# DT CONSULTING SERVICES, INC. BELLUCCI ENGINEERING, PLLC.

SITE CHARACTERIZATION WORK PLAN REVISED FOR 21 – 23 WAYNE AVENUE WEST HAVERSTRAW, NEW YORK

STATE SUPERFUND PROGRAM SITE NUMBER 344087

**February 9, 2023** 

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February 9, 2023

Ms. Rachel Savarie
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233

# RE: SITE CHARACTERIZATION WORK PLAN - REVISED

21-23 Wayne Avenue West Haverstraw, Rockland County, New York

Site No.: 344087

Dear Ms. Savarie:

DT Consulting Services, Inc. (DTCS) and Bellucci Engineering, PLLC are pleased to present this Site Characterization Work Plan - Revised for the above referenced property. This report documents the field work and reporting activities proposed for the Subject Property to characterize the nature and extent of targeted contaminants and addresses your comment letter dated January 23, 2023. If you should have any questions or require additional information, please contact our office.

Respectfully submitted,

Daniel Bellucci, P.E.

Bellucci Engineering, PLLC

Deborah Thompson, Senior Geologist

Loral Idenposen

DT Consulting Services, Inc.

Cc: A. Alkhalaf/Toscott Realty, LLC

B. Fitteron/NB Environmental Services, LLC

G. Bowitch, Esq.

C. Vooris/NYSDOH

"I Daniel Bellucci certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Report 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)."

# **TABLE OF CONTENTS**

1.0	INTRODUCTION	ON/PURPOSE1-2
2.0	SITE INFORM	ATION/PREVIOUS ENVIRONMENTAL REPORTING2-7
3.0	<b>OBJECTIVES</b>	7
	3.1 DATA ASS	SESSMENT AND NEEDS7-8
4.0	SITE CHARAC	CTERIZATION STAGE - PROPOSED METHODS8-13
	4.1 SOIL GAS	SAMPLING AND ANALYSIS9-10
	4.2 SOIL SAM	IPLING AND ANALYSIS10-11
		WATER WELL INSTALLATION11-12
		WATER MONITORING/ANALYSIS12-13
		E GROUNDWATER ELEVATION SURVEY 13
5.0		URANCE PROJECT PLAN
2.0	•	SJECTIVES
		CAL METHODS/QUALITY ASSURANCE SUMMARY 15
		ALITY CONTROL SAMPLES 15-16
	•	MPLING PROCEDURES16-18
		CUSTODY
		DUCTION, VERIFICATION AND REPORTING20
		ABILITY SUMMARY REPORT21
	5.8 ELECTRO	NIC DATA DELIVERABLES21
6.0		CTERIZATION REPORT21-23
<b>7.0</b>	PROJECT SCH	IEDULE
	URES	Duanauty I agation Man
U	ıre 1 ıre 2	Property Location Map Tax Map
_	ire 3	Surrounding Land Use Map
_	ire 4	Site (base) Plan/Proposed Sampling Locations
	BLES bles 1-3	Soil Comparison Charts – ERC, July 2018
1 410	ios I-s	comparison Charts Disc, July 2010
AT	<u> FACHMENTS</u>	
	achment A	Health and Safety Plan
Atta	achment B	Community Air Monitoring Plan

#### 1.0 INTRODUCTION AND PURPOSE

This Site Characterization Work Plan (SCWP) has been prepared pursuant to the terms of a New York State Department of Environmental Conservation (NYSDEC or Department) Order on Consent and has been prepared to satisfy the investigation requirements of the State Superfund Program (SSP). The Subject Property is located at 21-23 Wayne Avenue, West Haverstraw, Rockland County, New York (heretofore referenced as the Site or Subject Property). Refer to Figures 1 & 2 for a Site Location Map and Site Base Map, respectively. Prior investigation activities had been conducted on the Site and the results of those investigations were submitted to the Department. Based upon these results, the Department has designated the Site as Site Number 344087 with a Classification of "P" pursuant to ECL 27-1305. The Site is not, however currently listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State.

Upon the completion of field studies described herein, a Site Characterization Report will be prepared and submitted to the Department for review and approval. Since all investigative/work will be performed in accordance with an executed NYSDEC Order on Consent, an approved SCWP is required prior to initiating any remaining investigation activities. The expressed purpose of this work is to provide documentation of on-Site soil and groundwater quality conditions via sampling and analysis of soils and the monitoring of existing/proposed groundwater wells, as well as evaluation of soil gas quality along the Site's property boundaries. Pending the results of this Site Characterization, an appropriate remedial action plan, if one is necessary, can be developed and implemented upon NYSDEC approval.

This SCWP has been prepared to identify specific source areas, if any, at the above referenced Site. The Site is the location of past detections of heavy metals, polychlorinated biphenyls (PCBs) and semi-volatile organic compounds (SVOCs) as identified in historical subsurface investigative reports. As more fully

described in Section 2 of this document, targeted contaminants have been detected in the surficial and subsurface soils on the property as a result of historical Site use (i.e., automotive recycling center). The past release of hazardous substances at the Site may have resulted in:

• A potential threat to human health associated with potential exposure to Site related contaminants via absorption, inhalation and/or ingestion.

#### 2.0 SITE INFORMATION/ PREVIOUS ENVIRONMENTAL REPORTING

The Subject Property contains seven taxable lots that total approximately 3.13 acres of land. The Site is located in the Village of West Haverstraw, Rockland County, New York as is being collectively referred to as 21 – 23 Wayne Avenue (note that the Subject parcels have also been referenced as 2 and 10 Cliff Street, 9 and 18 Phelps Street, and 4, 6 and 7 Lafayette Avenue in previous environmental reporting). The Site is officially designated by the Village of West Haverstraw Tax Assessor's Office as Section 20.20, Block 2, Lots 49.2, 50 – 53 and Section 26.08, Block 1, Lots 1 & 2 (see Figure 2 for parcel tax map). Records indicate that the commercial use of the Site dates back as early as 1946. Specifically, the Subject Property was operated as an automotive recycling center "junkyard" until approximately 2006 when the property was purchased by Toscott Realty, LLC (i.e., the Participant). At present, the Site parcels consist of wooded/undeveloped land. All historical Site improvements have been demolished and removed. However, a concrete pad is currently located on the northern portion of 6 Lafayette Avenue. According to the property owner, Toscott Realty, LLC, this pad had been the location of a former building (demolished in 2007) which had been previously utilized to dismantle automobiles. The area surrounding the Subject Property is primarily characterized by a mix of residential and commercial development (see Figure 3 for detail). Site topography is generally level and at grade with the surrounding roadways. The closest surface waterbody is the Minisceongo Creek, located approximately 1,200-ft. south of the Site.

Electric and gas services is supplied by Orange and Rockland Utilities, while potable water and sanitary services are supplied by the local municipality. No groundwater supply wells were observed by representatives of this office during Site inspections and no groundwater supply wells are known to be present or used on adjoining or nearby properties.

Several environmental assessments were conducted by various contractors on behalf of the Participant between 2018 and 2021. As a result of a October 14, 2021 Phase I Environmental Site Assessment (ESA) performed by NB Environmental Services, LLC (NBES) of Norwalk, CT), the following areas of potential environmental concern and/or recognized environmental conditions (RECs) were identified and are associated with the Subject Property:

- 1. The historic usage as an automobile recycling facility and the potential for leaks and/or spills from the storage of automobiles on-Site;
- 2. The former presence of a reported 200-gallon fuel oil underground storage tank (UST) located adjacent to a former on-Site garage (see Figure 4 for location). The structure and the storage tank were reportedly removed in 2007, however there is no closure documentation for the UST;

The presence of lead-impacted soil reported to have been removed and transported off-Site for disposal in 2007 (see Figure 4 for location). Additionally, a spill was reported to the NYSDEC on August 13, 2018, generating spill number 18-05186. According to documents reviewed, the spill was related to an August 2018 Phase II ESA completed at the Site where analytical reporting indicated "the presence of PCBs, lead and other environmental impacts". Impacted material, from an area where car burning reportedly occurred in the 1980s, was encountered during this 2018 Phase II assessment. Such material was reportedly excavated and stockpiled on-Site. Later, NBES oversaw the disposal of the remaining stockpiled soil. A total of 23.56 tons of soil was removed and properly

disposed of at Envirite of Pennsylvania, Inc. located in York, PA. The spill case was ultimately closed by the NYSDEC on April 27, 2020.

Two field investigative studies have also been performed on the Subject Property to characterize Site conditions. These include the following:

## 1. Phase II Environmental Site Assessment, August 2018.

Performed by ERC Environmental (ERC)

The ERC Phase II ESA included collection of seven soil and two groundwater samples for analysis and Site characterization. Pertinent findings documented in the ERC field study include the following:

# • Soil Sampling – Metals

Analytical results revealed that lead, barium, zinc, cadmium and copper were found at concentrations which exceeded NYSDEC Part 375-6(b) Commercial Soil Cleanup Objectives (SCOs) in each of the seven samples analyzed. Specifically, lead was reported at a maximum concentration of 1,720 mg/kg or parts per million (ppm), which is above the Unrestricted and Commercial Use SCOs of 63 and 1,000 ppm, respectively. Barium was found to exceed both the Unrestricted and Commercial Use soil guidance at one sampling location (denoted as TP-5) with a reported sample concentration of 1,880 ppm vs. its SCOs of 350 and 400 ppm, respectively. Zinc has Unrestricted and Commercial Use SCOs of 2,220 and 10,000 ppm, respectively. The maximum contaminant concentration detected during this investigation for Zinc was reported at 4,470 ppm. Cadmium was reported at a maximum concentration of 19.8 ppm which exceeded both the Unrestricted and Commercial Use SCOs of 3 and 9.3 ppm, respectively. And finally copper, displayed a maximum analyte concentration of 4,850 ppm which was above both the Unrestricted and Commercial Use SCOs of 50 and 270 ppm, respectively.

# • Soil Sampling – Polychlorinated Biphenyls (PCBs)

Analytical results revealed that PCBs were found at concentrations which exceeded NYSDEC Part 375-6(b) Commercial SCOs in three of the seven samples analyzed. Aroclor 1260, a commercial mixture of PCBs with an average chlorine content of 60%, was documented in laboratory analysis at a maximum concentration of 1.48 ppm, which when compared to Unrestricted and Commercial Use SCOs, was found above the 0.1 and 1 ppm guidance, respectively.

## • Soil Sampling – Semi-Volatile Organic Compounds (SVOCs)

Analytical results revealed that the maximum concentration of Benzo(a)pyrene was found at 3,350 ug/kg or parts per billion (ppb), which exceeded NYSDEC Part 375-6 Unrestricted (a) and Commercial (b) SCOs of 1,000 ppb. Other SVOCs which were reported during the Phase II ESA included Benzo(a)anthracene and Benzo(b)fluoranthene with maximum concentrations of 3,590 ppb and 5,580 ppb respectively. The Unrestricted and Commercial Use SCOs for these compounds are 1,000 and 5,600 ppb, respectively. All other reported SVOCs which exceeded soil cleanup objectives included Chrysene (maximum concentration of 3,600 ppb), Dibenzo(a,h)anthracene (maximum concentration of 450 ppb) and Indeno(1,2,3-cd)pyrene (maximum concentration of 1,430 ppb) to which the analytes have Unrestricted and Commercial Use SCOs of 1,000/56,000 ppb, 330/560 ppb and 500/5,600 ppb, respectively.

#### • Soil Sampling – Volatile Organic Compounds (VOCs)

Analytical results revealed that all VOCs were returned with sample concentrations below laboratory detectable limits or non-detect.

# • Soil Sampling – Pesticides

Analytical results revealed the presence of one pesticide, Chlordane, at a maximum concentration of 37.3 ppm, which is above the Unrestricted and Commercial Use SCOs of 0.094 and 24 ppm, respectively.

#### • Soil Sampling – Total Petroleum Hydrocarbons (TPH)

Diesel Range Organics (DRO) and Gasoline Range Organics (GRO)

Results ranging from non-detect to 27,800 ppm for DRO and non-detect to 61.6 ppm for GRO were reported. These results suggest a release of petroleum hydrocarbons has occurred on-Site.

### • Groundwater Sampling – SVOCs and VOCs

Analytical results revealed that all targeted compounds were reported below NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1. ambient water quality standards (AWQS).

Attached for your review as Tables 1 - 3 is a summary of analytical reporting in comparison to the detected compound SCO.

## 2. Phase II Environmental Site Assessment, November 2021.

Performed by NB Environmental Services, LLC (NBES)

The NBES Phase II ESA included the advancement of soil borings and the installation of groundwater monitoring wells for the purpose of sample collection and evaluation of subsurface conditions. Pertinent findings documented in NBES's ESA include the following:

 To provide additional data on current subsurface soil conditions, a total of six soil borings were advanced at the Subject Property. Select samples were chosen for VOC, SVOC and RCRA 8 Metals analysis from three of

the borings. It should be noted the VOC and SVOC analysis was limited to

the NYSDEC CP-51 compound list for petroleum analytes. Upon review

of analytical testing results, NBES concluded that the representative soil

samples were below applicable state standards.

• A total of four groundwater samples were obtained to characterize

groundwater quality. Select samples were chosen for VOC, SVOC and

RCRA 8 Metals analysis from three of the borings. It should be noted

the VOC and SVOC analysis was limited to the NYSDEC CP-51 list

for petroleum analytes. Three of the samples were collected from the

newly installed monitoring wells (MW-2, MW-3 and MW-4), and the

fourth sample was collected from a pre-existing well (MW-1).

Analysis of Site wells revealed only minimal detections for barium

ranging from 54 to 59 micrograms per liter (µg/L) in two of the four

wells sampled. The detected concentrations are below the TOGS

AWQS of 1,000  $\mu$ g/L.

3.0 OBJECTIVES

The purpose of the SCWP is to fully characterize Site conditions via sampling of

soil gas, surficial and subsurface soils and groundwater. Pending the results of

this SC, an appropriate remedial action plan, if necessary, will be generated to

address any impacts which warrant additional action.

3.1 Data Assessment and Needs

Based upon the results of previous investigations, impacts to soil quality

(attributed to the historic Site use as an automotive recycling center) have been

identified on the Subject Property. Existing soil and groundwater data (as

documented above) has assisted in defining the principal contaminant source area,

but additional investigative activities appear warranted to fully characterize the

nature and extent of subsurface impacts, if indicated. To assist in determining the

potential for any off-Site contaminant migration, a soil vapor study along the

periphery of the Subject Property boundaries will be conducted as part of the

proposed SC.

4.0 SITE CHARACTERIZATION STAGE – PROPOSED METHODS

The scope of the sampling program is directed at providing sufficient information

that will complete data gaps in historical Site surveys. The SC objectives and

methods have been developed in accordance with the NYSDEC Brownfield

Program Cleanup Guidance (NYSDEC May 2004), and relevant provisions of

Department of Environmental Remediation (DER)-10 Technical Guidance for

Site Investigation and Remediation, May 2010. A Site and contaminant specific

Health and Safety Plan or HASP and a Community Air Monitoring Plan or

CAMP have been prepared for the Site and have been placed in Attachments A &

B respectively. Special requirements have also been deemed necessary by the

NYSDEC and New York State Department of Health (NYSDOH) as work will be

conducted within 20 feet of potentially exposed individuals or structures. A copy

of these special CAMP requirements (as outlined in DER-10) has been placed in

Attachment B for reference. Each of these documents (including the special

CAMP requirements) will be employed during all Site activities. Figure 4 shows

the proposed soil vapor, soil and groundwater sampling locations for this SCWP.

Prior to initiation of the field investigation activities, a Resource Evaluation

Permit will be obtained from the Rockland County Department of Health

(RCDOH), in accordance with County requirements.

## 4.1 Soil Gas Sampling and Analysis

To fully characterize the nature and extent of any impacts on-Site, a total of nine soil gas sampling points will be installed in the interior area of the Site and along the property boundaries to analyze soil vapor for the presence of VOCs (see Figure 4). The soil gas points will be installed by advancing 1.25-inch solid stem direct push sample rods to a depth of approximately 7-21-feet below ground surface (bgs), or five feet above the detected groundwater table. Depths are variable based upon previous reporting on the depth to the groundwater surface. A dedicated soil vapor implant will be installed at the base of the borehole and connected to the surface with dedicated high density polyethylene tubing. The annulus around the vapor implant will be filled with No. 2 filter sand to approximately 3-feet bgs. The remaining annulus will be sealed with hydrated bentonite to the surface. Following installation, a MiniRae photoionization detector (which registers airflow below 0.2 liters per minute) will be attached to the high density polyethylene tubing and a minimum of three sample volumes will purged from each point. Total VOC readings will be recorded for each soil gas point and used as a basis for comparison with laboratory analytical data.

The soil gas sample will be collected for analysis in batch clean SUMMA canisters equipped with a laboratory calibrated flow control device to facilitate the collection of the samples for a 8-hour sample duration time; with a flow rate not to exceed 0.2 liters per minute. As a quality assurance/quality control measure, an inert tracer gas (helium) test will be completed before and after sampling to document that the soil vapor sampling points were properly sealed preventing subsurface infiltration of ambient air into the sample chain. Following sampling, the pressure of the SUMMA canister will be recorded, and each soil gas point will be removed from the ground, plugged with bentonite chips and sealed at the surface with concrete or asphalt, as appropriate. A sample log sheet will be maintained summarizing sample identification, date and time of sample collection, sampling depth, identity of samplers, sampling methods and devices,

soil vapor purge volumes, volume of the soil vapor extracted, vacuum of canisters before and after the samples are collected, and chain of custody protocols.

The soil gas samples will be submitted to a NYSDOH-approved laboratory for analysis of VOCs by EPA Method TO-15. Sample collection and analysis will be in accordance with the methods described in the Quality Assurance/Quality Control (QA/QC) Plan as described in Section 6 of this report. All laboratory reporting will be provided in an EQuIS-ready format.

# 4.2 Soil Sampling and Analysis

A total of twenty-four soil borings are proposed for Site characterization within the Site boundaries (see Figure 4 for proposed locations). A qualified environmental driller will advance the proposed investigative borings. The on-Site geologist/engineer will screen the soil samples for environmental impacts and collect environmental samples for laboratory analysis. Site work will comply with the safety guidelines outlined in the HASP and CAMP (Attachments A & B). The investigative borings will be advanced to the depth of approximately 30 feet bgs using a direct-push drilling method. Soil will be collected continuously to the boring termination depth with a Geoprobe macro core sampler in four or five-foot increments using disposable acetate sleeves. Each sample will be screened for organic vapors with a photo-ionization detector (PID) and evaluated for visual and olfactory indications of environmental impacts. Soil descriptions will be recorded in a field log. A total of one surficial soil sample will be collected from zero to two feet below grade and one soil sample will be collected from the groundwater interface or locations that exhibit evidence of impact (a total of two samples per boring location). In order to assess the potential for human exposure from soil contamination, a total of five surface samples will also be collected from a depth of zero to two inches below the vegetative cover (see Figure 4 for proposed locations). Samples will not be composite samples but will be discrete grab samples. The proposed sampling rationale is provided in Table 1. Each

collected soil sample will be analyzed for VOCs, Semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) Metals, Pesticides, Polychlorinated Biphenyl's or PCBs, and Per- And Polyfluoroalkyl Substances or PFAs, Cyanide, and 1,4-Dioxane via USEPA test methods 8260, 8270, 3050B/7473, 8081, 8082, and 1633 respectively. Field quality control measures including trip and field blanks will be collected and submitted to the chemical laboratory for analysis. These control measures are described in Section 6 of this report. All laboratory reporting will be provided in an EQuIS-ready format.

**Table 1 - Soil Sampling Summary** 

Sample Matrix	Sample Depth (Feet below grade)	Number of Samples	Sample Location	Rationale
Soil	0-2"	5	Select locations from within property limits.	Assess the potential for human exposure resulting from soil contamination.
Soil	0-2'	24	All 24 soil boring locations. Within property limits.	Evaluate potential for surficial spills, poor quality urban fill.
Soil	Groundwater interface or depth where field screening indicates contamination	24	All 24 soil boring locations. Within property limits.	Evaluate presence of soil contamination at groundwater interface or depth where field screening indicates potential surficial impacted soil

## 4.3 Groundwater Well Installation

Upon completion of soil sampling activities, four of the boring locations will be converted to a permanent 1-inch PVC groundwater monitoring well (see Figure 4 for locations). The wells will be constructed of +/- 10 to 15-feet of 0.01 slot

schedule 40 PVC well screen and completed to grade with solid schedule 40 PVC riser pipe. The length of well screen will vary depending on the depth to groundwater encountered, but will be installed five feet above through five feet below to intersect the groundwater table. The annulus around the well screen will be backfilled with No. 2 filter sand to 2-feet above the top of screen and sealed with a 1-2 foot bentonite layer. The wells will be finished at the surface with steel flush-mount road boxes set in a 2'x2' concrete pad. Following installation, each well will be developed by rapidly pumping the wells to remove entrained silt and sediment from the sand pack and well screen and ensure connectivity with the surrounding shallow groundwater table. A minimum of three to five well volumes will be removed from each well during development.

# 4.4 Groundwater Monitoring/Analysis

All of the existing and newly installed groundwater wells will be sampled as a part of this SC. Groundwater samples will be collected using a peristaltic pump and dedicated polyethylene tubing, employing low-flow methodology. One round of groundwater samples will be collected from the monitoring wells and will be analyzed for VOCs and 1, 4-Dioxane, SVOCs, TAL Metals, Pesticides, PCBs, PFAs, and Cyanide, via USEPA test methods 8260, 8270, 6010/7470/7471, 8081, 8082, 1633 and 9016, respectively. Field quality control measures including trip and field blanks will be collected and submitted to the chemical laboratory for analysis. These control measures are described in Section 5 of this report. All laboratory reporting will be provided in an EQuIS-ready format.

#### **Groundwater Sampling Summary Table**

Sample Matrix	Number of	Sample Location	Rationale
11241111	Samples		
Groundwater	8	All 8 existing/proposed	Evaluate current groundwater
		monitoring locations.	conditions to complete the
		Within property limits.	Conceptual Site Model.

Waste Handling & Borehole Abandonment

All investigation-derived waste (IDW) will be contained on-Site in a secure area

for appropriate characterization and disposal by DTCS/BE. Soil cuttings, personal

protective equipment, and spent disposable sampling materials will be segregated

by waste type and placed in DOT-approved 55-gallon steel drums. All

decontamination water, purged groundwater, and drilling water will be stored in

55-gallon drums as necessary. Field staff will maintain an inventory of all waste

storage vessels. All storage vessels will be appropriately labeled with the

contents, generator, location, and date.

Boreholes that are not completed as permanent monitoring wells, which intersect

the shallow groundwater table and/or gross contamination, or are extended past

30-feet bgs, will be tremie grouted from bottom up, in accordance with RCDOH

requirements.

4.5 Relative Groundwater Elevation Survey

Water level measurements will be recorded to the nearest 0.01 foot after well

development and prior to ground water sampling. The horizontal and vertical

location of the monitoring wells will be surveyed relative to an arbitrary site

datum. The monitoring well elevations and water level measurements will be used

to calculate relative ground water elevations and determine ground water flow

direction that will be shown on a scaled base map.

5.0 QUALITY ASSURANCE PROJECT PLAN

As stated previously, the goals of this SCWP are to verify that there are no

potential off-Site impacts and to properly characterize existing environmental

conditions at the Site. Therefore, this Quality Assurance Project Plan (QAPP) has

been developed to establish the procedures and protocols for collection and

laboratory analysis of samples associated with the completion of the SC. Project

management/organizational responsibilities will be performed under the direction

of Deborah J. Thompson, Senior Geologist and Daniel Bellucci, P.E.

5.1 Quality Assurance/Quality Control (QA/QC) Objectives

The NYSDEC Analytical Services Protocol (ASP) provides levels of quality for

laboratory testing as they apply to remedial investigation and construction

activities. As such, the NYSDEC ASP will be followed during the course of Site

investigation/remediation on the Subject Property. The overall data quality

objectives of the project are:

To ensure that samples collected are representative;

• To provide detection limits for the selected analytical methods, which are

below the established cleanup objective or regulatory standards;

• To measure and document precision and accuracy using procedures

established by the laboratories, the NYSDOH Environmental Laboratory

Approval Program (ELAP) and U.S. Environmental Protection Agency

(EPA) approved analytical methods;

To ensure that a NYSDOH ELAP and NYSDOH ELAP CLP certified

laboratory will conduct all soil vapor, soil and groundwater analyses.

• To ensure that all final site verification samples (Confirmatory samples)

are reported with ASP Category B deliverables.

# 5.2 Analytical Methods/Quality Assurance Summary

- Matrix type:
   Soil vapor, soil and groundwater
- Number or frequency of samples to be collected per matrix: Variable, pending field conditions
- *Number of field and trip blanks per matrix:* Soil, groundwater 1
- Analytical parameters to be measured per matrix:
   Soil Gas VOCs
   Soil/Groundwater VOCs, SVOCs, TAL Metals, Pesticides, PCBs, PFAs, cyanide, and 1, 4-dioxane
- Analytical methods to be used per matrix:
   EPA Test Method TO-15 (soil gas)
   EPA Test Methods 8260, 8270, 3050B/7473, 8081, 3550C, and 1633 (soil/groundwater)
- The number/type of matrix spiked, duplicate and blank samples to be collected:
   Dependent upon the total number of samples of each matrix to be analyzed but, there will be at least one split per matrix.

All analyses will be performed by NYSDEC Analytical Services Protocol (ASP) with Category B deliverables.

## **5.3** Field Quality Control Samples

Field quality controls for laboratory confirmation samples include the collection and analysis of field duplicate and equipment rinsate samples. The frequency of collection for the specified QC field samples is as follows:

✓ A trip blank will be prepared before the sample bottles are sent by the laboratory. A trip blank will be included with each shipment of samples where sampling and analysis for VOC is planned (water matrix only).

✓ One field blank per day for PFA sampling.

✓ One field duplicate sample per groundwater monitoring event.

# **5.4** Field Sampling Procedures

Sampling/Analytical procedures are described in detail in the SCWP as outlined above and will not be reiterated in this QAPP. The Work Plan also includes Site maps and sampling diagrams as well as details for sampling implementation, decontamination, and waste management.

# **Sample Containerization**

Analysis	<b>Bottle Type</b>	Preservative	<b>Holding Time</b>
	nbient Indoor Air		
VOCs GC/MS	1L or 6L Summa canister	None	7 days (until extraction, 40 days extracted)
Soil Samples			
VOCs	40 ml with septum cap	DI, MeOH	14 days
SVOCs	4 oz glass	None	7 days (until extraction, 40 days extracted)
TAL Metals	4 oz. glass	None	6 months Mercury, 26 days
Pesticides	4 oz. glass	None	7 days (until extraction, 40 days extracted)
PCBs	4 oz. glass	None	7 days (until extraction, 40 days extracted)
PFAs	250 mL Polypropylene	None	14 days
Groundwater Sa	mples		
VOCs	40 ml with septum cap	HCl	14 days
SVOCs	1 L glass	None	7 days (until extraction, 40 days extracted)
TAL Metals	1 L plastic	Nitric acid to pH <2	6 months Mercury, 26 days
Pesticides	Wide mouth glass	None	7 days (until extraction, 40 days extracted)
PCBs	1 L glass	None	7 days (until extraction, 40 days extracted)
PFAs	125 mL Polypropylene	None	14 days

As all bottles will contain the necessary preservatives as shown above, they need

only be filled. Each VOC 40ml vial must be filled to the brim with no air

bubbles. The other sample jars should be filled to within an inch from the top for

liquids, and to the brim for soils and sediment. All samples will be preserved

with ice during collection and shipment.

**Sample Preservation** 

The samples collected for analysis will require preservation prior to shipment (as

described above). Preservation of the sample ensures sample integrity and

prevents or minimizes degradation or transformation of the constituents to be

analyzed. Specific preservation requirements include proper handling, packaging

in laboratory-supplied sample containers, and chilled to 4° Celsius (°C) for

shipping to the contract analytical laboratory.

**Documenting Field Samples** 

The DTCS/BE Field Team will use field logbooks or specific field forms to

record pertinent information regarding subsurface characteristics, field screening

results, and confirmatory sampling activities. Field staff will record the project

name and number, date, sampling personnel on Site, other personnel present,

weather conditions, and other relevant events to sampling activity in a

chronological order. The field log book and/or analysis forms will be maintained

in the project file.

5.5 Sample Custody

**Chain-of-Custody Forms** 

Each sample will be recorded onto a chain-of-custody (COC) form. The form will

include the project name and number, names of the field sampling personnel, the

sample number, date and time the sample was collected, whether the sample is a

composite or grab sample, sample location, number of containers per sample

number, constituents to be analyzed, and pertinent comments. The form will

document the date, time, and signature of person(s) relinquishing and receiving

custody of the samples.

Sample Transportation to the Laboratory

Samples will be shipped for analysis to the laboratory either the day the samples

are collected or within 24 hours following collection, except in the case of

samples that are collected on Saturday. Samples will be transported by a

laboratory supplied carrier service. If samples are collected on a Saturday, they

will be stored by field personnel during the weekend and then readied for

transport on Monday. The contract analytical laboratory will be required to

perform the analyses on the samples within the allowable holding time proscribed

for the analyses.

**Laboratory Sample Custody** 

Upon arrival at the analytical laboratory, samples will be checked in by the

sample custodian. The sample custodian will:

• Sign the COC form documenting receipt of the samples from the carrier;

• Verify that the number of samples received in the shipment agrees with the

number listed on the COC form;

Verify that the information on each bottle agrees with the information

documented on the COC form; and

• Document on the COC form the integrity/condition (bottle intact, temperature,

etc.) of all received samples.

In the event of any discrepancy or problems associated with the shipment of

samples for chemical analysis, the analytical laboratory project manager will

immediately notify the field personnel. A unique laboratory sample number will

be assigned to each sample. Pertinent information from the COC form and/or

sample label (e.g., sample identification, sampling location, sampling date and

time, sample description, and requested analyses) together with the date of sample

receipt will be entered into the analytical laboratory's data management system

which will be used to record the status of samples, their storage locations, and the

analytical results. The analytical laboratory will have in-house COC procedures to

ensure proper security of all samples.

**Laboratory Selection** 

The laboratory chosen for the project must be certified, and maintain certification,

under the NYSDOH ELAP and NYSDOH ELAP CLP for analyses of solid and

hazardous waste, along with emerging contaminants. DTCS/BE has contracted

with York Analytical Laboratories, Inc. located in Stratford, CT to perform

laboratory services for this Work Plan whom are certified for the required

emerging contaminants analysis via USEPA Method 1633.

5.6 Data Reduction, Verification and Reporting

Verification of data obtained from sampling will be performed by the Project

Manager who will determine the validity of the data by comparing the actual

procedures used for field measurements, sampling, and custody, as documented

on forms and in the field log book, with those prescribed in the work plan and/or

approved by the Project Manager.

5.7 Data Usability Summary Report

As part of this Remedial Investigation Work Plan, a Data Usability Summary

Report or DUSR will be prepared to summarize the soil and groundwater

sampling and analytical results for the Site. The primary objective of the DUSR

is to determine whether the analytical data meets Site specific objectives for data

quality and data use.

The DUSR will be prepared following the guidelines provided in DER-10

Technical Guidance for Site Investigation and Remediation, May 2010, Guidance

for the Development of Data Usability Summary Reports. The complete

validated analytical results and Form 1s will be provided in the DUSR during

reporting of the remedial investigation.

**5.8** Electronic Data Deliverables

Following the completion of the field investigation, data from the SC will be

submitted to NYSDEC and NYSDOH in the Department's most current electronic

data deliverable (EDD) format for submission to EQuIS. All analytical data will

be summarized in data tables compared to applicable regulatory standards, along

with complete laboratory analytical reports. Scaled Site plans will also be

included in the SC Report.

6.0 SITE CHARACTERIZATION REPORT

Following the completion of the proposed sampling, analysis and data evaluation,

a SC Report will be prepared that presents the findings of the investigation. The

following information will be included in the SC Report.

1. A narrative discussion of methods and results. Work completed under the

NYSDEC approved SC Work Plan will be described, including the

methods employed for sample collection and laboratory analysis.

2. Potential for off-Site soil, groundwater and soil vapor impacts. This Site

Characterization Investigation will sample soil, groundwater and soil gas

along the Site's property boundaries to ensure the absence of targeted

contaminants. Maps displaying soil and soil gas analytical results, with

text boxes depicting contaminant concentrations at each monitoring point

will be produced as part of this report.

3. Hydrogeological Data. Hydrogeologic factors and their influence on the

migration and distribution of any on-Site contaminants will be discussed.

Supporting data including groundwater elevation data and maps displaying

groundwater analytical results, with text boxes depicting contaminant

concentrations at each monitoring point will be prepared for the inclusion

in the final SC Report.

4. Standards and Guidance. Standards and Guidance that pertain to the

sampled Site media will be identified and listed in summary tables along

with the analytical results for each medium. Any exceedances

encountered above regulatory standards will be indicated on the tables and

discussed in the technical overview.

5. Conclusions/Recommendations. The results of the NYSDEC approved SC

study will be summarized in a written document which will identify

source area(s), if any, and potential exposure pathways, if any, in relation

to human and environmental receptors. The SC Report will include

specific conclusions and will also evaluate appropriate remedial options,

all based upon the SC results.

- 6. *Supporting Information*. To support the Site data collected during the implementation of the described work plan, the following items will be appended to the SC Report:
  - Site photographs;
  - Site maps, including text box figures depicting analytical results;
     and
  - Laboratory analysis.

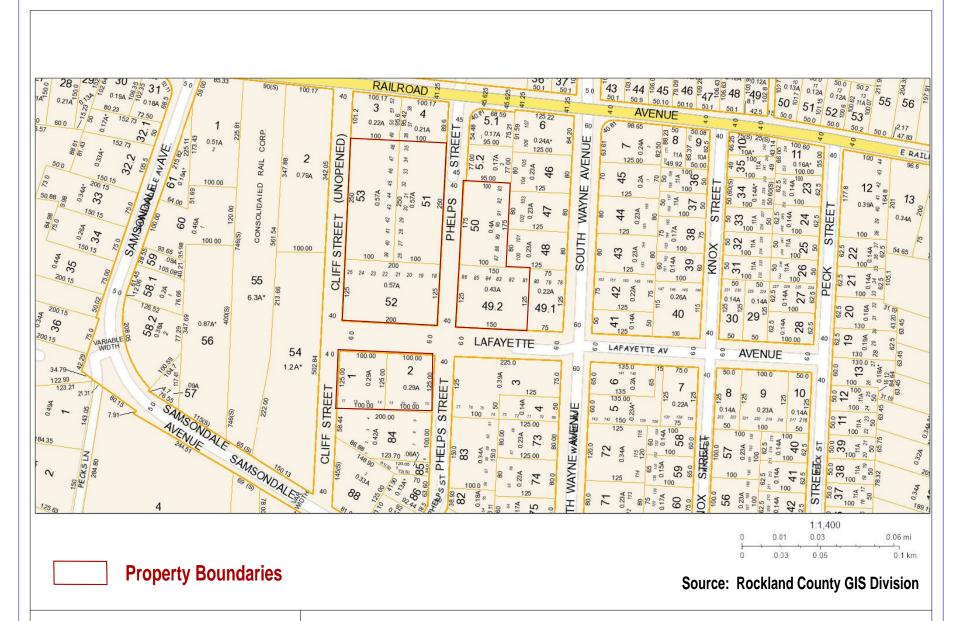
## 7.0 PROJECT SCHEDULE

The SC sampling and analysis program proposed herein will be implemented following NYSDEC and NYSDOH approval. The field sampling will be scheduled to begin within sixty days of approval. DTCS/BE estimates that the field work will require four days to complete, and laboratory analysis within two weeks of the conclusion of field work on-Site. The Site Characterization Report will be submitted for NYSDEC and NYSDOH review and approval within two months of field work completion.



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DT Consulting Services, Inc. 1291 Old Post Road Ulster Park, New York 12487 (845) 658-3484

Client:	Toscott Realty, LL	.C											
Location:	Location: 21 - 23 Wayne Avenue, West Haverstraw, Rockland County, New York												
Title:	Parcel Tax Map												
Scale: Graphic Drawn By: O.T. Site No: 344087 Fig.#: 2													



# 0 0.01 0.03 0.06 mi 0 0.03 0.05 0.1 km

# **KEY - LAND USE**

1 = Single Family Residence

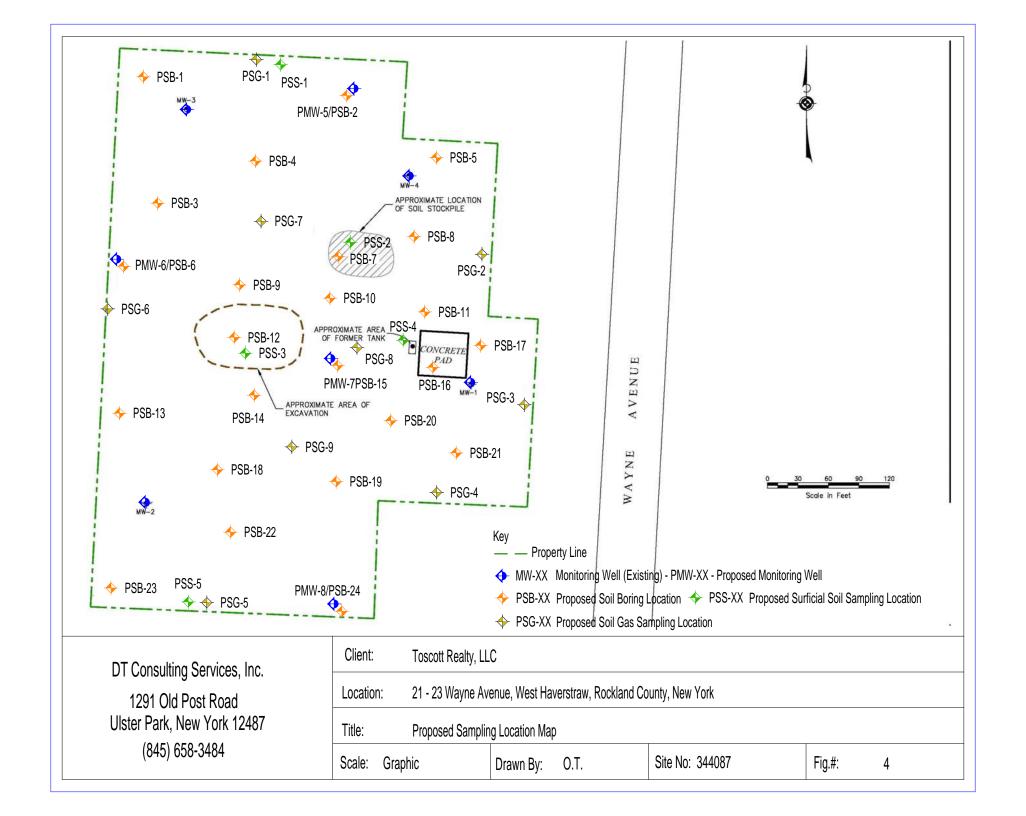
2 = Commercial/Industrial Property

Property Boundaries

Source: Rockland County GIS Division

DT Consulting Services, Inc. 1291 Old Post Road Ulster Park, New York 12487 (845) 658-3484

Client:	Toscott Realty, LL	.C										
Location: 21 - 23 Wayne Avenue, West Haverstraw, Rockland County, New York												
Title:	Surrounding Land	Use										
Scale: Grap	hic	Drawn By:	O.T.	Site No: 344087	Fig.#:	3						





**TABLES** 

# Table 1

# Semi-Volatile Organic Compound (SVOC) Soil Sample Summary

21-23 Wayne Avenue. West Haverstraw, New York Soil Samples Collected by ERC Environmental on July 3, 2018 (Concentrations in ug/kg or Parts Per Billion)

			S	Sample II					
Semi Volatile Organic Compounds	SP-1	SP-2	SP-3	SP-4	VC-1	VC-2	VC-3	<b>Unrestricted Use</b>	Commercial Use
Acenaphthene	ND	ND	107	ND	ND	122	ND	20,000	500,000
Acenaphthylene	761	691	174	536	ND	92.8	ND	100,000	500,000
Anthracene	1,200	1,090	474	963	37.1	332	224	100,000	500,000
Benzo[a]anthracene	3,590	2,120	960	2,450	122	707	511	1,000	5,600
Benzo[a]pyrene	3,350	2,220	1,030	3,040	141	805	588	1,000	1,000
Benzo[b]fluoranthene	5,580	3,700	1,049	5,230	214	1,320	1,030	1,000	5,600
Benzo[g,h,i]perylene	1,180	1,040	448	1,430	61	334	279	100,000	500,000
Benzo[k]fluoranthene	1,770	1,210	596	1,850	76.2	571	339	800	56,000
bis(2-ethylhexyl)phthalate	ND	1,480	1,090	1,230	189	453	2,940		
Butylbenzylphthalate	636	1,370	1,570	2,590	ND	1,760	4,220		
Chrysene	3,600	2,310	953	2,830	128	740	575	1,000	56,000
Dibenzo[a,h]anthracene	414	320	129	450	ND	104	ND	330	560
Dimethylphthalate	ND	194	ND	ND	ND	ND	ND		
Di-n-butylphthalate	ND	659	183	799	ND	395	697		
Fluoranthene	5,590	4,270	2,160	5,650	310	1,610	1,160	100,000	500,000
Fluorene	ND	ND	224	ND	ND	94.2	ND	30,000	500,000
Indeno[1,2,3-cd]pyrene	1,210	991	424	1,430	60.7	315	267	500	5,600
Naphthalene	218	274	ND	ND	ND	ND	ND	12,000	500,000
Phenanthrene	2,760	2,570	1,710	2,440	127	947	737	100,000	500,000
Pyrene	4,700	3,480	1,850	4,240	213	1,190	930	100,000	500,000

# **Notes:**

All Analytes are compared to NYSDEC Table 375-6.8:

- (a): Unrestricted Use Soil Cleanup Objectives and (b): Commercial Soil Cleanup Objectives (SCOs)
- 1) Concentrations in Bold Exceed NYSDEC Unrestricted SCOs
- 2) ND = Not Detected

# Table 2

Page 1 of 2

Metals Soil Sample Summary

21-23 Wayne Avenue, West Haverstraw, New York

Soil Samples Collected by ERC Environmental on July 3, 2018

(Concentrations in mg/kg or Parts Per Million)

					Samp	le ID					<b>Unrestricted Use</b>	<b>Commercial Use</b>
Metal	SP-1	SP-2	SP-3	SP-4	VC-1	VC-2	VC-3	SP-5	SP-6	SP-7	SCO	SCO
Aluminum	NA	NA	NA	NA	NA	NA	NA	15,700	8,370	10,800	NS	NS
Antimony	18.3	11.2	1.63	2.38	ND	3.58	1.5	ND	ND	ND	NS	NS
Arsenic	6.64	6.13	2.26	4.59	1.44	6.24	2.32	3.08	ND	4.49	13	16
Barium	NA	NA	NA	NA	NA	NA	NA	253	56.8	97.8	350	400
Beryllium	0.389	0.403	0.382	0.355	0.401	0.124	0.289	0.565	0.329	0.427	7.2	590
Cadmium	22.4	28.4	5.24	10.4	0.428	2.43	2.56	4.50	ND	ND	2.5	9
Calcium	NA	NA	NA	NA	NA	NA	NA	5,620	4,620	2,830	NS	NS
Chromium	48.8	57.6	20	29.2	13.6	16.9	32.7	21.8	9.65	12.9	30	1,500
Cobalt	NA	NA	NA	NA	NA	NA	NA	4.66	4.46	4.59	NS	NS
Copper	664	743	164	361	56.6	111	204	90.7	51.1	62.5	50	270
Iron	NA	NA	NA	NA	NA	NA	NA	90,700	13,900	17,500	NS	NS
Lead	13,600	14,800	2,400	2,900	264	503	616	438	90.2	210	63	1,000
Mercury	0.239	0.289	0.0871	0.24	ND	0.278	0.063	0.189	ND	0.193	0.18	2.8
Magnesium	NA	NA	NA	NA	NA	NA	NA	3,380	2,580	2,120	NS	NS
Manganese	NA	NA	NA	NA	NA	NA	NA	292	288	228	1,600	10,000
Nickel	130	191	46.8	88.6	21.9	73.6	150	336	36.1	28.9	30	310
Potassium	ND	ND	ND	ND	ND	ND	ND	514	516	530	NS	NS
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.9	1,500
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	1,500
Sodium	ND	ND	ND	ND	ND	ND	ND	907	245	389	NS	NS
Vanadium	ND	ND	ND	ND	ND	ND	ND	18.9	16.5	29.6	NS	NS
Zinc	14,000	13,200	2,600	4,480	392	608	2,430	4,720	538	434	109	10,000

# **Notes:**

All analytes are compared to NYSDEC Table 375-6.8:

- (a): Unrestricted Use Soil Cleanup Objectives (SCOs) and (b): Commercial SCOs
- 1) Concentrations in **Bold** Exceed NYSDEC Unrestricted SCOs
- 2) ND = Non Detect
- 3) NS = No Reported Standard

#### Table 2

#### Page 2 of 2

Metals Soil Sample Summary

21-23 Wayne Avenue, West Haverstraw, New York

Soil Samples Collected by ERC Environmental on July 3, 2018

(Concentrations in mg/kg or Parts Per Million)

							Samp	ole ID							Unrestricted Use	Commercial Use
Metal	SB-8	SB-9	SP-10	SP-11	SP-12	SP-13	SP-14	SP-15	TP-1	TP-2	TP-3	TP-4	TP-5	TP-6	sco	sco
Aluminum	13,800	5,320	12,500	10,500	8,250	11,700	9,630	5,550	12,400	16,400	12,000	13,800	14,000	89,900	NS	NS
Antimony	3.85	ND	2.54	ND	ND	ND	4.59	ND	NS	NS						
Arsenic	8.05	1.48	2.58	ND	3.67	1.73	ND	ND	2.82	2.01	2.06	2.58	4.58	4.16	13	16
Barium	215	41.9	50.3	44.4	58.8	51.1	33.5	34.1	130	88.2	77.7	131	1,880	204	350	400
Beryllium	0.576	0.193	0.492	0.409	0.172	0.439	0.273	0.224	0.453	0.505	0.442	0.515	0.462	0.379	7.2	590
Cadmium	8.53	ND	1.66	ND	ND	ND	6.17	19.8	2.5	9						
Calcium	2,260	7,450	1,320	484	29,900	2,880	2,590	3,280	1,300	717	1,010	1,040	24,900	6,220	NS	NS
Chromium	37.6	8.29	9.93	9.79	16.6	11	8.91	6.51	18.5	14.4	22.4	14.1	33.4	23.7	30	1,500
Cobalt	6.47	4.08	3.93	5.03	5.31	5.93	6.65	4.79	6.19	5.43	2.88	3.85	4.35	5.29	NS	NS
Copper	80.8	18.4	18.1	13.9	31.6	22	22.9	13.4	601	88.3	110	41.3	285	4,850	50	270
Iron	56,000	13,100	15,600	15,800	13,500	19,700	18,200	13,200	69,800	21,300	135,000	24100	63,500	48,000	NS	NS
Lead	458	68.3	65.1	22.4	113	79	18.2	11.2	329	65.1	206	129	1,720	726	63	1,000
Mercury	0.141	ND	ND	ND	0.0497	0.129	ND	ND	0.101	ND	0.103	0.0816	0.119	0.205	0.18	2.8
Magnesium	2,200	3,210	1,950	2,850	9,420	5,030	3,910	2,680	2,050	2,560	1,980	1,910	14,600	4,180	NS	NS
Manganese	368	235	339	352	181	431	343	318	325	350	1,030	422	480	363	1,600	10,000
Nickel	24.2	10	13.3	12.7	13.1	15.9	11.4	9.59	276	33.6	18.6	14.4	36.4	32	30	310
Potassium	605	719	480	645	1,220	812	702	834	483	551	474	478	587	648	NS	NS
Selenium	ND	ND	ND	ND	3.9	1,500										
Silver	ND	ND	ND	ND	2	1,500										
Sodium	732	205	210	161	390	213	459	208	453	303	296	450	3,280	739	NS	NS
Vanadium	50.3	11.4	15.8	13.5	24.9	12.1	23.2	10.6	16	18.8	9.51	15.5	15.6	17.7	NS	NS
Zinc	808	112	81.6	47.6	63.2	92.9	46.7	35.4	2,520	198	2,920	543	4,470	625	109	10,000

#### Notes:

All analytes are compared to NYSDEC Table 375-6.8:

- (a): Unrestricted Use Soil Cleanup Objectives (SCOs) and (b): Commercial SCOs
- 1) Concentrations in **Bold** Exceed NYSDEC Unrestricted SCOs
- 2) ND = Non Detect
- 3) NS = No Reported Standard

#### Table 3

Pesticides and PCBs Soil Sample Summary

21-23 Wayne Avenue, West Haverstraw, New York

Soil Samples Collected by ERC Environmental on July 3, 2018

(Concentrations in mg/kg or Parts Per Million)

	Sample ID					Unrestricted Use	Commercial Use	
Analyte	SP-1	SP-2	SP-3	SP-4	VC-1	VC-2	SCO	SCO
Pesticides								
Chlordane	ND	ND	14.5	37.3	ND	11.2	0.094	24

Analyte

PCBs									
Aroclor 1260	1.08	1.48	ND	1.21	ND	0.282	0.1	1	

#### **Notes:**

All analytes are compared to NYSDEC Table 375-6.8:

- (a): Unrestricted Use Soil Cleanup Objectives (SCOs) and (b): Commercial SCOs
- 1) Concentrations in **Bold** Exceed NYSDEC Unrestricted SCOs
- 2) ND = Non Detect
- 3) NS = No Reported Standard



## **ATTACHMENTS**



## ATTACHMENT A

## **Environmental Services Health & Safety Plan**

**Job Name**: 21 – 23 Wayne Avenue

- 1.0 Introduction
- 2.0 Organizational Structure
  - 2.1 Safety and Health Manager
  - 2.2 Site Safety and Health Office
  - 2.2.1 Responsibilities
- 3.0 Personal Protective Equipment
  - 3.1 Protection Levels
    - 3.1.1 Level A
    - 3.1.2 Level B
    - 3.1.3 Level C
    - 3.1.4 Level D
- 4.0 Work Zones
  - 4.1 Exclusion Zone
  - 4.2 Contamination Reduction Zone
  - 4.3 Support Zone
- 5.0 Air Monitoring
- 6.0 Site Communications
- 7.0 Emergency Procedures
  - 7.1 Injury in the exclusion zone
  - 7.2 Injury in the support zone
  - 7.3 Fire or explosion
  - 7.4 Protective equipment failure
- 8.0 Standard Safety Practices
- 9.0 Daily Safety Meetings
- 10.0 Site Specific Plan
  - 10.1 Detailed Site information
  - 10.2 Contaminants on Site/Action Levels
  - 10.3 Emergency Information
    - 10.3.1 Emergency Responders
    - 10.3.1.1 Hospital
    - 10.3.1.2 Emergency telephone numbers
    - 10.3.1.3 Regulatory agencies

- 10.4 First Aid
- 10.5 Work Zones

10.5.1 Command post

10.6 Site Communications

10.6.1 Telephone

10.6.2 Hand Signals

- 10.7 Environmental Monitoring
- 10.8 Personal Protective Equipment

10.8.1 Exclusion zone

10.8.2 Contamination reduction corridor

10.9 Decontamination

10.9.1 Decontamination Procedure

- 11.0 Key Personnel
- 12.0 Work Plan
  - 12.1 Job objective / Detailed work plan

#### 1.0 INTRODUCTION

DT Consulting Services, Inc. (DTCS) has designed a safety and health program to provide its employees and subcontractors with the guidelines necessary to ensure their own safety and health as well as that of the surrounding community. The goal of this plan is to minimize the risk of injury during remedial investigation procedures including the advancement and sampling of soil cores, coring for soil gas sampling, along with the installation, development and monitoring of groundwater wells.

#### 2.0 ORGANIZATIONAL STRUCTURE

#### 2.1 SAFETY AND HEALTH MANAGER

It is the responsibility of the safety and health manager to develop the comprehensive safety and health plan. The safety and health manager will be appraised of any changes in the comprehensive safety and health plan as well as all Site-specific procedural determinations. The safety and health manager for this project will be Ms. Deborah Thompson.

#### 2.1.1 RESPONSIBILITIES

- a) Initial Site evaluation
- b) Hazard identification
- c) Determination of appropriate protection levels
- d) Conduct daily safety and health meetings
- e) Supervision of Site sampling and monitoring
- f) Supervision of decontamination procedures
- g) Designate work zones to maintain Site integrity

#### 3.0 PERSONAL PROTECTIVE EQUIPMENT

The proper personal protective equipment is chosen by the Site safety and health officer in consultation with the safety and health manager. The level of protection is dependent on the hazards that are likely to be encountered on-Site.

#### 3.1 PROTECTION LEVELS

DTCS utilizes four levels of protection as set forth in the OSHA guidelines, Appendix B of 1910.120.

#### 3.1.1 Level A

Level A provides the greatest level of skin, respiratory, and eye protection with the following minimum equipment:

- Full face, self-contained breathing apparatus (SCBA) or supplied air with escape SCBA
- Fully encapsulated chemical resistant suit
- Chemical resistant boots
- Chemical resistant inner and outer gloves

#### 3.1.2 Level B

Level B provides the greatest level of respiratory protection, but a lower level of skin protection than Level A with the following minimum equipment:

- Full face SCBA or supplied air with escape SCBA
- Chemical resistant clothing
- Chemical resistant inner and out gloves
- Chemical resistant boots

#### **3.1.3** Level C

Level C provides the same level of skin protection as Level B, but a lower level of respiratory protection with the following minimum equipment:

- Full face piece air purifying respirator with appropriate cartridge. Cartridges are chosen based on knowledge of hazardous material
- Chemical resistant clothing
- Chemical resistant inner and outer gloves
- Chemical resistant boots

#### 3.1.4 Level **D**

Level D provides the lowest level of skin protection and no respiratory protection with the following minimum equipment:

- Coveralls
- Safety boots
- Gloves
- Safety glasses or splash goggles

#### 4.0 WORK ZONES

DTCS utilizes the standard three-zone approach to Site control. These zones are the exclusion zone, the contamination reduction zone and the support zone. The support zone will be located upwind of work locales. Movement of personnel and equipment through these zones shall be strictly regulated in order to prevent contamination of clean environments and to protect workers in the support zone from possible exposure.

#### 4.1 EXCLUSION ZONE

The exclusion zone is the area of highest contamination. All personnel entering this zone must wear the appropriate level of protection as prescribed in the Site specific safety plan. The outer boundary of the exclusion zone, referred to as the Hotline, shall be determined based upon such considerations as; extent of surface contamination, safe distance in the case of fire or explosion, physical area necessary for workers to conduct operations in a safe manner and safe distance in the event of vapor or gas emissions. Upon determination, the Hotline shall be visibly marked and secured to prevent accidental entry by unauthorized personnel.

#### 4.2 CONTAMINATION REDUCTION ZONE

The Contamination Reduction Zone is the area between the exclusion zone and the support zone. Its purpose it to protect the clean environment from contamination as workers enter and exit the exclusion zone. The outer boundary of this zone is referred to as the Coldline and shall be clearly marked. Decontamination stations shall be set up in this zone in a line known as the contamination reduction corridor. All personnel exiting the exclusion zone must follow the steps as prescribed in the decontamination procedures prior to re-entering the support zone.

#### 4.3 SUPPORT ZONE

The support zone is the area furthest away from the exclusion zone. It is considered a clean, non-contaminated area where workers need not wear any protective equipment. The command post, equipment trailer, first aid station and lavatory facilities are all located in this area. This area is not, however, open to traffic. Only authorized personnel may enter.

#### 5.0 AIR MONITORING

While executing the Site Characterization Work Plan, specific health and safety monitoring procedures, including particulate and volatile organic compound or VOC monitoring will be conducted during Site activities. Refer to Section 10 for the Site specific monitoring plan.

#### 6.0 SITE COMMUNICATIONS

Various methods of communication will be employed based upon Site conditions and work zones. Regardless of method of communication, personnel working in the exclusion zone will remain within constant view of support crews.

DTCS has a network of devices to aid in communications. All or some of the following devices may be used depending upon job Site requirements; hand held radios, headset transistor walkie-talkies and cellular telephones.

The following hand signals shall be standardized for use in emergencies and in event of radio communication breakdown.

Hand gripping throat - out of air, can't breathe Grip partner's wrist - leave area immediately Hands on top of head - need assistance Thumbs up - I am all right, okay Thumbs down - no, negative

Horn blasts may be used to gain the immediate attention of crews to indicate that dangerous conditions exist.

#### 7.0 EMERGENCY PROCEDURES

The following procedures shall be followed by all Site personnel in the event of an emergency. Any changes to this procedure shall be noted in the Site-specific plan. In all situations where there has been an evacuation of exclusion zone to the support zone, the support zone will be located upwind of work locales. Reentry shall not be permitted until the following conditions have been met; the cause of the emergency has been determined and corrected, the Site hazards have been reassessed, the safety plan has been reviewed and all personnel have been apprised of any changes.

#### 7.1 INJURY IN THE EXCLUSION ZONE

In the event of an injury in the exclusion zone, the emergency signal shall be sounded. All personnel in the exclusion zone will assemble at the contamination reduction corridor. First aid procedures will begin on-Site and if necessary, an ambulance will be called. No personnel will be allowed to re-enter the exclusion zone until the exact nature and cause of the injury has been determined.

#### 7.2 INJURY IN THE SUPPORT ZONE

In the event of an injury in the support zone, on-Site first aid procedures will begin immediately and an ambulance called if necessary. The Site safety and health officer shall determine if the nature and cause of the injury or loss of the injured person will jeopardize the smooth running of the operations. If so, the emergency signal will be sounded and all personnel will follow the same procedure as outline above.

#### 7.3 FIRE OR EXPLOSION

In the event of fire or explosion, the emergency signal shall be sounded and all personnel will assemble at the contamination reduction corridor. The fire department will be called and all personnel will be evacuated to a safe distance.

#### 7.4 PROTECTIVE EQUIPMENT FAILURE

In the event of protective equipment failure, the affected worker and his/her buddy will leave the exclusion zone immediately. In the event of any other equipment failure, the Site safety and health officer will determine if this failure affects the operation. If so, the emergency signal will be sounded and all personnel will leave the exclusion zone until such time as it is deemed safe.

#### 8.0 STANDARD SAFETY PRACTICES

The following guidelines will be followed by all personnel at all times; any changes must be approved by the safety and health manager.

- All employees will attend the daily safety meetings prior to Site entry.

- The buddy system will be utilized at all times.
- There will be no eating, drinking, smoking, or use of smoking material (i.e. matches) within the work area(s).
- Only authorized personnel will be allowed in designated work zones and will wear the proper personal protective clothing and equipment as prescribed in the Site safety plan.
- The Site safety and health officer will be appraised of any unusual circumstances immediately.

Such circumstances include but are not limited to the following; unusual odors, emissions, signs of chemical reaction, and discovery of conditions or substances not mentioned in the Site safety plan. The Site safety officer will then determine if these conditions warrant a shut down of operations.

#### 9.0 DAILY SAFETY MEETINGS

Daily safety meetings will be conducted by the Site safety and health officer prior to commencement of work. All personnel, regardless of job classification are required to attend.

#### 9.1 DISCUSSIONS

- 1. Overview of safety and health plan.
- 2. Detailed discussion of substances of concern with emphasis on exposure limits, exposure symptoms and exposure hazards.
- 3. Review of standard safety precautions and work practices.
- 4. Review of work plan.
- 5. Review of hand signals and emergency signals.

Personnel will sign a daily attendance sheet, which shall include an overview of the topics discussed.

#### 10.0 SITE SPECIFIC PLAN

#### 10.1 DETAILED SITE INFORMATION

- Plan Date TBA

- **Job Name** 21-23 Wayne Avenue

- Client Toscott Realty, LLC

172 Ray Street

Elmwood Park, New York 07407

- Client Contact/Phone No. Mr. Ahmad Alkhalaf (973) 886-7130

- **Site Address** 21-23 Wayne Avenue

Haverstraw, New York 10993

- **Cross Street** Phelps Street/Lafayette Avenue

- Site Access Direct

#### 10.2 CONTAMINANTS ON SITE/ACTION LEVELS

The following substances are known or suspected to be on Site, primarily in Site wastes. The primary hazards of each are identified, associated primarily with direct skin contact and inhalation.

SUBSTANCE	PRIMARY HAZARDS		
Metals			
Lead	Anemia, kidney and liver damage, mental retardation and abnormalities in fertility and pregnancy.		
Barium	Nausea, vomiting, diarrhea, muscle weakness, tremors, irregular heartbeat.		
Zinc	Nausea, vomiting, loss of appetite, abdominal cramps, diarrhea and headaches.		
Cadmium	Respiratory irritation.		
Copper	Hypertension, severe nausea and vomiting, damage to renal and hepatic systems.		
Polychlorinated Biphenyls (PCBs)	Decreased body weight, carcinogenesis, dermal toxicity, fatty liver, melanomas.		
Semi-Volatile Organic Compounds (SVOCs)	Damage to liver, kidneys, and central nervous system. Irritation, fatigue, loss of coordination, memory loss.		

#### **Particulate Air Monitoring**

Particulate monitoring will be conducted during ground intrusive activities at the Site in accordance with the Fugitive Dust and Particulate Monitoring from DER-10 Technical Guidance for Site Investigation and Remediation. Dust and particulate monitoring will be conducted near the approximate upwind and downwind perimeters of the exclusion zone, when possible, or where dust generating operations are apparent. Dust monitoring may be suspended during periods of precipitation and snow cover.

Particulate air monitoring will be conducted with a DataRAM-4 (or a similar device). This instrument is equipped with an audible alarm (indication of exceedance) and is capable of measuring particulate matter less than 10 micrometers in size (PM-10). It will continually record emissions (calculating 15-minute running average concentrations) generated during field activities. The dust monitoring devices will be checked and recorded periodically throughout the day of intrusive activities to assess emissions and the need for corrective action. Particulate monitoring response and action levels include:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (µg/m3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 µg/m3 above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 µg/m3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 µg/m3 of the upwind level and in preventing visible dust migration.

#### **Volatile Organic Compound Air Monitoring**

Volatile organic compound (VOC) air monitoring will be conducted in conjunction with the dust monitoring program. VOC air monitoring will be conducted using a RAE Systems MiniRAE 2000 VOC instrument (or a similar photoionization detector device) to provide real-time recordable air monitoring data. VOC monitoring will be conducted for ground intrusive (continuous monitoring) and non-intrusive activities (periodic monitoring).

VOCs will be monitored and recorded at the downwind perimeter of the immediate work area. Upwind concentrations will be measured before field activities commence and periodically throughout the day to establish background conditions. The downwind VOC monitoring device will also be checked periodically throughout the day to assess emissions and the need for corrective action. VOC monitoring response and action levels include:

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If the organic vapor level remains sustained above 5 ppm at the perimeter of the work area, activities must be shut down and work will be re-evaluated.

#### **Documentation and Calibration**

The volatile organic compound air monitoring device shall be calibrated prior to daily field activities according to manufacturer's instructions and standard industrial hygiene practices. Calibration measurements will be recorded on a field data record. Field measurements will be recorded and available for State (NYSDEC and NYSDOH) personnel to review. The particulate monitoring device is factory calibrated on an annual basis. Upon completion of field activities, available monitored data recorded will be downloaded, evaluated and summarized in the Remedial Investigation Report.

#### **Meteorological Monitoring**

Wind direction is the only meteorological data considered relevant for the RI activities. To evaluate wind direction, a windsock, wind vane, or other equivalent equipment will be utilized. Wind direction will be established at the start of each work day, and may be reestablished during the day should a significant shift in wind direction be noted. These results will be employed to position the particulate and VOC monitoring equipment in appropriate upwind and downwind locations. Wind direction and location of the monitoring stations will be noted in daily field logs.

#### 10.3 EMERGENCY INFORMATION

10.3.1 EMERGENCY RESPONDERS

10.3.1.1 **HOSPITAL** 

Name: Helen Hayes Hospital

#### **Address & Telephone Number:**

51-55 Route 9W North

West Haverstraw, New York 10993

(845) 786-4000

**Distance from Site:** 0.9 Miles

## 10.3.1.2 EMERGENCY TELEPHONE NUMBERS

Police911 on Cellular PhoneFire911 on Cellular PhoneAmbulance911 on Cellular Phone

#### 10.3.1.3 **REGULATORY AGENCIES**

**EPA Telephone Number** 1-800-424-8802

**NYSDEC Spills Hotline** 1-800-457-7362

#### 10.4 FIRST AID

First Aid available at the following stations:

First Aid Kit TRUCK

Emergency Eye Wash TRUCK & ON SITE

#### 10.5 WORK ZONES

#### 10.5.1 COMMAND POST

Command post will be mobile.

#### 10.6 SITE COMMUNICATIONS

#### 10.6.1 TELEPHONE

Command Post Telephone - Cellular Phone Number (845)943-0159

#### 10.6.2 HAND SIGNALS

See Section 6.0

#### 10.7 ENVIRONMENTAL MONITORING

#### 10.7.1 MONITORING EQUIPMENT

Refer to Site Characterization Work Plan

#### 10.8 PERSONAL PROTECTIVE EQUIPMENT

## 10.8.1 EXCLUSION ZONE, PROTECTION LEVEL

**PROTECTIVE EQUIPMENT**: Level D **RESPIRATORY** None

**HEAD** Hard Hat & Safety Glasses

**HANDS** Nitrile or Leather **FEET** Steel Toed Boots

**SUIT** None

## 10.8.2 CONTAMINATION REDUCTION CORRIDOR (DECON LINE)

**PROTECTIVE EQUIPMENT**: Level D **RESPIRATORY** None

**HEAD** Hard Hat & Safety Glasses

HANDS Nitrile or Leather

FEET Steel Toed SUIT None

#### 10.9 **DECONTAMINATION**

#### 10.9.1 DECONTAMINATION PROCEDURE

Decontamination procedures to be utilized on-Site will be pursuant to Sampling, Analysis, And Assessment of Per-And Polyfluoroalkyl Substances (PFAS) under NYSDEC's Part 375 Remedial Programs, June 2021. Standard two step decontamination using detergent (Alconox brand or similar) and clean, PFAS-free water will be performed for sampling



ATTACHMENT B

# Community Air Monitoring Plan REVISED

Job Name/Site Number: 21-23 Wayne Avenue/344087

#### 1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been prepared by DT Consulting Services, Inc. (DTCS) to support the implementation of the Site Characterization Work Plan (SCWP) activity associated with the Subject Property located at 21 – 23 Wayne Avenue, Haverstraw, Rockland County, New York. A Site Plan is provided as Figure 1. Details related to this Site activity is presented in the SCWP Document, DTCS/Bellucci Engineering, PLLC dated November 8, 2022, to which this CAMP is included as an attachment and as a supporting plan. This CAMP fulfills the routine monitoring requirements provided in the New York State Department of Environmental Conservation (NYSDEC) document entitled Division of Environmental Technical Guidance for Site Investigation and Remediation (DER-10) issued on May 3, 2010. Appendix 1A of DER-10 provides general guidance and protocols for the preparation and implementation of a CAMP. Appendix 1B of DER-10 supplements the contents of Appendix 1A of DER-10 and provides additional requirements for fugitive dust/particulate monitoring. requirements have also been deemed necessary by the NYSDEC and New York State Department of Health (NYSDOH) as work will be conducted within 20 feet of potentially exposed individuals or structures. A copy of these CAMP requirements (as outlined in DER-10) has been placed in Attachment A for reference. This CAMP identifies the required air monitoring to protect on-Site workers and the community during the implementation of proposed investigative activities.

#### 1.1 CAMP Objectives

The overall objective of the CAMP is to establish requirements for protection measures from potential airborne releases of constituents of concern during intrusive and/or potential dust generating Site activities. As summarized in the SCWP, laboratory analysis indicates that constituents of concern at the Site include heavy metals, polychlorinated biphenyl's (PCBs) and semi-volatile organic compounds (SVOCs). This CAMP identifies potential air emissions, and describes air monitoring procedures, the monitoring schedule, data collection, and reporting requirements for the SCWP actions to be completed by DTCS. DTCS will

implement this CAMP and will provide all labor, materials, and equipment necessary to implement the monitoring program specified in this CAMP, as well as any required contractor worker documentation and monitoring described in the Environmental Health and Safety Plan prepared for the implementation of the project.

#### 1.2 Revisions to the CAMP

Any changes to the scope or procedures in this CAMP will be formally documented as a revision to this document. A revision number will be indicated on the front page of any revised document and will serve as a historical record of any and all revisions made to the document. For changes requiring immediate resolution during the implementation of this CAMP, approval will be secured from the NYSDEC and, if applicable, the Responsible Party.

#### 1.3 Potential Air Emissions Related to Remedial Activities

Intrusive investigative activities have the potential to generate localized impacts to air quality. Drilling components of the SCWP that are considered intrusive for the purposes of this CAMP and that have the potential to generate air emissions are anticipated to include, but may not be limited to the following:

- ✓ Soil Vapor Sampling;
- ✓ Soil Sampling; and
- ✓ Monitoring Well Installation.

#### 2.0 AIR QUALITY MONITORING AND ACTION LEVELS

#### 2.1 Monitoring During Site Operations

Atmospheric air monitoring results are used to provide data to determine when exclusion zones need to be established and/or when certain action levels are required. For all instruments there are Site-specific action level criteria which are used in making field health and safety determinations. Other data, such as the visible presence of contamination or the steady state

nature of air contaminant concentration, are also used in making field health and safety decisions. Therefore, the Health and Safety Officer (HSO) may establish an exclusion zone or require a person to wear a respirator even though atmospheric air contaminant concentrations are below established action levels.

Prior to commencement of planned remedial activities the following will be conducted:

 Background readings will be obtained with a photoionization detector (PID) for VOCs in parts per million (ppm). Any unusual background readings will be discussed with NYSDEC/NYSDOH prior to commencement of work;

During Site work involving disturbance of fill and/or native soil, real time air monitoring will be conducted for VOCs. A PID will be used to monitor concentrations of VOCs at personnel breathing-zone height. Dust/particulate monitoring will be accomplished with an aerosol monitor. Air monitoring will be the responsibility of the HSO or designee. Air monitoring will be conducted continuously during ground intrusive activities in the work zone on the project Site. All manufacturers' instructions for instrumentation and calibration will be available on-Site.

#### 2.1.1 Volatile Organic Compounds

Monitoring with a PID, such as a MiniRAE 2000 (10.6v) or equivalent will occur continuously during the execution of the IRM work plan. Colormetric Indicator Tubes for benzene may be used as backup for the PID, if measurements remain above background monitor every 2 hours. Instrumentation action levels to be utilized are as follows:

#### Action Levels for Organic Vapors

Instrument	Action Level	Action Required					
Outdoor Action Levels							
PID	Background to 5 ppm	No further action required.					
	> 5 ppm for > 5 minutes	1. Temporarily discontinue all activities and evaluate potential causes of the excessive readings. If these levels persist and cannot be mitigated (i.e., by slowing drilling or excavation activities), contact HSO to review conditions and determine source and appropriate response action.  2. If PID readings remain above 5 ppm, temporarily discontinue work.  3. If sustained PID readings fall below 1 ppm, no further action required.					
	> 5 ppm but < 150 ppm for	1. Discontinue all work; all workers shall move					
	> 5 minutes	outside of the work zone.  2. Evaluate potential causes of the excessive readings and allow work area to vent until VOC concentrations fall below 5 ppm.					
	> 30 ppm (steady state	Stop Work / Suppress Emissions / Evacuate and re-					
	condition) within work zone	evaluate.					
> 150 ppm   Evacuate the work zone							
	> 1 ppm above background.	Monitoring will be performed adjacent to any occupied space within 20 feet of the work zone.					
	Opposite the walls of occupied structures or next to intake vents.						

#### **Notes:**

- 1. 1 ppm level based on OSHA Permissible Exposure Limit (PEL) for benzene.
- 2. 5 ppm level based on OSHA Short Term Exposure Limit (STEL) maximum exposure for vinyl chloride for any 15 minute period.
- 3. 150 ppm level based on NIOSH Immediately Dangerous to Life and Health (IDLH) for tetrachloroethylene.

#### 2.1.2 Fugitive Dust and Particulate Monitoring

During invasive procedures which have the potential for creating airborne dust, such as boring/sampling of dry soils, a real time airborne dust monitor such as a Mini-Ram should be used to monitor for air particulates. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities. The HSO will continuously monitor for particulates during all ground intrusive activities. Instrument action levels to be utilized for dust monitoring are as follows:

#### Action Levels for Particulates

Instrument	Action Level	Level of Protection/Action Required						
Outdoor Action Levels								
Total Dust Aerosol	> 0.100 mg/m3 above BKD	Stop Work/Implement dust control.						
Monitor	(steady state condition) at work	Continue dust monitoring if dust						
	zone for 15-minutes or visible	levels are less than 150 mg/m3.						
	dust.							
	< 0.150 mg/m3 above BKD	Stop Work/implement dust control,						
	(following dust suppression	continue work once levels are <150						
	measures).	mg/m3.						
Special Requirements for Work Within 20 Feet of Potentially Exposure Individuals or Structures								
	> 0.150 mg/m3	Work activities will be suspended						
	Opposite the walls of	until controls are implemented and						
	occupied structures or next	are successful in reducing the total						
	to intake vents.	particulate concentration to 0.150						
		mg/m3 or less at the monitoring point.						

#### 2.2 Periodic Monitoring for Odors

During work hours, hourly or more frequent walks around the perimeter of the work area will be performed to qualitatively monitor for the presence and intensity of Site-related odors. Perimeter checks will be performed more frequently, as necessary, depending on the nature and location of work being performed. If odors are noted at the perimeter of the work area, work will continue and odor, vapor, and dust controls will be employed to abate emissions. Additionally, construction techniques will be evaluated and modified, if necessary and appropriate, and more frequent checks of the perimeter of the work area will be performed. If odors persist at the perimeter of the work area at an unacceptable intensity, work will be stopped while activities are re-evaluated. The source or cause of the odors will be identified and additional odor, vapor, and dust controls will be employed. Work will resume provided that the controls are successful in mitigating the intensity of odors at the perimeter of the work area.

#### 2.3 Instrument Calibration

Calibration of the VOC and PM-10, instrumentation will be conducted in accordance with each of the equipment manufacturer's calibration and quality assurance requirements. The VOC and PM-10 monitoring equipment will be calibrated or zeroed, respectively, daily (at a minimum), and such calibrations will be recorded in the field logbook.

#### 3.0 MONITORING SCHEDULE/DATA COLLECTION/REPORTING

The following identifies the monitoring schedule and data collection/reporting requirements.

#### 3.1 Monitoring Schedule

Air monitoring will be conducted prior to initiating remedial Site activities to establish adequate baseline data and until such time that intrusive and/or potential dust generating activities are complete. The frequency of construction air monitoring will be relative to the level of Site work activities being conducted and may be adjusted as the work proceeds and in consideration of the monitoring results.

#### 3.2 Data Collection and Reporting

Results of the air monitoring for total organic vapors and particulates (both instantaneous readings and 15-minute average concentrations) will be recorded by the on-Site HSO or designee. Upon executing the approved IRM, a CAMP report will be generated to include, but not be limited to, the following:

 A brief memorandum summarizing the air monitoring work activities and results for the monitoring period. A summary of the qualitative monitoring for the presence and intensity of Site-related odors will also be included.

In the event that an exceedance of an air monitoring action level (for either VOCs or PM-10), the HSO or designee will notify DEC (via telephone) as soon as possible (i.e., real time). Within 24 hours of the observed exceedance, the HSO or designee will send a follow-up e-mail to DEC's representative, and the Responsible Party summarizing the data, the cause of the exceedance, and any corrective measures implemented (or to be implemented) as a result of the exceedance. The information will also be documented in the CAMP report. Odor complaints received from the public will be evaluated and verified based on the following:

- Date and time of complaint;
- Location and nature of work activities being performed at the Site;
- Location and nature of non-project-related work activities being performed in the surrounding community; and
- Prevailing wind direction and other local meteorological conditions.

Regardless of the outcome of this evaluation, all associated parties will be notified of odor complaints within 24 hours. In response to a verified odor complaint, perimeter monitoring will continue and additional odor, vapor, and dust controls will be employed to mitigate Site-related odor emissions. Construction techniques will also be evaluated and modified, if necessary and appropriate.

equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

#### 11.0 KEY PERSONNEL

#### SAFETY AND HEALTH MANAGER / ON-SITE SUPERVISOR

Deborah J. Thompson

#### **FOREMEN**

TBA

#### **FIELD PERSONNEL**

Will Vary

#### 12.0 WORK PLAN

#### 12.1 **JOB OBJECTIVE**

The objective is to execute a Site Characterization Work Plan which includes soil, soil gas and groundwater sampling to further characterize the extent of historical contamination identified on-Site under the direct supervision of the New York State Department of Environmental Conservation. Upon completion of field work, a Site Characterization Report will be generated to address documented contamination.