It will be determined whether a risk or impediment to the planned work under this EWP is posed by utilities or easements on the affected portion of the Site.

D.1 NOTIFICATION

At least 15 days prior to the start of any excavation activity on the areas of the Site subject to the EWP, the Site owner or their representative will notify the NYSDEC. Table D.1.1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of Site-related contact information is provided in Appendix B of the SMP.

Table D.1.1: Notifications*

Name	Phone/Email Address
NYSDEC DER Project Manager: Jared Donaldson	(518) 402-9176 Jared.Donaldson@dec.ny.gov
NYSDEC Regional HW Engineer: Walter Parish	(631) 444-0240 walter.parish@dec.ny.gov
NYSDEC Site Control: Kelly Lewandowski	(518) 402-9553 kelly.lewandowski@dec.ny.gov

*Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, estimated volumes of soil to be excavated, and any work that may impact the pavement above the former LP-1 location or the building slab where residual soil may be present;
- A summary of environmental conditions anticipated to be encountered 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 (HASP), in electronic format, if it differs from the HASP provided in Appendix E of the SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

D.2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all excavations in the LP-1 area or beneath the existing building slab. Soil screening will be continued during all excavation and invasive work in these areas until such time that it is confirmed that residual soil is not present in the affected area or that the residual soil has been removed.

Soils from areas where residual soil is present will be segregated based on previous environmental data and screening results into material that may require off-site disposal and material that requires testing to determine if the material can be reused on-site. Further discussion of off-site disposal of materials and on-site reuse is provided in Section D-7 of this Appendix.

D.3 SOIL STAGING METHODS

Soil stockpiles containing residual soil, if created, 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 of residual soil, if created, 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 of residual soil, if created, 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 the NYSDEC.

D.4 MATERIALS EXCAVATION AND LOAD-OUT

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

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this EWP.

Loaded vehicles with residual soil 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 cleaning area will be operated onsite, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks loaded with residual soil will be cleaned at the truck wash before leaving the Site until the activities performed under the EWP are complete. Truck wash waters, if generated, will be collected and disposed of offsite in an appropriate manner.

Locations where vehicles containing residual soil enter or exit the Site shall be inspected daily for evidence of offsite soil tracking.

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

D.5 MATERIALS TRANSPORT OFF-SITE

All transport of residual soil 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.

Residual soil 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.

Truck transport routes are as follows:

- Exit Site onto Montauk Highway, turn right and travel less than ¼ mile to Wellwood Avenue;
- Turn right onto Wellwood Avenue and travel about 3 miles north to Rt. 109 (Babylon-Farmingdale Road);
- Turn left onto Babylon-Farmingdale Road and travel northwest about 2 miles to Rt. 110 (Broad Hollow Road);
- Turn right onto Broad Hollow Road and travel about 4 miles north to the Long Island Expressway (LIE); and
- Enter LIE either east-bound or west-bound, as appropriate.

All trucks loaded with residual soil will exit the vicinity of the Site using only this approved truck route. This is the most appropriate route and considers: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks involved in residual soil transport will be prohibited from stopping and idling in the neighborhood outside the Site.

Egress points for truck and equipment transport involving residual soil from the Site will be kept clean of dirt and other materials during removal of residual soil

Queuing of trucks involving residual soil will be performed onsite in order to minimize offsite disturbance. Offsite queuing will be prohibited.

D.6 RESIDUAL SOIL DISPOSAL OFFSITE

All residual soil excavated, once confirmed to be contaminated above the 6 NYCRR unrestricted use SCOs, will be removed from the Site as a regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. Unregulated offsite management of residual soil from this Site will not occur without formal NYSDEC approval.

Offsite disposal locations for excavated residual 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 for residual soil 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 residual soils taken offsite will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet unrestricted use SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

D.7 MATERIALS REUSE ONSITE

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material (excavated residual soil containing VOCs exceeding unrestricted use SCOs) does not remain onsite. Contaminated onsite material, including VOC-contaminated soil, will not be reused onsite.

D.8 FLUIDS MANAGEMENT

All liquids to be removed from the Site under this EWP, including but not limited to, excavation dewatering fluids, decontamination waters, 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 generated under this EWP will not be recharged back to the land surface or subsurface of the Site, and will be managed off-site, unless prior approval is obtained from NYSDEC.

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

D.9 COVER SYSTEM

This Site presently has a cover system (asphalt pavement) over the area where residual soil is present (former LP-1 area). A cover system (concrete building slab) is also present beneath the building. After the completion of soil removal and any other invasive activities in the area subject

to the cover systems, if residual soil remains present the cover system will be restored in a manner that complies with the SMP. The existing cover system is comprised of asphalt pavement over the former LP-1 area and the concrete slab beneath the building. If the cover is replaced over residual soil, a demarcation layer, consisting of orange snow fencing material, white geotextile, or equivalent material will be placed above the residual soil and below the cover 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 SMP). If the type of cover system changes from that which exists prior to the excavation (i.e., the asphalt cover is replaced by cover soil or the concrete building slab is replaced by other materials), this will constitute a modification of the cover described in the SMP. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP.

D.10 BACKFILL FROM OFFSITE SOURCES

All materials proposed for import onto the Site for use as backfill in a remedial excavation will be approved by the qualified environmental professional and will be in compliance with provisions in the SMP prior to receipt at the Site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/ 67386.html, will be prepared and submitted to the NYSDEC project manager, allowing a minimum of 5 business days for review.

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 for use as backfill in a remedial excavation will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the possible land uses (residential to industrial) and protection of groundwater criteria, the resulting soil quality standards are listed in Table 375-6.8(b). Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill 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 residual soil and covered to prevent dust releases.

D.11 STORMWATER POLLUTION PREVENTION

It is anticipated that any remedial excavation to remove identified residual soil under this EWP will be relatively small (not more than 1,600 square feet – the approximate footprint of the existing cover over the former LP-1 area) or will be significantly below grade (in the case of the existing building slab). In the event that a remedial excavation remains open for more than one day, then barriers and hay bale checks will be installed around the remedial excavation 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 the 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 this EWP 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.

D.12 EXCAVATION CONTINGENCY PLAN

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

Sampling will be performed on product, groundwater, and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatile and semivolatile organic compounds, 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 Review Report.

APPENDIX E
HEALTH AND SAFETY PLAN AND COMMUNITY AIR MONITORING PLAN

This worker Health and Safety Plan (HASP) has been prepared for a New York State Department of Environmental Conservation (NYSDEC) site identified as 80 East Montauk Highway, Lindenhurst, NY (Site), which is managed under a Consent Decree (Civil Action No. 97-5121). This HASP is part of the Site Management Plan (SMP) for this Site and includes measures for the protection of worker health and safety during site management activities. A Community Air Monitoring Plan (CAMP) is also included to address potential issues that may affect the Site community during onsite intrusive activities involving residual soil, groundwater, or soil vapor.

E.1 Worker Health and Safety Plan

E.1.1 Introduction

This HASP has been written for compliance with "OSHA Hazardous Waste Operations Standards (29 CFR 1910.120)", the guidance documents, "Standard Operating Safety Guidelines (Office of Solid Waste and Emergency Response, 1992)" and the "Occupational Safety and Health Guidance Manual for Hazardous Waste Activities" (U.S. Department of Health and Human Services, 1985).

E.1.2 Scope and Applicability of the HASP

This HASP is designed to be applicable to locations where residual soil excavation, soil vapor sampling, monitoring well sampling, and/or indoor/outdoor air sampling, if any, are performed at the Site by all parties that either perform or witness the activities. This HASP may also be modified or amended to meet specific needs of the proposed work.

This HASP details the Site safety procedures, Site background, and safety monitoring. Contractors will be required to adopt this HASP in full or to follow an approved HASP. The Health and Safety Officer (HSO) will be present at the Site to inspect the implementation of the HASP; however, it is the sole responsibility of the contractor(s) to comply with the HASP.

The HASP has been formulated as a guide to complement professional judgment and experience. The appropriateness of the information presented should always be evaluated with respect to unforeseen Site conditions that may arise.

E.1.3 Site Work Zone and Visitors

The Site work zone (a.k.a. exclusion zone) during the performance of any excavation and sampling activities will be a 30-foot radius about the work location. This work zone may be extended if, in the judgment of the HSO, Site conditions warrant a larger work zone.

No visitors will be permitted within the work zone without the consent of the HSO. All visitors will be required to be familiar with, and comply with, the HASP. The HSO will deny access to those whose presence within the work zone is unnecessary or those who are deemed by the HSO to be in non-compliance with the HASP.

All Site workers, including the contractors, with the potential to contact residual materials will be required to have 40-hour hazardous material training (eight-hour refresher courses annually), respirator fit test certification, and current medical surveillance as stated in 29 CFR 1910.120.

The HSO will also give an onsite health and safety discussion to all Site personnel, including the contractors, prior to initiating Site work involving residual materials. Workers not in attendance during the health and safety talk will be required to have the discussion with the HSO prior to entering the work zone involving residual materials.

Emergency telephone numbers and directions to the nearest hospital are shown in Table E.1.3.1 and will be kept at the Site in the possession of the HSO and will be available to all Site workers and visitors.

TABLE E.1.3.1
EMERGENCY TELEPHONE NUMBERS AND
DIRECTIONS TO GOOD SAMARITAN HOSPITAL, WEST ISLIP

Police 911
Ambulance 911
LI Regional Poison Control Center..... 1-800-222-1222
Good Samaritan Hospital.....631-376-3000

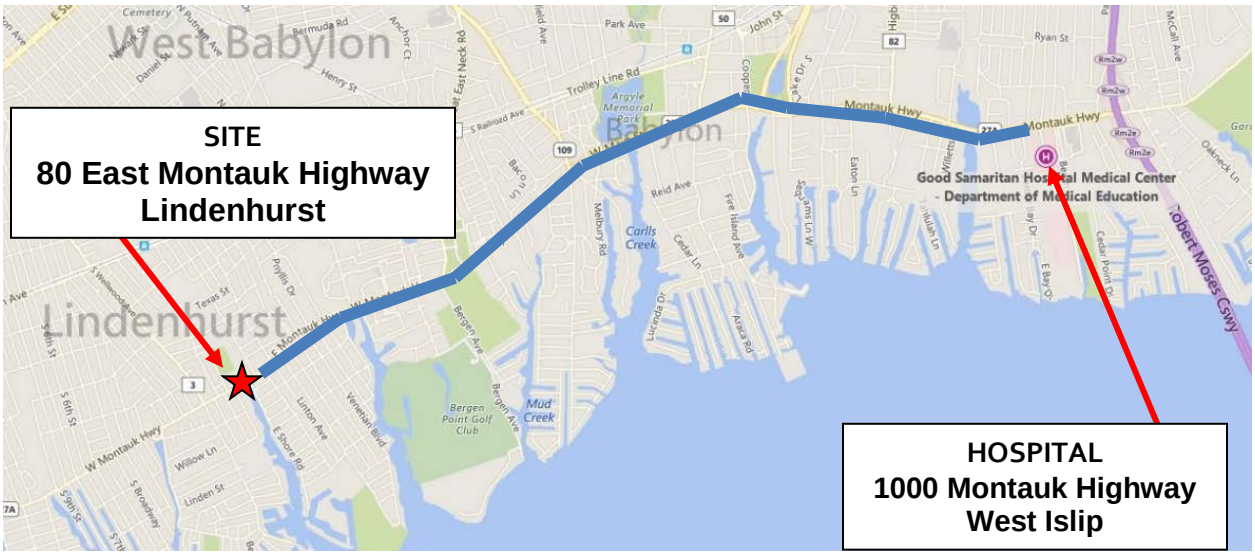
FPM Contact Personnel (631-737-6200)

Dr. Kevin J. Phillips, P.E. .....Cell # 631-374-6066
Stephanie Davis, Program Director .....Cell # 516-381-3400
John Bukoski, Project Manager .....Cell # 516-381-3535

Directions to the Good Samaritan Hospital, West Islip

1000 Montauk Highway
West Islip, NY 11795
Tel: 631-376-3000

Exit the Site and turn left onto Montauk Highway. Travel east on Montauk Highway for about 3.5 miles. The Good Samaritan Hospital is immediately on the left at 1000 Montauk Highway in West Islip; follow the signs to the Emergency Room.



E.1.4 Key Personnel/Alternates

The project coordinator and Quality Assurance Officer (QAO) for this project will be identified in advance of field activities and will be a qualified environmental professional (QEP). The project manager will also be a QEP and will also act as the HSO. An assistant project manager and assistant health and safety officer may be designated for the field activities.

E.1.5 Site Background

Based on the Site history and previous analyses of samples, the known chemicals present at the Site include the volatile organic compound (VOC) tetrachloroethylene (PCE). This chemical is present in soil, groundwater, soil vapor, and indoor air at the Site. The VOCs acetone and 2-butanone are also present in soil at the Site, and breakdown products of PCE (vinyl chloride, cis-1,2-DCE, 1,1-DCE, and/or trichloroethene) are present in groundwater, sub-slab soil vapor, and/or indoor air. The metals chromium and copper are also found at low levels in soil. Site management activities will include collection of groundwater samples, and may also include collection of soil, soil vapor, and indoor/outdoor air samples.

E.1.6 Task/Operation Health and Safety Analysis

This section presents health and safety analyses for the excavation and sampling tasks. In general, one QEP will be onsite during these activities. No excavations or other intrusive Site operations will be conducted by contractors without the presence of a QEP onsite. In the event that the HSO is not present on the Site, the Assistant HSO will implement the HASP. Levels of personal protection mentioned in this section are defined in Section E.1.9.

- Excavation and Intrusive Sampling Safety Analysis

Intrusive activities, including performing excavations, will be performed by an excavation contractor and will be observed by a QEP. The excavations will be performed by using a backhoe, excavator, or other powered equipment to remove pavement above the targeted area and then excavate unconsolidated deposits consisting primarily of sand. The depth to groundwater is approximately 5 feet below grade at the Site and may be contacted during intrusive activities that extend to or beyond that depth. A QEP will be present to coordinate, oversee, and monitor intrusive activities.

To minimize the potential for dust inhalation during intrusive activities involving residual materials, the HSO will assess wind and soil moisture conditions and, if it is deemed necessary by the HSO, the affected area will be wetted with potable water. If this measure is determined to be ineffective, the HSO may decide to upgrade personal protection to Level C respiratory protection to include respirators with dust cartridges. If extremely dusty conditions exist that cannot be successfully controlled by dust suppression with potable water, then the HSO may choose to postpone intrusive activities until such time as conditions improve.

Organic vapor concentrations will be monitored in the work zone during intrusive activities involving residual materials by utilizing a Photovac MicroTIP PID or equivalent. The PID will be "zeroed" by exposing the PID to ambient (outdoor) air prior to intrusive activities and the upper range of calibration will be established by calibrating at 98 to 100 parts per million (ppm) of isobutylene. Background organic vapor concentrations will then be established in the work zone prior to intrusive activities and recorded in the HSO field book. Upon commencement of intrusive activities, PID readings will be obtained in the workers' breathing zone. Readings will be obtained following the initial advance into the ground and every five feet thereafter. At the discretion of the HSO, PID readings may be obtained more frequently. All readings and observations will be recorded in the HSO field book. PID air monitoring will be conducted by a QEP.

Steady-state PID readings greater than five ppm in the worker's breathing zone will require upgrading to Level C personal protective equipment. Steady-state readings, for this purpose, will be defined as readings exceeding five ppm above background for a minimum of ten seconds at points approximately one foot above and then around the borehole opening. These points will define the worker's breathing zone. Level C personal protection will be implemented including full-face air-purifying respirators with dust and organic vapor cartridges (personal protective equipment will be described in greater detail in Section E.1.9). All onsite personnel with the potential to contact residual materials must be properly trained and fit tested prior to donning respirators.

If PID readings exceed steady-state levels greater than 50 ppm above background or any conditions exist for which the HSO determines require Level B personal protective equipment, all work at the Site will cease immediately and all personnel will evacuate the work zone. Evacuation will occur in the upwind direction if discernible. Specific evacuation routes will be discussed prior

to commencement of work at each location based on work location and wind direction and an evacuation meeting place will be determined. Level B conditions are not anticipated to be encountered; however, if level B conditions arise, no Site work will be performed by the QEPs or contractors and a complete evaluation of the operation will be performed and this HASP will be modified.

All personnel will be required to wear chemical-resistant nitrile gloves when the potential for dermal contact with the soil or groundwater is possible. This will include handling equipment retrieved from excavations or wells. Dermal contact with soil or groundwater and equipment that has been in contact with soil or groundwater will be avoided.

➢ Other Safety Considerations

- Noise

During operations that may generate potentially harmful levels of noise, the HSO will monitor noise levels with a Realistic^{tm} hand-held sound level meter. Noise levels will be monitored in decibels (dBs) in the A-weighted, slow-response mode. Noise level readings which exceed the 29 CFR 1910.95 permissible noise exposure limits will require hearing protection (see Table E.1.6.1 for Permissible Noise Exposures).

Hearing protection will be available to all Site workers and will be required for exceedances of noise exposure limits. The hearing protection will consist of foam, expansion-fit earplugs (or other approved hearing protection) with a noise reduction rating of at least 29 dB. Hearing protection must alleviate worker exposure to noise to an eight-hour time-weighted average of 85 dB or below. In the event that the hearing protection is inadequate, work will cease until a higher level of hearing protection can be incorporated.

- Slip/Trip/Fall Preventative Measures

To reduce the potential for slipping, tripping, or falling, the work zone will be kept clear of unnecessary equipment. In addition, all Site workers will be required to wear work boots with adequate tread to reduce the potential for slipping (work boots must be leather or chemical-resistant and contain steel toes and steel shanks).

TABLE E.1.6.1
PERMISSIBLE NOISE EXPOSURES*

Duration Per Day Hours	Sound Level dBA Slow Response
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110

Notes:

When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: $C_1/T_1+C_2/T_2+.....C_n/T_n$ exceeds unity, then, the mixed exposure should be considered to exceed the limit value. C_n indicates the total time of exposure at a specified noise level, and T_n indicates the total time of exposure permitted at that level.

Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

*Standards derived from 29 CFR 1910.95

- Insects

Potential insect problems include, but are not limited to stinging insects such as bees, wasps, and hornets, and ticks. Prior to commencement of work, each work area will be surveyed for nests and hives to reduce the possibility of disturbing stinging insects. In addition, each Site worker will be asked to disclose any allergies related to insect stings or bites. The worker will be requested to keep his or her anti-allergy medicine on Site.

Tick species native to Long Island consist of the pinhead-sized deer tick and the much-larger dog tick. Ticks may exist at the Site. All Site workers will be advised to avoid walking through vegetated areas and will be advised to check for ticks on clothing periodically.

- Potential Electrical and Other Utility Hazards

Potential electric hazards consist mainly of overhead and underground power lines. Other utilities that may present hazards include telephone lines, gas lines, sewer lines, water lines, and other overhead or underground utilities. Prior to commencement of intrusive work at the Site, all locations will be inspected with respect to overhead lines. Intrusive work

involving heavy equipment will not be performed when the horizontal distance between the equipment and overhead wires is less than 30 feet.

Underground potential utility hazards will be minimized by contacting the One-Call service to provide markouts of the utilities beneath adjoining public streets prior to the commencement of intrusive activities.

- Heat/Cold Stress

Heat stress may become a concern especially if protective clothing is donned that will decrease natural ventilation. To assist in reducing heat stress, an adequate supply of water or other liquids will be staged on the Site and personnel will be encouraged to rehydrate at least every two hours even if not thirsty. In addition, a shady rest area will be designated to provide shelter during sunny or warm days and Site workers will break for at least 10 minutes every two hours in the rest area, and, in very hot weather, workers wearing protective clothing may be rotated.

Indications of heat stress range from mild (fatigue, irritability, anxiety, decreased concentration, dexterity or movement) to fatal. Medical help will be obtained for serious conditions. Heat-related problems include:

- Heat rash: caused by continuous exposure to heat and humid air and aggravated by chafing clothes. Decreases ability to tolerate heat.
- Heat cramps: caused by profuse perspiration with inadequate fluid intake and chemical replacement (especially salts). Signs: muscle spasm and pain in the extremities and abdomen.
- Heat exhaustion: caused by increased stress on various organs to meet increased demands to cool the body. Signs: shallow breathing; pale, cool, moist skin; profuse sweating; dizziness and lassitude.
- Heat stroke: the most severe form of heat stress. Can be fatal. Medical help must be obtained immediately. Body must be cooled immediately to prevent severe injury and/or death. Signs: red, hot, dry skin; no perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

Cold exposure is a concern if work is conducted during cold weather, marginally cold weather during precipitation periods, or moderate to high wind periods. To assist in reducing cold exposure the following measures will be taken when cold exposure concerns are present:

- All personnel will be required to wear adequate and appropriate clothing. This will include head gear to prevent the high percentage loss of heat that occurs in this area (thermal liners for hard hats if hard hats are required).
- A readily-available warm shelter will be identified near the work zone.
- Work and rest periods will be scheduled to account for the current temperature and wind velocity conditions.
- Work patterns and the physical condition of workers will be monitored and personnel will be rotated, as necessary.
- Indications of cold exposure include shivering, dizziness, numbness, confusion, weakness, impaired judgment, impaired vision, and drowsiness. Medical help will be obtained for serious conditions if they occur.

Cold exposure-related problems are:

- Frost bite: Ice crystal formation in body tissues. The restricted blood flow to the injured part results in local tissue destruction.
- Hypothermia: Severe exposure to cold temperature resulting in the body losing heat at a rate faster than the body can generate heat. The stages of hypothermia are shivering, apathy, loss of consciousness, decreasing pulse and breathing rate, and death.

➢ **The Buddy System**

All activities in contaminated or potentially contaminated areas will be conducted by pairing off the Site workers in groups of two (or three if necessary). Each person (buddy) will be able to provide his or her partner with assistance, observe his or her partner for signs of chemical, cold, or heat exposure, periodically check the integrity of his or her partner's protective clothing, and notify the HSO or others if emergency help is needed. The buddy system will be instituted at the beginning of each work day. If new workers arrive on Site, a buddy will be chosen prior to the new worker entering the work zone.

- **Site Communications**

Two communication systems will be established at the Site: internal communication among personnel onsite, and external communication between onsite and offsite personnel. Internal communication will be used to alert team members to emergencies, pass along safety information such as heat stress check, protective clothing check, etc., communicate changes in the work to be accomplished, and maintain Site control. Due to ambient noise, verbal communications may be difficult at times. The HSO will carry a whistle (and compressed air horn if respirators are donned) to signal Site workers. A single whistle blast will be the signal to immediately evacuate the work zone through the access control point. This signal will be discussed with all Site workers prior to commencement of work.

An external communication system will be established between onsite and offsite personnel to coordinate emergency response, report to the Project Manager, and maintain contact with essential offsite personnel. A field telephone will be available at all times in the HSO's vehicle. In addition, a backup telephone will be identified prior to the commencement of Site operations and this location will be relayed to all Site workers.

- **General Safe Work Practices**

Standing orders applicable during Site operations are as follows:

- No smoking, eating, drinking, or application of cosmetics in the work zone.
- No matches or lighters in the work zone.
- All Site workers will enter/exit work zone through the Site access point.
- Any signs of contamination, radioactivity, explosivity, or unusual conditions will require evacuating the Site immediately and reporting the information to the HSO.
- Loose-fitting clothing and loose long hair will be prohibited in the work zone during heavy equipment operations.
- A signal person will direct the backing of work vehicles.
- Equipment operators will be instructed to check equipment for abnormalities such as oozing liquids, frayed cables, unusual odors, etc.

E.1.7 Personnel Training Requirements

All onsite personnel with the potential to contact residual materials will receive adequate training prior to entering the Site. These personnel will, at a minimum, have completed OSHA-approved, 40-hour hazardous materials Site safety training and OSHA-approved, eight-hour safety refresher course within one year prior to commencing field work. In addition, each worker must have a minimum of three days field experience under the direct supervision of a trained, experienced supervisor.

Prior to Site field work, the HSO will conduct an in-house review of the project with respect to health and safety with all personnel who will be engaged with field work involving residual materials at the Site. The review will include discussions of signs and symptoms of chemical exposure and heat/cold stress that indicate potential medical emergencies. In addition, review of PPE will be conducted to include the proper use of air-purifying respirators.

E.1.8 Medical Surveillance Program

All workers at the Site with the potential to contact residual materials must participate in a medical surveillance program in accordance with 29 CFR 1910.120. A medical examination and consultation must have been performed within the last twelve months to be eligible for field work. The content of the examination and consultation will include a medical and work history with special emphasis on symptoms related to the handling of hazardous substances, health hazards, and fitness for duty including the ability to wear required personal protective equipment under conditions (i.e., temperature extremes) that may be expected at the work Site.

All medical examinations and procedures will be performed by, or under the supervision of, a licensed physician. The Physician shall furnish a written opinion containing:

- The results of the medical examination and tests;
- The physician’s opinion as to whether the employee has any detected medical conditions which would place the worker at increased risk of material impairment of the employee's health from work in hazardous waste operations;
- The physician's recommended limitations upon the worker assigned to the work; and

- A statement that the worker has been informed by the physician of the results of the medical examination and any further examination or treatment.
- An accurate record of the medical surveillance will be retained. The record will consist of at least the following information:
- The name and social security number of the employee;
- The physician's written opinions, recommended limitations, and results of examinations and tests; and
- Any worker medical complaints related to exposure to hazardous substances.

E.1.9 Personal Protective Equipment

General Considerations

The two basic objectives of the personal protective equipment (PPE) are to protect the wearer from safety and health hazards, and to prevent the wearer from incorrect use and/or malfunction of the PPE.

Potential Site hazards have been discussed previously in Section E.1.6. The duration of Site activities is estimated to be periods of several days. All work is expected to be performed during daylight hours and workdays, in general, are expected to be eight to ten hours in duration. Any work performed beyond daylight hours will require the permission of the HSO. This decision will be based on the adequacy of artificial illumination and the type and necessity of the task being performed.

Personal protection levels for the Site activities, based on past investigations at the Site, are anticipated to be Level D with the possibility of upgrading to Level C. The equipment included for each level of protection is provided as follows:

➢ Level C Protection

Level C personnel protective equipment includes:

- Air-purifying respirator, full-face

- Chemical-resistant clothing includes: Tyvek[tm] (spunbonded olefin fibers) for particulate and limited splash protection or Saranex[tm] (plastic film-laminated Tyvek) for permeation resistance to solvents.
- Coveralls*, or
- Long cotton underwear*
- Gloves (outer), chemical-resistant
- Gloves (inner), chemical-resistant
- Boots (outer), leather or chemical-resistant, steel toe and shank
- Boot covers (outer), chemical-resistant (disposable)*
- Hard hat (face shield)*
- Escape mask*
- 2-way radio communications (inherently safe)*

(*) optional

Meeting all of these criteria permits use of Level C protection:

- Oxygen concentrations are not less than 19.5% by volume.
- Measured air concentrations of identified substances will be reduced by the respirator below the substance's threshold limit value (TLV).
- Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect any body area left unprotected by chemical-resistant clothing.
- Job functions do not require self-contained breathing apparatus.
- Direct readings are below 50 ppm on the PID.

➢ Level D Protection

Level D personnel protective equipment includes:

- Coveralls

- Gloves*
- Boots/shoes, leather or chemical-resistant, steel toe and shank
- Safety glasses or chemical splash goggles*
- Hard hat (face shield*)
- Escape mask*

(*) optional

Meeting any of these criteria allows use of Level D protection:

- No contaminant levels above 5 ppm organic vapors or dusty conditions are present.
- Work functions preclude splashes, immersion, or the reasonable potential for unexpected inhalation of any chemicals above the TLV.

➢ Additional Considerations for Selecting Levels of Protection

Another factor that will be considered in selecting the appropriate level of protection is heat and physical stress. The use of protective clothing and respirators increases physical stress, in particular, heat stress on the wearer. Chemical protective clothing greatly reduces natural ventilation and diminishes the body's ability to regulate its temperature. Even in moderate ambient temperatures, the diminished capacity of the body to dissipate heat can result in one or more heat-related problems.

All chemical protective garments can be a contributing factor to heat stress. Greater susceptibility to heat stress occurs when protective clothing requires the use of a tightly-fitted hood against the respirator face piece, or when gloves or boots are taped to the suit. As more body area is covered, less cooling takes place, increasing the probability of heat stress.

Wearing protective equipment also increases the risk of accidents. It is heavy, cumbersome, decreases dexterity, agility, interferes with vision, and is fatiguing to wear. These factors all increase physical stress and the potential for accidents. In particular, the necessity of selecting a level of protection will be balanced against the increased probability of heat stress and accidents.

➢ Donning and Doffing Ensembles

- Donning an Ensemble

A routine will be established and practiced periodically for donning a Level C ensemble. Assistance may be provided for donning and doffing since these operations are difficult to perform alone. Table E.1.9.1 lists sample procedures for donning a Level C ensemble. These procedures should be modified depending on the particular type of suit and/or when extra gloves and/or boots are used.

- Doffing an Ensemble

Exact procedures for removing Level C ensembles must be established and followed to prevent contaminant migration from the work area and transfer of contaminants to the wearer's body, the doffing assistant, and others. Doffing procedures are provided in Table E.1.9.2. These procedures should be performed only after decontamination of the suited worker. They require a suitably attired assistant. Throughout the procedures, both worker and assistant should avoid any direct contact with the outside surface of the suit.

➢ Respirator Fit Testing

The fit or integrity of the facepiece-to-face seal of a respirator affects its performance. Most facepieces fit only a certain percentage of the population; thus, each facepiece must be tested on the potential wearer in order to ensure a tight seal. Facial features such as scars, hollow temples, very prominent cheekbones, deep skin creases, dentures or missing teeth, and the chewing of gum and tobacco may interfere with the respirator-to-face seal. A respirator shall not be worn when such conditions prevent a good seal. The worker's diligence in observing these factors shall be evaluated by periodic checks. Fit testing will comply with 29 CFR 1910.1025 regulations.

➢ Inspection

The PPE inspection program will entail five different inspections:

- Inspection and operational testing of equipment received from the factory or distributor;
- Inspection of equipment as it is issued to workers;
- Inspection after use;

TABLE E.1.9.1
SAMPLE LEVEL C DONNING PROCEDURES

1. Inspect the clothing and respiratory equipment before donning (see Inspection in subsection E.1.7).

2. Adjust hard hat or headpiece if worn, to fit user's head.

3. Standing or sitting, step into the legs of the suit; ensure proper placement of the feet within the suit; then gather the suit around the waist.

4. Put on chemical-resistant safety boots over the feet of the suit. Tape the leg cuff over the tops of the boots.

5. Don the respirator and adjust it to be secure, but comfortable.

6. Perform negative and positive respirator facepiece seal test procedures.

   - To conduct a negative pressure test, close the inlet part with the palm of the hand or squeeze the breathing tube so it does not pass air, and gently inhale for about 10 seconds. Any inward rushing of air indicates a poor fit. Note that a leaking facepiece may be drawn tightly to the face to form a good seal, giving a false indication of adequate fit.

   - To conduct a positive pressure test, gently exhale while covering the exhalation valve to ensure that a positive pressure can be built up. Failure to build a positive pressure indicates a poor fit.

7. Depending on type of suit:

   - Put on inner gloves (surgical gloves).

   - Additional over-gloves, worn over attached suit gloves, may be donned later.

8. Put on hard hat

9. Have assistant observe the wearer for a period of time to ensure that the wearer is comfortable, psychologically stable, and that the equipment is functioning properly.

TABLE E.1.9.2
DOFFING PROCEDURES

1. Remove any extraneous or disposable clothing, boot covers, outer gloves, and tape.

2. Remove respirator by loosening straps and pulling straps over the top of the head and move mask away from head. Do not pull mask over the top of the head.

3. Remove arms, one at a time, from suit, avoiding any contact between the outside surface of the suit and wearer's body and lay the suit out flat behind the wearer. Leave internal gloves on, if any.

4. Sitting, if possible, remove both legs from the suit.

5. After suit is removed, remove internal gloves by rolling them off the hand, inside out.

- Periodic inspection of stored equipment; and
- Periodic inspection when a question arises concerning the appropriateness of the selected equipment, or when problems with similar equipment arise.

The inspection checklist is provided in Table E.1.9.3. Records will be kept of all inspection procedures. Individual identification numbers will be assigned to all reusable pieces of equipment and records should be maintained by that number. At a minimum, each inspection should record the ID number, date, inspector, and any unusual conditions or findings. Periodic review of these records may indicate an item or type of item with excessive maintenance costs or a particularly high level of down-time.

➢ Storage

Clothing and respirators will be stored properly to prevent damage or malfunction due to exposure to dust, moisture, sunlight, damaging chemicals, extreme temperatures, and impact.

Potentially-contaminated clothing will be stored in a well-ventilated area separate from street clothing, with good air flow around each item, if possible. Different types and materials of clothing and gloves will be stored separately to prevent issuing the wrong materials by mistake, and protective clothing will be folded or hung in accordance with manufacturer's recommendations.

TABLE E.1.9.3
PPE INSPECTION CHECKLIST

CLOTHING

- Determine that the clothing material is correct for the specified task at hand.
- Visually inspect for imperfect seams, non-uniform coatings, tears, and/or malfunctioning closures.
- Hold up to light and check for pinholes and flex product and observe for cracks or other signs of deterioration.
- If the product has been used previously, inspect inside and out for signs of chemical attack, including discoloration, swelling, and/or stiffness.

During the work task, periodically inspect for:

- Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind that chemical attack can occur without visible effects.
- Indication of physical damage, including closure failure, tears, punctures, and/or seam discontinuities.

GLOVES

- Before use pressurize glove to check for pinholes. Either blow into glove, then roll gauntlet toward fingers, or inflate glove and hold under water. In either case, no air should escape.

AIR-PURIFYING RESPIRATORS

- Inspect air-purifying respirators before each use to be sure they have been adequately cleaned. Check material conditions for signs of pliability, deterioration, and/or distortion.
- Examine cartridges to ensure that they are the proper type for the intended use, the expiration date has not been passed, and they have not been opened or used previously. Check face shields and lenses for cracks, crazing, and/or fogginess.

Air-purifying respirators will be stored individually in resealable plastic bags. After each use air-purifying respirators will be dismantled, washed, and placed in sealed plastic bags.

- PPE Maintenance

  - Specialized PPE maintenance will be performed only by the factory or an authorized repair person. Routine maintenance, such as cleaning, will be performed by the personnel to whom the equipment is assigned. Respirators will be cleaned at the end of each day with alcohol pads or, preferably, by washing with warm soapy water.

- Decontamination Methods

All personnel, clothing, equipment, and samples leaving the work zone area involving residual materials at the Site must be decontaminated to remove any harmful chemicals that may have adhered to them. Decontamination methods either (1) physically remove contaminants (2) inactivate contaminants by chemical detoxification or disinfection/sterilization, or (3) remove contaminants by a combination of both physical and chemical means. In many cases, gross contamination can be removed by physical means involving dislodging/displacement, rinsing, wiping off, and evaporation. Contaminants that can be removed by physical means include dust, vapors, and volatile liquids. All reusable equipment will be decontaminated by rinsing in a bath of detergent and water (respirators, gloves to be reused). Monitoring equipment will be decontaminated by wiping with paper towels and water. All used PPE to be discarded will be disposed offsite as solid waste.

The effectiveness of the decontamination will be evaluated near the beginning of Site activities and will be modified if determined to be ineffective. Visual observation will be used for this purpose. The HSO will inspect decontaminated materials for discoloration, stains, corrosive effects, visible dirt, or other signs of possible residual contamination.

E.2 Community Air Monitoring Plan

This Community Air Monitoring Plan (CAMP) will be implemented at the Site by the QEP during intrusive activities involving residual materials, including excavations and sampling. Due to the nature of the contaminants at the Site, there is a potential for organic vapor emissions as these activities occur. In addition, there is the potential for dust to be associated with intrusive excavation activities. To address these concerns, organic vapor monitoring will be performed during intrusive activities involving residual materials and dust monitoring will be performed during excavations involving residual materials.

Any CAMP monitoring results that exceed the action levels described below will be reported (or notice provided by another arrangement acceptable to the NYSDEC) when identified if a NYSDEC representative is present at the Site or within two hours by phone call or email to the NYSDEC Project manager when no NYSDEC representative is onsite. Exceedances of the CAMP action levels will also be summarized in the monthly progress reports, including the duration of the exceedance(s) and any response actions taken.

E.2.1 Organic Vapor Monitoring

Under the CAMP, organic vapor concentrations will be monitored at the boundaries of the work zone involving residual materials. It will be the responsibility of the HSO to implement the plan and to ensure that proper action is taken in the event that any of the established action levels are exceeded.

To monitor organic vapors, a PID capable of calculating 15-minute running average concentrations will be used and maintained in good operating condition. Calibration of the PID will be performed according to manufacturer's instructions. Background levels of organic vapors will be measured at the work zone boundary prior to beginning work and upwind of the work area periodically using a PID. Monitoring may be performed more frequently at the discretion of the HSO. Organic vapors will be monitored continuously at the downwind perimeter of the work area during ground intrusive activities involving residual materials.

PID readings will be recorded in the field logbook for both background and work area perimeter. Logbook recordings will include the time, location, and PID readings observed. Downwind perimeter levels will be recorded in the log whenever the level reaches 5 ppm above the background along with the action(s) taken to mitigate the level. If the level of organic vapors exceeds 5 ppm above the background at the downwind perimeter of the work area, work activities will be halted and monitoring continued. The vapor emission response plan will then be implemented.

E.2.1.1 Vapor Emission Response Plan

The vapor emission response plan includes the following trigger levels and responses:

- Greater than 5 ppm at perimeter: In the event the level of organic vapors exceeds 5 ppm above the background at the downwind perimeter of the residual materials work

area, activities will be halted and monitoring continued. If the organic vapor level then decreases to below 5 ppm above background, work activities can resume but organic vapor readings will be obtained more frequently as directed by the HSO.

- 5 ppm to 25 ppm at perimeter and less than 5 ppm at the work zone boundary: If the level of organic vapors is greater than 5 ppm but less than 25 ppm over background at the downwind perimeter of the residual materials work area, activities will be halted, the source of the vapors will be identified and corrective actions will be taken. Monitoring will be continued and activities will resume if the organic vapor concentration at half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background. More frequent intervals of monitoring will be performed as directed by the HSO.
- Above 25 ppm at perimeter: If the level of organic vapors is above 25 ppm at the perimeter of the residual materials work area, activities will be shut down. Should such a shutdown be necessary, downwind air monitoring will continue as directed by the HSO to confirm that organic vapor concentrations decrease. Actions will be taken to abate the source of vapor emissions and activities will not resume until the source is controlled.

E.2.1.2 Major Vapor Emission Response Plan

The Major Vapor Emission Response Plan will automatically be placed into effect if:

- Efforts to abate the emission source are unsuccessful and levels above 5 ppm persist for more than 30 minutes in the 20-foot zone; or
- The vapor levels are greater than 10 ppm above background in the 20-foot zone.

Upon activation of the Major Vapor Emission Response Plan, the following activities will be undertaken:

- All emergency response contacts as listed in the HASP will be notified;
- Air monitoring will be conducted at 30-minute intervals within the 20-foot zone. If two successive readings below action levels are measured, air monitoring will be halted or modified as directed by the HSO; or

- If air monitoring readings remain above action levels, work will be halted and further measures taken to reduce organic vapors.

If a Major Vapor Emission Response Plan is implemented, the NYSDEC and NYSODH will be contacted within 24 hours.

E.2.2 Dust Monitoring

Dust (particulate) monitoring will be performed during excavations involving residual materials with the potential to create dust by using a Miniram personal monitor calibrated according to the manufacturer's instructions. The Miniram will be capable of calculating 15-minute running average concentrations and operated continuously at the downwind perimeter of the work zone during excavation activities.

To ensure the validity of the fugitive dust measurements, appropriate QA/QC measures will be employed, including periodic instrument calibration, operator training, daily instrument performance (span) checks, and record-keeping on daily log sheets. If measurable dust levels are noted, then readings will also be obtained upwind of the work zone. If the downwind particulate level exceeds the upwind level by more than 100 micrograms per cubic meter (ug/m^3), then dust suppression techniques will be employed or work will be halted or controlled such that dust levels are reduced at the downwind perimeter to within 150 ug/m^3 of the upwind level.

If dust is generated during boring or other intrusive activities, then dust suppression will be performed, as discussed in Section E.1.6 of this HASP. Corrective measures may include increasing the level of PPE for onsite personnel and implementing additional dust suppression techniques. Should the action level of 150 $\mu g/m^3$ continue to be exceeded, work will stop and the NYSDEC will be notified as described in Section C.2 above. The notification will include a description of the control measures implemented to prevent further exceedances.

Reasonable fugitive dust suppression techniques will be employed during all intrusive Site activities involving residual materials that may generate fugitive dust. Particulate (fugitive dust) monitoring will be employed during the handling of contaminated soil or when onsite activities may generate fugitive dust from exposed contaminated soil.

Fugitive dust from contaminated soil that migrates offsite has the potential to transport contaminants offsite. Although there may be situations when the monitoring equipment does not

measure dust at or above the action level, visual observation may indicate that dust is leaving the Site. If dust is observed leaving the working area, additional dust suppression techniques will be employed.

The following techniques have been shown to be effective for controlling the generation and migration of dust during intrusive activities and will be used as needed during intrusive activities involving residual materials at the Site:

- Wetting equipment and exposed soil;
- Restricting vehicle speeds to 10 mph;
- Covering areas of exposed soil after investigation activity ceases; and
- Reducing the size and/or number of areas of exposed soil.

When techniques involving water application are used, care will be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will be considered to prevent overly wet conditions, conserve water, and provide an effective means of suppressing fugitive dust.

Evaluation of weather conditions is also necessary for proper fugitive dust control. When extreme wind conditions may make dust control ineffective, investigation actions may be suspended until wind speeds are reduced.

E.2.3 Noise Monitoring

Due to the use of heavy equipment, there is a potential for noise to impact the surrounding community. Work will be performed only during normal working hours when ambient noise levels are elevated due to ongoing activities and traffic in the surrounding community. Therefore, the potential for noise impacts on the surrounding community is low.

If pedestrians are present in the Site vicinity, it is possible for noise impacts to occur. To address these concerns and other safety concerns, pedestrians will be barred from entering the work zone. In addition, during activities involving residual contamination the HSO will periodically monitor noise levels at the work zone boundary and the closest property boundary with a Realistic^{tm} hand-held sound level meter. Noise levels will be monitored in dBs in the A-weighted, slow-response mode. If noise level readings exceed an eight-hour time-weighted

average of 85 dB at the work zone boundary or at the closest property boundary, the HSO will take appropriate measures to reduce noise exposure beyond these boundaries. These measures may include extension of the work zone boundary, issuing appropriate hearing protection devices as discussed in Section E.1.6, or other measures, as appropriate. In the event that the noise exposure measures are inadequate, work will cease until noise levels can be reduced to below 85 dB at the work zone boundary and/or at the closest property boundary.

APPENDIX F
QUALITY ASSURANCE PROJECT PLAN

This Quality Assurance Project Plan (QAPP) is applicable to all sampling activities at this Site.

F.1 Data Quality Objectives

The Data Quality Objectives (DQOs) will be applicable to all data-gathering activities at the Site. DQOs will be incorporated into sampling, analysis, and quality assurance tasks.

The data users for this project are the qualified environmental professional (QEP), the Site Owner/Remedial Party, the New York State Department of Environmental Conservation (NYSDEC), and the New York State Department of Health (NYSDOH). No other data users are anticipated. The collected data are intended to further evaluate the nature and extent of volatile organic compounds (VOCs) in onsite soil, groundwater, soil vapor, and/or indoor air.

For this project, field screening will be performed during sampling and excavation activities. Field screening includes monitoring for organic vapors in soil and in the air in the work zone using a Photovac MicroTIP photoionization detector (PID, or equivalent) and visual observations of soil or groundwater characteristics. All readings and observations will be recorded by the QEP in his or her field notebook. All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.

F.2 Standards, Criteria, and Guidance

The following standards, criteria, and guidance (SCGs) have been identified for the Site:

- NYSDEC DER-10;
- The NYSDEC Class GA Ambient Water Quality Standards, which are used to evaluate the groundwater chemical analytical results;
- The 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives, which are used to evaluate soil sample results;

- The 6 NYCRR Parts 370, 371, and 372 regulations for hazardous waste management, which are used to guide hazardous waste characterization and disposal; and
- The NYSDOH *Final Guidance for Evacuating Soil Vapor Intrusion in the State of New York (October 2006 and May 2017),* which are used to evaluate sub-slab soil vapor and indoor air results.

F.3 Quality Assurance/Quality Control Procedures

QA/QC procedures will be utilized during the performance of field sampling work to ensure that the resulting chemical analytical data accurately represent Site conditions. The following sections include descriptions of the QA/QC procedures to be utilized.

➢ Equipment Decontamination Procedures

All non-disposable downhole equipment (i.e., soil sampling equipment, submersible pumps) used during sampling activities will be decontaminated by washing in a potable water and Alconox solution and rinsing in potable water prior to use at each location to reduce the potential for cross-contamination. All sampling equipment will be either dedicated disposable equipment or will be decontaminated prior to use at each location. The decontamination procedures utilized for all non-disposable sampling equipment will be as follows:

1. The equipment will be scrubbed in a bath of potable water and low-phosphate detergent followed by a potable water rinse;
2. The equipment will be rinsed with distilled water; and
3. The equipment will be allowed to air dry, if feasible, and wrapped in aluminum foil (shiny side out) for storage and transportation.

➢ QA/QC Samples

QA/QC samples will be collected and utilized to evaluate the potential for field or laboratory contamination and to evaluate the laboratory's analytical precision and accuracy. The specific types of QA/QC samples to be collected are described below.

The decontamination procedures will be evaluated by the use of equipment blank samples. These samples consist of aliquots of laboratory-supplied water that are poured over or through the dedicated or decontaminated sampling equipment and then submitted to the laboratory for analysis.

An equipment blank sample will be prepared for each day that soil or groundwater sampling is conducted at the Site and will be analyzed for the same analytes as the primary environmental samples collected that day (VOCs). The equipment blanks will be labeled in a manner to prevent identification by the analytical laboratory.

Trip blank samples will be utilized to evaluate the potential for VOC cross-contamination between samples in the same cooler or shipping container. Trip blank samples consist of laboratory-provided containers filled with laboratory water or laboratory air that are sealed in sample containers at the laboratory and that are transported to and in the field with the other sample containers. A trip blank will be shipped with each group of soil, groundwater, and soil vapor/indoor air samples and will be managed in the field and analyzed in the laboratory in the same manner as the primary environmental samples.

Blind duplicate samples will be obtained at a frequency of at least one per every 20 environmental samples and will be used to attest to the precision of the laboratory. A blind duplicate consists of a separate aliquot of sample collected at the same time, in the same manner, and analyzed for the same parameters as the primary environmental sample. The blind duplicate samples are labeled in a manner such that they cannot be identified by the laboratory. The sample results are compared to those of the primary environmental sample to evaluate laboratory analytical precision.

Matrix spike/matrix spike duplicate (MS/MSD) samples will be collected at a frequency of one per 20 environmental soil or groundwater samples. The purpose of the MS/MSD samples is to confirm the accuracy and precision of laboratory results based on a particular matrix. The MS/MSD results will be evaluated during the preparation of the DUSRs, as discussed below.

- Chain-of-Custody Procedures

For each day of sampling, chain-of-custody (COC) sheets will be completed and submitted to the laboratory with the samples collected that day. A copy of each COC sheet will be retained by the QEP for sample tracking purposes. Each COC sheet will include the project name, the sampler's signature, the sampling locations and intervals, and the analytical parameters requested.

- Data Usability Summary Reports

All chemical analytical results will be evaluated using the sample data packages, sample data summary packages, and case narratives provided by the analytical laboratory. The data evaluation will be performed to verify that the analytical results are of sufficient quality to be relied upon to assess the potential presence of contaminants in the groundwater, soil vapor, indoor air, and/or soil samples. A DUSR will be prepared for each data package following the "Guidance for the Development of Data Usability Summary Reports" provided by the NYSDEC (Appendix 2B of DER-10).

F.4 Sample Analysis

All samples will be submitted to NYSDOH ELAP-certified laboratories. Holding times will be in accordance with NYSDEC ASP requirements. Analytical data will be provided by the laboratories in electronic format, in accordance with DER-10, Section 1.15.

The soil and groundwater samples will be analyzed for TCL VOCs using EPA Method 5035/5035A and 8260B. The soil vapor, sub-slab soil vapor and indoor/outdoor air samples will be analyzed for VOCs using Method TO-15. Low-level analyses will be performed for the indoor air samples. The analytical methods used will be as per NYS ASP with Category B deliverables.

F.5 Data Evaluation and Reporting

The data collected will be assembled, reviewed, and evaluated following each sampling round. The soil and groundwater samples will be used to assess the nature and extent of the remaining contamination in the soil and groundwater at the Site. The soil vapor and indoor air samples will be used to assess the potential for soil vapor intrusion in the Site building. The resulting data will be reported to the NYSDEC in the appropriate reports documenting Site-related activities (monitoring report, Periodic Review Report, as appropriate).

Electronic Data Deliverables (EDDs) will be prepared for each data package and uploaded into the NYSDEC's environmental information management system.

APPENDIX G
SITE MANAGEMENT FORMS

This Appendix includes all Site-specific site management forms, including the Site-wide Inspection Checklist, the Well Sampling Data Form, the Canister Field Sampling Record, and the Green Remediation Metrics Form for this Site. The forms will be completed during site management activities, as appropriate, and provided to the NYSDEC in electronic format in accordance with the reporting requirements specified in Section 7.0 of the SMP.

Site-Wide Inspection Checklist
Cardwell Condenser Corporation Site
80 East Montauk Highway
Lindenhurst, New York

Date of Inspection: _____

Site-wide inspections will be performed annually, at a minimum. A site-wide inspection will also be performed after severe events that may affect the pavement cover over the former LP-1 area, or the monitoring wells.

The following inspection checklist will be completed during each site-wide inspection. Supporting documentation will be attached, as necessary. The completed site-wide inspection checklist and supporting documentation will be included in the associated Periodic Review Report.

Compliance with Institutional Controls

Institutional Controls (ICs) are required to: (1) implement, maintain and monitor the engineering controls (ECs) described in the Site Management Plan (SMP); (2) prevent future exposure to residual contamination by controlling disturbances of residual materials; and, (3) restrict the use of the Site to industrial, commercial, restricted residential, or residential uses. Adherence to these ICs on the Site (Controlled Property) is required under the Environmental Easement. These ICs are described in Section 3.2 of the Site Management Plan. Please complete the following checklist to confirm compliance with the Site ICs:

- The Controlled Property may be used for industrial use. **Confirm the use of the Site**:

- All Engineering Controls (pavement cover over former LP-1 area, concrete building slab, and groundwater monitoring wells) must be operated and maintained as specified in the SMP for the Controlled Property. **Confirm operation and maintenance of ECs**:

- Annual inspections and certifications must be conducted in accordance with the SMP. **Confirm compliance with annual inspections and certifications**:

- Groundwater and other environmental or public health monitoring, and reporting of

information thus obtained, must be performed in a manner specified in the SMP. **Confirm that the required monitoring and reporting are in accordance with the SMP:**

- Onsite environmental monitoring devices, including but not limited to groundwater monitoring wells, will be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP. **Confirm that monitoring devices have been protected and/or replaced:**

- All soil disturbance activities must be conducted in accordance with the NYSDEC-approved SMP and the Excavation Work Plan (EWP). **Confirm that these activities, if they have occurred, are in compliance with the SMP and EWP**:

- Use of the groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for the intended purpose. **Confirm that groundwater use has not occurred**:

- As per the Environmental Easement, the Controlled Property may not be used for a higher level of use (commercial, residential or unrestricted use), and the above-stated ECs may not be discontinued without proper notification of the NYSDEC of the change, approval of that use by the NYSDEC, and an amendment of the SMP approved by the NYSDEC. **Confirm continued compliance with the Environmental Easement:**

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

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

Confirm that property deed and all subsequent instruments of conveyance are in compliance:

- Grantor covenants and agrees that the Environmental Easement shall be incorporated in full or by reference in any leases, license, or other instruments granting a right to use the Controlled Property. **Confirm that leases, licenses or other right-to-use documents incorporate or reference the Environmental Easement**:

- Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls employed at the Controlled Property were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any SMP for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls. **Confirm the submittal of the Annual Certification Statement:**

Compliance with Engineering Controls

Provide a written evaluation of the condition and continued effectiveness of the ECs:

- The pavement cover over the former LP-1 area EC:
- The concrete slab cover underlying the existing onsite building EC:
- The groundwater monitoring well EC:

General Site Conditions

Provide a written description of the Site conditions at the time of the site-wide inspection. Attach digital photographs or other supporting information as needed.

Site Management Activities

Provide a discussion and assessment of ongoing site management activities including as applicable but not limited to, soil/residual materials management, groundwater monitoring, community air monitoring, nuisance control, well replacement/repair, health and safety monitoring, and other applicable and pertinent activities. Attach supporting documentation as necessary.

Compliance with Schedules

The Monitoring and Sampling Plan included in Section 4 of the SMP does not include any permit requirements but does include a schedule for groundwater and other monitoring. **Discuss compliance with the groundwater monitoring schedule:**

Site Records

The Site records include, but are not limited to, groundwater monitoring reports, EC inspections, site-wide inspection checklists, soil management documents, community air monitoring documents, regulatory agency correspondence, reports, and the PRR. **Confirm that each type of Site record is up to date and provide comments:**

Inspector Information

Name and Affiliation of Inspector(s):

Date of Inspection:

Reason for Inspection:

List additional inspections or activities conducted in association with this inspection:

Attachments:

Correspondence

Supporting documents

Photolog

WELL SAMPLING DATA FORM

Site Name: Cardwell Condenser Corporation Site, #152035

Location: 80 East Montauk Highway, Lindenhurst, NY

Well No.: _____ Well Diameter: _____

Date: _____ Start Time: _____

Weather: _____ Finish Time: _____

Sampled By: _____

Depth to Bottom of Well: _____ Feet.

Depth to Water: _____ Feet.

Height of Water Column: _____ Feet.

Water Volume in Casing: _____ Gallons.

Water Volume to be Purged: _____ Gallons.

Water Volume Actually Purged: _____ Gallons.

Purge Method: _____

Physical Appearance/Comments: _____

FIELD MEASUREMENTS:

Time	Gallons	pH	Cond. (uS)	Temp. (^{o}F)	Turbidity (NTU)

Sampling and Analytical Methods: _____

Laboratory Name and Location: _____

CANISTER FIELD SAMPLING RECORD

Project: _____

Site Location: _____

Sample ID _____ Canister ID _____

Sampler _____ Canister Volume _____

Location _____ Flow Controller ID _____

Height _____ Flow Controller Setting _____

Sample Type (sub-slab, soil gas, amb, indoor) _____

Reading	Date	Time	Vacuum
Initial Canister Vacuum			
Final Canister Vacuum			

Weather or Ambient Conditions: _____

Purge Data: _____

Helium Check Data: _____

Comments: _____

Summary of Green Remediation Metrics for Site Management

Site Name: Cardwell Condenser Corporation Site **Site Code**: #152035
Address: 80 East Montauk Highway **City**: Lindenhurst
State: NY **Zip Code**: 11757 **County**: Suffolk

Initial Report Period (Start Date of period covered by site management)
Start Date: _____

Current Reporting Period
Reporting Period From: _____ To: _____

Contact Information
Preparer's Name: _____ Phone No.: _____
Preparer's Affiliation: _____

I. Solid Waste Generation: Quantify the management of solid waste generated during site management activities.

	Current Reporting Period (tons)	**Total to Date (tons)**
Total waste generated on-site		
OM&M generated waste		
Of that total amount, provide quantity:		
Transported off-site to landfills		
Transported off-site to other disposal facilities		
Transported off-site for recycling/reuse		
Reused on-site		

Provide a description of any implemented waste reduction programs for the site in the space provided on Page 2.

II. Transportation/Shipping: Quantify the distances travelled for delivery of supplies, shipping of laboratory samples, and removal of waste.

	Current Reporting Period (miles)	**Total to Date (miles)**
Consultant and Contractor(s)		
Laboratory Courier/Delivery Service		
Waste Removal/Hauling		

Provide a description of all mileage reduction programs for the Site in the space provided on Page 2. Include specifically any local vendor/services utilized that are within 50 miles of the Site.

III. Water Usage: Quantify the water volumes used for site management from various sources.

	Current Reporting Period (gallons)	**Total to Date (gallons)**
Total quantity of water used onsite		
Of that total amount, provide quantity:		
Public potable water supply usage		
Surface water usage		
Onsite groundwater usage		
Collected or diverted storm water usage		

Provide a description of any implemented water consumption reduction programs for the Site in the space provided below.

IV. Land Use and Ecosystems: Quantify the amount of land and/or ecosystems disturbed and the area of land and/or ecosystems restored to a pre-development condition (i.e. Green Infrastructure).

	Current Reporting Period (acres)	**Total to Date (acres)**
Land disturbed		
Land restored		

Provide a description of any implemented land restoration/green infrastructure programs for the Site in the space provided below.

Description of green remediation programs reported above (Attach additional sheets if needed)
Waste Generation:
Transportation/Shipping:
Water usage:
Land Use and Ecosystems:
Other:

APPENDIX H
FIELD SAMPLING PLAN

This Field Sampling Plan is applicable to activities involving sampling of soil, groundwater, soil vapor and indoor air at the Site. The Quality Assurance Project Plan (QAPP) provided in Appendix F to the Site Management Plan provides additional information concerning quality assurance/quality control procedures for sampling activities.

H.1 Soil Sampling

Soil sampling will be performed in the event that the pavement cover over the former LP-1 area is removed and soil is excavated. Soil sampling will also be performed in the event that the existing concrete slab beneath the onsite building (cover) is breached or removed. All soil sample locations will be identified using a GPS.

The soil that that remains in place following excavation of any residual soil will be screened by a qualified environmental professional (QEP) for visual and/or photoionization detector (PID) indications of potential volatile organic compound (VOC) contamination. The soil that remains in the excavation will be sampled in a manner designed to characterize the sidewalls and floor of the excavation.

Soil samples retained will be submitted for laboratory analysis. The samples retained for VOC analysis will be collected using Method 5035A preservation procedures. All samples retained for analysis will be tested for Target Compound List (TCL) VOCs. Upon completion of sampling, the sample containers will be sealed, labeled, managed, transported, and tracked as described in Section H-4 below.

H.2 Soil Vapor and Indoor/Outdoor Sampling

In the event that the current use of the onsite building changes, if chlorinated VOCs are no longer used onsite, or if a new building is constructed onsite, sub-slab soil vapor and indoor air sampling will be conducted at monitoring points installed through the building slab(s) to assess the potential for soil vapor intrusion (SVI). An ambient (outdoor) air sample will also be collected during the sampling event to assess potential impacts of outdoor air quality on the indoor air quality.

At each monitoring point, co-located sub-slab soil vapor and indoor air samples will be collected. Prior to sample collection three to five volumes of air will be purged through the monitoring point at a rate of less than 0.2 liters per minute using an air pump so as to ensure that a representative sample is obtained. To confirm the integrity of the monitoring point seal a helium tracer gas will be confined over the seal and the potential presence of helium in the polyethylene tubing will be checked with a helium meter. Following purging and the seal integrity check, the sub-slab soil vapor sample will be collected into a laboratory-supplied Summa canister equipped with a calibrated flow controller. Co-located indoor air samples and an ambient (outdoor) air sample will also be collected concurrently with the sub-slab vapor samples over an approximate 8-hour time period (commensurate with commercial or industrial use of the Site). In the event that the Site will be used for residential purposes, then the sample time will be increased to 24 hours. In either case, the flow controller for each canister will be set so as not to exceed 0.2 liters per minute. The environmental professional will observe the flow controllers and seal the canisters while some vacuum remains. Upon completion of sampling, each canister will be sealed, labeled, managed, transported, and tracked as described in Section H-4 below. The soil vapor, indoor air, and outdoor air sample locations will be identified using a GPS.

During the sampling event, a building inventory will be completed using the most current NYSDOH inventory form. The information obtained will be used to assess factors that may affect the indoor air sample results.

H.3 Groundwater Monitoring Well Sampling

Groundwater monitoring well sampling will be performed as specified in the SMP for this Site. During each groundwater monitoring event, the depth to the static water level and depth of the well will be measured at each well using an interface probe. The potential presence of non-aqueous-phase liquid (NAPL) will also be assessed. Then a decontaminated low-flow pump will be used to purge each well until the turbidity of the produced water is less than 50 NTU or until five well volumes of water have been purged. Following the removal of each well volume, field parameters, including pH, turbidity, specific conductivity, and temperature, will be monitored. When all stability parameters vary by less than 10 percent between the removal of successive well volumes, the well will be sampled. Well sampling forms documenting the well purging and sampling procedures will be completed.

Following purging, sampling will be performed. Samples will be obtained directly from the pump or using dedicated disposable polyethylene bailers suspended from dedicated cotton or polypropylene lines. The retrieved samples will be decanted into laboratory-supplied sample containers. Upon completion of sampling, the sample containers will be sealed, labeled, managed, transported, and tracked as described in Section H-4 below.

H.4 Sample Management and Analyses

Each sample container will be labeled, and the labeled containers containing soil or groundwater samples will be placed in a cooler with ice to depress the sample temperature. The filled labeled Summa canisters will be secured in shipping containers. A chain of custody form will be completed and kept with each of the coolers and shipping containers to document the sequence of sample possession. At the end of each day, the filled coolers and shipping containers will be transported by overnight courier to the analytical laboratory.

The analytical laboratories for all samples will be NYSDOH ELAP-certified for the proposed analyses. All of the soil and groundwater samples will be analyzed for TCL VOCs using EPA Method 5035/5035A and 8260B. The soil vapor samples will be analyzed for VOCs using Method TO-15. Low-level TO-15 analyses will be performed for the indoor air samples. The analytical methods used will be as per NYS Analytical Services Protocol (ASP) with Category B deliverables. Electronic data deliverables (EDDs) will be prepared and uploaded into the NYSDEC's environmental information management system.

APPENDIX I
REMEDIAL SYSTEM OPTIMIZATION TABLE OF CONTENTS

In the event that a Remedial System Optimization (RSO) Study is performed to evaluate the remedy for this Site, an RSO Report will be prepared to document the results of the Study. The following Table of Contents provides a general outline for an RSO Report and should be modified to fit the needs of the RSO Study.

REMEDIAL SYSTEM OPTIMIZATION
FOR
CARDWELL CONDENSER CORPORATION SITE

TABLE OF CONTENTS

4.1 RECOMMENDATIONS TO ACHIEVE OR ACCELERATE SITE CLOSURE

4.1.1 Source Reduction/Treatment

4.1.2 Sampling

4.1.3 Conceptual Site Model (Risk Assessment)

4.2 RECOMMENDATIONS TO IMPROVE PERFORMANCE

4.2.1 Maintenance Improvements

4.2.2 Monitoring Improvements

4.2.3 Process Modifications

4.3 RECOMMENDATIONS TO REDUCE COSTS

4.3.1 Supply Management

4.3.2 Process Improvements or Changes

4.3.3 Optimize Monitoring Program

4.3.4 Maintenance and Repairs

4.4 RECOMMENDATIONS FOR IMPLEMENTATION