



# **Revised Remedial Action Work Plan**

Former Marianina  
Site

34 East Post Road  
White Plains, NY

NYSDEC Case No. 16-  
08934.11.2018

0214155

**34 East Post Road  
LLC**

January 2025

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## LIST OF ACRONYMS

<b>Acronym</b>	<b>Definition</b>
AOC	Area of Concern
AS/SVE	Air Sparging/Soil Vapor Extraction
AWQS	Ambient Water Quality Standard
BOA	Brownfield Opportunity Area
CAMP	Community Air Monitoring Plan
C&D	Construction and Demolition
CEQR	City Environmental Quality Review
CFR	Code of Federal Regulations
CHASP	Construction Health and Safety Plan
COC	Certificate of Completion
CQAP	Construction Quality Assurance Plan
CSOP	Contractors Site Operation Plan
DCR	Declaration of Covenants and Restrictions
ECs/ICs	Engineering Controls and Institutional Controls
ELAP	Environmental Laboratory Accreditation Program
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations Emergency Response
IRM	Interim Remedial Measure
RAWP	Interim Remedial Measure Work Plan
MNA	Monitored Natural Attenuation
NOC	Notice of Completion
NYS DEC	New York State Department of Environmental Conservation
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York State Department of Health and Mental Hygiene

NYC DEC	New York City Office of Environmental Remediation
NYC VCP	New York City Voluntary Cleanup Program
NYCRR	New York Codes Rules and Regulations
NYS DEC	New York State Department of Environmental Conservation
NYS DEC DER	New York State Department of Environmental Conservation Division of Environmental Remediation
NYS DOH	New York State Department of Health
NYS DOT	New York State Department of Transportation
ORC	Oxygen-Release Compound
OSHA	United States Occupational Health and Safety Administration
PCBs	Polychlorinated Biphenyls
PE	Professional Engineer
PID	Photo Ionization Detector
QEP	Qualified Environmental Professional
RAOs	Remedial Action Objectives
RA	Remedial Activities
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan or Plan
RCA	Recycled Concrete Aggregate
RD	Remedial Design
RI	Remedial Investigation
RMZ	Residual Management Zone
SCOs	Soil Cleanup Objectives
SCG	Standards, Criteria and Guidance
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SSDS	Sub-Slab Depressurization System
SVOC	Semi-Volatile Organic Compound

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TAL	Target Analyte List
TCL	Target Compound List
USGS	United States Geological Survey
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VOC	Volatile Organic Compound

## CERTIFICATION STATEMENT

I, Lucas Hellerich, certify that I am currently a NYS registered professional engineer and that this Remedial Action Work 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) and Green Remediation (DER-31).

087900 NYS Professional Engineer #

1/28/2025 Date

Lucas Hellerich Signature

## 1. INTRODUCTION

Woodard & Curran Engineering and Geological Services P.A. P.C. (Woodard & Curran), on behalf of 34 East Post Road, LLC (herein referred to as "34 EPR"), has prepared the following Revised Remedial Action Work Plan (RAWP) for the former Marianina Site, located at 34 East Post Road in the City of White Plains, Westchester County, New York (herein referred to as the "Site") (Figure 1).

This RAWP was prepared in general accordance with the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation dated May 2010 (DER-10), and in response to the NYSDEC Amended Order on Consent between NYSDEC and Marianina Oil Corporation, White Plains Hospital Medical Center, and 34 EPR, dated September 8, 2022 (Amended Consent Order). This RAWP was also prepared in response to the Stipulation of Settlement and Order between White Plains Housing Authority (WPHA) and 34 EPR, LLC (34 EPR) filed June 23, 2023 (Stipulation of Settlement and Order), which references the findings of previous remedial investigation activities and supplemental investigations conducted at the Site, including the 2015 Site Investigation (SI) / Remedial Investigation Report (RIR), prepared by First Environment, Inc (First Environment), the 2017 Subsurface Investigation Report prepared by HydroEnvironmental Solutions, Inc. (HydroEnvironmental) and the supplemental remedial investigation activities conducted by Woodard & Curran in 2022, and contains a list of CP\_51 specific SCOs required to be achieved. 34 EPR and Woodard & Curran reached the conclusion after review of the September 2021 RAWP prepared by HydroEnvironmental, which was attached to the Amended Consent Order as Exhibit A, and the 2022 Woodward & Curran Supplemental Remedial Investigation results which postdated the September 2021 RAWP, that the September 2021 RAWP had to be further revised as described herein. This RAWP incorporates the general scope of the remedy described in the Amended Consent Order Exhibit A RAWP, but adds further detail, which the team contended was necessary. This RAWP also limits the footprint of the remediation to that area depicted in Amended Consent Order Exhibit B Spill Remediation Boundary Map, which was incorporated into the Amended Consent Order and was not included in the September 2021 Amended Consent Order Exhibit A RAWP but which reflects the 2022 Woodward & Curran 2022 Supplemental Remedial Investigation results.

The Amended Consent Order Exhibit B Spill Remediation Boundary Map also takes into account the location of utilities which cannot be impacted, and the location of WPHA large heating oil tanks on the adjacent WPHA property. It is important to note that the Stipulation of Settlement and Order specifically states that "34 EPR shall not be required to excavate within ten feet of the southernmost UST on WPHA's property or within five feet of underground utilities located under the former Brookfield Street to the west..." Implementing portions of the proposed remedial action will require an access agreement with WPHA.

The proposed remedial action (RA) includes remediation of contaminated soils associated with the Spill No. 1608924<sup>1</sup> at the Site and which has migrated to the east, north and west of the Site, on and under adjacent impacted White Plains Housing Authority (WPHA) property to the extent of the Amended Consent Order

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<sup>1</sup> Note the Spill No. listed in the Consent Order is 16-08934 but the actual DEC spill report lists the Spill No. as 1608924 and this is still the number in the on-line Spills Database.

Exhibit B Spill Remediation Boundary Map primarily through means of contaminated soil excavation. Excavation will continue until end-point sampling meets the current CP-51 Soil Cleanup Objectives (SCOs).

This RAWP summarizes the nature and extent of contamination as determined from data gathered during the Remedial Investigation (RI), performed between 2015 and 2017 and the Supplemental Remedial Investigation (SRI) conducted in 2022. The remedy described in this document is consistent with the procedures defined in DER-10, DER-31, and complies with applicable standards, criteria and guidance. The remedy described in this document also complies with applicable Federal, State and local laws, regulations and requirements, the Consent Order, and the Stipulation of Settlement and Order.

## 1.1 Site Location and Description

The Site is located in the County of Westchester, White Plains, New York and is identified by the Municipal Tax Parcel Viewer as a 0.26-acre plot with the Tax ID 130.27-2-4. A United States Geological Survey (USGS) topographical quadrangle map (Figure 1) shows the Site location. The Site is zoned as B-3 (Intermediate Business). The Site coordinates, as measured from the approximate center of the Site are 41° 02'65.57"N Latitude and 73°76'.98"W Longitude. The Site elevation is between 200 and 225 feet above mean sea level (amsl).

The surface topography at the Site is relatively flat; however, there is an elevation difference noted between the Site and the WHPA parcel to the north. The Site property slopes down towards the WHPA parcel with an elevation difference of approximately 3-5 feet.

## 1.2 Description of Surrounding Property

Mixed use, commercial, and institutional properties surround the Site. The Site is located to the north of East Post Road and east of Brookfield Street. The uses and features of adjoining/nearby properties are described below:

- North: WHPA affordable housing Apartment complex;
- South: Institutional buildings including, White Plains Hospital;
- East: Mixed use, and Office Space including doctors' offices, and a diner;
- West: Commercial use including a laundromat, and barber shop as well as single and multifamily properties.

The Site and surrounding areas are depicted on Figure 2.

## 2. REMEDIAL INVESTIGATION FINDINGS

The Site was investigated in accordance with the scope of work presented in the Remedial Investigation (RI) Work Plan dated 2015 and Supplemental Remedial Investigation (SRI) conducted by Woodard & Curran in 2022. The SRI was conducted between March 2022 and June 2022. Prior to the SRI, several previous environmental investigations were conducted at the Site and off-site, including but not limited to the following:

- 2015 – First Environment, Inc. Site Investigation / Remedial Investigation
- 2017 – HydroEnvironmental Solutions, Inc. Subsurface Investigation
- 2020 – Woodard & Curran Limited Environmental Conditions Assessment
- 2022 – Woodard & Curran Supplemental Remedial Investigation

### 2.1 Summary of First Environment Site Investigation / Remedial Investigation

First Environment, Inc. (First Environment), on behalf of the White Plains Housing Authority (WPHA), conducted a Remedial Investigation (RI) on April 28-29, 2015 and December 11-18, 2015 at portions of the WPHA property that are adjacent to 34 East Post Road Site including an area between the Site and the WPHA's Building at 33 Fisher Court. The 33 Fisher Court Building is approximately 200 feet east of WPHA's Building at 159 South Lexington Avenue. The Building 159 area and its parking lot have been the subject of a prior investigation due to a discharge from a former Getty service station on the other side of Brookfield Street at 26 East Post Road, White Plains, NY.

The objective of the RI activities included the following tasks:

- to determine the location of subsurface utilities and/or potential anomalies adjacent to the areas of concern (AOCs), which may impede the completion of the remedial investigation;
- to confirm and evaluate the current and potential future status of contamination of the WPHA property potentially originating from the Site; and
- to obtain additional data regarding soil and groundwater impacts necessary to develop a remedial strategy.

These tasks included the completion of soil boring installations, soil sampling, permanent monitoring well installations, and two groundwater sampling events.

A review of the soil analytical results collected from the soil boreholes revealed volatile organic compounds (VOCs) at concentrations above their respective New York State Department of Environmental Conservation (NYSDEC) Soil Cleanup Levels (SCL) for Gasoline Contaminated Soils pursuant to CP-51 guidance document in select soil boring locations. The analytical results for the groundwater sampling conducted revealed the presence of petroleum-related VOCs above the NYSDEC Ambient Water Quality Standards (AWQS) in two of the five monitoring wells installed and sampled in December 2015 and August 2016, as well as previously existing MW-106 sampled during the December 2015 event.

## 2.2 Summary of HES Subsurface Investigation

HydroEnvironmental Solutions, Inc. (HES), on behalf of Mr. Frank Codella, has completed a Subsurface Investigation (SI) on the Site. The SI included the installation of seven soil borings and three temporary groundwater monitoring wells across the Site. The SI field work was completed on January 18, 2017.

In late 2016, NYSDEC completed an investigation pertaining to the Site. The results of the investigation stated that potential contamination to the soil and groundwater at the Site were impacted by petroleum related constituents. Therefore, NYSDEC recommended that a site assessment be conducted at the Site. Based on the aforementioned investigation, a spill was reported and a NYSDEC Spill Number was assigned to the Site on December 21, 2016.

Soil screening and laboratory analyses completed during SI activities at the Site indicated that petroleum hydrocarbon impacts exist in the soil and groundwater beneath the Site and are believed to be related to gasoline and not diesel fuel.

Concentrations of ethylbenzene (32,000 ug/kg), isopropylbenzene (4,500 ug/kg), n-propylbenzene (18,000 ug/kg), 1,2,4-trimethylbenzene (16,000 ug/kg) and xylenes (11,200 ug/kg) exceeded their respective NYSDEC unrestricted use SCOs in the soil sample designated GB-3 TW (4-8).

Concentrations of n-propylbenzene (6,000 ug/kg), 1,2,4-trimethylbenzene (37,000 ug/kg), 1,3,5-trimethylbenzene (9,500 ug/kg) and xylenes (6,400 ug/kg) exceeded their respective NYSDEC unrestricted use SCOs in the soil sample designated GB-7 (8-12).

Concentrations of lead were detected in the soil samples designated GB-3 TW (4-8) (4 ug/kg), GB-6 (4-8) (9.39 ug/kg) and GB-7 (8-12) (3.96 ug/kg) which are below the NYSDEC unrestricted use SCOs of 63 ug/kg.

The results of groundwater sampling, specifically from the temporary monitor well designated GB-1 TW, indicated that impacts to the groundwater exist beneath the Site. Dissolved concentrations of VOCs and SVOCs considerably exceeded their respective NYSDEC – AWQS.

Based on the recorded groundwater elevations at the Site using temporary monitor wells designated GB-1, GB-3 and GB-4, the groundwater flow direction is generally to the west and depth to water ranges from 5.8 ft bgs to 8.5 ft bgs beneath the Site. MTBE was not detected in any of the soil or groundwater samples analyzed during this investigation.

Based on the results of the investigation, HES did not believe that gasoline impacts to soil and groundwater are recent in nature. HES is unaware of any dispensing equipment failure (tanks/links/pumps), monitoring equipment failure, any discrepancies in inventory records, any regulatory violations related to annual compliance testing and/recordkeeping required by the NYSDEC or WCDOH. Therefore, HES recommends that such records be produced and reviewed in support of this belief.

## 2.3 Summary of Woodard & Curran 2020 and 2022 Remedial Investigations

Due to a significant number of underground utilities, and lack of clearance for the Geoprobe, WC-SB-07 was excluded from the sampling program. In addition, many borings in the former WHPA recreation area were adjusted accordingly due to being in the vicinity of underground utilities.

Therefore, a subsurface utility clearance survey will be conducted throughout the entire work area and at specific proposed drilling locations and as required in the Stipulation of Settlement and Order. The utility survey will be conducted to confirm the proposed drilling locations and identify any subsurface utilities that could act as potential preferential pathways. The utility clearance survey will be conducted by Ground Penetrating Radar Systems, Inc. (GPRS) of Boothwyn, Pennsylvania and overseen by Woodard & Curran personnel. GPRS used geophysical methods including ground-penetrating radar, metal detectors, and piping tracing to determine the presence of subsurface obstructions and infrastructure at the proposed boring locations.

### **2.3.1 Soil**

Between March 2022 and June 2022, soil borings were advanced to further investigate the nature and extent of subsurface contamination, including soil characterization and laboratory analysis of soil samples at various depths based on field conditions and observations. Twelve soil borings were advanced on the Site, and 18 soil borings were advanced on the WPHA property.

The supplemental soil investigation was conducted in three phases as follows:

- Phase 1 included the advancement of 12 soil borings, the collection of 25 discrete subsurface soil samples, and the collection of groundwater samples from 10 temporary/permanent groundwater well points.
- Phase 2 consisted of 10 soil borings and 22 discrete subsurface soil samples, and the collection of 6 temporary/ permanent groundwater well points. Based on field observations, the phase two sampling investigation was expanded to further delineate on-site contaminants. Soil samples were analyzed for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs).
- Phase 3 included the advancement of 11 soil borings, collection of 22 discrete subsurface soil samples, and collection of groundwater samples from 9 temporary groundwater well points. Soil samples were analyzed for VOCs and SVOCs and groundwater samples were analyzed for VOCs, SVOCs and total petroleum hydrocarbons (TPH).

A summary of the soil investigation, including sample intervals, quality assurance/quality control samples, and laboratory analysis, is provided on Table 1. Figure 3 depicts the locations of the borings advanced in 2022, which included the Site and portions of the WPHA property. Previously collected data and the 2022 data were used to define the Remediation Boundary as provided in the Amended Consent Order Exhibit B Spill Remediation Boundary Map.

Below is a discussion of the supplemental groundwater investigation conducted in three phases as follows.

### **2.3.2 Groundwater Investigation**

#### **2.3.2.1 Phase 1**

Concurrent with the soil investigation outlined in Section 2.2.1, Woodard & Curran collected a total of five low flow groundwater samples (including a blind duplicate) from four groundwater monitoring wells as shown on Figure 3. Groundwater monitoring wells were purged and sampled via USEPA low-flow

groundwater sampling methodology and in general accordance with NYSDEC DER-10 protocols. Groundwater samples were collected from the mid-point of the well screen interval with slight adjustments in depths based on measured depth to water at the time of sampling, as appropriate. Water quality parameters including pH, temperature, dissolved oxygen, conductivity, turbidity, and oxygen-reduction potential, and pumping rates and depth to water readings were recorded during purging to confirm stabilization of groundwater conditions. Water quality meters were calibrated daily, with periodic calibration checks performed throughout the day. Following water quality parameter stabilization, a sample from each well was collected for laboratory analysis. It should be noted that upon inspection, MW-205 was filled with dirt and/or debris, and a groundwater sample was unable to be taken from this existing well. A temporary well point was installed near MW-205 with the same well screen interval. The well was purged with a bailer for 15 minutes prior to sample collection.

In addition, four grab groundwater samples were collected from temporary well points installed within select soil borings to characterize groundwater conditions at the Site. Grab groundwater samples were collected from temporary PVC well points installed within the soil boring following soil sample collection. Soil borings were extended an additional five feet to install additional well screen to allow adequate groundwater recharge. Following temporary well point installation, an unfiltered grab groundwater sample was collected utilizing a dedicated disposable polyethylene bailer and/or check valve attached to tubing. Temporary groundwater wells were purged for 15 minutes prior to sample collection.

Groundwater samples were transferred using laboratory provided glassware under chain-of-custody protocol and analyzed for VOCs, SVOCs and TPH, which included gasoline and diesel range organics (GRO/DRO). Purge water generated during groundwater sampling is containerized in 55-gallon drums pending off-site disposal.

### **2.3.2.2 Phase 2**

On April 29, 2022 and May 2, 2022, six groundwater samples were collected from monitoring well points installed within select soil borings to characterize groundwater conditions at the Site. Groundwater samples were collected from monitoring wells installed within the soil boring following soil sample collection. Where possible, soil borings were extended an additional five feet to install additional well screen to allow adequate groundwater recharge.

Groundwater samples were transferred using laboratory provided glassware under chain-of-custody protocol and analyzed for VOCs, SVOCs, and TPH (GRO/DRO). Laboratory QA/QC samples were collected including a duplicate sample, a trip blank for each day and a Field blank for each day. Purge water generated during groundwater sampling is containerized in 55-gallon drums pending off-site disposal.

### **2.3.2.3 Phase 3**

On June 21, 2022 and June 22, 2022, nine grab groundwater samples were collected from temporary well points installed within select soil borings to characterize groundwater conditions at the Site. Grab groundwater samples were collected from temporary PVC well points installed within the soil boring following soil sample collection. Where possible, soil borings were extended an additional five feet to install additional well screen to allow adequate groundwater recharge. In borings where refusal was encountered below the water table a temporary well point was installed with the bottom of the well screen set at the top of refusal. Following temporary well point installation, an unfiltered grab groundwater sample was collected

utilizing a dedicated disposable polyethylene bailer. Temporary groundwater wells were purged for 15 minutes prior to sample collection.

Groundwater samples were transferred using laboratory provided glassware under chain-of-custody protocol and analyzed for VOCs, SVOCs, and TPH (GRO/DRO). Laboratory Quality Assurance / Quality Control samples were collected including a duplicate sample, a trip blank for each day and a field blank for each day. Purge water generated during groundwater sampling was containerized in 55-gallon drums pending off-site disposal.

### **2.3.3 Groundwater Gauging and Flow Determination**

Previous investigations conducted by First Environment, Inc (First Environment) determined that groundwater flows from the southeast towards the northwest. Woodard & Curran conducted a round of well gauging on existing wells: MW-201, MW-202, MW-203, and MW-106. Existing well survey data in the 2016 First Environment, Inc RIR was used to determine groundwater flow direction. Based on the groundwater contours as shown on Figure 4, groundwater flow direction follows the same trend flowing from the former BP and Getty gas stations in the southeast toward WPHA property in the northwest. Copies of boring logs are included in Appendix A.

### **2.3.4 Chemical Analytical Work Performed**

Soil samples were analyzed for VOCs, SVOCs and TPH (GRO/DRO). The laboratory results were compared to the NYSDEC Commercial Use SCOs and the data are provided in this RAWP.

Groundwater samples were analyzed for VOCs, SVOCs, and TPH (GRO/DRO). The sampling results were compared to NYSDEC Ambient Water Quality Standards (AWQS) for Class GA Groundwater. Note that there is no CP-51 SCO or NYSDEC AWQS for TPH.

## **2.4 Site History**

### **2.4.1 Past Uses and Ownership**

According to Sanborn Fire Insurance Maps, the Site was in operation dating back to at least 1900. At different times between 1900 and 1930, the Site was used as a carpenter shop, and storage yard. From 1936 until 2017, the Site was operated as an automobile fuel filling station. The Site has changed ownership several times during this time period with each owner running the filling station. The last owner of the automobile filling station was Marianina Oil Corporation, which operated the automobile fuel filling station from 1987 until at least September 2016. At the time of its closure a British Petroleum (BP) automobile filling station was in operation at the Site.

According to the title search results provided by the Westchester County Clerk's Office, the BP property was owned by the following entities:

- Deed made by The County Trust Company to Sinclair Refining Company dated 8/20/1936 recorded 8/24/1936 in Liber 3534 Page 183;
- Deed made by Atlantic Richfield Company to BP Oil Corporation dated 3/4/1969 recorded 10/14/1970 in Liber 6952 Page 678;

- Deed made by BP Oil Corporation to BP Oil Inc. dated 12/21/1973 recorded 7/18/1974 in Liber 7209 Page 180;
- Deed made by BP Oil Inc. to Northville Gasoline Corp. dated 10/5/1983 recorded 11/18/1983 in Liber 7878 Page 533; and
- Deed made by Northville Gasoline Corp. to Marianina Oil Corp. (Marianina) dated 6/24/1987 recorded 7/20/1987 in Liber 8893 Page 17.

A spill was reported on September 1, 2014. Marianina performed some investigation activities between 2014 to 2017 and eventually signed a 2021 Initial Consent Order with NYSDEC. In the interim, WPHA sued in Marianina in a civil action entitled *White Plains Housing Authority v. BP Products North America Inc., Marianina Oil Corp . & Atlantic Richfield Company*, Number 17-cv-6250 (S.D.N.Y.) ("Civil Case") under primarily a RCRA imminent and substantial endangerment claim because it had not yet addressed the contamination as of 2017. The case proceeded but in September 2020, Marianina filed for bankruptcy under Chapter XI of the Bankruptcy Code and the case moved into bankruptcy court. Marianina eventually entered into the 2021 Initial Consent Order, which included the requirement to implement the September 2012 HydroEnvironmental RAWP, which had been approved by the NYSDEC. However, Marianina did not have the financial resources to perform the remediation.

In early 2022, White Plains Hospital Medical Center (WP Hospital) entered into a Purchase And Sale Agreement (PSA) dated March 17, 2022 with Marianina, which was then subsequently approved by the bankruptcy court pursuant to the June 23, 2023 Stipulation of Settlement and Order. The PSA established a fund equal to \$1,250,000 from the Purchase Price to be held in escrow (the "Remediation Escrow") to fund the post-Closing implementation of the HydroEnvironmental September 2021 RAWP. WP Hospital, and 34 EPR, LLC an affiliate of WP Hospital, then agreed to step into the shoes of Marianina and assumed responsibility for the Amended Consent Order and HydroEnvironmental September 2021 RAWP. The Amended Consent Order requires WP Hospital or 34 EPR LLC to complete the cleanup required by the 2021 Initial Consent Order with the \$1,250,000 set aside from the bankruptcy proceeding within the Exhibit B Spill Remediation Boundary Map attached thereto. However, the Amended Order further states that if contamination extends beyond the footprint of the Exhibit B Spill Remediation Boundary Map, or contamination is found that is not related to this Spill on the WPHA property, or elsewhere, or if the Escrow money runs out before the full required remediation can be completed within the Exhibit B Spill Remediation Boundary Map then either:

- a. the Department shall undertake any remaining work for the cleanup pursuant to its authority under Navigation Law, which is subject to cost recovery or
- b. White Plains Hospital, 34 EPR LLC, or another entity may enter into an order or apply to the New York State Brownfield Cleanup Program as appropriate to finish the remaining work, including any off-site work required therein subject to access approval from any off-site property owner(s) at the time.

As of the date of this report, the 34 East Post Road portion of the Site is currently owned by 34 EPR, LLC, which is an affiliate of WP Hospital , and which will be the entity to implement the work described in this Revised RAWP.

## **2.5 Geologic and Hydrogeologic Conditions**

According to "A Guide to the Geology of Westchester County, New York" by Thomas McGuire (1997), the area of Westchester County containing the Site is in the Manhattan Prong region of the Hudson Highlands physiographic province. The higher ground in Westchester is composed of the Fordham Gneiss and the Manhattan Schist, both highly resistant to erosion. Inwood Marble underlies many of the valleys, including the Bronx River located approximately three-quarters of a mile to the west of the Site. The bedrock in the area of the Site have been dated to be of late Precambrian and early Paleozoic ages.

Based on borings performed during previous investigations, historic fill is present beneath the Site at varying thicknesses at depths to approximately 8 feet (ft) below ground surface (bgs). This historic fill consists of fine to coarse sand with varying amounts of silt, gravel and debris and fill material. Below 8 ft bgs dense, fine to coarse sand is encountered with varying amounts of silt, clay and gravel. Depth to refusal on-site ranged from 5 to 14.5 ft bgs

The Site and surrounding area consist of heavily developed urban land. The nearest body of water is the Bronx River, which is located approximately 2,170 feet northwest of the Site.

Groundwater flows to the north of the Site based on updated groundwater contours figures, and investigations performed by other consultants. During the field investigation activities performed for the Phase II ESA, groundwater was encountered at approximately 5 to 7.5 feet below ground surface (bgs). A map of updated groundwater contours is provided on Figure 4.

According to the U.S. Fish and Wildlife Service National Wetlands Inventory, the nearest wetlands are approximately 3,400 feet east of the Site.

There are no known public/private potable water supply wells, or irrigation or process water wells within 0.5-mile of the Site.

## **2.6 Contamination Conditions**

### **2.6.1 Conceptual Model of Site Contamination**

A conceptual site model (CSM) was developed based on the findings of the SRI and previous investigations to produce a framework for understanding the distribution of impacted soil, and groundwater, potential migration pathways, and potentially complete exposure pathways.

Based on review of historical documents, previous investigations and the above findings, the source of contamination within the Site is associated with the release and discharge from underground storage tanks (USTs) located on the Site. Release of the UST impacted subsurface soils and gasoline related impacts likely impacted groundwater leading to migration to off-site areas.

Based on the distribution, known on-site sources, and/or the nature and extent of contamination identified in the 2022 SRI and groundwater described above, gasoline related VOCs, SVOCs, TPH (GRO/DRO) analytes exceeding the NYSDEC CP-51 SCOs for gasoline impacted soils are considered to be Site contaminants of concern (COC). The NYSDEC CP-51 SCOs for gasoline impacted soils in place on date of Stipulation (June 23, 2023) and also listed in Table 1 of the Stipulation. Impacted media include soil and groundwater. Soil samples included detections of VOCs, SVOCs, TPH (GRO/DRO) in exceedances of the CP-51 SCOs.

## Receptor Population

The Site consists of a vacant, asphalt paved parking lot. The only structures remaining on the Site are the fueling canopy and sign post. Current receptor populations include staff completing inspections or investigations at the Site. During Site preparation, human receptors will be limited to construction and remediation workers, authorized guests visiting the Site. In the future, receptors will potentially include workers doing subsurface utility repairs at the Site. When the Site is eventually developed in what is intended to be a large parking garage that will span over additional adjacent properties, the use will remain commercial and the garage will likely be an open air garage.

### 2.6.2 Description of Area of Concern

In accordance with the Amended Consent Order and the Stipulation of Settlement and Order, the Exhibit B Spill Remediation Boundary Map encompasses the Site and extends to portions of the WPHA property to the northwest. The extent of this area is shown in Figure 3, which reflects the Amended Consent Order Exhibit B Spill Remediation Boundary Map. If areas of contamination are identified beyond the footprint of Figure 3, any required remediation would be subject to a separate Remediation Action Work Plan, which would likely be submitted with a Brownfield Cleanup Program Application per the terms in the Amended Consent Order.

Area of Concern (AOC-1) Current and Historical On- and Off-Site Impacts: Release(s) of petroleum products associated with historical on-Site fuel filling station operations have impacted subsurface soil and groundwater within the vicinity of AOC-1. The results of the 2022 SRI identified VOCs, SVOCs, and TPH (GRO/DRO) above the CP-51 SCOs.

### 2.6.3 Identification of Standards, Criteria, and Guidance

This RAWP was developed in accordance with the following standards, criteria and guidance as applicable:

- 6 NYCRR Part 372 – Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities
- 6 NYCRR Subpart 373-4 – Facility Standards for the Collection of Household Hazardous Waste and Hazardous Waste from Conditionally Exempt Small Quantity Generators
- 6 NYCRR Subpart 374-1 – Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
- 6 NYCRR Part 375 – Environmental Remediation Programs
- CP-43 – Commissioner Policy (CP) on Groundwater Monitoring Well Decommissioning (December 2009)
- CP-51 – Soil Cleanup Guidance (2010)
- DER-10 – Technical Guidance for Site Investigation and Remediation (May 3, 2010)
- DER-23 – Citizen Participation Handbook for Remedial Programs (March, 2010)

- TOGS 1.1.1 – Ambient Water Quality Standards & Guidance Values and Groundwater Effluent Limitations

#### **2.6.4 Soil Contamination**

Results of the soil samples collected during the 2022 SRI indicated detections of VOCs, SVOCs above the SGVs. The presence of petroleum-related VOCs in groundwater is attributed to the historical Site fuel filling station use.

Table 2 shows exceedances of CP-51 SCOs for gasoline impacted soil at the Site and Figures 5 and 7 shows locations of exceedances of CP-51 SCOs for gasoline impacted soil within the vicinity of the 34 East Post Road Resolution Agreement Extent.

#### **2.6.5 On-Site and Off-Site Groundwater Contamination**

Results of the groundwater samples collected during the 2022 SRI indicated detections of VOCs, SVOCs above the AWQG. The presence of petroleum-related VOCs in groundwater is attributed to the historical Site fuel filling station use.

Table 3 shows exceedances of the groundwater quality standards and Figures 6 and 8 shows locations of exceedances of groundwater within the Amended Consent Order Exhibit B Spill Remediation Boundary, which is also depicted in Figure 3.

### **2.7 Remedial Action Objectives**

Based on the results of the RI, the following Remedial Action Objectives have been identified:

#### **2.7.1 Soil**

RAOs for Public Health Protection:

- Prevent ingestion/direct contact with contaminated soil.
- 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 or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

#### **2.7.2 Groundwater**

RAOs for Public Health Protection:

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent dermal contact with contaminated groundwater.

RAOs for Environmental Protection:

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

### **2.7.3 Surface Water**

- There are no surface waters on the Site; therefore, RAOs for surface water are neither applicable nor relevant.

### **2.7.4 Soil Vapor**

RAOs for Public Health Protection:

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into off-site structures. There are no structures on-site.

### 3. REMEDIAL ACTION PLAN

This section presents the remedial action, in accordance with the Amended Consent Order and the Stipulation of Settlement and Order.

#### 3.1 Site Preparation Work, GRP Survey & Utility Clearance

Prior to any invasive work, there is some site preparation work needed on the WPHA portion of the Site including:

- Removal of approximately 8 trees between the Site and the WPHA property;
- Removal of a light pole and any other above-grade infrastructure;
- Relocation by WPHA and/or its waste disposal company of a waste dumpsters currently located in the WPHA Property boundary;
- Sampling and removal of a berm of soil; and
- Removal of asphalt associated with approximately 14 parking spaces to excavate the soil below these spaces.

In addition, the Stipulation of Settlement and Order requires 34 EPR to conduct a ground penetrating radar (“GPR”) survey to the west and north of the former Service Station. The GPR survey will be conducted by Ground Penetrating Radar Systems, Inc. (GPRS) of Toledo, Ohio and overseen by Woodard & Curran personnel to determine the actual location of the known underground fuel oil storage tanks (“USTs”) on WPHA’s property to the north and the location of underground utilities (such as sewer lines and electrical conduits) under the former Brookfield Street to the west of the Service Station. 34 EPR is not required to excavate within ten feet of the southernmost UST on WPHA’s property or within five feet of underground utilities located under the former Brookfield Street to the west. However, if there is remaining contamination beyond the footprint of these areas, Woodward & Curran will confer with NYSDEC to determine which party is responsible for such remaining contamination and/ or if it will be addressed in the BCP.

#### 3.2 UST Removal

If encountered, any on-site USTs and/or associated equipment would be decommissioned in accordance with applicable NYSDEC tank closure requirements. On-site USTs and/or associated fill equipment would be administratively closed with the NYSDEC Petroleum Bulk Storage (PBS) unit. Encountered USTs and petroleum-impacted soil will be excavated, stored in a segregated stockpile location, characterized, and disposed of off-site at a permitted disposal facility in accordance with applicable regulations. The location of the proposed stockpile is shown in Figure 9.

#### 3.3 Excavation of Subsurface Soils Within Remediation Extent

In accordance with the Amended Consent Order and the Stipulation of Settlement and Order, excavation will occur within the boundary of Figure 3 to the extent required to achieve the CP-51 SCOs for gasoline contaminated soils in place on date of Stipulation (June 23, 2023) and listed in Table 1 of the Stipulation. The extent of excavation is an irregular shape, which extends across the Site and to the north in the WPHA Building 33 parking lot. The planned soil excavation is expected to remove approximately 4,600 cubic yards (cu yd) of contaminated soil to a depth of approximately 8 ft bgs.

The total quantity of soil/fill expected to be excavated and disposed off-Site is approximately 4,600 cu yd or approximately 6,440 tons.

### **3.4 Dewatering**

To the extent that Light Non-Aqueous Phase Liquid (LNAPL) is encountered in groundwater in the excavation, and to the extent that groundwater encountered in the excavation emits an odor of petroleum or has a visible sheen, the groundwater will be pumped into frac tanks for treatment and off-site disposal. Any water to be pumped to dewater all excavations to facilitate digging below the water table will be pumped into frac tanks for characterization and off-site disposal.

### **3.5 Backfill and Amendment**

Backfill activities will be completed at the end of the excavation and collection of post-excavation soil sampling; or sequentially along with excavation. In consultation with the excavation subcontractor, portions of the excavation may likely be backfilled as work progresses to ensure safety of workers and equipment and facilitate access around the work area.

Prior to backfilling the excavation, a demarcation layer (snow fence) will be installed to serve as a physical separation between soils that will remain in place and the excavation limits. The excavated area will then be backfilled with imported certified clean fill material, which will meet the requirements of allowable constituent levels for imported fill or soil. Backfill will be compacted in a manner that is consistent with the needs of final Site restoration.

Along with imported fill material, petroleum hydrocarbon remediation amendments (i.e., PetroFix, or equivalent) will also be incorporated into the excavation bottom backfill in the saturated or capillary zone. The amendment will serve as an excavation polishing step for future treatment of groundwater that may still contain residual petroleum hydrocarbons.

PetroFix, manufactured by Regenesys Remediation Solutions, is a unique colloidal activated carbon remedial fluid (carbon milled to a diameter of 1 to 2 micrometers) paired with a blend of nitrate and sulfate electron acceptors to enhance the biostimulation of an anaerobic microorganism that degrades petroleum hydrocarbon contaminants. The colloidal carbon rapidly sorbs hydrocarbons out of the dissolved phase and creates a thriving environment for the microbes to readily access and degrade the hydrocarbons sorbed to the carbon. The permanent nature of the colloidal carbon allows the PetroFix to remain in the subsurface, sorbing hydrocarbons, and preventing rebound of hydrocarbons from surrounding soil and groundwater if present. Additionally, as microbes degrade the hydrocarbons off the carbon, the carbon is regenerated, opening sorption sites for further influx of hydrocarbons.

The PetroFix design dose is based on blending PetroFix in the top one to two feet and bottom one to two feet of backfill above the demarcation layer as needed based on field observations, using the excavator bucket. If needed, potable water will be added to the PetroFix before it is applied to the excavation bottom, to help with the thorough mixing of the amendment. If water is present in the excavation, additional water may not be added to the PetroFix before application. The final procedure will be field determined to ensure optimum mixing in the excavation bottom, and before backfilling of the excavation to grade is completed.

The total mass of PetroFix will be determined based on the size of the excavation and will be applied at a rate of one pound of PetroFix per cubic foot of soil. This design dose was recommended by the manufacturer.

### **3.6 Off-Site Groundwater Impacts**

The source of soil contamination off-Site within the defined area of excavation will be excavated to achieve the CP-51 SCOs, which should reduce off-Site groundwater impacts. As stated above, PetroFix will be added into the bottom of the excavation planned on the WPHA portion of the Site to further reduce off-Site groundwater impacts. Municipal water supply wells are not present on the Site or in this area of the City of White Plains; therefore, groundwater from the Site would not affect municipal water supply wells.

### **3.7 Post-Remediation**

#### **3.7.1 Monitoring Well Reinstallation**

After the implementation of RA, any groundwater monitoring wells impacted by the remedial activities will be reinstalled in the location in which it exists prior to remedial activities. Groundwater monitoring wells installed will be developed and gauged to ensure adequate hydraulic connection and removal of any drilling materials and fluids.

#### **3.7.2 Groundwater Monitoring**

After the implementation of the RA, post-remediation groundwater monitoring will be performed in the remaining on-Site monitoring well to monitor the impact of the RA on residual groundwater contamination. At least two rounds of post-remediation groundwater monitoring will be conducted.

### **3.8 Proximity to Floodplains**

According to the Federal Emergency Management Agency (FEMA) Flood Map Service Center (Map Number 36119C0269F, dated September 28, 2007), the Site is located in Zone X, which is determined to be outside of the 0.2% annual chance floodplain. The Site lies approximately 2,500 feet east from the nearest floodplain.

### **3.9 Summary of Selected Remedial Actions**

Remedial actions to be conducted, in accordance with the Amended Consent Order, include UST closure and removal, excavation of subsurface within the confines of the Exhibit B Spill Remediation Boundary Map to meet the CP-51 SCOs for gasoline impacted SCO in place on date of Stipulation (June 23, 2023) and listed on Table 1 of Stipulation and backfill with certified clean fill and the petroleum backfill reagent. Groundwater encountered in the remedial excavation will be removed and treated before discharge.

Supplemental remedial strategies may be implemented pending soil removal. Woodard & Curran plans to communicate with NYSDEC and stakeholders accordingly.

### **3.10 Spill Closure Report**

At the completion of the RA, a Spill Closure report will be prepared summarizing the CP-51 SCO objectives achieved and which will include post-RA groundwater monitoring results showing to consecutive

groundwater contaminant reduction trends with the goal of achieving a Certificate of Completion or No Further Action Letter as appropriate.

## 4. REMEDIAL ACTION PROGRAM

### 4.1 Governing Documents

This RAWP was prepared in accordance with the NYSDEC Division of Environmental Remediation's Technical Guidance for Site Investigation and Remediation dated May 2010 (DER-10), and in response to the Amended Consent Order, and the Stipulation of Settlement and Order. A copy of the Amended Consent Order is provided in Appendix B.

### 4.2 Standards, Criteria and Guidance (SCGs)

- Soil: CP-51 – Soil Cleanup Levels for Gasoline Contaminated Soils and Soil Cleanup Levels for Fuel Oil Contaminated Soil in place on date of Stipulation (June 23, 2023; Table 1 of Stipulation); and
- Groundwater: 6 NYCRR 703.5 - Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards (AWQS).

### 4.3 Site Specific Health & Safety Plan

All RA activities will be conducted in accordance with a Site-Specific Health and Safety Plan (HASP). The HASP will be compliant with the requirements of the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations (Standard 1910.120). A copy of the site-specific HASP is provided as an attachment in Appendix C.

### 4.4 Project Organization

The anticipated project team for the RA is as follows:

- **Dan Bendell** – NYSDEC Project Manager
- **Michael van der Heijden, LSRP** – Program Director – Woodard & Curran
- **Lucas Hellerich, PhD, P.E., LEP** – New York State Professional Engineer – Woodard & Curran
- **Derek Matuszewski, PG** - New York State Professional Geologist - Woodard & Curran
- **Evan Trumpatori** – Senior Project Manager – Woodard & Curran
- **Trevor King, P.E.** – Technical Advisor and Remediation Engineer – Woodard & Curran
- **Lauren Hammill** – Technical Manager – Woodard & Curran
- **John Pellegrini** – Geologist – Woodard & Curran
- **Stephanie Rogacki** – Environmental Scientist – Woodard & Curran
- **Joanna Wallace** – Site Safety Coordinator – Woodard & Curran

### 4.5 Work Hours

The hours for operation of the cleanup work will comply with the City of White Plains construction code requirements and a site access agreement entered into between WPHA and 34 EPR. The hours of operation will be conveyed to NYSDEC during the pre-construction meeting.

#### **4.6 Construction Health and Safety Plan**

The Health and Safety Plan is included in Appendix C. The Site Safety Coordinator will be Joanna Wallace. Remedial work performed under this RAWP will be in full compliance with applicable health and safety laws and regulations, including Site and OSHA worker safety requirements and HAZWOPER requirements. Confined space entry, if any, will comply with OSHA requirements and industry standards and will address potential risks. The parties performing the remedial construction work will ensure that performance of work is in compliance with the HASP and applicable laws and regulations. The HASP pertains to remedial and invasive work performed at the Site until the issuance of the Notice of Completion.

All field personnel involved in remedial activities (RA) will participate in training required under 29 CFR 1910.120, such as 40-hour hazardous waste operator training and annual 8-hour refresher training. Site Safety Officer will be responsible for maintaining workers training records.

Personnel entering any exclusion zone will be trained in the provisions of the HASP and will comply with all requirements of 29 CFR 1910.120. Site-specific training will be provided to field personnel. Additional safety training may be added depending on the tasks performed. Emergency telephone numbers will be posted at the site location before any remedial work begins. A safety meeting will be conducted before each shift begins. Topics to be discussed include task hazards and protective measures (physical, chemical, environmental); emergency procedures; PPE levels and other relevant safety topics. Meetings will be documented in a logbook or specific form.

#### **4.7 Site Security**

Site access will be controlled by gated entrances to the fenced property.

#### **4.8 Traffic Control**

Drivers of trucks leaving the Site with soil/fill will be instructed to proceed without stopping in the vicinity of the Site to prevent neighborhood impacts. The ingress/egress to local roads for trucks entering/leaving the Site is shown on Figure 9.

#### **4.9 Contingency Plan**

Damage from flooding or strong precipitation events can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of support of excavation structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety structures and cause downed power lines creating dangerous site conditions and loss of power. The contractor will monitor weather conditions and stop work if the conditions become dangerous. The NYSDEC will be notified if work is stopped for weather conditions. All soil stockpiles will be covered at the end of each workday with polyethylene sheeting and secured.

#### **4.10 Worker Training and Monitoring**

Workers participating in cleanup of contaminated material on this project are required to be trained in a 40-hour hazardous waste operators training course and to take annual refresher training. This pertains to workers performing specific tasks including removing contaminated material and installing cleanup systems in contaminated areas.

#### **4.11 Agency Approvals**

All permits or government approvals required for remedial construction have been or will be obtained prior to the start of the RA (i.e., excavation activities). Approval of this RAWP by NYSDEC does not constitute satisfaction of these requirements and will not be a substitute for any required permit.

#### **4.12 Pre-Construction Meeting with NYSDEC**

NYSDEC will be invited to attend the pre-construction meeting at the Site with all parties involved in the remedial process prior to the start of remedial construction activities.

#### **4.13 Emergency Contact Information**

Emergency contact information of the project personnel is provided in the HASP (Appendix C). A copy of the HASP will be present on Site throughout the duration of the RA.

#### **4.14 Site Preparation**

##### **4.14.1 Mobilization**

Mobilization will be conducted as necessary for each phase of work at the Site. Mobilization includes the following: subcontractors and field personnel orientation, equipment mobilization (including securing all sampling equipment needed for the field investigation), marking/staking excavation limits and utility mark-outs and a video survey to record site conditions. Each field team member will attend an orientation meeting to become familiar with the general operation of the Site, health and safety requirements, and field procedures.

##### **4.14.2 Monitoring Well Decommissioning**

Monitoring wells on-site and in the vicinity of the Exhibit B Spill Remediation Boundary Map are not expected to be decommissioned prior to excavation or during Site preparation activities. During ongoing excavation, if a well is required to be abandoned or decommissioned, Woodard & Curran will do so in accordance with CP-43 and DER-10; and report promptly to the NYSDEC project manager.

##### **4.14.3 Stabilized Construction Entrance(s)**

Steps will be taken to ensure that trucks departing the Site will not track soil, fill or debris off-site. Such actions may include use of cleaned asphalt or concrete pads or use of stone or other aggregate-based egress paths between the truck inspection station and the property exit. Measures will be taken to ensure that adjacent roadways will be kept clean of project related soils, fill and debris.

##### **4.14.4 Utility Marker and Easements Layout**

The presence of utilities and easements on the Site will be fully investigated prior to the performance of invasive work such as excavation this plan by using, at a minimum, the One-Call System (811). Underground utilities may pose electrocution, explosion, or other hazard during excavation.

Utility companies and other responsible authorities will be contacted to locate and mark the locations, and a copy of the Mark-Out Ticket will be retained by the contractor prior to the start of drilling, excavation or other invasive subsurface operations. Overhead utilities may also be present within the anticipated work

zones. Electrical hazards associated with drilling in the vicinity of overhead utilities will be prevented by maintaining a safe distance between overhead power lines and drill rig masts.

Proper safety and protective measures pertaining to utilities and easements, and compliance with all laws and regulations will be employed during invasive and other work contemplated under this RAWP. The integrity and safety of on-Site and off-Site structures will be maintained during all invasive, excavation or other remedial activity performed under the RAWP.

#### **4.14.5 Equipment and Material Staging**

Equipment and materials will be stored and staged in a manner that complies with applicable laws and regulations.

#### **4.14.6 Berm Removal and Reuse**

**4.14.7 In conjunction with site preparation activities, Woodard & Curran is conducting the removal of a small berm located at the northern boundary of the Site (Figure 9). Woodard & Curran does not anticipate stabilization of the berm. Materials removed from the berm area will be staged separately and are anticipated to be reused as backfill material after remediation activities and excavation as a part of site restoration activities.**

**Site Fencing**  
The Site property, in addition to areas of remedial activity, will be fenced off including the remediation areas on the WPHA property. The perimeter fence to be constructed will not impede access to the heating oil UST on WPHA property. Implementation of proposed remedial action will not interfere with access to and use of Brookfield Street, however there may be brief times where access is impeded.

#### **4.14.8 Decontamination Area**

All equipment and vehicles within the Site limits of construction and utilized for remedial activities will be decontaminated prior to exiting the Site. A decontamination area will be designated and will include high-pressure water, steam cleaner, plastic tubs with Alconox wash, and potable rinse water.

Sample equipment decontamination procedures are detailed in Section 5.4. Personnel decontamination procedures are detailed in the HASP (Appendix C).

#### **4.14.9 Demobilization**

Demobilization will include:

- As necessary, restoration of temporary access areas and areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management areas, and access area);
- Removal of sediment from erosion control measures and truck wash and disposal of materials in accordance with applicable laws and regulations;
- Removal of decontamination equipment, and;
- General refuse disposal.

Equipment will be decontaminated and demobilized at the completion of all field activities. Investigation equipment and large equipment (e.g., soil excavators) will be washed at the truck inspection station as necessary. In addition, all investigation and remediation derived waste will be appropriately disposed.

#### **4.15 Site Restoration**

The WPHA parcel will be restored similar to its original condition and that this includes, at a minimum, laying of asphalt, painting stripes of parking spaces, installing curb blocks if any are removed, reinstalling fencing that may need to be removed, seeding grass, and relocating dumpsters that were removed.

#### **4.16 Reporting**

Daily reports providing a general summary of activities for each day of active remedial work will be emailed to the NYSDEC Project Manager by the end of the following business day. Those reports will include:

- Project number and statement of the activities and an update of progress made and locations of excavation and other remedial work performed;
- Quantities of material imported and exported from the Site;
- Status of on-Site soil/fill stockpiles;
- A summary of all citizen complaints, with relevant details (basis of complaint; actions taken; etc.);
- A summary of CAMP results noting all excursions. CAMP data may be reported; and
- Photograph of notable Site conditions and activities.

The frequency of the reporting period may be revised in consultation with NYSDEC Project Manager based on planned project tasks. Daily email reports are not intended to be the primary mode of communication for notification to NYSDEC of emergencies (accidents, spills), requests for changes to the RAWP or other sensitive or time critical information. However, such information will be included in the daily reports. Emergency conditions and changes to the RAWP will be communicated directly to the DEC project manager by personal communication. Daily reports will be included as an Appendix in the future Remedial Action Report (RAR).

#### **4.17 Complaint Management Plan**

All complaints from citizens will be promptly reported to the NYSDEC Project Manager. Complaints will be addressed and outcomes will also be reported to the NYSDEC Project Manager in daily reports. Notices to NYSDEC will include the nature of the complaint, the party providing the complaint, and the actions taken to resolve any problems.

#### **4.18 Deviations from the Remedial Action Work Plan**

All changes to the approved RAWP will be reported to, and approved by, the NYSDEC Project Manager and will be documented in daily reports and reported in the RAR. The process to be followed if there are any deviations from the RAWP will include a request for approval for the change from NYSDEC noting the following:

- Reasons for deviating from the approved RAWP;
- Effect of the deviations on overall remedy and schedule; and
- Determination with basis that the remedial action with the deviation(s) is protective of public health and the environment.

## 5. QUALITY ASSURANCE PROJECT PLAN (QAPP)

The purpose of this Quality Assurance Project Plan (QAPP) is to ensure that scientific data is acquired according to established methods and procedures designed to obtain results that are objective, true, repeatable and of known accuracy. Specifically, this QAPP provides guidance and specifications to ensure that activities associated with the proposed RA activities at the Site are planned and executed in a manner consistent with the quality assurance objectives stated below:

- Field determinations and analytical results are valid through adherence to NYSDEC field acquisition procedures, NYSDEC-approved analytical protocol, calibration and preventative maintenance of equipment;
- Samples are identified and controlled through chain-of-custody procedures;
- Records are retained as documentary evidence of field activities and observations;
- Generated data are validated in accordance with respective NYSDEC data validation guidelines; and
- Evaluations of the data are accurate, appropriate, and consistent throughout the project.

The content of this QAPP is based on the NYSDEC requirements as stated in NYSDEC DER-10. This QAPP includes discussion of the following:

- Data Quality Objectives;
- Project Organization;
- Sample Acquisition and Field Data Collection Procedures;
- Decontamination Procedures;
- Waste Management;
- Field Data and Notes;
- Field Instrument Calibration and Maintenance;
- Sample Analysis and Laboratory Deliverable Format;
- Sample Quality Assurance; and
- Quality Control Procedures.

### 5.1 Data Quality Objectives

The overall objective of the RA is to gather supplemental information to select a remedial alternative and refine the remedial design to address subsurface soil and groundwater contamination. The proposed Data Quality Objectives (DQO) are as follows:

- DQO1 – Refine, through laboratory analysis and high-resolution excavation confirmation, the extent of subsurface soil contamination requiring remediation and collect data to support requirements of the resolution agreement.

## 5.2 Project Organization

The Professional Engineer (PE) and Qualified Environmental Professional (QEP) for this project are Lucas Hellerich and Michael van der Heijden, respectively. Principal personnel who will participate in the RA (i.e., excavation and site restoration) include Trevor King, Evan Trumpatori, Stephanie Rogacki, John Pellegrini and Derek Matuszewski.

The New York Certified analytical laboratory will be Pace Analytical Services of Westborough, Massachusetts, a NYSDEC-certified laboratory.

## 5.3 Sample Acquisition and Field Data Collection Procedures

Sampling will be conducted in accordance with established NYSDEC and USEPA protocols. Groundwater samples will be collected from permanent and/or temporary monitoring wells utilizing the USEPA low-flow methodology. Soil samples will be collected with appropriate instrumentation and data collection equipment.

## 5.4 Decontamination Procedures

Drilling and other sampling equipment will be decontaminated prior to collecting the first sample, between samples, and after the final sample. Prior to decontamination, a decontamination line will be set up on polyethylene sheeting. The decontamination line will progress from "dirty" to "clean", with an area for drying decontaminated equipment. Once the decontamination line is established, the following decontamination procedures will be implemented:

- Flush and rinse the equipment with potable water;
- Wash the item thoroughly in a bucket of soapy water (tap water) and use a stiff-bristle brush to dislodge any clinging dirt;
- Rinse the item in a bucket containing clear tap water and replace water as needed;
- Flush and rinse with distilled or deionized water and allow to air dry;
- Containerize decontamination fluids pending subsequent collection and analysis of waste characterization samples; and
- Document that decontamination was performed in the appropriate logbook or sample sheet.

## 5.5 Field Data and Notes

Field notebooks contain documentary evidence for procedures as performed by field personnel. Hard cover, bound field notebooks will be used because of their compact size, durability and secure page binding. The pages of the notebook will be numbered consecutively and will not be removed.

Entries will be made in waterproof, indelible ink. No erasures will be allowed. If an incorrect entry is made, the information will be crossed out with a single strike mark and the change initialed and dated by the team member making the change.

Each entry will be dated. Entries will be legible and contain accurate and complete documentation of the individual or sampling team's activities or observations made. The level of detail will be sufficient to explain and reconstruct the activity conducted. Each entry will be signed by the person(s) making the entry.

The following types of information will be provided for each sampling task, as appropriate:

- Project name and number;
- Reasons for being on-site or taking the sample;
- Date and time of activity;
- Sample identification number;
- Geographical location of the sampling point with reference to Site (or other) facilities or a map coordinate system. Sketches will be made in the field logbook when appropriate;
- Physical location of the sampling point, such as depth below ground surface;
- Description of the method of sampling including procedures followed, equipment used, and any departure from the specified procedures;
- Description of the sample such as physical characteristics, odor, etc.;
- Results of field measurements such as organic vapors, etc.;
- Readings obtained from health and safety equipment;
- Weather conditions at the time of sampling and previous meteorological events that may affect the representative nature of a sample;
- Photographic information including a brief description of what was photographed, the date and time, and the compass direction of the picture;
- Reference numbers from all serialized forms on which the sample is listed or labels which are attached to the sample (i.e., chain-of-custody forms, air bill numbers, etc.);
- Other pertinent observations such as the presence of other persons on the Site (those associated with the job, tenant personnel, other contractors), actions by others that may affect performance of Site tasks, etc.; and
- Names of sampling personnel and signature of persons making entries.

## **5.6 Field Instrument Calibration and Maintenance**

On-site field calibration activities will include the use of calibration standards and field equipment checks, as appropriate, for the equipment being used, including but not limited to a photoionization detector (PID) and water quality meter. Field calibration and/or checking of each instrument will be accomplished by following the procedures outlined in the operating manual for the equipment. At a minimum, field calibration will occur daily, prior to the initiation of sampling activities. Field calibration will be documented in the field notebook.

Equipment that fails calibration or becomes inoperable during use will be removed from service and segregated to prevent inadvertent use. The equipment will be properly tagged to indicate that it is out of calibration. Such equipment will be repaired and recalibrated to approved standards by qualified personnel. Equipment that cannot be repaired will be replaced.

Results of activities performed using field equipment that failed recalibration will be evaluated by the Project Manager or designee. If the activity results are adversely affected, the results of the evaluation will be documented, appropriate personnel notified, and a decision made as to the validity of the results.

Off-site calibration and maintenance of field instruments will be conducted as appropriate throughout the duration of project activities. All field instrumentation, sampling equipment, and accessories will be maintained in accordance with the manufacturer's recommendations and specifications and established field equipment practice. Off-site calibration and maintenance will be performed by qualified personnel.

## **5.7 Sample Analysis**

Samples collected during implementation of the RA will be analyzed by a laboratory certified under the New York State Department of Health's ELAP and approved for solid and hazardous waste. The analytical data measurements will be of sufficient sensitivity to accurately quantify the laboratory results to concentrations at, or below, the NYSDEC Part 375 Soil Cleanup Objectives (SCOs). Sample Quality Assurance

## **5.8 Sample Labeling**

Each sample collected will be assigned a unique identification number and placed in an appropriate sample container. Each sample container will have a sample label affixed to the outside with the date, time of sample collection and project name. In addition, this label will contain the sample identification number, analysis required and chemical preservatives, if any.

## **5.9 Sample Handling**

The analytical laboratory will provide pre-cleaned and prepared sample containers to collect samples for all matrices. The laboratory will also prepare and supply the required field blank sample containers, reagent preservatives, and trip blank sample containers according to the media to be sampled. Sample bottle containers, including the field blank and trip blank sample containers will be placed into coolers to be sent to the field sampling team.

Samples collected in the field for laboratory analysis will be placed directly into the laboratory-supplied sample containers. Individual sample containers will be sealed by hand-tightening container lids.

Possession of samples collected in the field will be traceable from the time of collection until they are analyzed by the analytical laboratory or disposed. To maintain and document sample possession, chain-of-custody procedures as described in Section 4.2.2.12 will be followed. Samples will be packaged and shipped as described in Section 4.2.2.13.

## **5.10 Sample Preservation**

Sample preservation measures will be used to mitigate sample decomposition by contamination, degradation, biological transformation, chemical interactions, and other factors during the time between sample collection and analysis. Steps taken to maintain in-situ characteristics may include refrigeration of samples at approximately 4 degrees Celsius (°C), freezing, pH adjustment, and/or chemical fixation. Samples are preserved according to the requirements of the specific analytical method selected.

The analytical laboratory will add the required preservatives to the appropriate sample containers during preparation of the containers.

### **5.11 Chain-of-Custody Procedures**

A program has been established for sample chain-of-custody that will be followed during sample handling activities in both field and laboratory operations. The primary purpose of chain-of-custody procedures is to document the possession of the samples from collection through shipping, storage, and analysis to data reporting and disposal.

Chain-of-custody refers to the actual possession of the samples. Samples are considered to be in custody if they are within sight of the individual responsible for their security or locked in a secure location by that person. Each person who takes possession of the samples, except the shipping courier, is responsible for sample integrity and safekeeping.

Chain-of-custody procedures are provided below:

- Chain-of-custody will be initiated by the laboratory supplying the pre-cleaned and prepared sample containers. Chain-of-custody forms will accompany the sample containers;
- At the time of sample collection, the chain-of-custody form will be completed for the sample collected. The sample identification number, date and time of sample collection, analysis requested and other pertinent information (e.g., preservatives) will be recorded on the form. All entries will be made in waterproof, indelible blue or black ink;
- Field samplers will be responsible for the care and custody of the samples collected until the samples are transferred to another party, dispatched to the laboratory, or disposed. The sampling team leader will be responsible for enforcing chain-of-custody procedures during field work;
- When the form is full or when all samples have been collected that will fit in a single cooler, the sampling team leader will check the form for possible errors and sign the chain-of-custody form. Any necessary corrections will be made to the record with a single strike mark, dated, and initialed; and
- A copy of the chain-of-custody form will be retained by the sampling team for the project file and the original will be sent with the samples.

When transferring custody of the samples, the individuals relinquishing and receiving custody of the samples will verify sample numbers and condition and will document the sample acquisition and transfer by signing and dating the chain-of-custody form. This process documents sample custody transfers from the sampler, usually through an express courier, to the analyst in the analytical laboratory.

The analytical laboratory will return the original chain-of-custody in the analytical data deliverable package. The chain-of-custody form becomes the permanent record of sample handling and shipment.

### **5.12 Sample Shipment**

Samples requiring shipment will be packaged and shipped as environmental samples in accordance with applicable federal and state regulations. Special declarations of type of samples and media will be made on the shipping label.

### **5.13 Packaging**

Sample containers and associated blanks will be packed in coolers with appropriate packaging material to minimize breakage and packed with ice in plastic bags and/or ice packs to maintain a temperature of approximately 4°C during transit. Paperwork will be put in a plastic bag and placed on top of the sample containers/ice or taped to the inside lid of the cooler. The cooler will be taped closed. Laboratory address labels will be placed on top of the cooler, and the cooler will be placed in transit to be received at the laboratory within 24 hours of shipment from the field.

### **5.14 Shipping**

Standard procedures to be followed for shipping environmental samples to the analytical laboratory are outlined below.

- All environmental samples collected will be transported to the laboratory by field personnel, by laboratory personnel, by courier, or shipped by overnight service;
- Daily shipments will be sent whenever necessary to meet holding time requirements; and
- The laboratory will be notified to be prepared to receive a shipment of samples. If the number, type, or date of shipment changes due to Site constraints or program changes, the laboratory will be informed.

### **5.15 Sample Storage**

Once samples are transported to the laboratory, custodial responsibility of the samples is transferred to the Laboratory Sample Manager to assure that the appropriate procedures and methods are followed.

### **5.16 Quality Control Procedures**

Sample quality control consists of those activities specifically conducted to ensure that the quality assurance program described in this QAPP is being implemented according to the specified requirements, to assess the effectiveness of the sample quality assurance program, to identify non-conformances, and to verify that any identified deficiencies are corrected. If any significant deviations from the quality assurance program are documented, corrective measure(s) will be immediately implemented and documented. Sample quality control will consist of data and technical review as described below.

### **5.17 Technical Review**

The reduction and analysis of data obtained through the sampling program along with the conclusions/recommendations reached based on these data will be reviewed to ensure the quality of the data and the validity of the conclusions/recommendations.

To ensure accurate transfer of laboratory data, the accuracy of electronic copies of analytical data provided by the laboratory will be verified by manually checking a minimum of ten percent of the sample data of the hard copy laboratory data package(s). Similarly, data that are reduced into tables and/or electronically reformatted to facilitate data evaluation (e.g., data summary tables highlighting exceedances of cleanup standards) will be verified by manually checking a minimum of ten percent of the sample data. If inaccuracies are detected, additional data will be checked, and appropriate corrective actions will be taken.

Conclusions and/or recommendations will be reviewed by one or more peers of the professional who develops the conclusion/recommendation to ensure their accuracy on the basis of the data that have been acquired and the analyses that have been conducted. Technical reviews will be performed by professionals who have the necessary knowledge and skill to perform the review.

## 6. COMMUNITY AIR MONITORING PLAN

### 6.1 Monitoring Controls

Real-time air monitoring for particulate levels and/or VOCs at the perimeter of the exclusion zone or work area will be necessary when conducting the RA. VOC and particulate monitoring will be conducted with a RA and a Dust Monitor, respectively.

### 6.2 Continuous Monitoring

Continuous monitoring for dust and VOCs will be required for all ground intrusive activities. Ground intrusive activities for this project primarily include soil boring advancement and soil sampling.

### 6.3 Periodic Monitoring

Periodic monitoring for VOCs will be completed during non-intrusive activities such as the collection of soil and/or the gauging and sampling of monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be completed during sampling activities.

### 6.4 VOC Monitoring, Response Levels and Actions

VOCs will be monitored at the downwind perimeter of the immediate work area (the exclusion zone) on a continuous basis. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work will be performed with a PID. The equipment will be calibrated daily and will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. 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 will 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.
2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shut down and a re-evaluation of activities and mitigation measures will be initiated.

4. All 15-minute readings will be recorded and be available for State (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded in field notes.

## 6.5 Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter (PM) less than 10 microns ( $\mu\text{m}$ ) in size (PM10) and will be capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. Readings will be compared to the levels specified below.

1. If the downwind PM10 particulate level is 100 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind PM10 particulate levels do not exceed  $150 \mu\text{g}/\text{m}^3$  above the upwind level and provided that no visible dust is migrating from the work area.
2. If, after implementation of dust suppression techniques, downwind PM10 particulate levels are greater than  $150 \mu\text{g}/\text{m}^3$  above the upwind level, work will 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 PM10 particulate concentration to within  $150 \mu\text{g}/\text{m}^3$  of the upwind level and in preventing visible dust migration.
3. All readings will be recorded and be available for State (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded in field notes.

## 7. REMEDIAL ACTION IMPLEMENTATION

### 7.1 Remedial Action Objectives

The goal of this RAWP is to address the contaminated impacts to the subsurface within the Amended Consent Order Exhibit B Spill Remediation Boundary Map and to meet the CP-51 SCOs, remove any contaminated groundwater encountered in the excavation and then perform bioremediation with PetroFix, which will reduce groundwater contamination over time.

### 7.2 Remedial Performance Evaluation

End-point samples will be collected and analyzed for compounds and elements as described below utilizing the following methodology:

- Volatile organic compounds by EPA Method 8260;
- Semi-volatile organic compounds by EPA Method 8270; and
- TPH (DRO/GRO).

New York State Environmental Laboratory Accreditation Program (ELAP) certified labs will be used for all end-point sample analyses. Labs performing endpoint sample analyses will be reported in the RAR. The RAR will provide a tabular and map summary of all end-point sample results and will include all data including non-detects and applicable standards and/or guidance values.

#### 7.2.1 End-Point Sampling Frequency

##### 7.2.1.1 Methodology

End-point samples will be collected from the sidewalls and the bottom of the remediation boundary defined in the Amended Order on Consent in accordance with the DER-10 specifications. End-point samples will be analyzed for gasoline related compounds and compared to the CP-51 SCOs. End-point samples will be collected at the following frequency:

- at least one surface sample, in accordance with subdivision DER-10 3.5.1(b), per 900 square feet of surface area to characterize soils below a storage or staging area up to 300 feet in perimeter:
  - i. For sampling of volatile organics, bottom samples should be taken within 24 hours of excavation and should be taken from the zero to six-inch interval at the excavation floor. Samples taken after 24 hours should be taken at six to twelve inches.
  - ii. For contaminated soil removal, post remediation soil samples for laboratory analysis should be taken immediately after contaminated soil removal. If the excavation is enlarged horizontally, additional soil samples will be taken pursuant to bullet above.

Post-remediation end-point sample locations and depths will be biased towards the areas and depths of highest contamination identified during previous sampling episodes unless field observations, such as field instrument measurements or visual contamination identified during the remedial action, indicate that other locations and depths may be more heavily contaminated.

### **7.2.2 Reporting of Results**

A Spill Closure Report, will be submitted following the implementation of the RAWP, and will incorporate the results and components of the approved RAWP.

### **7.3 Estimated Material Removal Quantities**

The estimated quantity of soil to be exported from the Site is 4,600 cubic yards. The Spill Remediation Boundary Map shown on Figure 9.

## 8. SOIL/ MATERIALS MANAGEMENT PLAN

All remedial activities will be conducted in accordance with a Site-Specific Materials Management Plan. The following provides a brief summary of the materials management controls to be implemented during the course of the remedial activities:

### 8.1 Temporary Site Fencing

Temporary construction fencing will be installed along the perimeter of the Amended Consent Order Exhibit B and the Spill Remediation Boundary Map shown in Figure 9. The Site will be secured along the northern, eastern and western perimeter. Ingress and egress points will be barriered during work hours and securely locked during off hours with appropriate signage maintained by the contractor.

### 8.2 Soil Screening Methods

Visual and instrumental soil screening (photoionization detection) assessments will be performed during remediation and development-related ground intrusive activities into known or potentially contaminated material, if applicable.

### 8.3 Stockpiles

Stockpiles may be required to stage excavated material pending loading or waste characterization sampling. Additional stockpile areas will be constructed as necessary to avoid comingling materials and cross contamination. Stockpile areas will be located within the Site as shown on Figure 9 and will meet the following requirements:

- Excavated soil will be placed on minimum thickness of 6millimeter low-permeability liner of sufficient strength and thickness to prevent puncture during use; separate stockpiles will be created for different material types.
- Placement and removal of soil in a manner to minimize the potential of compromising the integrity of the liner.
- Stockpiles will be covered with a minimum of 6-millimeter plastic sheeting or tarps, which will be securely anchored to the ground. Stockpiles will be covered at the end of each workday.
- Each stockpile perimeter will be reinforced with sedimentation barriers, siltation fences, temporary mulch, sandbags, temporary water diversion barriers/flood protection measures and hay or straw bales, as needed, to contain and filter particulates from rainwater that has drained off the soils and to mitigate the potential for surface water run-off.
- Inspections of the stockpiles will be conducted once daily and after every storm event.

Stockpiling of hazardous waste on Site is not anticipated and will not be performed without notification to USEPA and NYSDEC.

### 8.4 Materials Load Out and Transport

Field personnel will monitor ground-intrusive work, the excavation and load-out of excavated material.

Loaded trucks leaving the Site will be appropriately lined, securely covered, manifested, and placarded in accordance with the applicable federal, state, and local requirements, including applicable transportation requirements (i.e., New York State Department of Transportation [NYSDOT] and NYCDOT requirements). Trucks hauling historic fill material will not be lined unless required based on waste characterization results. Trucks hauling hazardous or TSCA material will be lined and covered. Hazardous wastes derived from the Site will be stored, transported, and disposed of in compliance with applicable local, state, and federal regulations.

A truck pad/ truck wash will be operated on Site. Trucks will be washed before leaving the Site. Ingress and egress points will be cleaned of dirt and other materials to prevent material generated during RA activities from being carried off-site. The proposed Site entrance and truck wash location is shown on Figure 9.

### **8.5 Materials Disposal Off-Site**

Soil excavated during the implementation of the RA will require off-site disposal at an appropriately permitted disposal facility. A disposal facility has not been determined at the time of the submission of this RBCP, however, the identified facility will be provided to the USEPA and NYSDEC Project Manager prior to the initial off-site transport and disposal of material.

Upon completion of the work or when a container is considered full, the waste will be transported off-site under manifest or bills of lading for disposal at an approved disposal facility.

Disposable tools and equipment, used PPE, polysheeting, and other similar wastes generated during the excavation will be transported for disposal. Disposal documentation will be included in the final RAR and copies will be kept by each disposal facility, to document that disposal of material is in conformance with the applicable local, state and federal regulations.

### **8.6 Fluids Management**

If generated, liquids will be containerized and disposed of in accordance with 40 CFR 761.79 and sampled for waste characterization. Liquids will be disposed of based on the results of the characterization sampling in accordance with 40 CFR 761.

In the event that there is an on-site spill associated with remedial activities, the following protocols will be implemented:

- Eliminate ignition sources that may be present;
- Avoid contact with spilled product;
- Keep unprotected personnel upwind of spill area;
- Stop the source of the release if it is safe to do so;
- Contain the released oil or spilled material with absorbent materials;
- Prevent released material from entering storm water catch basins, water sources, or other preferential pathways;

- Restrict access to impacted and potentially threatened areas;
- If a spill occurs on an unpaved area, remove and dispose of all contaminated soil in accordance with applicable state and federal regulations.
- Ensure recovered spill material is collected, containerized, labeled, properly characterized, and disposed of in accordance with all applicable state and federal regulations.
- Notify the NYSDEC Project Manager of the spill and associated response activities.

In addition, although not anticipated, any LNAPL that is encountered during RA activities will be recovered via passive recovery technologies including oil absorbent materials (booms, socks, pads, etc.). NYSDEC will be notified in the event of any spills or NAPL recovery activities, if appropriate.

### **8.7 Backfill from Off-Site Sources**

Imported clean backfill material will meet the requirements of NYSDEC DER-10 Section 5.4(e), Table 5.4(e)10. All proposed backfill material documentation will be provided to the NYSDEC Project Manager for review and approval prior to importation and placement.

### **8.8 Inspections**

Disturbed areas, material storage areas exposed to precipitation and in-place erosion control measures will be inspected once every seven (7) days, within 24 hours after any storm event greater than one half (0.5) inch of rainfall, and at least once during prolonged rainfall or snowmelt events.

### **8.9 Contingency Plan**

Damage from flooding can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of support of excavation structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety structures and cause downed power lines creating dangerous site conditions and loss of power.

Preparations in advance of an extreme storm event will include the following: containerized hazardous materials and fuels will be removed from the property; loose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and generators will be removed from excavated areas, trenches and depressions on the property to high ground or removed from the property; an inventory of the property with photographs will be performed to establish conditions for the site and equipment prior to the event; stockpile covers for soil and fill will be secured by adding weights such as sandbags for added security and worn or ripped stockpile covers will be replaced with competent covers; stockpiled hazardous wastes will be removed from the property; stormwater management systems will be inspected and fortified, including, as necessary: clean and reposition silt fences, hay bales; clean storm sewer filters and traps; and secure and protect pumps and hosing.

At the conclusion of an extreme storm event, as soon as it is safe to access the property, a complete inspection of the property will be performed. A site inspection report will be submitted to DEC at the completion of site inspection and after the site security is assessed. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will

be noted. Damage from storm conditions that result in acute public safety threats, such as downed power lines or imminent collapse of buildings, structures or equipment will be reported to public safety authorities via appropriate means such as calling 911. Any new petroleum spill conditions encountered will be reported to NYSDEC within 2 hours of identification and consistent with State regulations. Emergency and spill conditions will also be reported to NYSDEC. Public safety structures, such as construction security fences will be repaired promptly to eliminate public safety threats. Debris will be collected and removed. Dewatering will be performed in compliance with existing laws and regulations and consistent with emergency notifications; if any, from proper authorities. Eroded areas of soil including unsafe slopes will be stabilized and fortified. Dislocated materials will be collected and appropriately managed. Support of excavation structure will be inspected and fortified as necessary. Impacted stockpiles will be contained and damaged stockpile covers will be replaced. Stormwater control systems and structures will be inspected and maintained as necessary. If soil or fill materials are discharged off site to adjacent properties, property owners and NYSDEC will be notified and corrective measure plan designed to remove and clean dislocated material will be submitted to NYSDEC and implemented following approval by NYSDEC and granting of site access by the property owner. Impacted off-site areas may require characterization based on site conditions, at the discretion of NYSDEC. If on-site petroleum spills are identified, a qualified environmental professional will determine the nature and extent of the spill and report to NYSDEC's spill hotline at 800-457-7362 within statutory defined timelines. If the source of the spill is ongoing and can be identified, it should be stopped if this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYSDEC.

A Site storm response inspection report will be submitted to NYSDEC at the completion of site inspection. An inspection report established by NYSDEC is available on NYSDEC's website ([www.nyc.gov/DEC](http://www.nyc.gov/DEC)) and will be used for this purpose. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. The site inspection report will be sent to the NYSDEC project manager and will include the following: site name, address, tax block and lot, site primary and alternate contact name and phone number. Damage and soil release assessment will include: whether the project had stockpiles; whether stockpiles were damaged; photographs of damage and notice of plan for repair; report of whether soil from the Site was dislocated and whether any of the soil left the Site; estimates of the volume of soil that left the Site, nature of impact, and photographs; description of erosion damage; description of equipment damage; description of damage to the remedial program or the construction program, such as damage to the support of excavation; presence of on-site or off-site exposure pathways caused by the storm; presence of petroleum or other spills and status of spill reporting to NYSDEC; description of corrective actions; schedule for corrective actions. This report should be completed and submitted to NYSDEC project manager with photographs within 24 hours of the time of safe entry to the property after the storm event.

## **8.10 Community Air Monitoring Plan**

A community air monitoring plan (CAMP) has been developed and will be followed in accordance with Section 6 of this RAWP.

## **8.11 Odor, Dust and Nuisance Control Plan**

### **Odor Control**

All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) covering open excavations with tarps and other covers; and (c) use of foams to cover exposed odorous soils. If odors develop and cannot otherwise be controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; and (e) use of chemical odorants in spray or misting systems.

This odor control plan is capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. DEC will be notified of all odor complaint events. Implementation of all odor controls, including halt of work, will be the responsibility of the PE/QEP's certifying this remedial plan.

### **Dust Control**

Dust management during invasive on-Site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles.
- Use of properly anchored tarps to cover stockpiles.
- Exercise extra care during dry and high-wind periods.
- Use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface.

This dust control plan is capable of controlling emissions of dust. If nuisance dust emissions are identified, work will be halted and the source of dusts will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. DEC will be notified of all dust complaint events. Implementation of all dust controls, including halt of work, will be the responsibility of the PE/QEP's responsible for certifying this remedial plan.

### **Other Nuisances**

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards at the perimeter during remedial activities. Rodent control will be provided during Site clearing and grubbing and during the remedial program, as necessary, to prevent nuisances.

## 9. SCHEDULE

### 9.1 Project Schedule

The anticipated project schedule is presented below and is subject to change based on NYSDEC approval of this RAWP, permitting, and other approvals from local municipalities, including the City of White Plains, NY. Note that the final schedule will be adjusted based on the actual approval dates, permit issuance dates, and contractor mobilization schedule.

<b>Anticipated Remedial Action Schedule</b>	
RAWP Approval	January 2025
Asbestos testing	Completed September 2024
Site GPR Survey	Completed September 2024
Site preparation and removal of trees and berm on WPHA Property	February -April 2025
Mobilization	February 2025
RA Implementation	March – April 2025
RA Data Evaluation and Spill Closure Report	May - June 2025

## 10. REFERENCES

- First Environment, Inc. (First Environment). 2015. Site Investigation / Remedial Investigation Report, White Plains Housing Authority Building Nos. 159 and 33. White Plains, New York. October 2015.
- HydroEnvironmental Solutions, Inc. (HydroEnvironmental). 2017. Subsurface Investigation Report, 34 East Post Road. White Plains, New York. NYSDEC Spill No. 1608924 PBS No. 3-601177. March 7.
- New York State Department of Environmental Conservation. "DER-10/Technical Guidance for Site Investigation and Remediation, DEC Program Policy." May 2010
- NYSDEC, 2006; pending amendments 2025. 6 NYCRR Part 375 Environmental Remediation Programs. Division of Environmental Remediation.
- CP-51 Soil Cleanup Guidance Document

## **TABLES**

**TABLE 1: SUPPLEMENTAL REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS**

**TABLE 2: SUPPLEMENTAL REMEDIAL INVESTIGATION GROUNDWATER ANALYTICAL RESULTS**

Table 1  
 Supplemental Remedial Investigation Soil Analytical Results  
 Remedial Action Work Plan  
 34 East Post Road, White Plains

SAMPLE ID: LAB ID: COLLECTION DATE: ANALYTE	NY-CP51 (mg/kg)	WC-SB-01 (0-1.25')		WC-SB-01 (5-6.5')		WC-SB-02 (0.75-2')		WC-SB-02 (5-6')		WC-SB-04 (1-2')		WC-SB-04 (6-7.5')		WC-SB-03 (0.75-2')		WC-SB-03 (6-7.5')		WC-SB-05 (0.75-2')		WC-SB-05 (5-6.5')		WC-SB-05 (5-6.5')		WC-SB-06 (0.75-2')		WC-SB-06 (5-6.5')		WC-SB-06 (5-6.5')		WC-SB-13 (0.75-2')		WC-SB-13 (5-6.5')		WC-SB-13 (5-6.5')		WC-SB-12 (0.75-2')		WC-SB-12 (5-6')		WC-SB-12 (5-6')							
		L2215149-01 3/23/2022	L2215149-02 3/23/2022	L2215149-03 3/23/2022	L2215149-04 3/23/2022	L2215149-05 3/23/2022	L2215149-06 3/23/2022	L2215149-07 3/23/2022	L2215149-08 3/23/2022	L2215149-09 3/23/2022	L2215149-10/R1 3/23/2022	L2215149-11 3/23/2022	L2215149-12/R1 3/23/2022	L2215149-12/R1 3/23/2022	L2215149-12 R1 3/23/2022	L2215481-01 3/24/2022	L2215481-02/R1 3/24/2022	L2215481-02 R1 3/24/2022	L2215481-04 3/24/2022	L2215481-05/R1 3/24/2022	L2215481-05 R1 3/24/2022																										
Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q						
<b>VOLATILE ORGANICS BY EPA 5035</b>																																															
Methylene chloride		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.0023	J	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,1-Dichloroethane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Chloroform		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Carbon tetrachloride		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,2-Dichloropropane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Dibromochloromethane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,1,2-Trichloroethane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Tetrachloroethene		0.0011		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Chlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Trichlorofluoromethane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,2-Dichloroethane		0.00058	J	ND	U	ND	U	0.00051	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,1,1-Trichloroethane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Bromodichloromethane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
trans-1,3-Dichloropropene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
cis-1,3-Dichloropropene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,3-Dichloropropene, Total		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,1-Dichloropropene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Bromoform		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,1,2,2-Tetrachloroethane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Benzene	0.06	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	0.083		-	-	ND	U	0.045		-	-		
Toluene	0.7	0.0022		ND	U	ND	U	0.0018		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	0.051		-	-	ND	U	0.082		-	-		
Ethylbenzene	1	ND	U	ND	U	ND	U	ND	U	ND	U	0.048		ND	U	0.087		ND	U	0.7		-	-	0.00036	J	3.1		-	-	ND	U	16	E	16		-	-	ND	U	15		-	-				
Chloromethane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Bromomethane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Vinyl chloride		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Chloroethane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,1-Dichloroethene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
trans-1,2-Dichloroethene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Trichloroethene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,2-Dichlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,3-Dichlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,4-Dichlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
Methyl tert butyl ether	0.93	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
p/m-Xylene	0.26	ND	U	ND	U	ND	U	ND	U	ND	U	0.014		ND	U	0.0085		ND	U	0.86		-	-	0.0014	J	12		-	-	ND	U	ND	U	-	-	ND	U	0.84		-	-	ND	U	0.84	J	-	-
o-Xylene	0.26	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.002		ND	U	0.28		-	-	0.00039	J	1.1		-	-	ND	U	ND	U	-	-	ND	U	0.052	J	-	-	ND	U	0.052	J	-	-
Xylenes, Total	0.26	ND	U	ND	U	ND	U	ND	U	ND	U	0.014		ND	U	0.011		ND	U	1.1		-	-	0.0018	J	13		-	-	ND	U	ND	U	-	-	ND	U	0.89	J	-	-	ND	U	0.89	J	-	-
cis-1,2-Dichloroethene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-
1,2-Dichloro																																															



Table 1  
 Supplemental Remedial Investigation Soil Analytical Results  
 Remedial Action Work Plan  
 34 East Post Road, White Plains

SAMPLE ID:	NY-CP51 (mg/kg)	WC-SB-01 (0-1.25')		WC-SB-01 (5-6.5')		WC-SB-02 (0.75-2')		WC-SB-02 (5-6')		WC-SB-04 (1-2')		WC-SB-04 (6-7.5')		WC-SB-03 (0.75-2')		WC-SB-03 (6-7.5')		WC-SB-05 (0.75-2')		WC-SB-05 (5-6.5')		WC-SB-05 (5-6.5')		WC-SB-06 (0.75-2')		WC-SB-06 (5-6.5')		WC-SB-06 (5-6.5')		WC-SB-13 (0.75-2')		WC-SB-13 (5-6.5')		WC-SB-13 (5-6.5')		WC-SB-12 (0.75-2')		WC-SB-12 (5-6')		WC-SB-12 (5-6')	
		L2215149-01 3/23/2022	L2215149-01 3/23/2022	L2215149-02 3/23/2022	L2215149-02 3/23/2022	L2215149-03 3/23/2022	L2215149-03 3/23/2022	L2215149-04 3/23/2022	L2215149-04 3/23/2022	L2215149-05 3/23/2022	L2215149-05 3/23/2022	L2215149-06 3/23/2022	L2215149-06 3/23/2022	L2215149-07 3/23/2022	L2215149-07 3/23/2022	L2215149-08 3/23/2022	L2215149-08 3/23/2022	L2215149-09 3/23/2022	L2215149-09 3/23/2022	L2215149-10/R1 3/23/2022	L2215149-10/R1 3/23/2022	L2215149-11 3/23/2022	L2215149-11 3/23/2022	L2215149-12/R1 3/23/2022	L2215149-12/R1 3/23/2022	L2215149-12/R1 3/23/2022	L2215149-12/R1 3/23/2022	L2215481-01 3/24/2022	L2215481-01 3/24/2022	L2215481-02/R1 3/24/2022	L2215481-02/R1 3/24/2022	L2215481-02/R1 3/24/2022	L2215481-02/R1 3/24/2022	L2215481-04 3/24/2022	L2215481-04 3/24/2022	L2215481-05/R1 3/24/2022	L2215481-05/R1 3/24/2022	L2215481-05/R1 3/24/2022			
<b>SEMIVOLATILE ORGANICS BY GC/MS</b>																																									
Acenaphthene	20	0.019	J	0.045	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2,4-Trichlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Hexachlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bis(2-chloroethyl)ether		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2-Chloronaphthalene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,3-Dichlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,4-Dichlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
3,3'-Dichlorobenzidine		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2,4-Dinitrotoluene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2,6-Dinitrotoluene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Fluoranthene	100	1.9		3.7		ND	U	0.23		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.061	J	-		ND	U	0.18		-		ND	U	0.029	J	-		0.025	J	0.028	J
4-Chlorophenyl phenyl ether		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Bromophenyl phenyl ether		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bis(2-chloroisopropyl)ether		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bis(2-chloroethoxy)methane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Hexachlorobutadiene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Hexachlorocyclopentadiene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Hexachloroethane		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Isophorone		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Naphthalene	12	0.05	J	ND	U	ND	U	ND	U	ND	U	0.28		ND	U	0.084	J	ND	U	3.9		ND	U	2.6		ND	U	0.18		-		ND	U	1.9		ND	U	1.9			
Nitrobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
NDPA/DPA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
n-Nitrosodi-n-propylamine		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bis(2-ethylhexyl)phthalate		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Butyl benzyl phthalate		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Di-n-butylphthalate		0.073	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Di-n-octylphthalate		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Diethyl phthalate		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dimethyl phthalate		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo(a)anthracene	1	0.96		1.6		ND	U	0.13		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.036	J	-		ND	U	0.092	J	-		ND	U	ND	U	ND	U	ND	U	ND	U
Benzo(a)pyrene	1	0.97		1.7		ND	U	0.29		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.12	J	-		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo(b)fluoranthene	1	1.4		2.1		ND	U	0.4		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.048	J	-		ND	U	0.19		-		ND	U	ND	U	ND	U	ND	U		
Benzo(k)fluoranthene	0.8	0.36		0.72		ND	U	0.11		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.054	J	-		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chrysene	1	1		1.6		ND	U	0.19		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.04	J	-		ND	U	0.12		-		ND	U	ND	U	ND	U	ND	U	ND	U
Acenaphthylene	100	0.12	J	ND																																					





Table 1  
 Supplemental Remedial Investigation Soil Analytical Results  
 Remedial Action Work Plan  
 34 East Post Road, White Plains

SAMPLE ID:	LAB ID:	NY-CP51 (mg/kg)	WC-SB-09 (0.75-2)		WC-SB-09 (5-7)		WC-SB-X2		WC-SB-08 (0.75-2)		WC-SB-08 (5-7)		WC-SB-08 (5-7)		WC-SB-10 (0.75-2)		WC-SB-10 (5-6.5)		WC-SB-11 (0.75-2)		WC-SB-11 (5-6.5)		WC-SB-11 (5-6.5)		WC-SB-01 (2-3)		WC-SB-01 (5-6)		WC-SB-02 (1-2)		WC-SB-02 (11-12)		WC-SB-03 (1-2)		WC-SB-03 (7-8)		WC-SB-04 (1-2.25)								
			L2215481-06	L2215481-07	L2215481-08	L2215481-09	L2215481-10/R1	L2215481-10 R1	L2215481-11	L2215481-12	L2215481-13	L2215481-14	L2215481-14 R1	L2222625-01	L2222625-02	L2222625-03	L2222625-04	L2222625-05	L2222625-06	L2222625-07	3/24/2022	3/24/2022	3/24/2022	3/24/2022	3/24/2022	3/24/2022	4/29/2022	4/29/2022	4/29/2022	4/29/2022	4/29/2022	4/29/2022	4/29/2022	4/29/2022	4/29/2022	4/29/2022	4/29/2022	4/29/2022	4/29/2022						
ANALYTE	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q							
<b>SEMIVOLATILE ORGANICS BY GC/MS</b>																																													
Acenaphthene	20	0.046	J	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.1	J	ND	U	0.042	J		
1,2,4-Trichlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Hexachlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Bis(2-chloroethyl)ether		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
2-Chloronaphthalene		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
1,2-Dichlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
1,3-Dichlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
1,4-Dichlorobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
3,3'-Dichlorobenzidine		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
2,4-Dinitrotoluene		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
2,6-Dinitrotoluene		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Fluoranthene	100	1.6	J	0.22	J	0.33	J	0.26	J	0.23	J	-	-	0.08	J	0.023	J	0.023	J	0.023	J	-	-	0.046	J	0.16	J	0.16	J	0.16	J	0.16	J	0.16	J	0.16	J	0.16	J	0.16	J	0.16	J		
4-Chlorophenyl phenyl ether		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Bromophenyl phenyl ether		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bis(2-chloroisopropyl)ether		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bis(2-chloroethoxy)methane		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Hexachlorobutadiene		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Hexachlorocyclopentadiene		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Hexachloroethane		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Isophorone		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Naphthalene	12	ND	U	0.027	J	0.047	J	0.047	J	0.09	J	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.029	J
Nitrobenzene		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
NDPA/DPA		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
n-Nitrosodi-n-propylamine		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bis(2-ethylhexyl)phthalate		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Butyl benzyl phthalate		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Di-n-butylphthalate		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Di-n-octylphthalate		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Diethyl phthalate		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dimethyl phthalate		ND	U	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo(a)anthracene	1	0.6	J	0.079	J	0.12	J	0.17	J	0.12	J	-	-	0.074	J	0.12	J	0.033	J	0.033	J	-	-	0.034	J	0.11	J	0.11	J	0.11	J	0.11	J	0.11	J	0.11	J	0.11	J	0.11	J	0.11	J	0.4	J
Benzo(a)pyrene	1	0.62	J	0.077	J	0.11	J	0.2	J	0.11	J	-	-	0.099	J	0.12	J	0.05	J	0.05	J	-	-	0.034	J	0.12	J	0.12	J	0.12	J	0.12	J	0.12	J	0.12	J	0.12	J	0.12	J	0.12	J	0.45	J
Benzo(b)fluoranthene	1	0.74	J	0.093	J	0.14	J	0.25	J	0.16	J	-	-	0.12	J	0.14	J	0.056	J	0.056	J	-	-	0.033	J	0.13	J	0.13	J	0.13	J	0.13	J	0.13	J	0.13	J	0.13	J	0.13	J	0.13	J	0.56	J
Benzo(k)fluoranthene	0.8	0.																																											





Table 1  
 Supplemental Remedial Investigation Soil Analytical Results  
 Remedial Action Work Plan  
 34 East Post Road, White Plains

SAMPLE ID: LAB ID: COLLECTION DATE: ANALYTE	NY-CP51 (mg/kg)	WC-SB-04 (7-8')		WC-SB-04 (7-8')		WC-SB-05 (1-2')		WC-SB-05 (7-8')		WC-SB-05 (7-8')		WC-SB-08 (0.75-2')		WC-SB-08 (7-8.5')		WC-SB-08 (7-8.5')		WC-SB-X		WC-SB-X		WC-SB-09 (0.75-2')		WC-SB-09 (6-7.25')		WC-SB-06 (0.75-2')		WC-SB-06 (7-8.25')		WC-SB-06 (7-8.25')		WC-SB-07 (0.75-2')		WC-SB-07 (6.5-7.5')		WC-SB-10 (0.75-2')		WC-SB-10 (6-7.5')		WC-SB-10 (6-7.5')		WC-SB-10 (6-7.5')			
		L2222625-08/R1		L2222625-08 R1		L2222625-09		L2222625-10/R1		L2222625-10 R1		L2222848-01		L2222848-02/R1		L2222848-02 R1		L2222848-03		L2222848-03 R1		L2222848-04		L2222848-05		L2222848-06		L2222848-07/R1		L2222848-07 R1		L2222848-08		L2222848-09		L2222848-10		L2222848-11/R2		L2222848-11 R1		L2222848-11 R2			
		4/29/2022		4/29/2022		4/29/2022		4/29/2022		4/29/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022			
Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q		
<b>SEMIVOLATILE ORGANICS BY GC/MS</b>																																													
Acenaphthene	20	0.026	J	-	-	ND	U	ND	U	-	-	0.037	J	ND	U	-	-	ND	U	-	-	0.053	J	ND	U	0.075	J	ND	U	-	-	0.068	J	0.021	J	ND	U	0.1	J	-	-				
1,2,4-Trichlorobenzene		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Hexachlorobenzene		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Bis(2-chloroethyl)ether		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
2-Chloronaphthalene		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
1,2-Dichlorobenzene		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	0.042	J	ND	U	ND	U	ND	U	ND	U	-	-		
1,3-Dichlorobenzene		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
1,4-Dichlorobenzene		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
3,3'-Dichlorobenzidine		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
2,4-Dinitrotoluene		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	0.093	J	-	-
2,6-Dinitrotoluene		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Fluoranthene	100	0.075	J	-	-	0.2	J	ND	U	-	-	0.39	J	ND	U	-	-	ND	U	-	-	0.94	J	ND	U	0.56	J	ND	U	-	-	0.64	J	0.027	J	0.24	J	0.32	J	-	-	-	-		
4-Chlorophenyl phenyl ether		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
4-Bromophenyl phenyl ether		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Bis(2-chloroisopropyl)ether		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Bis(2-chloroethoxy)methane		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Hexachlorobutadiene		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Hexachlorocyclopentadiene		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Hexachloroethane		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Isophorone		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Naphthalene	12	3.1	J	-	-	0.026	J	3.9	J	-	-	0.22	J	0.12	J	-	-	0.064	J	-	-	0.094	J	4.8	J	0.088	J	0.03	J	-	-	1.5	J	5.4	J	0.063	J	19	E	19	E	-	-		
Nitrobenzene		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
NDPA/DPA		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
n-Nitrosodi-n-propylamine		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Bis(2-ethylhexyl)phthalate		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	0.21	J	ND	U	ND	U	0.072	J	-	-				
Butyl benzyl phthalate		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Di-n-butylphthalate		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Di-n-octylphthalate		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Diethyl phthalate		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Dimethyl phthalate		ND	U	-	-	ND	U	ND	U	-	-	ND	U	ND	U	-	-	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	ND	U	ND	U	-	-		
Benzo(a)anthracene	1	0.034	J	-	-	0.13	J	ND	U	-	-	0.24	J	ND	U	-	-	0.45	J	-	-	0.35	J	ND	U	0.35	J	ND	U	-	-	0.34	J	ND	U	0.12	J	0.12	J	-	-				
Benzo(a)pyrene	1	ND	U	-	-	0.13	J	ND	U	-	-	0.28	J	ND	U	-	-	0.51	J	-	-	0.34	J	ND	U	0.34	J	ND	U	-	-	0.3	J	ND	U	0.12	J	0.084	J	-	-				
Benzo(b)fluoranthene	1	ND	U	-	-	0.15	J	ND	U	-	-	0.37	J	ND	U	-	-	0.65	J	-	-	0.43	J	ND	U	0.43	J	ND	U	-	-	0.4	J	ND	U	0.16	J	0.1	J	-	-				
Benzo(k)fluoranthene	0.8	ND	U	-	-	0.058	J	ND	U	-	-	0.1	J	ND	U	-	-	0.21	J	-	-	0.15	J	ND	U	0.15	J	ND	U	-	-	0.1	J	ND	U	0.045	J	0.037	J	-	-				
Chrysene	1	0.032	J	-	-	0.15																																							







Table 2  
SRI Groundwater Analytical Results  
34 East Post Road  
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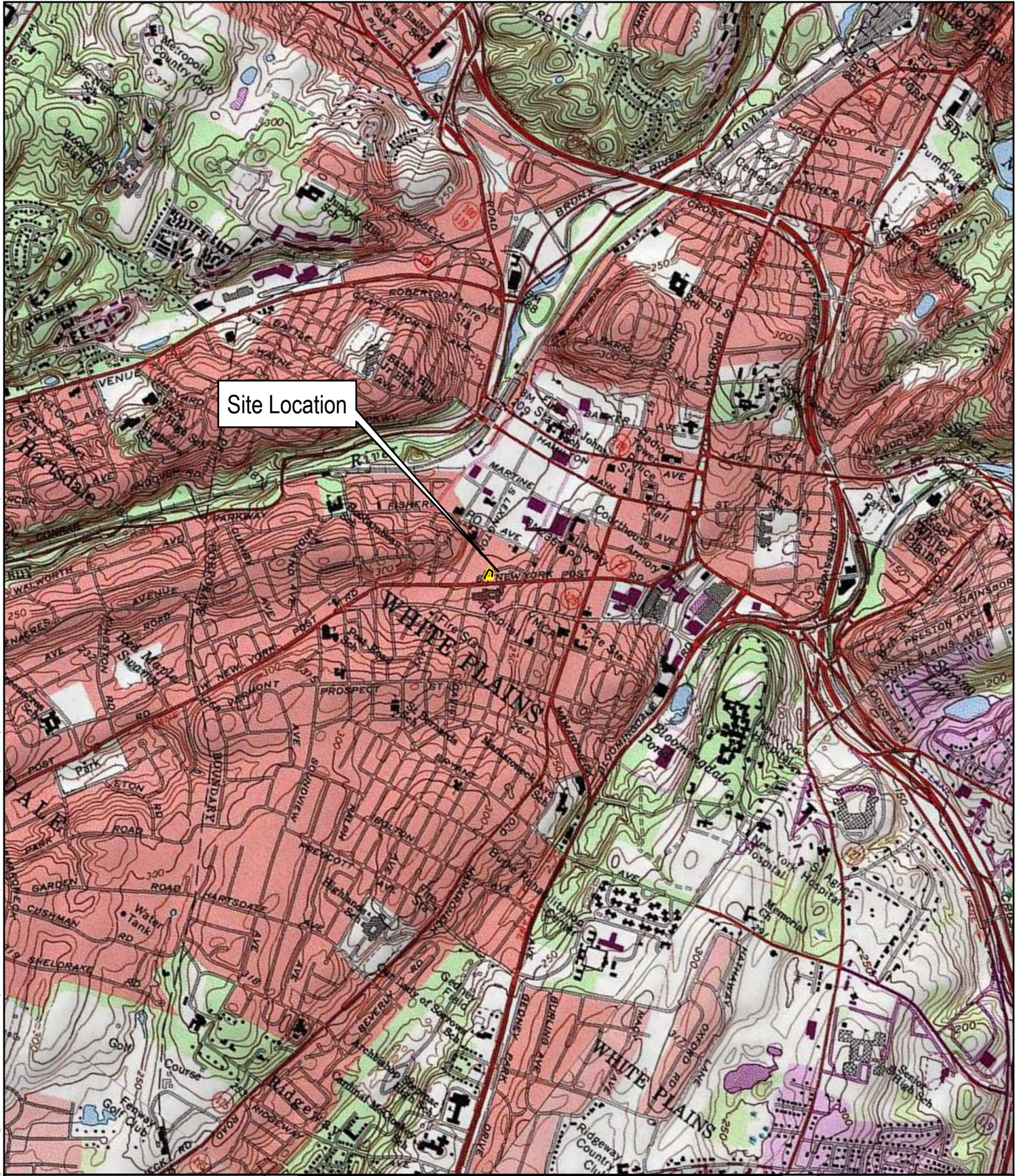
SAMPLE ID: LAB ID: COLLECTION DATE: SAMPLE MATRIX: ANALYTE	NY-AWQS (ug/l)	WC-MW-02		WC-MW-01		WC-MW-03		WC-MW-03		FIELD BLANK-20220429		TRIP BLANK-20220429		WC-MW-05		WC-MW-05	
		L2222625-11		L2222625-12		L2222625-13/R1		L2222625-13 R1		L2222625-14		L2222625-15		L2222848-12/R1		L2222848-12 R1	
		4/29/2022		4/29/2022		4/29/2022		4/29/2022		4/29/2022		4/29/2022		4/29/2022		5/2/2022	
WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER	
Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q
<b>VOLATILE ORGANICS BY GC/MS</b>																	
Methylene chloride	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,1-Dichloroethane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Chloroform	7	ND	U	ND	U	ND	U	-	-	1.8	J	ND	U	ND	U	-	-
Carbon tetrachloride	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,2-Dichloropropane	1	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Dibromochloromethane	50	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,1,2-Trichloroethane	1	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Tetrachloroethane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Chlorobenzene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Trichlorofluoromethane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,2-Dichloroethane	0.6	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,1,1-Trichloroethane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Bromodichloromethane	50	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
trans-1,3-Dichloropropene	0.4	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
cis-1,3-Dichloropropene	0.4	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,3-Dichloropropene, Total		ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,1-Dichloropropene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Bromoform	50	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,1,2,2-Tetrachloroethane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Benzene	1	ND	U	ND	U	710	J	-	-	ND	U	ND	U	250	J	-	-
Toluene	5	ND	U	ND	U	760	J	-	-	ND	U	ND	U	14	J	-	-
Ethylbenzene	5	ND	U	ND	U	2800	J	-	-	ND	U	ND	U	3900	E	3900	J
Chloromethane		ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Bromomethane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Vinyl chloride	2	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Chloroethane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,1-Dichloroethene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
trans-1,2-Dichloroethene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Trichloroethene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,2-Dichlorobenzene	3	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,3-Dichlorobenzene	3	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,4-Dichlorobenzene	3	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Methyl tert butyl ether	10	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
p/m-Xylene	5	ND	U	ND	U	6700	J	-	-	ND	U	ND	U	6200	J	-	-
o-Xylene	5	ND	U	ND	U	2200	J	-	-	ND	U	ND	U	ND	U	-	-
Xylenes, Total		ND	U	ND	U	8900	J	-	-	ND	U	ND	U	6200	J	-	-
cis-1,2-Dichloroethene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,2-Dichloroethene, Total		ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Dibromomethane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,2,3-Trichloropropane	0.04	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Acrylonitrile	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Styrene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Dichlorodifluoromethane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Acetone	50	1.7	J	4.9	J	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Carbon disulfide	60	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
2-Butanone	50	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Vinyl acetate		ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
4-Methyl-2-pentanone		ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
2-Hexanone	50	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Bromochloromethane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
2,2-Dichloropropane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,2-Dibromoethane	0.0006	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,3-Dichloropropane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,1,1,2-Tetrachloroethane	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Bromobenzene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
n-Butylbenzene	5	ND	U	ND	U	78	J	-	-	ND	U	ND	U	73	J	-	-
sec-Butylbenzene	5	ND	U	ND	U	44	J	-	-	ND	U	ND	U	40	J	-	-
tert-Butylbenzene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
o-Chlorotoluene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
p-Chlorotoluene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,2-Dibromo-3-chloropropane	0.04	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Hexachlorobutadiene	0.5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Isopropylbenzene	5	ND	U	ND	U	200	J	-	-	ND	U	ND	U	220	J	-	-
p-Isopropyltoluene	5	ND	U	ND	U	37	J	-	-	ND	U	ND	U	17	J	-	-
Naphthalene	10	ND	U	ND	U	670	J	-	-	ND	U	ND	U	1000	J	-	-
n-Propylbenzene	5	ND	U	ND	U	550	J	-	-	ND	U	ND	U	650	J	-	-
1,2,3-Trichlorobenzene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,2,4-Trichlorobenzene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
1,3,5-Trimethylbenzene	5	ND	U	ND	U	850	J	-	-	ND	U	ND	U	870	J	-	-
1,2,4-Trimethylbenzene	5	ND	U	ND	U	3200	J	-	-	ND	U	ND	U	4000	E	4000	J
1,4-Dioxane		ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
p-Diethylbenzene		ND	U	ND	U	60	J	-	-	ND	U	ND	U	530	J	-	-
p-Ethyltoluene		ND	U	ND	U	2300	J	-	-	ND	U	ND	U	1200	J	-	-
1,2,4,5-Tetramethylbenzene	5	ND	U	ND	U	190	J	-	-	ND	U	ND	U	230	J	-	-
Ethyl ether		ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
trans-1,4-Dichloro-2-butene	5	ND	U	ND	U	ND	U	-	-	ND	U	ND	U	ND	U	-	-
Total VOCs		1.7	-	4.9	-	21349	-	-	-	1.8	-	-	-	19194	-	7900	-
<b>SEMIVOLATILE ORGANICS BY GC/MS</b>																	
1,2,4-Trichlorobenzene	5	ND	U	ND	U	ND	U	-	-	ND	U	-	-	ND	U	-	-
Bis(2-chloroethyl)ether	1	ND	U	ND	U	ND	U	-	-	ND	U	-	-	ND	U	-	-
1,2-Dichlorobenzene	3	ND	U	ND	U	ND	U	-	-	ND	U	-	-	ND	U	-	-
1,3-Dichlorobenzene	3	ND	U	ND	U	ND	U	-	-	ND	U	-	-	ND	U	-	-
1,4-Dichlorobenzene	3	ND	U	ND	U	ND	U	-	-	ND	U	-	-	ND	U	-	-
3,3'-Dichlorobenzidine	5	ND	U	ND	U	ND	U	-	-	ND	U	-	-	ND	U	-	-
2,4-Dinitrotoluene	5	ND	U	ND	U	ND	U	-	-	ND	U	-	-	ND	U	-	-
2,6-Dinitrotoluene	5	ND															

Table 2  
SRI Groundwater Analytical Results  
34 East Post Road  
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SAMPLE ID: LAB ID: COLLECTION DATE: SAMPLE MATRIX: ANALYTE	NY-AWQS (ug/l)	WC-MW-X		WC-MW-X		WC-MW-04		WC-MW-04		WC-MW-06		WC-MW-06		ELD BLANK-202205		RIP BLANK-2022050	
		L2222848-13		L2222848-13 R1		L2222848-14 R1		L2222848-14 R1		L2222848-15		L2222848-15 R2		L2222848-16		L2222848-17	
		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022		5/2/2022	
WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER		WATER	
Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q	Conc	Q
<b>VOLATILE ORGANICS BY GC/MS</b>																	
Methylene chloride	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,1-Dichloroethane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Chloroform	7	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Carbon tetrachloride	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,2-Dichloropropane	1	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Dibromochloromethane	50	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,1,2-Trichloroethane	1	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Tetrachloroethene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Chlorobenzene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Trichlorofluoromethane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,2-Dichloroethane	0.6	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,1,1-Trichloroethane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Bromodichloromethane	50	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
trans-1,3-Dichloropropene	0.4	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
cis-1,3-Dichloropropene	0.4	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,3-Dichloropropene, Total		ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,1-Dichloropropene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Bromoform	50	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,1,2,2-Tetrachloroethane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Benzene	1	390	J	-	-	80	J	-	-	220	J	-	-	ND	U	ND	U
Toluene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Ethylbenzene	5	4700	J	-	-	2900	J	-	-	4500	J	-	-	ND	U	ND	U
Chloromethane		ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Bromomethane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Vinyl chloride	2	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Chloroethane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,1-Dichloroethene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
trans-1,2-Dichloroethene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Trichloroethene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,2-Dichlorobenzene	3	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,3-Dichlorobenzene	3	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,4-Dichlorobenzene	3	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Methyl tert butyl ether	10	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
p/m-Xylene	5	7800	J	-	-	3000	J	-	-	8900	J	-	-	ND	U	ND	U
o-Xylene	5	ND	U	-	-	190	J	-	-	1000	J	-	-	ND	U	ND	U
Xylenes, Total		7800	J	-	-	3200	J	-	-	9900	J	-	-	ND	U	ND	U
cis-1,2-Dichloroethene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,2-Dichloroethene, Total		ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Dibromomethane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,2,3-Trichloropropane	0.04	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Acrylonitrile	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Styrene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Dichlorodifluoromethane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Acetone	50	ND	U	-	-	ND	U	-	-	ND	U	-	-	1.8	J	ND	U
Carbon disulfide	60	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
2-Butanone	50	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Vinyl acetate		ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
4-Methyl-2-pentanone		ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
2-Hexanone	50	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Bromochloromethane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
2,2-Dichloropropane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,2-Dibromoethane	0.0006	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,3-Dichloropropane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,1,1,2-Tetrachloroethane	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Bromobenzene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
n-Butylbenzene	5	52	J	-	-	93	J	-	-	93	J	-	-	ND	U	ND	U
sec-Butylbenzene	5	33	J	-	-	52	J	-	-	51	J	-	-	ND	U	ND	U
tert-Butylbenzene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
o-Chlorotoluene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
p-Chlorotoluene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,2-Dibromo-3-chloropropane	0.04	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Hexachlorobutadiene	0.5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Isopropylbenzene	5	220	J	-	-	270	J	-	-	300	J	-	-	ND	U	ND	U
p-Isopropyltoluene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Naphthalene	10	980	J	-	-	1100	J	-	-	1300	J	-	-	ND	U	ND	U
n-Propylbenzene	5	610	J	-	-	770	J	-	-	830	J	-	-	ND	U	ND	U
1,2,3-Trichlorobenzene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,2,4-Trichlorobenzene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
1,3,5-Trimethylbenzene	5	880	J	-	-	1000	J	-	-	1200	J	-	-	ND	U	ND	U
1,2,4-Trimethylbenzene	5	4100	J	-	-	4500	J	-	-	5900	J	-	-	ND	U	ND	U
1,4-Dioxane		ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
p-Diethylbenzene		430	J	-	-	580	J	-	-	670	J	-	-	ND	U	ND	U
p-Ethyltoluene		1200	J	-	-	1700	J	-	-	2700	J	-	-	ND	U	ND	U
1,2,4,5-Tetramethylbenzene	5	170	J	-	-	240	J	-	-	240	J	-	-	ND	U	ND	U
Ethyl ether		ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
trans-1,4-Dichloro-2-butene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	ND	U
Total VOCs		21565	-	-	-	16475	-	-	-	27904	-	-	-	1.8	-	-	-
<b>SEMIVOLATILE ORGANICS BY GC/MS</b>																	
1,2,4-Trichlorobenzene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	-	-
Bis(2-chloroethyl)ether	1	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	-	-
1,2-Dichlorobenzene	3	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	-	-
1,3-Dichlorobenzene	3	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	-	-
1,4-Dichlorobenzene	3	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	-	-
3,3'-Dichlorobenzidine	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	-	-
2,4-Dinitrotoluene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	-	-
2,6-Dinitrotoluene	5	ND	U	-	-	ND	U	-	-	ND	U	-	-	ND	U	-	-
4-Chlorophenyl phenyl ether		ND	U	-	-	ND	U	-	-	ND	U	-					

## FIGURES

- FIGURE 1: SITE LOCUS MAP**
- FIGURE 2: SITE AND SURROUNDING AREAS**
- FIGURE 3: HISTORICAL SAMPLE LOCATIONS**
- FIGURE 4: GROUNDWATER CONTOURS**
- FIGURE 5: VOCS IN SOIL**
- FIGURE 6: VOCS IN GROUNDWATER**
- FIGURE 7: SVOCS IN SOIL**
- FIGURE 8: SVOCS IN GROUNDWATER**
- FIGURE 9: SITE EXCAVATION DIAGRAM**



Site Location

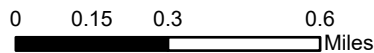
 Site Boundary

Legend

### Site Locus Map

34 East Post Road  
White Plains, NY

FIGURE 1



Project #: 214155  
Map Created: September 2024

Figure Exposed: 9/19/2024. By: sropackl. Using: woodardcurran.net\shared\Projects\2024\14155\04\_WP\_Hospital\25 West Post Rd ESA\wp\GIS\Projects\34\_East\_Post\_Road\2024\_RAWP - GIS\2024\_RAWP.aprx



# Site and Surrounding Areas

34 East Post Road,  
White Plains, NY

Figure 2



## Legend

-  Site Boundary
-  Tax Parcels

0 5 10 20  
Feet



**Woodard  
& Curran**

Project #: 214155  
Map Created: September 2024

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Figure Exported: 9/19/2024. By: srogacki. Using: \\woodardcurran.net\shared\Projects\0214155\_04\_WP\_Hospital\_25 West Post Rd ESA\wp\GIS\Projects\04 East Post Road\2024 RAWP - GIS\2024 - RAWP.aprx Layout: Site and Surrounding Areas



New York State, Maxar, Microsoft

# Historical Sample Locations

34 East Post Road,  
White Plains, NY

Figure 3



## Legend

### Boring

- BP Property
- WPHA Property

### Well

- ⊕ BP Property
- ⊕ WPHA Property

Site Boundary

Site Boundary

Remediation Boundary

Site Boundary

Remediation Boundary

0 5 10 20  
Feet



**Woodard  
& Curran**

Project #: 214155  
Map Created: November 2024

Service Layer Credits: World Imagery:  
New York State, Maxar, Microsoft

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Figure 3 created: 11/09/2024. By: arcoprac. Using: WoodardCurran\atlantaproject\214155\_04\_WPD\_Hospital\_205\_West Post Rd ES\Map\GIS\Project\34 East Post Road\2024\_RAWP\_GIS\2024\_RAWP.aprx

# WPHA Groundwater Contours March 2022

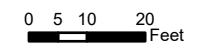
34 East Post Road  
White Plains, NY

Figure 4



### Legend

- WPHA Wells
- WPHA GW Contours March 2022
- Site Boundary
- Remediation Boundary



Project #: 214155  
Map Created: November 2024

Service Layer Credits: World Imagery:  
New York State, Maxar, Microsoft

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Figure Exported: 11/8/2024. By: sroqacki Using: \\woodardcurran.net\shared\Projects\0214155\_04\_WP\_Hospital\_25 West Post Rd ESA\wp\GIS\Projects\34 East Post Road\2024 RAWP - GIS\2024 - RAWP.aprx

# VOCs in Soil

34 East Post Road,  
White Plains, NY

Figure 5



## Legend

Boring

- BP Property
- WPHA Property

Remediation Boundary

Site Boundary

0 12.5 25 50 Feet



Project #: 214155  
Map Created: November 2024

Service Layer Credits: Bing Maps Aerial:  
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Sample Location		WC-SB-09	
Sample ID	WC-SB-09 (0.75-2)	WC-SB-09 (6-7.25)	
Sample Date	5/2/2022	5/2/2022	
<b>VOCs</b>			
Acetone	-	0.024	
Benzene	1.2	0.062	
Toluene	-	0.0031	
Ethylbenzene	15	0.48 E	
p,m-Xylene	0.64	0.09	
o-Xylene	0.29 J	0.0055 J	
Xylenes, Total	0.67 J	0.59 J	
n-Butylbenzene	0.52	0.23	
sec-Butylbenzene	1.5	0.014	
tert-Butylbenzene	0.86	0.0069	
Isopropylbenzene	0.038 J	0.0042 J	
p-Isopropyltoluene	2	0.029	
Naphthalene	0.12	0.0036	
1,3,5-Trimethylbenzene	7.5	0.074	
1,2,4-Trimethylbenzene	0.067 J	0.11	
p-Diethylbenzene	0.097 J	0.44 E	
p-Ethyltoluene	1.3	0.066	
1,2,4,5-Tetramethylbenzene	0.39	0.1	
Total VOCs	2.6	0.053	
Total VOCs	33.861	2.38657	
<b>VOCs by EPA 5035 High</b>			
Benzene	-	0.098	
Ethylbenzene	-	0.86	
p,m-Xylene	-	1.3	
Xylenes, Total	-	1.3	
n-Butylbenzene	-	2.3	
sec-Butylbenzene	-	0.011 J	
tert-Butylbenzene	-	1.4	
Isopropylbenzene	-	0.043 J	
p-Isopropyltoluene	-	0.13	
Naphthalene	-	0.43	
1,3,5-Trimethylbenzene	-	0.15	
1,2,4-Trimethylbenzene	-	0.52	
p-Diethylbenzene	-	0.059 J	
p-Ethyltoluene	-	0.15	
1,2,4,5-Tetramethylbenzene	-	0.1 J	
Total VOCs	-	3.872	

Sample Location		WC-SB-06	
Sample ID	WC-SB-06 (0.75-2)	WC-SB-06 (5-6.5)	
Sample Date	3/23/2022	3/23/2022	
<b>VOCs</b>			
Acetone	-	0.12 J	
Ethylbenzene	0.00036 J	3.1	
p,m-Xylene	0.0014 J	12	
o-Xylene	0.00039 J	1.1	
Xylenes, Total	0.0018 J	13	
n-Butylbenzene	-	8.5	
sec-Butylbenzene	-	3.3	
tert-Butylbenzene	-	0.12 J	
Isopropylbenzene	-	32	
p-Isopropyltoluene	-	1.8	
Naphthalene	-	13	
1,3,5-Trimethylbenzene	0.00039 J	13	
1,2,4-Trimethylbenzene	0.00065 J	22	
p-Diethylbenzene	0.002	86 E	
p-Ethyltoluene	0.00082 J	3.4	
1,2,4,5-Tetramethylbenzene	0.0014 J	45	
Total VOCs	0.00071	231.64	

Sample Location		WC-SB-08	
Sample ID	WC-SB-08 (0.75-2)	WC-SB-08 (5-7)	
Sample Date	3/24/2022	3/24/2022	
<b>VOCs</b>			
Ethylbenzene	0.00015 J	9.1	
p,m-Xylene	0.00059 J	23	
o-Xylene	-	1.8	
Xylenes, Total	0.00059 J	25	
n-Butylbenzene	-	9.8	
sec-Butylbenzene	-	15	
tert-Butylbenzene	-	5	
Isopropylbenzene	0.00016 J	61	
p-Isopropyltoluene	-	13	
Naphthalene	-	1.8	
1,3,5-Trimethylbenzene	0.00027 J	72	
1,2,4-Trimethylbenzene	0.00085 J	280 E	
p-Diethylbenzene	-	9.2	
p-Ethyltoluene	0.00052 J	120 E	
1,2,4,5-Tetramethylbenzene	0.00067 J	42	
Total VOCs	0.00254	682.9	

Sample Location		WC-SB-03	
Sample ID	WC-SB-03 (6-7.5)	WC-SB-03 (6-7.5)	
Sample Date	3/23/2022	3/23/2022	
<b>VOCs</b>			
Methylene chloride	0.0023 J	-	
Ethylbenzene	0.087	-	
p,m-Xylene	0.0085	-	
o-Xylene	0.002	-	
Xylenes, Total	0.011	-	
Styrene	0.00033 J	-	
Acetone	0.012	-	
n-Butylbenzene	0.15	-	
sec-Butylbenzene	0.024	-	
tert-Butylbenzene	0.0012	-	
Isopropylbenzene	0.022	-	
p-Isopropyltoluene	0.0069	-	
Naphthalene	0.19	-	
n-Propylbenzene	0.06	-	
1,3,5-Trimethylbenzene	0.0033	-	
1,2,4-Trimethylbenzene	0.059	-	
p-Ethyltoluene	0.004	-	
1,2,4,5-Tetramethylbenzene	0.16	-	
Total VOCs	0.98253	-	
<b>VOCs by EPA 5035 High</b>			
Ethylbenzene	0.15	-	
n-Butylbenzene	0.25	-	
sec-Butylbenzene	0.041 J	-	
Isopropylbenzene	0.042 J	-	
p-Isopropyltoluene	0.012 J	-	
Naphthalene	0.2	-	
n-Propylbenzene	0.1	-	
1,2,4-Trimethylbenzene	0.27	-	
p-Diethylbenzene	0.089 J	-	
1,2,4,5-Tetramethylbenzene	0.22	-	
Total HVOCs	1.374	-	

Sample Location		WC-SB-04	
Sample ID	WC-SB-04 (6-7.5)	WC-SB-04 (6-7.5)	
Sample Date	3/23/2022	3/23/2022	
<b>VOCs</b>			
Ethylbenzene	0.48	-	
p,m-Xylene	0.014	-	
o-Xylene	0.014	-	
n-Butylbenzene	0.089	-	
sec-Butylbenzene	0.041	-	
tert-Butylbenzene	0.0023	-	
Isopropylbenzene	0.081	-	
p-Isopropyltoluene	0.017	-	
Naphthalene	0.087	-	
n-Propylbenzene	0.29 E	-	
1,3,5-Trimethylbenzene	0.075	-	
1,2,4-Trimethylbenzene	0.094	-	
p-Diethylbenzene	0.05	-	
p-Ethyltoluene	0.15	-	
1,2,4,5-Tetramethylbenzene	0.17	-	
Total VOCs	1.2083	-	
<b>VOCs by EPA 5035 High</b>			
Ethylbenzene	0.022 J	-	
n-Butylbenzene	0.015 J	-	
Isopropylbenzene	0.018 J	-	
Naphthalene	0.051 J	-	
n-Propylbenzene	0.064 J	-	
1,3,5-Trimethylbenzene	0.018 J	-	
1,2,4-Trimethylbenzene	0.03 J	-	
p-Ethyltoluene	0.039 J	-	
1,2,4,5-Tetramethylbenzene	0.037 J	-	
Total HVOCs	0.294	-	

Sample Location		WC-SB-05	
Sample ID	WC-SB-05 (5-6.5)	WC-SB-05 (5-6.5)	
Sample Date	3/23/2022	3/23/2022	
<b>VOCs</b>			
Ethylbenzene	0.7	-	
p,m-Xylene	0.86	-	
o-Xylene	0.28	-	
Xylenes, Total	1.1	-	
n-Butylbenzene	6	-	
sec-Butylbenzene	2.6	-	
tert-Butylbenzene	1.4	-	
Isopropylbenzene	1.2	-	
p-Isopropyltoluene	2.5	-	
Naphthalene	6.5	-	
n-Propylbenzene	7.7	-	
1,3,5-Trimethylbenzene	33 E	-	
1,2,4-Trimethylbenzene	5.8	-	
p-Ethyltoluene	10	-	
Total VOCs	78.54	-	

Sample Location		WC-SB-08	
Sample ID	WC-SB-08 (0.75-2)	WC-SB-08 (7-8.5)	
Sample Date	5/2/2022	5/2/2022	
<b>VOCs</b>			
Benzene	0.00056 J	-	
Ethylbenzene	-	0.29	
p,m-Xylene	-	0.49	
o-Xylene	-	0.034 J	
Xylenes, Total	-	0.52 J	
n-Butylbenzene	-	5.9	
sec-Butylbenzene	-	1.6	
tert-Butylbenzene	-	0.08 J	
Isopropylbenzene	-	2.8	
p-Isopropyltoluene	-	0.89	
n-Propylbenzene	-	12	
Naphthalene	-	1.5	
1,3,5-Trimethylbenzene	-	12	
1,2,4-Trimethylbenzene	-	57	
p-Diethylbenzene	-	14	
p-Ethyltoluene	-	16	
1,2,4,5-Tetramethylbenzene	-	8.5	
Total VOCs	0.00056	133.084	

Sample Location		WC-SB-07	
Sample ID	WC-SB-07 (0.75-2)	WC-SB-07 (6.5-7.5)	
Sample Date	5/2/2022	5/2/2022	
<b>VOCs</b>			
Tetrachloroethene	0.00022 J	-	
Benzene	0.22	-	
Toluene	0.03	-	
Ethylbenzene	1 E	0.24	
1,2-Dichlorobenzene	0.015	-	
1,3-Dichlorobenzene	0.00026 J	-	
1,4-Dichlorobenzene	0.0016 J	-	
p,m-Xylene	0.093	0.22	
o-Xylene	0.038	-	
Xylenes, Total	0.13	0.22	
Styrene	0.00035 J	-	
n-Butylbenzene	0.12	1.5	
sec-Butylbenzene	0.08	0.55	
tert-Butylbenzene	0.0062	0.018	
Isopropylbenzene	0.31 E	0.73	
p-Isopropyltoluene	0.011	0.049	
Naphthalene	0.63 E	0.87	
n-Propylbenzene	0.61 E	2.4	
1,2,4-Trichlorobenzene	0.00068 J	-	
1,3,5-Trimethylbenzene	0.015	0.35	
1,2,4-Trimethylbenzene	0.036	1.1	
p-Diethylbenzene	0.22	1.4	
p-Ethyltoluene	0.32 E	0.54	
1,2,4,5-Tetramethylbenzene	0.61 E	2.2	
Total VOCs	4.36731	12.167	
<b>VOCs by EPA 5035 High</b>			
Benzene	0.36	-	
Ethylbenzene	0.55	-	
1,2-Dichlorobenzene	0.0098 J	-	
p,m-Xylene	0.11 J	-	
o-Xylene	0.025 J	-	
Xylenes, Total	0.14 J	-	
n-Butylbenzene	0.19	-	
sec-Butylbenzene	0.25	-	
tert-Butylbenzene	0.012 J	-	
Isopropylbenzene	0.19	-	
p-Isopropyltoluene	0.01 J	-	
Naphthalene	1.2	-	
n-Propylbenzene	0.65	-	
1,3,5-Trimethylbenzene	0.021 J	-	
1,2,4-Trimethylbenzene	0.072 J	-	
p-Diethylbenzene	0.51	-	
p-Ethyltoluene	0.13	-	
1,2,4,5-Tetramethylbenzene	2.2	-	
Total HVOCs	6.4898	-	

Sample Location		WC-SB-06	
Sample ID	WC-SB-06 (0.75-2)	WC-SB-06 (7-8.5)	
Sample Date	5/2/2022	5/2/2022	
<b>VOCs</b>			
Acetone	0.042	-	
2-Butanone	0.0086 J	-	
n-Butylbenzene	-	15	
sec-Butylbenzene	-	5.9	
Isopropylbenzene	-	12	
p-Isopropyltoluene	-	3.3	
Naphthalene	-	34	
n-Propylbenzene	-	48	
1,3,5-Trimethylbenzene	-	85	
1,2,4-Trimethylbenzene	-	410	
p-Diethylbenzene	-	100	
p-Ethyltoluene	-	270	
1,2,4,5-Tetramethylbenzene	-	28	
Total VOCs	0.0356	1231.47	

Sample Location		WC-SB-03	
Sample ID	WC-SB-03 (7-8)	WC-SB-03 (7-8)	
Sample Date	4/29/2022	4/29/2022	
<b>VOCs</b>			
Toluene	0.0005 J	-	
Acetone	0.022	-	
n-Butylbenzene	0.32 E	-	
sec-Butylbenzene	0.67 E	-	
tert-Butylbenzene	0.0074	-	
o-Chlorotoluene	0.0024	-	

# VOCs in Groundwater

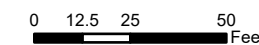
34 East Post Road,  
White Plains, NY

Figure 6



## Legend

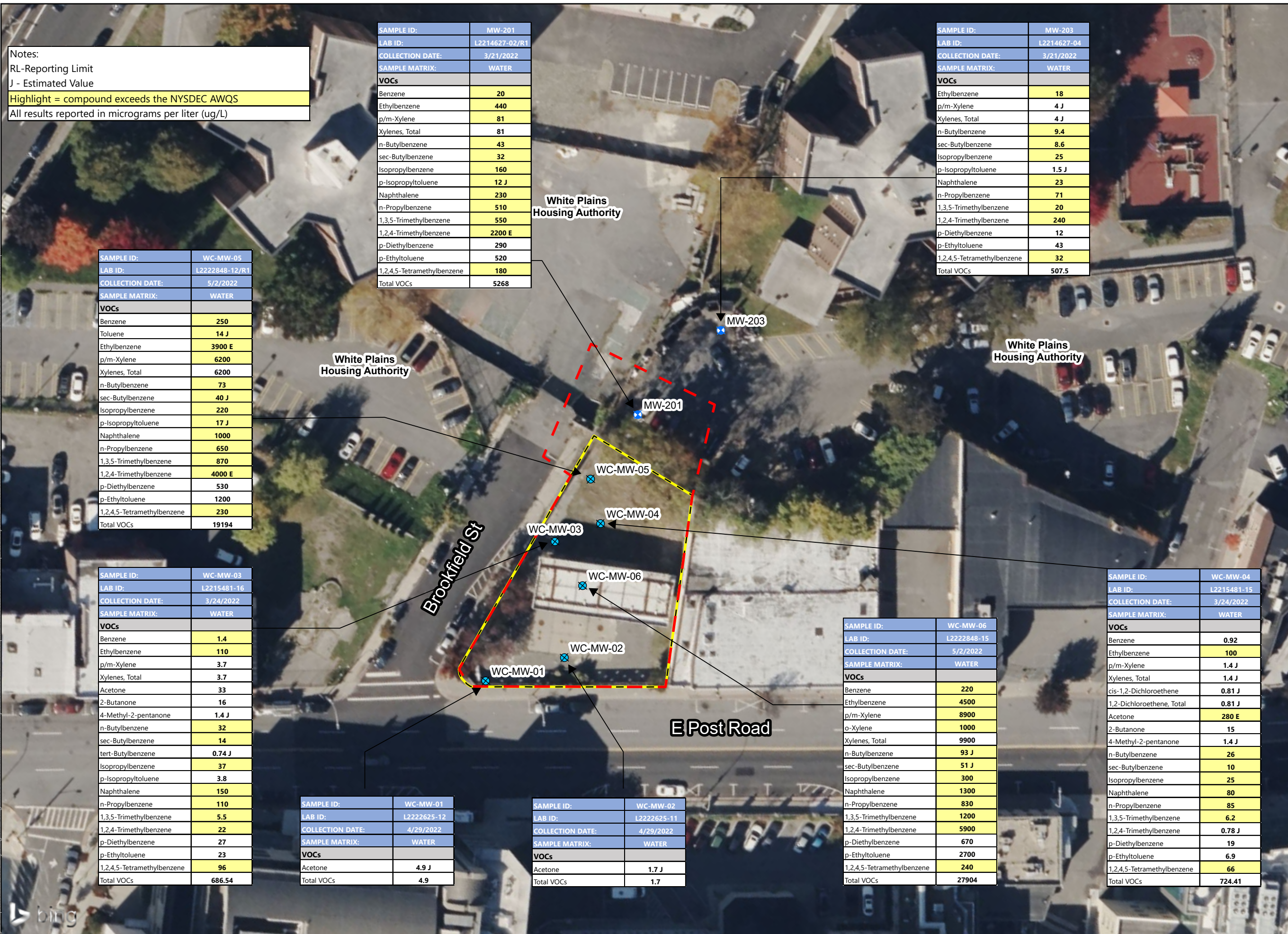
- Well
  - ⊕ BP Property
  - ⊕ WPHA Property
- Site Boundary
- Remediation Boundary



Project #: 214155  
Map Created: November 2024

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users' sole risk.



Notes:  
RL-Reporting Limit  
J - Estimated Value  
Highlight = compound exceeds the NYSDEC AWQS  
All results reported in micrograms per liter (ug/L)

SAMPLE ID:	MW-201
LAB ID:	L2214627-02/R1
COLLECTION DATE:	3/21/2022
SAMPLE MATRIX:	WATER
VOCs	
Benzene	20
Ethylbenzene	440
p/m-Xylene	81
Xylenes, Total	81
n-Butylbenzene	43
sec-Butylbenzene	32
Isopropylbenzene	160
p-Isopropyltoluene	12 J
Naphthalene	230
n-Propylbenzene	510
1,3,5-Trimethylbenzene	550
1,2,4-Trimethylbenzene	2200 E
p-Diethylbenzene	290
p-Ethyltoluene	520
1,2,4,5-Tetramethylbenzene	180
Total VOCs	5268

SAMPLE ID:	MW-203
LAB ID:	L2214627-04
COLLECTION DATE:	3/21/2022
SAMPLE MATRIX:	WATER
VOCs	
Ethylbenzene	18
p/m-Xylene	4 J
Xylenes, Total	4 J
n-Butylbenzene	9.4
sec-Butylbenzene	8.6
Isopropylbenzene	25
p-Isopropyltoluene	1.5 J
Naphthalene	23
n-Propylbenzene	71
1,3,5-Trimethylbenzene	20
1,2,4-Trimethylbenzene	240
p-Diethylbenzene	12
p-Ethyltoluene	43
1,2,4,5-Tetramethylbenzene	32
Total VOCs	507.5

SAMPLE ID:	WC-MW-05
LAB ID:	L2222848-12/R1
COLLECTION DATE:	5/2/2022
SAMPLE MATRIX:	WATER
VOCs	
Benzene	250
Toluene	14 J
Ethylbenzene	3900 E
p/m-Xylene	6200
Xylenes, Total	6200
n-Butylbenzene	73
sec-Butylbenzene	40 J
Isopropylbenzene	220
p-Isopropyltoluene	17 J
Naphthalene	1000
n-Propylbenzene	650
1,3,5-Trimethylbenzene	870
1,2,4-Trimethylbenzene	4000 E
p-Diethylbenzene	530
p-Ethyltoluene	1200
1,2,4,5-Tetramethylbenzene	230
Total VOCs	19194

SAMPLE ID:	WC-MW-03
LAB ID:	L2215481-16
COLLECTION DATE:	3/24/2022
SAMPLE MATRIX:	WATER
VOCs	
Benzene	1.4
Ethylbenzene	110
p/m-Xylene	3.7
Xylenes, Total	3.7
Acetone	33
2-Butanone	16
4-Methyl-2-pentanone	1.4 J
n-Butylbenzene	32
sec-Butylbenzene	14
tert-Butylbenzene	0.74 J
Isopropylbenzene	37
p-Isopropyltoluene	3.8
Naphthalene	150
n-Propylbenzene	110
1,3,5-Trimethylbenzene	5.5
1,2,4-Trimethylbenzene	22
p-Diethylbenzene	27
p-Ethyltoluene	23
1,2,4,5-Tetramethylbenzene	96
Total VOCs	686.54

SAMPLE ID:	WC-MW-01
LAB ID:	L2222625-12
COLLECTION DATE:	4/29/2022
SAMPLE MATRIX:	WATER
VOCs	
Acetone	4.9 J
Total VOCs	4.9

SAMPLE ID:	WC-MW-02
LAB ID:	L2222625-11
COLLECTION DATE:	4/29/2022
SAMPLE MATRIX:	WATER
VOCs	
Acetone	1.7 J
Total VOCs	1.7

SAMPLE ID:	WC-MW-06
LAB ID:	L2222848-15
COLLECTION DATE:	5/2/2022
SAMPLE MATRIX:	WATER
VOCs	
Benzene	220
Ethylbenzene	4500
p/m-Xylene	8900
o-Xylene	1000
Xylenes, Total	9900
n-Butylbenzene	93 J
sec-Butylbenzene	51 J
Isopropylbenzene	300
Naphthalene	1300
n-Propylbenzene	830
1,3,5-Trimethylbenzene	1200
1,2,4-Trimethylbenzene	5900
p-Diethylbenzene	670
p-Ethyltoluene	2700
1,2,4,5-Tetramethylbenzene	240
Total VOCs	27904

SAMPLE ID:	WC-MW-04
LAB ID:	L2215481-15
COLLECTION DATE:	3/24/2022
SAMPLE MATRIX:	WATER
VOCs	
Benzene	0.92
Ethylbenzene	100
p/m-Xylene	1.4 J
Xylenes, Total	1.4 J
cis-1,2-Dichloroethene	0.81 J
1,2-Dichloroethene, Total	0.81 J
Acetone	280 E
2-Butanone	15
4-Methyl-2-pentanone	1.4 J
n-Butylbenzene	26
sec-Butylbenzene	10
Isopropylbenzene	25
Naphthalene	80
n-Propylbenzene	85
1,3,5-Trimethylbenzene	6.2
1,2,4-Trimethylbenzene	0.78 J
p-Diethylbenzene	19
p-Ethyltoluene	6.9
1,2,4,5-Tetramethylbenzene	66
Total VOCs	724.41

# SVOCs in Soil

34 East Post Road,  
White Plains, NY

Figure 7



## Legend

- BP Property
- WPHA Property
- Site Boundary
- Remediation Boundary



Project #: 214155  
Map Created: November 2024

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users' sole risk.



Sample Location WC-SB-05		
Sample ID	WC-SB-05 (1-2)	WC-SB-05 (7-8)
Sample Date	4/29/2022	4/29/2022
SVOCs		
Fluoranthene	0.2	-
Naphthalene	0.026 J	3.9
Benzo(a)anthracene	0.13	-
Benzo(a)pyrene	0.13 J	-
Benzo(b)fluoranthene	0.15	-
Benzo(k)fluoranthene	0.058 J	-
Chrysene	0.15	-
Anthracene	0.036 J	-
Benzo(ghi)perylene	0.11 J	-
Fluorene	0.017 J	0.033 J
Phenanthrene	0.11	0.038 J
Dibenzo(a,h)anthracene	0.025 J	-
Indeno(1,2,3-cd)pyrene	0.11 J	-
Pyrene	0.18	-
Biphenyl	-	0.12 J
2-Methylnaphthalene	-	4.4
Carbazole	0.02 J	-
Total SVOCs	1.452	8.491

Sample Location WC-SB-09		
Sample ID	WC-SB-09 (0.75-2)	WC-SB-09 (6-7.25)
Sample Date	5/2/2022	5/2/2022
SVOCs		
Acenaphthene	0.053 J	-
Fluoranthene	0.94	-
Naphthalene	0.094 J	4.8
Benzo(a)anthracene	0.45	-
Benzo(a)pyrene	0.51	-
Benzo(b)fluoranthene	0.65	-
Benzo(k)fluoranthene	0.21	-
Chrysene	0.45	-
Anthracene	0.13	-
Benzo(ghi)perylene	0.32	-
Fluorene	0.078 J	0.032 J
Phenanthrene	0.64	0.05 J
Dibenzo(a,h)anthracene	0.079 J	-
Indeno(1,2,3-cd)pyrene	0.38	-
Pyrene	0.7	0.018 J
Biphenyl	-	0.1 J
Dibenzofuran	0.043 J	-
2-Methylnaphthalene	0.053 J	4.6
Carbazole	0.093 J	-
Total SVOCs	5.873	9.6

Sample Location WC-SB-06	
Sample ID	WC-SB-06 (5-6.5)
Sample Date	3/23/2022
SVOCs	
Fluoranthene	0.18
Naphthalene	2.6
Benzo(a)anthracene	0.092 J
Benzo(a)pyrene	0.12 J
Benzo(b)fluoranthene	0.19
Benzo(k)fluoranthene	0.054 J
Chrysene	0.12
Benzo(ghi)perylene	0.086 J
Phenanthrene	0.049 J
Indeno(1,2,3-cd)pyrene	0.092 J
Pyrene	0.17
Biphenyl	0.098 J
2-Methylnaphthalene	4.6
Total SVOCs	8.451

Sample Location WC-SB-08		
Sample ID	WC-SB-08 (0.75-2)	WC-SB-08 (5-7)
Sample Date	3/24/2022	3/24/2022
SVOCs		
Fluoranthene	0.26	0.23
Naphthalene	-	0.9
Benzo(a)anthracene	0.17	0.12
Benzo(a)pyrene	0.2	0.11 J
Benzo(b)fluoranthene	0.25	0.16
Benzo(k)fluoranthene	0.1 J	0.054 J
Chrysene	0.19	0.14
Acenaphthylene	0.028 J	-
Benzo(ghi)perylene	0.14 J	0.066 J
Fluorene	-	0.036 J
Phenanthrene	0.1 J	0.12
Dibenzo(a,h)anthracene	0.029 J	-
Indeno(1,2,3-cd)pyrene	0.14 J	0.075 J
Pyrene	0.23	0.18
Biphenyl	-	0.093 J
2-Methylnaphthalene	-	4.3
Total SVOCs	1.837	6.584

Sample Location WC-SB-03	
Sample ID	WC-SB-03 (6-7.5)
Sample Date	3/23/2022
SVOCs	
Naphthalene	0.084 J
Phenanthrene	0.035 J
2-Methylnaphthalene	0.029 J
Total SVOCs	0.148

Sample Location WC-SB-04	
Sample ID	WC-SB-04 (6-7.5)
Sample Date	3/23/2022
SVOCs	
Naphthalene	0.28
2-Methylnaphthalene	0.65
Total SVOCs	0.93

Sample Location WC-SB-05	
Sample ID	WC-SB-05 (5-6.5)
Sample Date	3/23/2022
SVOCs	
Fluoranthene	0.061 J
Naphthalene	3.9
Benzo(a)pyrene	0.036 J
Benzo(b)fluoranthene	0.048 J
Chrysene	0.04 J
Benzo(ghi)perylene	0.038 J
Fluorene	0.023 J
Phenanthrene	0.048 J
Indeno(1,2,3-cd)pyrene	0.035 J
Pyrene	0.055 J
Biphenyl	0.048 J
2-Methylnaphthalene	3
Total SVOCs	7.332

Sample Location WC-SB-08		
Sample ID	WC-SB-08 (0.75-2)	WC-SB-08 (7-8.5)
Sample Date	5/2/2022	5/2/2022
SVOCs		
Acenaphthene	0.037 J	-
Fluoranthene	0.39	-
Naphthalene	0.22	0.12 J
Benzo(a)anthracene	0.24	-
Benzo(a)pyrene	0.28	-
Benzo(b)fluoranthene	0.37	-
Benzo(k)fluoranthene	0.1 J	-
Chrysene	0.23	-
Acenaphthylene	0.048 J	-
Anthracene	0.057 J	-
Benzo(ghi)perylene	0.18	-
Fluorene	0.043 J	-
Phenanthrene	0.21	-
Dibenzo(a,h)anthracene	0.046 J	-
Indeno(1,2,3-cd)pyrene	0.22	-
Pyrene	0.33	-
Biphenyl	-	0.025 J
Dibenzofuran	0.061 J	-
2-Methylnaphthalene	0.1 J	0.74
Carbazole	0.029 J	-
Total SVOCs	3.191	0.885

Sample Location WC-SB-07		
Sample ID	WC-SB-07 (0.75-2)	WC-SB-07 (6.5-7.5)
Sample Date	5/2/2022	5/2/2022
SVOCs		
Acenaphthene	0.068 J	0.021 J
1,2-Dichlorobenzene	0.042 J	-
Fluoranthene	0.64	0.027 J
Naphthalene	1.5	5.4
Bis(2-ethylhexyl)phthalate	0.21	-
Benzo(a)anthracene	0.34	-
Benzo(a)pyrene	0.3	-
Benzo(b)fluoranthene	0.4	-
Benzo(k)fluoranthene	0.1 J	-
Chrysene	0.31	-
Acenaphthylene	0.037 J	-
Anthracene	0.11	-
Benzo(ghi)perylene	0.22	-
Fluorene	0.14 J	0.038 J
Phenanthrene	0.52	0.063 J
Dibenzo(a,h)anthracene	0.042 J	-
Indeno(1,2,3-cd)pyrene	0.21	-
Pyrene	0.58	0.021 J
Biphenyl	0.065 J	0.092 J
Dibenzofuran	0.052 J	-
2-Methylnaphthalene	2.3	5.5
Carbazole	0.058 J	-
Total SVOCs	8.244	11.162

Sample Location WC-SB-10		
Sample ID	WC-SB-10 (0.75-2)	WC-SB-10 (6-7.5)
Sample Date	5/2/2022	5/2/2022
SVOCs		
Acenaphthene	-	0.1 J
2,4-Dinitrotoluene	-	0.093 J
Fluoranthene	0.24	0.32
Naphthalene	0.063 J	19
Bis(2-ethylhexyl)phthalate	-	0.072 J
Benzo(a)anthracene	0.12	0.12
Benzo(a)pyrene	0.12 J	0.064 J
Benzo(b)fluoranthene	0.16	0.1 J
Benzo(k)fluoranthene	0.045 J	0.037 J
Chrysene	0.11	0.1 J
Acenaphthylene	-	0.028 J
Anthracene	-	0.084 J
Benzo(ghi)perylene	0.097 J	0.048 J
Fluorene	-	0.15 J
Phenanthrene	0.11	0.39
Indeno(1,2,3-cd)pyrene	0.1 J	0.052 J
Pyrene	0.17	0.23
Biphenyl	-	0.29 J
Dibenzofuran	-	0.061 J
2-Methylnaphthalene	0.038 J	17
Carbazole	0.018 J	0.053 J
Total SVOCs	1.391	38.412

Sample Location WC-SB-04		
Sample ID	WC-SB-04 (1-2.25)	WC-SB-04 (7-8)
Sample Date	4/29/2022	4/29/2022
SVOCs		
Acenaphthene	0.042 J	0.026 J
Fluoranthene	0.7	0.075 J
Naphthalene	0.029 J	3.1
Benzo(a)anthracene	0.4	0.034 J
Benzo(a)pyrene	0.45	-
Benzo(b)fluoranthene	0.56	-
Benzo(k)fluoranthene	0.18	-
Chrysene	0.34	0.032 J
Anthracene	0.1 J	-
Benzo(ghi)perylene	0.28	-
Fluorene	0.053 J	0.045 J
Phenanthrene	0.42	0.11
Dibenzo(a,h)anthracene	0.071 J	-
Indeno(1,2,3-cd)pyrene	0.34	-
Pyrene	0.54	0.065
Biphenyl	-	0.12 J
Dibenzofuran	0.03 J	0.016 J
2-Methylnaphthalene	-	4.2
Carbazole	0.064 J	-
Total SVOCs	4.599	7.823

Sample Location WC-SB-01	
Sample ID	WC-SB-01 (2-3)
Sample Date	4/29/2022
SVOCs	
Fluoranthene	0.046 J
Benzo(a)anthracene	0.034 J
Benzo(b)fluoranthene	0.033 J
Chrysene	0.03 J
Benzo(ghi)perylene	0.022 J
Pyrene	0.038 J
Total SVOCs	0.203

Sample Location WC-SB-02	
Sample ID	WC-SB-02 (1-2)
Sample Date	4/29/2022
SVOCs	
Fluoranthene	0.16
Benzo(a)anthracene	0.11
Benzo(a)pyrene	0.12 J
Benzo(b)fluoranthene	0.13
Benzo(k)fluoranthene	0.052 J
Chrysene	0.12
Benzo(ghi)perylene	0.085 J
Phenanthrene	0.069 J
Dibenzo(a,h)anthracene	0.02 J
Indeno(1,2,3-cd)pyrene	0.096 J
Pyrene	0.17
Total SVOCs	1.132

Sample Location WC-SB-03	
Sample ID	WC-SB-03 (1-2)
Sample Date	4/29/2022
SVOCs	
Acenaphthene	0.1 J
Fluoranthene	1.3
Naphthalene	0.077 J
Benzo(a)anthracene	0.58
Benzo(a)pyrene	0.56
Benzo(b)fluoranthene	0.69
Benzo(k)fluoranthene	0.21
Chrysene	0.49
Acenaphthylene	0.072 J
Anthracene	0.2
Benzo(ghi)perylene	0.32
Fluorene	0.1 J
Phenanthrene	1.2
Dibenzo(a,h)anthracene	0.08 J
Indeno(1,2,3-cd)pyrene	0.4
Pyrene	1
Dibenzofuran	0.081 J
2-Methylnaphthalene	0.041 J
Carbazole	0.11 J
Total SVOCs	7.611

Sample Location WC-SB-06		
Sample ID	WC-SB-06 (0.75-2)	WC-SB-06 (7-8.25)
Sample Date	5/2/2022	5/2/2022
SVOCs		
Acenaphthene	0.075 J	-
Fluoranthene	0.56	-
Naphthalene	0.088 J	0.03 J
Benzo(a)anthracene	0.35	-
Benzo(a)pyrene	0.34	-
Benzo(b)fluoranthene	0.43	-
Benzo(k)fluoranthene	0.15	-
Chrysene	0.38	-
Anthracene	0.11	-
Benzo(ghi)perylene	0.27	-
Fluorene	0.086	-
Phenanthrene	0.42	-
Dibenzo(a,h)anthracene	0.068	-
Indeno(1,2,3-cd)pyrene	0.3	-
Pyrene	0.46	-
Dibenzofuran	0.05 J	-
2-Methylnaphthalene	0.067 J	0.21 J
Carbazole	0.06 J	-
Total SVOCs	4.264	0.24

Notes:  
 J - Estimated Value  
 U - Not detected above the laboratory reporting limit  
 Highlight = compound exceeds the CP-51  
 All results reported in milligrams per kilogram (mg/kg).  
 Samples collected immediately above the observed water table.

Figure: Encountered: 11/07/2024 - By: aacopaci - Using: WoodardCurran.mxd; Project: 214155 - GIS: 2024 - RAWP - 3/15/2024 - 08: SVOCs in Soil - RAWP: SVOCs in Soil

# SVOCs in Groundwater

34 East Post Road,  
White Plains, NY

Figure 8



## Legend

- Well
- BP Property
- WPHA Property
- Remediation Boundary
- Site Boundary

SAMPLE ID:	MW-203
LAB ID:	L2214627-04
COLLECTION DATE:	3/21/2022
SAMPLE MATRIX:	WATER
<b>SVOCs BY GC/MS-SIM</b>	
Acenaphthene	0.13
Fluoranthene	0.02
Naphthalene	11
Acenaphthylene	0.04
Anthracene	0.02
Fluorene	0.11
Phenanthrene	0.11
Pyrene	0.02
2-Methylnaphthalene	7.1
Total SVOCs GC/MS SIM	18.55

SAMPLE ID:	MW-201
LAB ID:	L2214627-02/R1
COLLECTION DATE:	3/21/2022
SAMPLE MATRIX:	WATER
<b>SVOCs BY GC/MS</b>	
Biphenyl	1
Total SVOCs GC/MS	1
<b>SVOCs BY GC/MS-SIM</b>	
Acenaphthene	0.26
Fluoranthene	0.03
Naphthalene	130
Acenaphthylene	0.1
Anthracene	0.04
Fluorene	0.23
Phenanthrene	0.18
Pyrene	0.02
2-Methylnaphthalene	130
Total SVOCs GC/MS SIM	260.86

SAMPLE ID:	WC-MW-05
LAB ID:	L2222848-12/R1
COLLECTION DATE:	5/2/2022
SAMPLE MATRIX:	WATER
<b>SVOCs BY GC/MS</b>	
Diethyl phthalate	0.71
Biphenyl	5
2,4-Dimethylphenol	2.9
Carbazole	0.91
Total SVOCs GC/MS	9.52
<b>SVOCs BY GC/MS-SIM</b>	
Acenaphthene	0.88
Fluoranthene	0.57
Naphthalene	480
Benzo(a)anthracene	0.24
Benzo(a)pyrene	0.15
Benzo(b)fluoranthene	0.22
Benzo(k)fluoranthene	0.07
Chrysene	0.22
Acenaphthylene	0.38
Anthracene	0.37
Benzo(ghi)perylene	0.12
Fluorene	1.3
Phenanthrene	1.5
Dibenzo(a,h)anthracene	0.02
Indeno(1,2,3-cd)pyrene	0.11
Pyrene	0.52
2-Methylnaphthalene	170
Total SVOCs GC/MS SIM	656.67

SAMPLE ID:	WC-MW-03
LAB ID:	L2215481-16
COLLECTION DATE:	3/24/2022
SAMPLE MATRIX:	WATER
<b>SVOCs BY GC/MS</b>	
Butyl benzyl phthalate	2.8
Total SVOCs GC/MS	2.8
<b>SVOCs BY GC/MS-SIM</b>	
Acenaphthene	0.12
Fluoranthene	0.07
Naphthalene	37
Benzo(a)anthracene	0.03
Benzo(a)pyrene	0.02
Benzo(b)fluoranthene	0.03
Benzo(k)fluoranthene	0.01
Chrysene	0.02
Acenaphthylene	0.04
Anthracene	0.03
Benzo(ghi)perylene	0.02
Fluorene	0.13
Phenanthrene	0.14
Indeno(1,2,3-cd)pyrene	0.02
Pyrene	0.07
2-Methylnaphthalene	31
Total SVOCs GC/MS SIM	68.75

SAMPLE ID:	WC-MW-04
LAB ID:	L2215481-15
COLLECTION DATE:	3/24/2022
SAMPLE MATRIX:	WATER
<b>SVOCs BY GC/MS</b>	
Bis(2-ethylhexyl)phthalate	1.5
Total SVOCs GC/MS	1.5
<b>SVOCs BY GC/MS-SIM</b>	
Acenaphthene	0.1
2-Chloronaphthalene	0.08
Fluoranthene	0.09
Naphthalene	14
Benzo(a)anthracene	0.04
Benzo(a)pyrene	0.02
Benzo(b)fluoranthene	0.03
Benzo(k)fluoranthene	0.01
Chrysene	0.03
Acenaphthylene	0.06
Anthracene	0.04
Benzo(ghi)perylene	0.02
Fluorene	0.13
Phenanthrene	0.18
Indeno(1,2,3-cd)pyrene	0.02
Pyrene	0.08
2-Methylnaphthalene	19
Hexachlorobenzene	0.04
Total SVOCs GC/MS SIM	33.97

SAMPLE ID:	WC-MW-06
LAB ID:	L2222848-15
COLLECTION DATE:	5/2/2022
SAMPLE MATRIX:	WATER
<b>SVOCs BY GC/MS</b>	
Bis(2-ethylhexyl)phthalate	4.4
Di-n-butylphthalate	0.76
Biphenyl	17
Dibenzofuran	3.5
Carbazole	12
Total SVOCs GC/MS	37.66
<b>SVOCs BY GC/MS-SIM</b>	
Acenaphthene	6.3
Fluoranthene	19
Naphthalene	1700
Benzo(a)anthracene	6.5
Benzo(a)pyrene	4.8
Benzo(b)fluoranthene	6.4
Benzo(k)fluoranthene	2
Chrysene	5.8
Acenaphthylene	1.4
Anthracene	5.9
Benzo(ghi)perylene	2.7
Fluorene	8.2
Phenanthrene	25
Dibenzo(a,h)anthracene	0.6
Indeno(1,2,3-cd)pyrene	3
Pyrene	16
2-Methylnaphthalene	850
Total SVOCs GC/MS SIM	2663.6

SAMPLE ID:	WC-MW-02
LAB ID:	L2222625-11
COLLECTION DATE:	4/29/2022
SAMPLE MATRIX:	WATER
<b>SVOCs BY GC/MS-SIM</b>	
Acenaphthene	0.02
Fluoranthene	0.11
Benzo(a)anthracene	0.04
Benzo(a)pyrene	0.03
Benzo(b)fluoranthene	0.05
Benzo(k)fluoranthene	0.02
Chrysene	0.04
Anthracene	0.03
Benzo(ghi)perylene	0.03
Fluorene	0.03
Phenanthrene	0.13
Indeno(1,2,3-cd)pyrene	0.03
Pyrene	0.09
2-Methylnaphthalene	0.03
Total SVOCs GC/MS SIM	0.68

White Plains Housing Authority

White Plains Housing Authority

White Plains Housing Authority

Brookfield St

E Post Road

Notes:  
 J - Estimated Value  
 Highlight = compound exceeds the NYSDEC AWQS  
 All results reported in micrograms per liter (ug/L)

0 12.5 25 50 Feet



Project #: 214155  
 Map Created: November 2024

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New York State, Maxar, Microsoft

# Site Excavation Diagram

34 East Post Road  
White Plains, NY

**Figure 9**

**Legend**

- Site Boundary
- Remediation Boundary
- Proposed Backfill Area
- Approximate Extent of Berm Area
- Ingress Egress Entrance
- Proposed Stockpile Segregation Area



**Note:**  
CAMP locations to adjust on a daily basis due to upwind and downwind conditions. The proposed stockpile segregation area may adjust as needed with the progression of the excavation areas. Backfill amendment may be applied as needed based on field observations.



Project #: 0214155  
Map Created: January 2025

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**APPENDIX A:**

**BORING LOGS**





Woodard & Curran Engineering and Geological Services  
 800 Westchester Avenue, Suite N507  
 Rye Brook, New York 10573

# WELL NUMBER WC-SB-01

**CLIENT** White Plains Hospital **PROJECT NAME** 34 East Post Road - Former BP Station  
**PROJECT NUMBER** 214155.06 **PROJECT LOCATION** White Plains, NY  
**DATE STARTED** 4/29/22 **COMPLETED** 4/29/22 **GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** 4  
**DRILLING CONTRACTOR** Eastern Environmental **GROUND WATER LEVELS:**  
**DRILLING METHOD** Macro Core **AT TIME OF DRILLING** 9.00 ft  
**LOGGED BY** John Pellegrini **CHECKED BY** \_\_\_\_\_ **AT END OF DRILLING** ---  
**NOTES** Temp Well Installed **AFTER DRILLING** ---

DEPTH (ft)	RECOVERY %	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data	WELL DIAGRAM
0					ASPHALT.		
					0.7 Broken pulverized CONCRETE.	PID = 0ppm	
2	58	SB-01 (2-3') collected	SW-SM		1.7 Brown, moist, medium dense, fine SAND, little silt, trace small gravel. No odor.	PID = 0ppm	
					2.9 No Recovery.	PID = 0ppm	
4					5.0 Brown, moist, medium dense, fine SAND, little silt, trace small gravel. No odor.		
		SB-01 (5-6') collected	SW-SM		5.7 Brown, wet, medium to fine SAND, some silt. No odor.	PID = 0ppm	
6			SM		6.3 No Recovery. Water table believed to be at 9 ftbgs.	PID = 0ppm	
8	25						
10							
12					No Soil Core Collected.		
14							
15.0							

Bottom of borehole at 15.0 feet.

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Screen Interval (6'-15')



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 Rye Brook, New York 10573

# WELL NUMBER WC-SB-02

<b>CLIENT</b> White Plains Hospital	<b>PROJECT NAME</b> 34 East Post Road - Former BP Station
<b>PROJECT NUMBER</b> 214155.06	<b>PROJECT LOCATION</b> White Plains, NY
<b>DATE STARTED</b> 4/29/22	<b>COMPLETED</b> 4/29/22
<b>DRILLING CONTRACTOR</b> Eastern Environmental	<b>GROUND ELEVATION</b> _____
<b>DRILLING METHOD</b> Macro Core	<b>HOLE SIZE</b> 4
<b>LOGGED BY</b> John Pellegrini	<b>GROUND WATER LEVELS:</b>
<b>CHECKED BY</b> _____	▽ <b>AT TIME OF DRILLING</b> 9.00 ft
<b>NOTES</b> Temp Well Installed	<b>AT END OF DRILLING</b> ---
	<b>AFTER DRILLING</b> ---

DEPTH (ft)	RECOVERY %	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data	WELL DIAGRAM	
								Feet BGS
0					ASPHALT.			
		SB-02 (1-2') collected	SP-SM		0.5 Brown/black, dry, medium dense, fine SAND, little silt, trace asphalt, little medium gravel. No odor.	PID = 0ppm		
				SP		1.2 Brown, dry, loose/medium dense, fine SAND, medium to fine sand from 3-3.33 ftbgs. No odor.		PID = 0ppm
2	67					3.3 No Recovery.		PID = 0ppm
4					5.0 No Recovery. Material fell out of macro core. Water table believed to be at 9 ftbgs.			
6	0							
8								
10								
		SB-02 (11-12') collected	GP		10.0 Gray, saturated, medium sized gravel. No odor.	PID = 0ppm		
				SW		10.6 Brown/grayish brown, saturated, dense, medium to fine SAND, trace silt, some small to coarse gravel. No odor.		PID = 0ppm
12	47			SW		12.0 Brown/grayish brown, dense, saturated, medium to fine SAND, little coarse to fine sand, some coarse to small gravel, eroded bedrock at the bottom.		PID = 0ppm
						12.3 No Recovery.		
14					14.0 Refusal at 14.0 feet. Bottom of borehole at 15.0 feet.			

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# BORING NUMBER WC-SB-03

<b>CLIENT</b> White Plains Hospital	<b>PROJECT NAME</b> 34 East Post Road - Former BP Station
<b>PROJECT NUMBER</b> 214155.06	<b>PROJECT LOCATION</b> White Plains, NY
<b>DATE STARTED</b> 4/29/22 <b>COMPLETED</b> 4/29/22	<b>GROUND ELEVATION</b> _____ <b>HOLE SIZE</b> 4
<b>DRILLING CONTRACTOR</b> Eastern Environmental	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> Macro Core	▽ <b>AT TIME OF DRILLING</b> 7.00 ft
<b>LOGGED BY</b> John Pellegrini <b>CHECKED BY</b> _____	<b>AT END OF DRILLING</b> ---
<b>NOTES</b> _____	<b>AFTER DRILLING</b> ---

DEPTH (ft)	RECOVERY %	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data
0					ASPHALT.	
			SP		0.5 Brown/gray/black, medium dense, dry, fine SAND, trace silt, little small gravel. No odor.	
		SB-03 (1-2') collected	SP		0.8 Brown, dry, medium dense/loose, fine SAND, trace silt, medium to fine sand from 2.75'-3.08' ftbgs, trace brick, little medium to coarse gravel. No odor.	PID = 0ppm
2			SP			PID = 0ppm
	62				3.1 No Recovery.	PID = 0ppm
					5.0 Brown, moist, medium dense, medium to fine SAND, trace silt, little small gravel. No odor.	PID = 0ppm
			SW		5.8 Brown, wet, medium dense, medium to fine SAND, little silt, trace gravel. No odor.	PID = 0ppm
6			SW-SM			PID = 0ppm
					▽ 7.3 Black, saturated, medium dense, fine SAND, little silt, little fine gravel. Odors and staining throughout interval.	PID = 0ppm
	62	SB-03 (7-8') collected	SP-SM		8.0	PID = 148ppm
8			SW		8.1 Black/brown, coarse to fine SAND, trace gravel. No odor.	PID = 3ppm
					No Recovery.	
10					10.0	

Bottom of borehole at 10.0 feet.

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# BORING NUMBER WC-SB-04

<b>CLIENT</b> <u>White Plains Hospital</u>	<b>PROJECT NAME</b> <u>34 East Post Road - Former BP Station</u>
<b>PROJECT NUMBER</b> <u>214155.06</u>	<b>PROJECT LOCATION</b> <u>White Plains, NY</u>
<b>DATE STARTED</b> <u>4/29/22</u> <b>COMPLETED</b> <u>4/29/22</u>	<b>GROUND ELEVATION</b> _____ <b>HOLE SIZE</b> <u>4</u>
<b>DRILLING CONTRACTOR</b> <u>Eastern Environmental</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Macro Core</u>	▽ <b>AT TIME OF DRILLING</b> <u>7.50 ft</u>
<b>LOGGED BY</b> <u>John Pellegrini</u> <b>CHECKED BY</b> _____	<b>AT END OF DRILLING</b> <u>---</u>
<b>NOTES</b> _____	<b>AFTER DRILLING</b> <u>---</u>

DEPTH (ft)	RECOVERY %	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data
0					Pulverized CONCRETE.	
1.0						
2.0	60	SB-04 (1-2.25') collected	SP		Brown, dry, medium dense, fine SAND, little silt, little fine gravel. Odor at 2 ftbgs.	PID = 0ppm
2.4			SP-SM		Brown/black, dense, moist, fine SAND, little silt. Faint odor with staining observed.	PID = 0.7ppm
3.0			SP-SM		Brown/gray, moist, dense, fine SAND, little silt, little fine gravel. No odor.	
4.0					No Recovery.	PID = 0.7ppm
5.0						
5.8			GP		Gray, moist, coarse GRAVEL, trace fine sand. No odor.	PID = 0ppm
6.4			SP-SM		Brown/gray, medium dense, moist, fine SAND, little interwoven coarse to fine sand, little silt, trace fine gravel. No odor.	PID = 0.2ppm
7.4			SW		White/gray/tan, wet, medium dense, coarse to fine SAND. Slight odor.	PID = 21.7ppm
7.4	63	SB-04 (7-8') collected	SP-SM		▽ Brown/black/gray, saturated, medium dense, fine SAND, little silt, little coarse sand, trace fine gravel. Strong odors from 2.42-2.50 ftbgs odors get weaker toward bottom of interval.	PID = 609ppm
8.2					No Recovery.	PID = 7ppm
10.0						

Bottom of borehole at 10.0 feet.

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# WELL NUMBER WC-SB-05

<b>CLIENT</b> White Plains Hospital	<b>PROJECT NAME</b> 34 East Post Road - Former BP Station
<b>PROJECT NUMBER</b> 214155.06	<b>PROJECT LOCATION</b> White Plains, NY
<b>DATE STARTED</b> 4/29/22	<b>COMPLETED</b> 4/29/22
<b>DRILLING CONTRACTOR</b> Eastern Environmental	<b>GROUND ELEVATION</b> _____
<b>DRILLING METHOD</b> Macro Core	<b>HOLE SIZE</b> 4
<b>LOGGED BY</b> John Pellegrini	<b>GROUND WATER LEVELS:</b>
<b>CHECKED BY</b> _____	▽ <b>AT TIME OF DRILLING</b> 7.50 ft
<b>NOTES</b> Temp Well Installed	<b>AT END OF DRILLING</b> ---
	<b>AFTER DRILLING</b> ---

DEPTH (ft)	RECOVERY %	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data	WELL DIAGRAM
0					ASPHALT.		
1.2		SB-05 (1-2') collected	SP-SM		Gray/tan/brown, dry, medium dense, fine SAND, little silt, little fine gravel. No odor.	PID = 0.2ppm	
2.8	82		SP-SM		Gray/brown, moist, dense, fine SAND, little silt, little medium to fine gravel. Faint odor from 3.91-4.08 ftbgs.	PID = 0.7ppm	
4.1					No Recovery.	PID = 0.2ppm	
5.0			SW-SM		Brown, moist, medium dense, medium to fine SAND, little silt, some fine gravel. Slight odor from 6.58-6.67 ftbgs.	PID = 6.9ppm	
6.7			SW		Black/white/gray, moist, loose, coarse to fine SAND, little fine gravel. Odors.	PID = 0.9ppm	
7.3	63	SB-05 (7-8') collected	SP-SM		▽ Gray/brown/black, saturated, medium dense, fine SAND, little silt, little fine gravel. Strong odors from 7.5-8.17 ftbgs.	PID = 0.6ppm	
8.2					No Recovery.	PID = 45ppm	
10.0					No core collected.	PID = 330ppm	
11.0						PID = 1054ppm	
12.0						PID = 156ppm	
15.0							Screen Interval (7'-14')

Bottom of borehole at 15.0 feet.

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# BORING NUMBER WC-SB-06

**CLIENT** White Plains Hospital  
**PROJECT NUMBER** 214155.06  
**DATE STARTED** 5/2/22 **COMPLETED** 5/2/22  
**DRILLING CONTRACTOR** Eastern Environmental  
**DRILLING METHOD** Macro Core  
**LOGGED BY** John Pellegrini **CHECKED BY**  
**NOTES**

**PROJECT NAME** 34 East Post Road - Former BP Station  
**PROJECT LOCATION** White Plains, NY  
**GROUND ELEVATION** **HOLE SIZE** 4  
**GROUND WATER LEVELS:**  
 ∇ **AT TIME OF DRILLING** 7.50 ft  
**AT END OF DRILLING** ---  
**AFTER DRILLING** ---

DEPTH (ft)	RECOVERY %	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data	
							Feet BGS
0					Topsoil. Brown, moist, loose/medium dense, fine SAND, little silt, little medium to fine gravel. No odor.		
		SB-06 (0.75-2') collected	SP-SM		1.2	Brown/gray/white, moist, medium dense, fine SAND, little silt, little medium to fine gravel, trace coarse sand. No odor.	PID = 0ppm
2			SP-SM		4.1	No Recovery.	PID = 0ppm
	82	SB-06 (7-8.25') collected	SP		5.0	Brown/black/gray, moist, loose, fine SAND, trace silt. No odor. Green staining at 5.75 ftbgs.	PID = 2ppm
4			SW		5.8	Black/white/gray, moist, loose/medium dense, coarse to fine SAND, trace silt. No odor.	PID = 1.8ppm
	70		SW		7.0	Gray/brown/white, moist to wet, medium dense, medium to fine SAND, trace silt. Odors and black staining from 7.41-7.67 ftbgs.	PID = 1.8ppm
6			SP-SM		7.7	Gray/brown, saturated, medium dense, fine SAND, little coarse sand, little silt, little medium to fine gravel. Faint odor.	PID = 2.8ppm
					8.5	No Recovery.	PID = 5.2ppm
8					10.0	No Recovery.	PID = 7.7ppm
							PID = 97.3ppm
							PID = 116ppm
10							PID = 11.2ppm

Bottom of borehole at 10.0 feet.

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# WELL NUMBER WC-SB-07

**CLIENT** White Plains Hospital **PROJECT NAME** 34 East Post Road - Former BP Station  
**PROJECT NUMBER** 214155.06 **PROJECT LOCATION** White Plains, NY  
**DATE STARTED** 5/2/22 **COMPLETED** 5/2/22 **GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** 4  
**DRILLING CONTRACTOR** Eastern Environmental **GROUND WATER LEVELS:**  
**DRILLING METHOD** Macro Core **AT TIME OF DRILLING** 7.50 ft  
**LOGGED BY** John Pellegrini **CHECKED BY** \_\_\_\_\_ **AT END OF DRILLING** ---  
**NOTES** Temp Well Installed **AFTER DRILLING** ---

DEPTH (ft)	RECOVERY %	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data	WELL DIAGRAM
0							
2	68	SB-07 (0.75-2') collected	SP-SM		Brown/gray/black, moist, medium dense, fine SAND, little silt, little medium to fine gravel. Staining from 1.08-1.33 ftbgs with odors.	PID = 33.5ppm	
3.4			SP-SM		Brown/tan, moist, medium dense, fine SAND, little silt. Faint odors.	PID = 20.5ppm	
4		No Recovery.				PID = 33ppm	
5.0			SW		Brown/black/gray, moist, medium dense, medium to fine SAND, little coarse sand, trace silt, some medium to fine gravel. Odors.	PID = 1.7ppm	
6						PID = 19.1ppm	
7.0			SP-SM		Gray/black/brown, wet to saturated, medium dense, fine SAND, little silt. Staining and odors from 7.17-7.42' ftbgs.	PID = 354ppm	
7.7	53	SB-07 (6.5-7.5') collected	SP-SM		Gray/black/brown, wet to saturated, medium dense, fine SAND, little silt. Staining and odors from 7.17-7.42' ftbgs.	PID = 618ppm	
8		No Recovery				PID = 52ppm	
10		No core collected.					
12							
14							
15.0							

Bottom of borehole at 15.0 feet.

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# BORING NUMBER WC-SB-08

**CLIENT** White Plains Hospital  
**PROJECT NUMBER** 214155.06  
**DATE STARTED** 5/2/22 **COMPLETED** 5/2/22  
**DRILLING CONTRACTOR** Eastern Environmental  
**DRILLING METHOD** Macro Core  
**LOGGED BY** John Pellegrini **CHECKED BY**  
**NOTES**

**PROJECT NAME** 34 East Post Road - Former BP Station  
**PROJECT LOCATION** White Plains, NY  
**GROUND ELEVATION** **HOLE SIZE** 4  
**GROUND WATER LEVELS:**  
 ∇ **AT TIME OF DRILLING** 7.50 ft  
**AT END OF DRILLING** ---  
**AFTER DRILLING** ---

DEPTH (ft)	RECOVERY %	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data
0					Feet BGS 0.2 ASPHALT.	
2	75	SB-08 (0.75-2') collected	SP-SM		Brown, dry, medium dense, fine SAND, little silt, little fill material including asphalt, little fine to medium gravel. No odor.	PID = 0ppm
4			SP-SM		Light brown, moist, loose/medium dense, fine SAND, little silt, trace quartz rock fragments. No odor.	PID = 0ppm
6			SP-SM		No Recovery.	
7			SP-SM		Light brown, moist, loose/medium dense, fine SAND, little silt, coarse gravel 5.83-5.92 ftbgs. No odor.	PID = 0ppm
8		SB-08 (7-8.5') and duplicate collected	SW-SM		Brown/light brown, moist to wet, medium dense, medium to fine SAND, little silt, trace fine gravel. No odor.	PID = 0ppm
9			SP-SM		Gray, saturated, medium dense, fine SAND, little silt, trace fine gravel. Odor.	PID = 436ppm
10					No Recovery.	PID = 11.3ppm

Bottom of borehole at 10.0 feet.

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# WELL NUMBER WC-SB-09

**CLIENT** White Plains Hospital  
**PROJECT NUMBER** 214155.06  
**DATE STARTED** 5/2/22 **COMPLETED** 5/2/22  
**DRILLING CONTRACTOR** Eastern Environmental  
**DRILLING METHOD** Macro Core  
**LOGGED BY** John Pellegrini **CHECKED BY**  
**NOTES** Temp Well Installed

**PROJECT NAME** 34 East Post Road - Former BP Station  
**PROJECT LOCATION** White Plains, NY  
**GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** 4  
**GROUND WATER LEVELS:**  
 ▽ **AT TIME OF DRILLING** 7.00 ft  
**AT END OF DRILLING** ---  
**AFTER DRILLING** ---

DEPTH (ft)	RECOVERY %	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data	WELL DIAGRAM
0							
0.5			SP-SM		Topsoil with organics, Brown, moist, loose, fine SAND, some silt, little medium to fine gravel. No odor.		
0.8			GP		White coarse GRAVEL.		
2	60	SB-09 (0.75-2') collected	SP-SM		Brown/gray, moist, medium dense, fine SAND, little silt, trace fine gravel. Odors from 2.5-3 ftbgs.	PID = 3.9ppm	
3.0					No Recovery.	PID = 40.3ppm	
4						PID = 297ppm	
5.0							
5.8			SP-SM		Gray, moist, loose/medium dense, fine SAND, little silt, little medium to fine gravel. Odor.	PID = 55ppm	
6.2			GP		Coarse ROCK.	PID = 98ppm	
6.67-6.83		SB-09 (6-7.25') collected	SP-SM		Gray/brown, moist to wet, medium dense, fine SAND, little silt. Green staining from 6.67-6.83 ftbgs with strong odors.	PID = 1939ppm	
7.3					▽	PID = 115ppm	
8	45				No Recovery.		
10					No core collected		
12							
14							
15.0							

Bottom of borehole at 15.0 feet.

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Screen Interval (7'-14')



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# WELL NUMBER WC-SB-10

**CLIENT** White Plains Hospital **PROJECT NAME** 34 East Post Road - Former BP Station  
**PROJECT NUMBER** 214155.06 **PROJECT LOCATION** White Plains, NY  
**DATE STARTED** 5/2/22 **COMPLETED** 5/2/22 **GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** 4  
**DRILLING CONTRACTOR** Eastern Environmental **GROUND WATER LEVELS:**  
**DRILLING METHOD** Macro Core **▽ AT TIME OF DRILLING** 6.50 ft  
**LOGGED BY** John Pellegrini **CHECKED BY** \_\_\_\_\_ **AT END OF DRILLING** ---  
**NOTES** Temp Well Installed **AFTER DRILLING** ---

DEPTH (ft)	RECOVERY %	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data	WELL DIAGRAM
0					CONCRETE.		
		SB-10 (0.75-2') collected	SP-SM		0.7 Brown, moist, medium dense, fine SAND, little silt, trace medium to fine gravel. No odor.	PID = 1.9ppm	
2	53				1.8 Brown/black/gray, fine SAND, some silt. Slight odor 2.33-2.67 ftbgs.	PID = 28.4ppm	
4					2.7 No Recovery.	PID = 180ppm	
6		SB-10 (6-7.5') collected	SP		5.0 Brown/gray, moist to wet. medium dense, fine SAND, trace silt. Staining observed from 5.75-5.83 ftbgs and 6.33-6.75 ftbgs. Strong odors from 6-7.58 ftbgs.	PID = 23.4ppm	
8	52				7.6 No Recovery.	PID = 856ppm	
10					10.0 No core collected.	PID = 903ppm	
12							
14							
15.0							

Screen Interval (7'-14')

Bottom of borehole at 15.0 feet.

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**APPENDIX B:**

**GOVERNING DOCUMENTS**



STATE OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

.....)  
In the matter of the Alleged Violations of  
Article 17 of the New York State Environmental  
Conservation Law ("ECL"), Article 12 of the Navigation  
Law of the State of New York and Title 6 of the Official  
Compilation of Codes, Rules and Regulations  
("6 NYCRR") of the State of New York

**A M E N D E D  
O R D E R O N C O N S E N T**

Case No. SPILLS.16-  
08934.11.2018

-by-

Marianina Oil Corp., White Plains Hospital Medical Center &  
34 EPR LLC

Respondents  
.....)

WHEREAS:

1. The New York State Department of Environmental Conservation (the "Department") entered an Order on Consent with Marianina Oil Corp. ("Marianina") for this matter in August, 2021 ("2021 Order"). The 2021 Order is incorporated herein by reference and, except as amended below, remains in full force and effect.
2. The 2021 Order was executed to resolve open violations including the violation of a prior Order executed in 2017 ("2017 Order"), in which Marianina agreed to remediate contamination at a petroleum bulk storage facility located at 34 East Post Road, White Plains NY (the "Facility"). Marianina filed bankruptcy in the middle of the Department's enforcement action for failing to comply with the 2017 Order.
3. The 2021 Order requires Marianina to facilitate the cleanup of the Facility pursuant to the approved workplan attached to and incorporated into the 2021 Order (the "Workplan"). The 2021 Order further requires that Marianina seek to incorporate the terms and conditions of the 2021 Order and attached Workplan as a priority in the eventual Bankruptcy Plan.
4. White Plains Hospital Medical Center ("White Plains Hospital"), or an affiliated entity 34 EPR LLC, now intends to purchase the Facility and, provided it proceeds with the purchase, shall deposit \$1,250,000 from the proceeds of the sale into an escrow account to be disbursed in accordance with the Bankruptcy Court Order to facilitate the cleanup of the Facility. White Plains Hospital or 34 EPR LLC will be utilizing these proceeds from the sale of the Facility to conduct the cleanup required of Marianina under the 2021 Order.

5. The Department, with the consent of Respondent Marianina and White Plains Hospital and 34 EPR LLC, has agreed to and enters into, the following amendment to the 2021 Order.

THE COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION HEREBY ORDERS THAT:

I. The 2021 Order on Consent is hereby amended to add either White Plains Hospital or 34 EPR LLC as a Party to the 2021 Order depending on which entity acquires the Facility. The party will be added the day the Facility is acquired. White Plains Hospital or 34 EPR LLC shall complete the cleanup required by the 2021 Order with the \$1,250,000 set aside from the bankruptcy proceeding as is outlined in the 2021 Order.

II. Paragraph I.2. of the 2021 Order is removed and amended as follows:

Marianina has submitted, for Department approval, a proposed Workplan to implement and complete the investigation and remediation due to the contamination at and emanating from the Facility. The Workplan has already been approved by the Department, and is already an enforceable part of this agreement and attached hereto as Exhibit A. White Plains Hospital, 34 EPR have submitted a supplemental map (Exhibit B) with new information to further facilitate the remediation which has also now been approved by the Department; however if conditions on site show that contamination emanating from this spill goes beyond the map it will also have to be remediated as part of this Order. White Plains Hospital, 34 EPR LLC or another entity shall implement and complete the Workplan in Exhibits A within the remediation boundary\_map in Exhibit B as approved on behalf of Marianina. To clarify, the White Plains Hospital or 34 EPR LLC agree to remediate to achieve the goal of the petroleum cleanup levels in the CP-51 Guidance document in all end point samples both on- and off-site within the Spill Remediation Boundary area shown on the map attached hereto in Exhibit B. If the money runs out in the bankruptcy before the full Workplan can be completed within the area shown on the map in Exhibit B and pursuant to the Workplan in Exhibit A, then either: a. the Department shall undertake any remaining work for the cleanup pursuant to its authority under Navigation Law, which is subject to cost recovery or b. White Plains Hospital, 34 EPR LLC, or another entity may enter into an order or apply to the New York State Brownfield Cleanup Program as appropriate to finish the remaining work, including any off-site work required therein, utilizing the approved Workplan attached hereto in Exhibit B that is subject to the Order, to ensure the required work is completed. Post remediation groundwater monitoring will be subject to final department approval. If additional remediation is required beyond Spill Remediation Boundary shown on the map in Exhibit B that is not related to this spill on the White Plains Housing Authority property or elsewhere, subject to access approval from any off-site property owner(s) at the time, then those areas would be eligible to apply to the Brownfield Cleanup Program.

III. Paragraph I.4. of the 2021 Order is removed and replaced with the following:

This Order shall not terminate until the work for the cleanup has been completed, or the Department enters into a subsequent order or Brownfield Cleanup Agreement with White Plains Hospital, 34 EPR LLC or a new entity to complete any remaining work, including any off-site work.

IV. All other provisions of the Order on Consent remain unchanged, in full force and effect and shall be binding on the Respondents.

IV. This Second Amendment to the Order on Consent shall take effect when it is signed by Respondents and a designee of the Commissioner.

DATED: September 8, 2022

BASIL SEGGOS  
COMMISSIONER  
NEW YORK STATE DEPARTMENT OF  
ENVIRONMENTAL CONSERVATION

By: *Andrew Guglielmi*

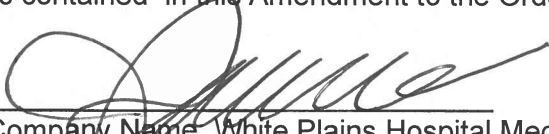
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Andrew Guglielmi, Esq. Director  
Division of Environmental Remediation

CONSENT BY RESPONDENT

Respondent White Plains Hospital Medical Center hereby consents to the issuing and entering of this Amendment to Order on Consent without further notice, and agrees to be bound by the terms, conditions and provisions contained in this Amendment to the Order on Consent.

9/1/22  
Date

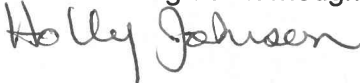
  
Company Name: White Plains Hospital Medical Center  
Name: Joseph Guarracino  
Title: Executive Vice President, Chief Administrative Officer  
& Chief Financial Officer, Authorized Signatory

ACKNOWLEDGMENT

STATE OF New York )  
COUNTY OF Westchester ) ss:

On the 1 day of September in the year 2022, before me personally came Joseph Guarracino to me known, who being, by me duly sworn, did depose and say that he/she is EVP, CAO, CFO of White Plains Hospital and that he/she executed the above instrument; and that he/she signed his/her name thereto by authority of said company.

Notary Public, Signature and Office  
of individual taking acknowledgment:

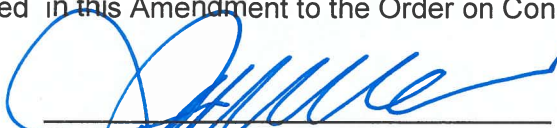


**HOLLY JOHNSON**  
Notary Public, State of New York  
No. 01JO8008057  
Qualified in Westchester County  
Commission Expires June 1, 2026

CONSENT BY RESPONDENT

Respondent 34 EPR LLC hereby consents to the issuing and entering of this Amendment to Order on Consent without further notice, and agrees to be bound by the terms, conditions and provisions contained in this Amendment to the Order on Consent.

9/1/22  
Date

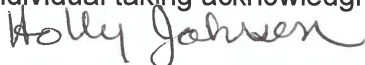
  
Company Name: 34 EPR LLC  
Name: Joseph Guarracino  
Title: Authorized Signatory

ACKNOWLEDGMENT

STATE OF New York )  
COUNTY OF Westchester ) ss:

On the 1 day of September in the year 2022, before me personally came Joseph Guarracino to me known, who being, by me duly sworn, did depose and say that he/she is EVP, CAO CFO of White Plains Hospital and that he/she executed the above instrument; and that he/she signed his/her name thereto by authority of said company.

Notary Public, Signature and Office  
of individual taking acknowledgment:



HOLLY JOHNSON  
Notary Public, State of New York  
No. 01J08008057  
Qualified in Westchester County  
Commission Expires June 1, 2026

CONSENT BY RESPONDENT

Respondent Marianina Oil Corp. hereby consents to the issuing and entering of this Amendment to Order on Consent without further notice, and agrees to be bound by the terms, conditions and provisions contained in this Amendment to the Order on Consent.

9/6/2022  
Date

*Nancy A. Madoni*  
Company Name: Marianina Oil Corp.  
Name: Nancy Madoni  
Title: Chief Restructuring Officer

ACKNOWLEDGMENT

STATE OF New York  
COUNTY OF Westchester ss:

On the 6th day of September in the year 2022, before me personally came Nancy Madoni to me known, who being, by me duly sworn, did depose and say that he/she is Chief Restructuring Officer of Marianina Oil Corp. and that he/she executed the above instrument; and that he/she signed his/her name thereto by authority of said company.

Notary Public, Signature and Office of individual taking acknowledgment:

*Lee J. Lefkowitz*  
**LEE J. LEFKOWITZ**  
Notary Public, State of New York  
Qualified in New York County  
No. 02LE6263517  
My Commission Expires June 11, 2024

IN THE UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

WHITE PLAINS HOUSING AUTHORITY,  <p style="text-align: right;">Plaintiff,</p> <p style="text-align: center;">-against-</p> 34 EPR, LLC,  <p style="text-align: right;">Defendant.</p>
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STIPULATION OF  
SETTLEMENT AND ORDER  
  
17-cv-6250-NSR-JCM

MEMO ENDORSED

WHEREAS the White Plains Housing Authority (“WPHA” or “Plaintiff”) commenced this action on August 18, 2017, against Defendant BP Products North America Inc. (“BPPNA”) pursuant to the Resource Conservation and Recovery Act (“RCRA”), 42 U.S.C. 6901 et seq.; the New York State Navigation Law, N.Y. Nav. Law 181, and state law regarding a private nuisance, trespass, and negligence, seeking declaratory relief, injunctive relief, damages, and attorneys’ fees and costs for the contamination emanating from a former service station at 34 East Post Road, White Plains, New York (the “Service Station”) and impacting Plaintiff’s real property at and in the vicinity of its building located at 33 Fisher Court, White Plains, New York (“Building 33”); and

WHEREAS Marianina Oil Corporation (“Marianina”), the then owner of the former Service Station, and Atlantic Richfield (an affiliate of BPPNA) were subsequently added as defendants in this action; and

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WHEREAS in or about November 2019, the case against each of BPPNA and Atlantic Richfield was settled, they were dismissed from this action, and this case continued against Defendant Marianina; and

WHEREAS on August 27, 2020, WPHA was granted summary judgment against Marianina on all issues, including the issue of liability for creating an imminent and substantial endangerment to WPHA and its community, under RCRA for injunctive relief to abate the endangerment to WPHA and its community (ECF No. 112); and

WHEREAS in September 2020, Marianina filed for bankruptcy under Chapter XI of the Bankruptcy Code; and

WHEREAS on October 30, 2020, Magistrate Judge Judith McCarthy ruled that the grant of an injunction under RCRA was not stayed by the Bankruptcy filing; and

WHEREAS on September 8, 2022, the White Plains Hospital Medical Center (“White Plains Hospital”), 34 EPR and Marianina entered into an amended version of a NYSDEC Order that Marianina had previously signed that added White Plains Hospital and 34 EPR as Respondents to the Order; and

WHEREAS on December 16, 2022, this Court entered an Order substituting 34 EPR, for Marianina as the defendant in this action on the terms provided for therein and stated “Plaintiff retains the same rights, claims and defenses against White Plains Hospital it otherwise would possess as against Marianina” (ECF No. 229) – White Plains Hospital being the sole member and manager of 34 EPR; and

WHEREAS on December 19, 2022, this Court denied a motion previously made by Marianina to dismiss or stay this action based on the NYSDEC Consent Order (ECF No. 230); and

WHEREAS White Plains Hospital, although a non-party to this action, is the sole member and manager of 34 EPR, and agrees to comply with the obligations assigned to it under this Order; and

WHEREAS the undersigned parties wish to finally and fully resolve this action and all claims, disputes, relief sought, and damages associated therewith, without the need for further litigation by entering into this stipulation of settlement and order (the “Stipulation and Order”); and

NOW, THEREFORE, it is hereby AGREED AND ORDERED as follows:

1. The foregoing “WHEREAS” recitals are included herein as if set forth at length. 34 EPR shall remediate the Service Station and WPHA’s adjacent property in the vicinity of WPHA’s Building 33 in accordance with this Stipulation and Order and its attachments so as to protect health and the environment from endangerment within the meaning of RCRA and to maintain the jurisdiction of this Court as follows:

- a. During said remediation of the contaminated soils on, under and associated with the under the Service Station and to the east, north, and west (and all points in between) of the Service Station, on and under all adjacent impacted WPHA

property, soil shall be excavated until all soil data from side walls and bottom samplings comply with the attached Table 1 or the red line on the attached Figure A is reached.

b. All contaminated soils to the south of the Service Station shall be excavated until all data from side wall and bottom samplings to the south of the Service Station at least meet the Commercial Use Soil Cleanup Objectives of the NYSDEC per 6 NYCRR Part 375-6.8(b).

c. Notwithstanding (a) and (b) above, 34 EPR shall not be required to excavate beyond the red line in attached Figure A. Additionally, 30 days before commencement of excavation, 34 EPR shall provide a draft work plan to Plaintiff's consultant, First Environment, Inc. ("First Environment")<sup>1</sup> for its review and comment and 34 EPR shall have conducted a ground penetrating radar ("GPR") survey to the west and north of the former Service Station. The GPR survey is to be overseen by a New York licensed professional engineer to determine the actual location of the known underground fuel oil storage tanks ("USTs") on WPHA's property to the north and the location of underground utilities (such as sewer lines and electrical conduits) under the former Brookfield Street to the west of the Service Station.

d. The work plan for the remedial excavation will include the current Figure A, which shall be supplemented to include the approximate GPR determined

---

<sup>1</sup> WPHA reserves the right to substitute another comparably licensed environmental consulting firm for First Environment.

physical location of the USTs and utilities. The work plan shall be prepared, signed, and sealed by the NY licensed professional engineer.

e. The work plan shall provide that when the excavation approaches the area of the USTs to the north of the Service Station and utilities under the former Brookfield Street to the west of the Service Station mechanical excavation shall stop and the parties' engineers shall confer as to mutually agreeable steps to determine how close to the distances provided in (f) below the excavator can safely approach the USTs to the north and the utilities to the west to avoid harm disruption or damage to the USTs or the utilities.

f. 34 EPR shall not be required to excavate within ten feet of the southernmost UST on WPHA's property or within five feet of underground utilities located under the former Brookfield Street to the west assuming 34 EPR's engineers and First Environment's engineers agree those are safe distances to avoid any harm, disruption or damages to the USTs or utilities. If there is any differences of views, the parties' engineers shall confer and reach an agreement as to what is the nearest safe distance. 34 EPR shall have no responsibility for excavating elevated levels of chlorinated solvents. WPHA agrees to cooperate with 34 EPR in connection with its performance of the work under this Stipulation and Order, including without limitation providing access to the land to be remediated within the red line on Figure A, taking or refraining from such actions as might be reasonably needed in connection with 34

EPR's work, and providing any paperwork or information as may be reasonably necessary in connection with the work.

g. Notwithstanding (a) through (f) above, neither 34 EPR nor White Plains Hospital shall be required to remediate any significant new fuel oil discharge from the USTs.

h. In the event groundwater in the excavation contains DNAPL, emits an odor of petroleum or has a visible sheen, 34 EPR shall pump, treat, and properly dispose of the treated groundwater during the excavation until the soil standards set forth above have been achieved and the excavation has been backfilled as provided for herein.

i. First Environment shall be permitted access to observe and conduct sampling of the excavation and groundwater during the excavation.

j. Before the excavation is backfilled, the parties shall confirm in writing to this Court that the soil criteria set forth in Paragraphs 1(a) through 1(c) have been achieved and that Paragraphs 1(d) through 1(h) have been complied with.

k. Upon completion of the soil excavation (and treatment of groundwater if required pursuant to Paragraph 1(h)), 34 EPR will backfill the excavation and restore the surface of WPHA's property to a condition at least as good as it was prior to the excavation.

l. In the event that during the remediation 34 EPR is required to destroy parking spaces in use by WPHA or its community prior to the excavation, 34 EPR shall provide substitute parking that is mutually agreed upon at no cost to the WPHA or its community.

m. All the work required by this Stipulation and Order shall start on or before November 15, 2024 and all the work required by this Stipulation and Order must be fully completed no later than June 30, 2025, time being of the essence.

n. Until all the remediation hereunder has been completed pursuant to this terms in this Stipulation and Order, 34 EPR will not seek to sell, pledge, lease or otherwise transfer control of Service Station or the real property of the Service Station without the prior written consent of this Court. Any person or entity seeking to take title to or otherwise to take control of the Service Station, prior to and as a condition of such sale or other transfer of control, is to first receive a copy of this Stipulation and Order, promptly file an appearance in this Court submitting to the jurisdiction of this Court, and comply with all the terms of this Stipulation and Order as 34 EPR would be required to do. Once the all remediation has been completed pursuant to this Stipulation and Order, 34 EPR may sell, pledge, lease or otherwise transfer control of the Service Station and/or real property of the Service Station as it deems appropriate, in accordance with applicable law.

o. Until all the remediation hereunder has been completed pursuant to this Stipulation and Order any attempt at a sale or other transfer of title or control over the

Service Station and/or real property of the Service Station that is not in compliance with this Stipulation and Order shall be deemed a willful violation of this Stipulation and Order and, in addition, such attempted sale or transfer shall be null, void and of no effect. Once all the remediation hereunder has been completed pursuant to this Stipulation and Order, 34 EPR may proceed as provided in the immediately preceding subparagraph.

2. White Plains Hospital, which is the sole member and manager of 34 EPR, (a) consents to 34 EPR entering into this Stipulation and Order, (b) will cooperate with 34 EPR to help it obtain financing for, and carry out, the remediation provided for herein, and (c) neither White Plains Hospital nor 34 EPR shall use or seek to use the NYSDEC Consent Order as a basis for reducing or otherwise altering their obligations under this Stipulation and Order.

3. All parties will bear their own costs and attorney's fees.

4. Upon completion of all of the remediation work provided for hereunder, any and all claims for damages, relief, and disputes by Plaintiff related to the matters and claims asserted in or related to this action against 34 EPR and/or White Plains Hospital are fully released.

5. This Stipulation and Order is the product of mutual negotiations by the parties who have at all times been represented by counsel and is the result of joint drafting. This contains the parties' entire understanding with respect to the subject matter hereof. There are no representations, promises, or understandings other than those in this Stipulation and Order.

6. This Court will retain jurisdiction to interpret and enforce this Stipulation and Order.

N.W. BERNSTEIN & ASSOCIATES, LLC  
*Counsel for the Plaintiff White Plains Housing Authority*

By: 

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Rye Brook, New York 10573  
914 358-3500  
[nwbernstein@nwblc.com](mailto:nwbernstein@nwblc.com)

GARFUNKEL WILD, P.C.  
*Counsel for Defendant 34 EPR, LLC and  
Non-Party White Plains Hospital Medical  
Center (signing as to paragraph 2 only)*


By: 

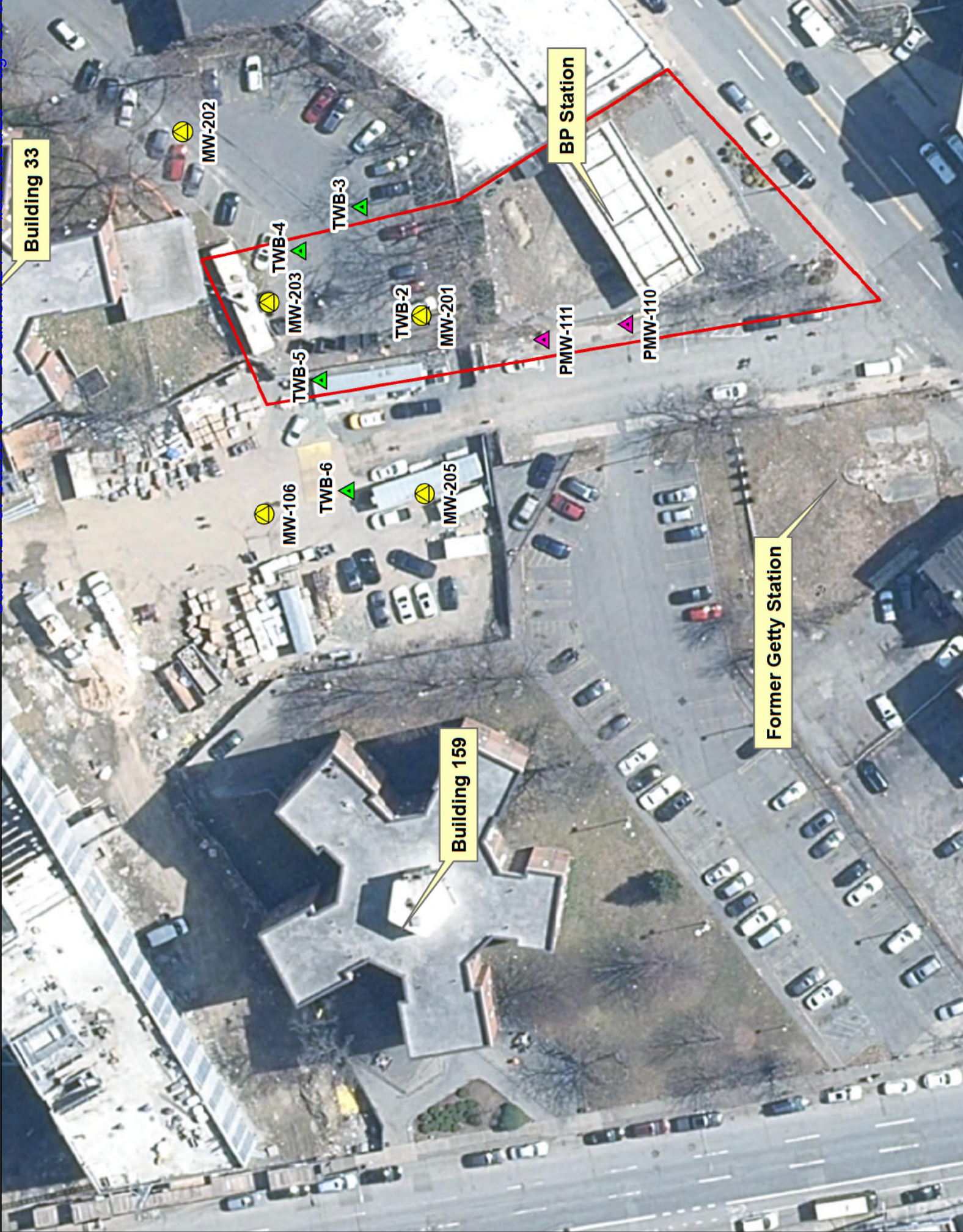
Kevin G. Donoghue KD2875  
111 Great Neck Road  
Great Neck, New York 11021  
516-393-2535  
[kdonoghue@garfunkelwild.com](mailto:kdonoghue@garfunkelwild.com)  
Dated:  
White Plains, New York

**The Clerk of the Court is directed to terminate this case.**

SO ORDERED

Dated: June 23, 2023  
White Plains, NY

  
\_\_\_\_\_  
Nelson S. Román  
United States District Judge



Building 33

BP Station

Former Getty Station

Building 159

MW-202

TWB-4

TWB-3

TWB-5

MW-203

TWB-2

MW-201

PMW-111

PMW-110

MW-106

TWB-6

MW-205

**Table 1 to Stipulation and Order on Consent****Soil Cleanup Levels for Gasoline Contaminated Soils**

<b>Contaminant</b>	<b>CAS Registry Number</b>	<b>Soil Cleanup Level (ppm)</b>
Benzene	71-43-2	0.06
n-Butylbenzene	104-51-8	12.0
sec-Butylbenzene	135-98-8	11.0
Ethylbenzene	100-41-4	1.0
Isopropylbenzene	98-82-8	2.3
p-Isopropyltoluene	99-87-6	10.0
Methyl-Tert-Butyl-Ether	1634-04-4	0.93
Naphthalene	91-20-3	12.0
n-Propylbenzene	103-65-1	3.9
Tert-Butylbenzene	98-06-6	5.9
Toluene	108-88-3	0.7
1,2,4-Trimethylbenzene	95-63-6	3.6
1,3,5-Trimethylbenzene	108-67-8	8.4
Xylene (Mixed)	1330-20-7	0.26

**APPENDIX C:**

**HEALTH AND SAFETY PLAN**





# Health and Safety Plan (HASP)

## 34 EPR Remedial Action

### *East Post Road*

*OPTIONAL DISCLAIMER: This document is a DRAFT document prepared under a government Consent Decree. This document has not undergone formal review by EPA and NYSDEC. The opinions findings, and conclusions expressed are those of the author and not those of the U.S. Environmental Protection Agency and the New York Department of Environmental Conservation.*

800 Westchester Avenue  
Rye Brook, NY 10573  
800.426.4262

[woodardcurran.com](http://woodardcurran.com)

0214155  
Updated  
November 2024

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## HEALTH AND SAFETY PLAN SUMMARY

<b>PROJECT CONTACTS (See Section 2.4 for Project Roles and Responsibilities)</b>	
<b>Woodard &amp; Curran Project Manager:</b> Evan Trumpatori	Cell: 631-662-9991
<b>Woodard &amp; Curran Health &amp; Safety Manager:</b> Joanna Wallace	Cell: 216-392-3620
<b>Woodard &amp; Curran Project Safety Officer:</b> Derek Matuszewski	Cell: 631-767-5562
<b>Woodard &amp; Curran Site Safety Officer:</b> John Pellegrini	Cell: 718-200-5208
<b>Other Woodard &amp; Curran Personnel</b>	
Stephanie Rogacki	Cell: 201-774-0238
Trevor King	Cell: +1 (215) 384-4829
<b>Other Key Personnel:</b>	
Site Coordinator: Brad Taylor	Office: (914) 681-2454
Engineering/Site Construction Manager: TBD	Cell: XXX-XXX-XXXX
<b>EMERGENCY CONTACTS (See Section 11 for Emergency Procedures)</b>	
<b>White Plains Fire Department:</b> <u>          911          </u> <b>White Plains Police Department:</b> <u>          911          </u> <b>Ambulance:</b> <u>                  911                  </u> <b>Poison Control Center:</b> <u>          1-800-222-1222          </u> <b>Nurse Hotline:</b> <u>                  1-888-449-7787                  </u> <b>State Police:</b> <u>                                  (845) 677-7300                                  </u> <b>Sheriff:</b> <u>          Westchester County Dept. of Public Safety (914) 995-2000          </u> <b>Health Department:</b> <u>                                  (866)-881-2809                                  </u> <b>Local Emergency Planning Committee:</b> <u>Westchester Office of Emergency Mgmt. (914)-231-1850</u> <b>DigSafe:</b> <u>  1-888-DIG-SAFE (344-7233)  </u>	

## OBJECTIVE

This *Health and Safety Plan* (HASP) has been prepared to provide general health and safety information and establish the minimum health and safety related procedures and requirements to be followed while implementing remediation, air monitoring, and construction related activities at the former Marianna Oil Company Site, NYSDEC Case No. 16-08934..11., located at 34 East Post Road White Plains, New York (Site).

This HASP is intended to establish the minimum health and safety requirements to be followed by Woodard & Curran (W&C) personnel and persons not otherwise required to prepare their own health and safety plan (e.g., visitors) while engaged in activities at the Site on behalf of 34 East Post Road LLC. These minimum health and safety requirements shall be used by the Construction Manager (CM) and Contractors in conjunction with the requirements set forth in project specifications (Health and Safety Requirements). These requirements shall not relieve any party from compliance with any applicable Federal, State, local, or other health and/or safety requirements and safe construction practices.

The applicability of this HASP to each person or party is identified below. Discussion regarding the roles and responsibilities of each party is provided in Section 2.

Engineer: Woodard & Curran, also referred to as the Supervising Contractor, Engineer, or W&C. The Project Manager (PM), Project Safety Officer (PSO) and Site Safety Officer (SSO) work for and under the direction of the Engineer. All W&C personnel are subject to the requirements of this HASP.

W&C Contractor: W&C Contractors, with limited exceptions, are required to develop and operate under their own Contractor Health and Safety Plan (CHSP) as described herein. Any W&C Contractor who does not operate under their own CHSP is subject to the requirements of this HASP. W&C Contractors are ultimately responsible for their own health and safety at the Site.

Contractor: Contractors are required to develop and operate under their own CHSP as described herein, designate a Health and Safety Officer (HSO) as defined in project specifications, and are ultimately responsible for their own health and safety at the Site.

Visitor: Visitors are subject to the requirements of this HASP.

W&C's SSO will be on-site while actively observing Site remedy and related construction activities and is responsible, as the PSO's designee to validate and verify that the requirements of this HASP and all applicable CHSP's are being met. At times when W&C's SSO is not on-site, or, when W&C is on-site but not actively observing the remedial and/or construction activities, the CM will be responsible as the Group's Representative for validating and verifying that the Contractor's HSO enforces the implementation of the CHSP. Additional information on the roles and responsibilities of each party is included in Section 2.

## SITE SPECIFIC HAZARDS

Site Specific Hazards are described in Section 7. Hazard control information is described in Section 14.

## **EMERGENCY PROCEDURES**

Emergency procedures are described in Section 11.0. Emergency contacts are provided in this HASP summary for immediate reference above and in Section 11.0.

The nearest hospital is White Plains Hospital. A map showing the route and hospital location is included in Section 1.2.

The designated signal for an on-site emergency is three sustained blasts from an air or car horn or very loud whistle. In the event of an on-site emergency, the primary evacuation assembly point for the work Site is at the entrance to the Site on Brookfield Street. If the entry point is not accessible due to the on-site emergency, the alternate evacuation assembly point is the additional entrance to the Site located on East Post Road. While working on the White Plains Housing Authority property, the primary evacuation point will be to the east on Martin Luther King jr. Blvd. The evacuation assembly point locations will be reviewed at each Daily Safety Briefing at the start of a day's work. All personnel must be accounted for before leaving the assembly area unless it is too dangerous to remain in the assembly area. The location of the assembly points is depicted on the Site Plan included in Appendix A.

Injuries, illnesses, and close calls shall be immediately reported to the PSO. The PSO or designee will report the incident to the W&C Project Manager and Health and Safety Manager. The Organizational Chart for the Site is included in Appendix B.

## **GENERAL HEALTH AND SAFETY REQUIREMENTS**

All personnel that work at the Site and authorized Site visitors will receive a Site Safety Briefing upon their first visit to the Site as described in Section 5.1. All personnel who enter the Site shall sign in at the field office upon each entry to the Site, and shall sign out prior to each departure from the Site. Personnel that work at or visit the Site are subject to the requirements of this HASP or a CHSP as described above.

## **CHSP REQUIREMENTS**

A CHSP shall incorporate the requirements contained in this HASP and project specifications as applicable, and shall describe all actions to be taken to perform the work assigned to that Contractor. All tasks undertaken by the Contractor and associated subcontractors shall be identified and characterized through a hazard analysis, and such identified hazards shall be integrated with all health and safety procedures, support drawings, maps and plans in the CHSP. The CHSP and any modifications, once incorporated, shall be submitted to the Engineer for review prior to implementation of the work. The Engineer's review of the CHSP does not relieve the Contractor of any obligation or liability. The Engineer's review shall not constitute an approval of the CHSP and shall not relieve the Contractor of full responsibility for the health and safety of its personnel at the Site.

## **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Level D protection will be worn for initial entry on-site and for all activities except where higher levels of protection are required as noted in Table 9-1. Level D protection will consist of:

Standard work clothes such as trousers and long sleeve shirts.

- Steel-toe safety boots.
- Hard hat.
- Safety glasses.
- Reflective safety/traffic vest.
- Cut-resistant gloves.

Level D Modifications may be made based on the individual Job Safety Analysis (JSA) performed prior to conducting tasks as discussed in Section 9.

No Level C work activities are anticipated. Authorization by the PM, W&C Health and Safety Manager (HSM), and PSO is required **PRIOR TO** initiating any work activities requiring Level C or higher protection.

## 1. EMERGENCY CONTACT INFORMATION

### 1.1 Medical Care

#### Life-Threatening Medical Care:

Any incident that threatens life and/or limb and/or loss of consciousness of any on-site personnel will be considered an incident that requires emergency medical care. Emergency medical care will be provided by the City of White Plains EMS or Ambulance (911) Fire Dept. (911), Police Dept. (911). A full service hospital with an emergency room has also been identified below should the facility's medical services be required.

#### Non-Life-Threatening Medical Care:

Typical incidents that require non-life-threatening care are superficial cuts, scrapes, and bruises that can be treated by the SSO or designee with first aid training. A basic first aid kit is located in the field office maintained by the SSO or designee on the Site. For non-life-threatening incidents experienced by Woodard & Curran employees that may require medical treatment or advice, notify the Manager then call the Nurse Hotline.

### 1.2 Site Map with Directions to Hospital

**Hospital:** White Plains Hospital, White Plains, NY

**General Phone:** (914)-681-0600

**Emergency Phone:** (914)-681-0600

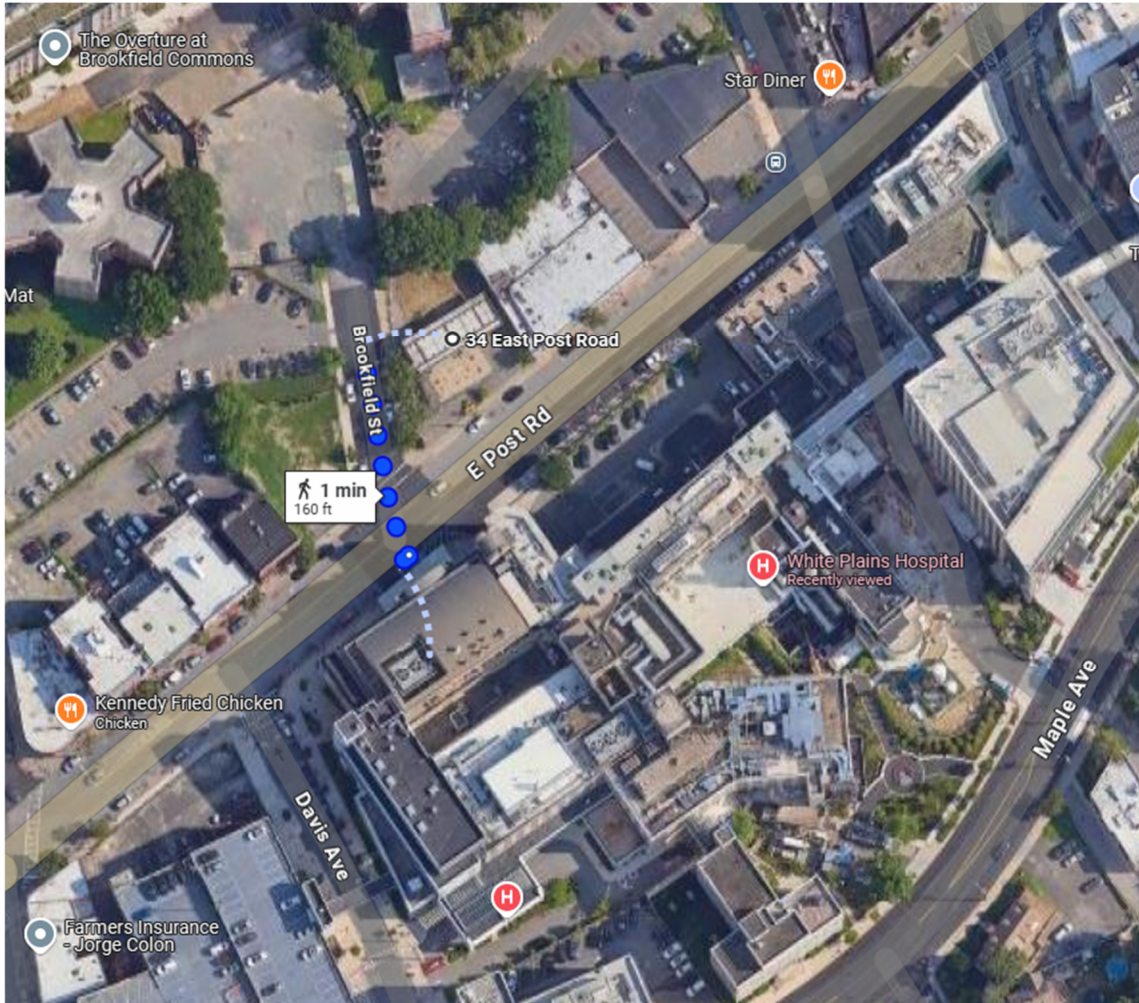
#### Directions to Hospital:

*Total Driving Distance:* 160 feet

*Estimated Driving Time:* Approximately 1 minute

1. Exit Site and head directly south. The emergency room entrance is directly across the street from the Site on East Post Road.

**Arrive: 41 East Post Road, White Plains, New York**



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## 2. SITE COMMUNICATION AND ORGANIZATIONAL STRUCTURE

### 2.1 Stop Work Authority & Communication

Health and safety is affected by the actions of all personnel on the Site. All personnel shall have the authority to stop work immediately in the event of unacceptable environmental, health and safety conditions.

If unsafe conditions or actions are observed, the SSO shall immediately stop work and inform the Contractor or W&C Contractor of the unsafe condition or action. The Contractor or W&C Contractor shall immediately modify the situation or action to maintain compliance with this HASP or the applicable CHSP. Once such action is taken to the satisfaction of the SSO, work may resume. If the Contractor or W&C Contractor do not correct the situation or disagree with the SSO, work shall not resume and the SSO and Contractor's HSO shall immediately notify the CM and/or the PSO for resolution.

Any health and safety concerns shall immediately be communicated by any person to the SSO, PSO, W&C PM or CM as appropriate. The PSO and PM will make all necessary modifications to the HASP in consultation with the HSM if any Site conditions change. Amendments to and reassessment of the HASP are to be conducted in accordance with Section 4.3 and recorded in Appendix C.

### 2.2 Signal for Emergencies

Three sustained blasts from air or car horn, or very loud whistle.

The emergency signal SHALL NOT be the same as other signals on the Site (e.g., blasting warning).

### 2.3 Routine Site Communication

Cellular telephone numbers to reach key project contacts are provided on Page HS-5 of this HASP. Cellular phone communication will be the primary form of communication in and out of the work Site. Adequate cellular phone reception has been verified at the Site. Cellular telephone numbers for Contractors, W&C Contractors, or visitors will be provided to the SSO or designee at the Site Safety Briefing.

In addition, the following on-site communication system for all workers may also be used during work tasks and shall not be conflicting between the HASP and CHSP or other plans:

- Verbal communication,
- Radios/Walkie-Talkies (verify coordination of channels on-site)
- Hand signals as follows:

<b><u>Signal</u></b>	<b><u>Definition</u></b>
Hands clutching the throat	Out of air/cannot breathe
Thumbs up	OK/I am all right/I understand
Thumbs down	No/Negative/I do not understand
Arms waving upright	Send backup support/need assistance
Grip buddy's wrist	Exit area immediately

## **2.4 Organizational Structure**

The organizational structure, responsibilities, and lines of communication for Woodard & Curran personnel at the Site are as described below. A Project Organization Chart is provided in Appendix B. Contractors must provide their own specific organizational structure, responsibilities, and lines of communication within their CHSPs, which will be utilized in conjunction with this HASP. Contractors' organizational structure, responsibilities, and lines of communication will be reviewed with the SSO or designee at the Site Safety Briefing.

All personnel maintain Stop Work Authority if conditions or actions are observed which the individual believes may not meet the requirements of this HASP or general safe work practices. Notification of the work stoppage shall be made immediately to the SSO and CM for resolution and be communicated to the PSO and PM as appropriate.

Key project personnel and their responsibilities with regards to Site activities are discussed below.

### **2.4.1 Engineer**

Woodard & Curran, also referred to as the Supervising Contractor, Engineer, or W&C, assumes the duties and responsibilities and has the rights and authority assigned to Engineer or Supervising Contractor in the Design Plans and Specifications. The PM, PSO, SSO, W&C field personnel, and the HSM all work for the Engineer as presented below.

#### **2.4.1.1 Project Manager**

The PM represents the Engineer and has responsibility and authority to direct all W&C work operations, is directly responsible for the technical progress of project task elements, and the development of the overall Health and Safety program for the Site. The PM is Evan Trumpatori. The PM, in consultation with the PSO and the HSM (see below for descriptions of these roles) is responsible for approving modifications/addenda to this HASP. The PM also has final authority to suspend W&C employees and W&C Contractors from field activities/site access for violation of provisions of this HASP. Disciplinary action with regard to Contractors will be made in consultation with the CM as required.

#### **2.4.1.2 Project Safety Officer**

The PSO serves as the PM's designee for implementation, verification, and validation of the Health and Safety program for the Site. The PSO is Derek Matuszewski. The PSO is responsible for developing the HASP and required modifications to this HASP. The responsibilities of the PSO include, but are not limited to the following health and safety related items:

- Development of the overall Health and Safety program for the Site with the PM and the HSM.
- Coordinating development of HASP and required Addenda for new project tasks.
- Overseeing and monitoring the performance of the SSO and bears ultimate responsibility for the proper implementation of this HASP.
- Verification and validation that the requirements of this HASP are implemented and effective.
- Review of Contractor's and W&C Contractor's CHSPs for compliance with the requirements of this HASP.

- Ensuring provision of a copy of each W&C Contractor's CHSP to the SSO or designee.
- Verifying the availability, through the SSO or designee, of emergency response personnel and medical support facilities.
- Maintaining overall responsibility for response and corrective actions in the event of an emergency, an incident, or identification of a potentially unsafe condition or act.
- Recommendation to the PM regarding suspension of employee or W&C Contractor personnel from field activities/site access for violation of provisions of this HASP. Disciplinary action with regard to Contractors will be made in consultation with the PM and CM as required.

### **2.4.1.3 Site Safety Officer**

The SSO is directly involved with the day-to-day activities at the Site. The SSO work for and under the direction of the Engineer (W&C) and are subject to the requirements of this HASP. The SSO is John Pellegrini. The SSO's primary responsibility is to monitor personnel compliance with this HASP or the applicable CHSP, as appropriate. The SSO or designee will assess the compliance of Contractor and W&C Contractor operations with applicable health and safety requirements. If deficiencies are observed and the contractor does not correct them, the SSO will notify the PSO, PM, and CM as appropriate for resolution. All deficiencies and corrective actions will be recorded in the field log.

The SSO will make recommendations for modifications to the HASP should any Site health and safety conditions change. These changes will be made by the PSO, PM, and the HSM. The SSO reserves the right to stop work if a Contractor's practices are deemed dangerous to human health, public welfare, safety, or the environment.

The responsibilities of the SSO, as they pertain to work being performed by W&C, include the following:

- Coordination of W&C Contractor control and orientation.
- Coordination of emergency response personnel and medical support resources.
- Coordination of Site control and security.
- Coordination of spill response measures.
- Initiation of corrective actions in the event of an emergency, an incident, or identification of a potentially unsafe condition or act.
- Implementation of corrective actions to control hazards that have been identified in the workplace.
- Periodic inspection of general work conditions and implemented hazard controls.
- Conduct or arrange for formal hazard assessments as necessary.
- Periodically assess the compliance of W&C Contractor operations with applicable health and safety requirements.

### **2.4.1.4 Woodard & Curran Field Personnel**

W&C field personnel are responsible for complying with this HASP, using the proper PPE, reporting unsafe acts and conditions, and following the work, safety, and health instructions of the SSO.

#### **2.4.1.5 W&C Health and Safety Manager (HSM)**

The HSM will review procedural changes and modifications to this HASP made by the PSO and PM and maintains final authority to resolve health and safety issues that are not resolved at the Site by project staff. The HSM Joanna Wallace will implement a system for regular recognition and reporting of job hazards, and will conduct periodic project hazard assessments as necessary and support HASP or CHSP review activities. If an incident occurs at the Site that relates to staff health and safety, the Contractor HSM will be notified of the incident within 24 hours.

#### **2.4.2 Construction Manager**

The CM represents the Site client with respect to the management, oversight and coordination of the various procurement and construction contracts. The CM is to be determined at the time of the remedial activities and redevelopment of the Site. The CM will work closely with the Engineer to provide coordination of scheduling, technical, quality assurance and construction administration issues that may arise with the Contractor(s) during the implementation of the work. At times when W&C's SSO is not on-site, or, when W&C is on-site but not actively observing the remedial and construction activities, the CM will be responsible as the client representative for validating and verifying that the Contractor's HSO enforces the implementation of the CHSP.

#### **2.4.3 Contractor**

A Contractor is an individual, firm, or corporation that has entered into a contractual agreement with the Site client or other non-W&C entity to complete all or some portion of the applicable work specified in the approved Design. The Contractor assumes all duties and responsibilities and has the rights and authority assigned to the Contractor in the Design Plans and Specifications. Contractors are required to develop and operate under their own CHSP as described herein, and are ultimately responsible for their own health and safety at the Site.

Contractors must be qualified to perform the scope of work, and should have a good track record in performing such services. A pre-qualification process will be implemented to review safety performance criteria, insurance requirements, and other conditions that contractors should meet in order to be considered for selection. Contractors and their personnel must understand and comply with the requirements established in their CHSP. A Site specific orientation will be conducted by the PSO or SSO during the Site Safety Briefing prior to the onset of work.

The Contractor shall comply with all applicable laws and regulations and shall take all necessary precautions for the safety of persons or property, or the protection of persons or property from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall provide competent persons as needed whose duties and responsibilities shall be maintaining and supervising of safety precautions over their specific scope of work. Contractors must maintain documentation of employee training and participation in a medical surveillance program consistent with the requirements of their CHSP and project specifications; copies of these documents must also be provided to the PSO for project files upon request. Contractor personnel must participate in twice daily safety briefings coordinated by the SSO or designee for their employees.

#### **2.4.4 W&C Contractor**

A W&C Contractor is an individual, firm, or corporation that has entered into a contractual agreement with W&C to perform work at the Site. Some W&C Contractors may be required to develop and operate under their own CHSP at the discretion of W&C. Any W&C Contractor who does not operate under their own CHSP is subject to the requirements of this HASP. A Site-specific orientation will be conducted by the PSO or SSO during the Site Safety Briefing prior to the onset of work.

W&C Contractors shall comply with all applicable laws and regulations and shall take all necessary precautions for the safety of persons or property, or the protection of persons or property from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. W&C Contractors shall provide competent persons as needed whose duties and responsibilities shall be maintaining and supervising of safety precautions over their specific scope of work. W&C Contractors must maintain documentation of employee training and participation in a medical surveillance program consistent with the requirements of their CHSP; copies of these documents must also be provided to the PSO for project files upon request. Contractor personnel must participate in twice daily safety briefings coordinated by the SSO or designee for their employees.

#### **2.4.5 Visitors**

A visitor is a person or group of persons who must be accompanied at all times by the SSO or designee. Visitors are subject to the requirements of this HASP.

All visitors must attend a Site Safety Briefing upon their first visit to the Site and daily safety briefings as described in Section 5. Visitors may include client/owner representatives, New York State Department of Environmental Conservation (NYSDEC) officials or representatives, Utility Workers, City of White Plains representatives, or any other individual either directly or indirectly related to the objectives identified in Section 3 of this HASP. Visitors will be accompanied at all times by the SSO or designee. If visitors intend to enter a designated exclusion zone, they must meet all of the training and medical surveillance requirements and have the personal protective equipment required by this HASP according to their task and level of exposure for that work zone. Applicable documentation of visitor training and medical surveillance will be provided by the escort and maintained by the SSO or designee.

### 3. SITE DESCRIPTION AND SCOPE

#### 3.1 Site Background

The Site is located in the County of Westchester, White Plains, New York and is identified by the Municipal Tax Parcel Viewer as a 0.26-acre plot with the Tax ID 130.27-2-4. A United States Geological Survey (USGS) topographical quadrangle map (Figure 1) shows the Site location. The Site is zoned as B-3 (Intermediate Business). The Site coordinates, as measured from the approximate center of the Site are 41° 02'65.57"N Latitude and 73°76'.98"W Longitude. The Site elevation is between 200 and 225 feet above mean sea level (amsl).

The surface topography at the Site is relatively flat; however, there is an elevation difference noted between the Site and the WPHA parcel to the north. The Site property slopes down towards the WPHA parcel with an elevation difference of approximately 3-5 feet.

#### 3.2 Scope of Work

This HASP is intended to detail the health and safety requirements for investigation, remediation, and general field activities during the IRM implementation. Modifications to this HASP will be made as needed to address additional health and safety considerations pertaining to the implementation interim remedial activities on Site.

Task-specific work plans that detail field sampling tasks will be consistent with and reference the Quality Assurance Project Plan (QAPP) and this HASP. The following provides a summary of the field activities to be implemented as part of the RAWP.

##### 3.2.1 Site Preparation Work, GRP Survey & Utility Clearance

Prior to any invasive work, there is some site preparation work needed on the WPHA portion of the Site including:

- Removal of approximately 8 trees between the Site and the WPHA property.
- Removal of a light pole and any other above-grade infrastructure;
- Relocation by WPHA and/or its waste disposal company of a waste dumpsters currently located in the WPHA Property boundary;
- Sampling and removal of a berm of soil; and
- Removal of asphalt associated with approximately 14 parking spaces to excavation the soil below these spaces.

In addition, the Stipulation of Settlement and Order requires 34 EPR to conduct a ground penetrating radar ("GPR") survey to the west and north of the former Service Station. The GPR survey is to be overseen by a New York licensed professional engineer to determine the actual location of the known underground fuel oil storage tanks ("USTs") on WPHA's property to the north and the location of underground utilities (such as sewer lines and electrical conduits) under the former Brookfield Street to the west of the Service Station. 34 EPR is not required to excavate within ten feet of the southernmost UST on WPHA's property or within five feet of underground utilities located under the former Brookfield Street to the west. However, if there is remaining contamination beyond the footprint of these areas, Woodward & Curran will confer with NYSDEC to determine which party is responsible for such remaining contamination and/ or if it will be addressed in the BCP.

### **3.2.2 UST Removal**

If encountered, any on-site USTs and/or associated equipment would be decommissioned in accordance with applicable NYSDEC tank closure requirements. On-site USTs and/or associated fill equipment would be administratively closed with the NYSDEC Petroleum Bulk Storage (PBS) unit. Petroleum-impacted soil will be excavated, stored in a segregated stockpile location, characterized, and disposed of off-site at a permitted disposal facility in accordance with applicable regulations. The location of the proposed stockpile is shown in Figure 9.

### **3.2.3 Excavation of Subsurface Soils Within Remediation Extent**

In accordance with the Amended Consent Order and the Stipulation of Settlement and Order, excavation will occur within the boundary of Figure 3 to the extent required to achieve the CP-51 SCOs. The extent of excavation is an irregular shape, which extends across the Site and to the north in the WPHA Building 33 parking lot. The planned soil excavation is expected to remove approximately 4,600 cubic yards (cu yd) of contaminated soil to a depth of approximately 8 ft bgs.

The total quantity of soil/fill expected to be excavated and disposed off-Site is approximately 4,600 cu yd or approximately 6,440 tons.

### **3.2.4 Dewatering**

To the extent that Light Non-Aqueous Phase Liquid (LNAPL) is encountered in groundwater in the excavation, the LNAPL will be pumped into frac tanks for treatment and off-site disposal.

### **3.2.5 Backfill and Amendment**

Backfill activities will be completed at the end of the excavation and collection of post-excavation soil sampling; or sequentially along with excavation. In consultation with the excavation subcontractor, portions of the excavation may likely be backfilled as work progresses to ensure safety of workers and equipment and facilitate access around the work area.

Prior to backfilling the excavation, a demarcation layer (snow fence) will be installed to serve as a physical separation between soils that will remain in place and the excavation limits. The excavated area will then be backfilled with imported certified clean fill material, which will meet the requirements of allowable constituent levels for imported fill or soil. Backfill will be compacted in a manner that is consistent with the needs of final Site restoration.

Along with imported fill material, petroleum hydrocarbon remediation amendments (i.e., PetroFix, or equivalent) will also be incorporated into the excavation bottom backfill in the saturated or capillary zone. The amendment will serve as an excavation polishing step for future treatment of groundwater that may still contain residual petroleum hydrocarbons.

## **3.3 Related Documents**

This document is a component of the Site's RAWP, which includes this HASP.

## 4. MEDICAL SURVEILLANCE AND TRAINING REQUIREMENTS

### 4.1 Medical Surveillance

Medical Surveillance for W&C employees is performed in adherence with OSHA's HAZWOPER medical surveillance regulations under 29 CFR 1910.120, and 29 CFR 1910.1020 covering access to employee exposure and medical records and W&C Corporate Policy. All W&C employees working in contaminated or potentially contaminated areas have had medical surveillance examinations. Medical surveillance clearance records are kept at the W&C corporate office in Portland and are available upon request and authorization of the employee. W&C personnel are required to have had a physical examination within the last 12 or 24 months depending on field assignment and exposure potential.

Other personnel working at or visiting the Site who will work in contaminated or potentially contaminated areas or who will come into contact with impacted or potentially impacted materials will also be required to comply with the training and medical surveillance requirements of 29 CFR 1910.120.

### 4.2 Training Requirements and Documentation

Training required of all personnel working in or visiting the exclusion and contamination reduction zones includes:

- 40-hour HAZWOPER training
- Three days of supervised field experience after initial 40-hour training
- Annual HAZWOPER refresher training
- Site Safety Briefing as described in Section 5.1

Other health and safety related training includes HAZWOPER 8-hour Supervisory Training for the CM, PSO, SSO, HSOs, or anyone with on-Site supervisory or management responsibility related to health and safety as specified in this HASP or a Contractor's CHSP.

W&C personnel working on-Site will also have the following health and safety related training:

- Personal protective equipment (PPE),
- Hazard communication,
- Respiratory protection,
- First aid and cardiopulmonary resuscitation (CPR),
- Excavation and trenching safety awareness,
- Use of fire extinguishers only by trained personnel,
- Use of site monitoring equipment.

Documentation of W&C training for hazardous waste site work is kept at the Site and maintained by the PSO or SSO.

### 4.3 Reassessment of HASP

When a significant change occurs, the hazards will be reassessed. Some indicators of the need for reassessment include:

- The commencement of a new work phase not previously identified in this HASP.
- Chemical compounds discovered other than those previously identified.
- A change in the scope of work that affects the degree of contact with the chemical.
- Review contacts and emergency information at least annually if the scope of work associated with this HASP extends beyond one year and none of the indicators listed above have triggered reassessment in the prior one year period.

When changes to any aspect of this HASP occur, such changes will be written in the Amendments to Site Safety Plan, Appendix C to this HASP and the amendments will be communicated to all Site workers at the next Daily Safety Briefing unless deemed otherwise by the SSO.

## 5. SAFETY BRIEFINGS

### 5.1 Site Safety Briefing

The PSO or SSO will provide a Site Safety Briefing to all personnel that work at the Site and authorized Site visitors. This training will be provided to each person upon their first visit to the Site, and should include the following topics as applicable:

- Names of personnel responsible for Site safety and health.
- Safety, health, and other hazards at the Site.
- PPE to be used at the Site.
- Necessary training as applicable to tasks.
- Work practices to be used at the Site to reduce risks from identified hazards.
- Emergency procedures (e.g. evacuation, incident reporting, spill response).
- Decontamination procedures.
- Review of JSAs as necessary and as applicable.

All personnel required to follow this HASP are required to sign and date the Review Acknowledgement Form in Section 15 prior to Site work to indicate they are aware and familiar with the general requirements of the HASP presented during the Site Safety Briefing by the SSO or designee.

### 5.2 Daily Safety Briefings

Daily safety briefings will be conducted by the SSO or designated individual at least daily, preferably each morning prior to beginning work. The Safety Briefings will be coordinated with other contractors and sub-contractors on Site and information regarding Site hazards will be shared by all. At times when the SSO is not on-site, or, when W&C is on-site but not actively observing the remedial or construction activities, the CM will be responsible for conducting safety briefings.

The daily safety briefings are intended to encourage safe work practices as well as safe working conditions. These meetings will be documented by the SSO or CM, as applicable. Work personnel and visitors must sign Daily Safety Briefing attendance sheets or be listed in the Site logbook to verify attendance. Daily Safety Briefing logs will be kept on-Site in a separate binder from the HASP (Example form provided in Appendix D).

The Daily Safety Briefing topics should contain information applicable to the task(s) of the day. General safety awareness topics may also be selected but only in addition to daily task hazard overview topics. It is always good practice to reinforce certain safety concerns that are inherent to certain project field tasks. A list of example Daily Safety Briefing Topics and Tips is included in Appendix D. Additional safety briefings will be held daily following lunch. Additional safety briefings will also be held when planned work activities change or if additional hazard levels are noted during work activities.

## 6. SITE CONTROL

### 6.1 Site Map and Work Zones

Access to the work areas will be controlled by SSO or designee. Only authorized personnel as indicated by this HASP in Section 2 have access to the Site for the purposes of performing remedial action work tasks. A Site Plan is provided in Appendix A.

Site work zones will be established by the PSO or designee prior to the beginning of the project or task and may be subject to modification based on the current work activities. The locations of work zones will be included as part of the daily safety briefings. Many typical small tasks will have minimally sized zones (e.g., a 3-foot radius around the well-head). However, larger project tasks, such as excavation of contaminated soils and sediment, may require larger delineated work zones. Additional figures depicting these work zones for new work scopes will be included in future addendums to this HASP or in the applicable project work plans. Decontamination lines (if necessary) for heavy equipment, small equipment and personnel will be established based on the location of the work activity and the potential to spread contamination. Refer to the table below for estimated work zone sizes for potential remedial and redevelopment tasks.

Task	Total Estimated Work Zone Size
Groundwater Sampling	Approximate 3-foot radius around the well-head
Soil Boring Advancement / Monitoring Well Installation / Directional Drilling	Approximate 25-foot radius around heavy machinery
General Construction Work	Approximate 25-foot radius around all heavy machinery
In-Situ Chemical Oxidation (ISCO)	Approximate 50-foot radius around all ISCO equipment and materials
Non-Aqueous Phase Liquid (DNAPL) recovery	Approximate 10-foot radius around the well-head
Soil Gas / Indoor Air Sampling	Approximate 20-foot radius around all sampling equipment and/or soil gas installation equipment (either hand tools or drill rigs)
Site Reconnaissance	Entire Site
Test Pitting / Excavation	Approximate 25-foot radius around all heavy machinery
Soil Sampling	Approximate 3-foot radius around each hand sampling equipment

**Construction Zone:** The Construction Zone will be designated by the PSO or designee and CM. The Construction Zone is the area in which construction related activities are occurring outside of the areas of known contamination. OSHA HAZWOPER training/certification is not required for workers engaged in construction related activities within the Construction Zone. The extent of the Construction Zone may be modified at any time by the PSO and CM if additional hazards are identified.

**Exclusion Zone:** The Exclusion Zone (sometimes also referred to as the “hot zone” or “dirty zone”) at the subject Site will be designated by the PSO or designee and will generally consist of an area within 15 feet of the work area (but may vary widely depending on equipment operation radius needs, wind, weather, topography, buildings, chemicals, contamination, size and scope of project task, etc.). Proper decontamination procedures must be followed when exiting the Exclusion Zone. **Please note:** Only authorized personnel who meet the training and medical surveillance requirements may enter this zone.

**Contamination Reduction Zone (CRZ):** The CRZ (sometimes also referred to as the “warm zone” or “decontamination” or “decon” zone) will be identified by the PSO or designee. The CRZ will be determined daily and be located between the exclusion and support zones. The access or “contamination reduction corridor” or CRC (often also referred to as the “decon area”) for the exclusion zone will be marked with traffic cones or yellow tape. The CRC will be located upwind of the exclusion zone, which will be determined daily and communicated at daily safety briefings by the SSO or designee. Site workers must enter and leave the exclusion zone using this corridor. Workers will sign in and out of the Site. Log books will be kept at the site office or SSO or designee project vehicle for signing in and out (see Appendix E for example Site Sign-In/Sign-Out Log Sheet.) Section 10 of this HASP contains information about decontamination supplies and procedures.

**Support Zone:** The support zone (sometimes also referred to as the “cold zone” or “clean zone”) functions as the clean area and is the outermost zone beyond the Contamination Reduction Zone. This is where support and administrative personnel remain. The support zone is also where the project vehicle, phone, meeting area, and command post are located. Normal work uniforms are appropriate clothing for this zone. The support zone will be located upwind of the high hazard areas (the exclusion zone) as appropriate.

## 6.2 Use of Buddy System

The buddy-system ensures that no person works in or visits an area with high hazard conditions as established by the PSO. “High hazard conditions” could include temperature extremes, higher chemical concentrations, dangerous wildlife, dangerous topography or walking conditions, working in, on or around water, and severe weather. When working in a “buddy-system required” area, persons are paired and must always be in close proximity of each other. If one person has to leave the high hazard work area for any reason, both persons must leave. The SSO or designee will coordinate the implementation of the buddy system at the Site. Tasks requiring the use of the buddy system are identified in the respective JSA.

## 6.3 General Site Security

The Site is located in a commercial and residential neighborhood in White Plains, New York. A chain linked fence with a locked gate surrounds the Site (East Post Road serves as the southern boundary). All personnel entering the Site are required to use the sign in/out log located in the field office., A sign posted with a contact name and number will be located on the entry gate to the Site so that all visitors will be able to inform the SSO or designee of their arrival to the Site.

The following site security measures may be employed at the site.

- Metal fencing surrounding both parcels
- Gates which will be kept shut (but unlocked) while personnel are on-site to prevent public foot traffic, and then locked once all project personnel leave the Site
- The fence shall be posted with “Private Property – Authorized Vehicles Only” signage displayed at all entrances as exemplified below.



Some additional Site security options include the following:

- “Authorized” personnel log;
- Cones, stakes, and flagging;
- Sawhorses and “keep out” signs;
- Barrier tape;
- Rock, concrete, or masonry-type walls;
- Orange “snow” fencing;
- Wood or Metal fencing;
- Gates;
- 24-hour security guards;
- Lighting;
- Microwave or infrared motion detectors;
- Electronic surveillance systems;
- Other methods; and/or
- A combination of above options.

## 7. HEALTH AND SAFETY HAZARD ANALYSIS

### 7.1 Chemical Hazard Analysis

Several contaminants of concern (COC) have been identified at the Site. These COCs include, VOCs, SVOCs, and metals.

Gasoline related VOCs, SVOCs, TPH (GRO/DRO) analytes exceeding the NYSDEC CP-51 SCOs are considered to be Site contaminants of concern (COC). Impacted media include soil and groundwater. Soil samples included detections of VOCs, SVOCs, TPH (GRO/DRO) in exceedances of the CP\_51 SCOs.

Table 7-1 below provides a summary of predominant COCs and other contaminants/air hazards and symptoms of overexposure with contaminant specific action levels that may be utilized by the SSO or designee if Site monitoring results or observed work conditions suggest that a specific contaminant needs to be measured independently to quantify a specific exposure. Should this occur, a COC specific monitoring protocol will be developed by the SSO and appended to this HASP. Environmental monitoring and personal protection levels anticipated for the Site chemical hazards are described in Sections 8 and 9 respectively. A summary of the Hazard Communication Plan for the Site is included in Appendix F.

**Table 7-1: Chemical Contaminants of Concern**

Contaminant	Exposure Limits (TWA unless noted) <sup>a</sup>	IDLH	Symptoms of Exposure	Ionization Potential	Action Level	Special Designations
Benzene	NIOSH REL 0.1 ppm 1 ppm STEL	500 ppm	Irritation eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude (weakness, exhaustion); dermatitis; bone marrow depression	9.24 eV	0.5 ppm 29 C.F.R. 1910.1028	Carcinogen Skin
	OSHA PEL 1 ppm 5 ppm STEL					
	ACGIH TLV 0.5 ppm 2.5 ppm STEL					
benzo(a)anthracene	NIOSH REL 0.1 mg/m <sup>3</sup>	80 mg/m <sup>3</sup>	Irritation, to skin, throat, and respiratory system, contact dermatitis, bronchitis	Not Established	0 ppm 29 C.F.R. 1910.1027	Probable Carcinogen
	OSHA PEL 0.2 mg/m <sup>3</sup>					
	ACGIH TLV 0.2 mg/m <sup>3</sup>					
Benzo(a)pyrene	NIOSH REL 0.1 mg/m <sup>3</sup>	80 mg/m <sup>3</sup>	Skin rash, eye irritation with redness or burning sensation. Exposure to sunlight can increase the effects	Not Established	0 ppm 29 C.F.R. 1910.1027	Probable Carcinogen
	OSHA PEL 0.2 mg/m <sup>3</sup>					
	ACGIH TLV 0.2 mg/m <sup>3</sup>					
benzo(b)fluoranthene	NIOSH REL Not Established	Not Established	Skin, and eye irritation	Not Established	Not Established	Probable Carcinogen
	OSHA PEL Not Established					
	ACGIH TLV Not Established					
benzo(k)fluoranthene	NIOSH REL Not Established	Not Established	Skin, and eye irritation	Not Established	Not Established	Probable Carcinogen
	OSHA PEL Not Established					

Contaminant	Exposure Limits (TWA unless noted) <sup>a</sup>	IDLH	Symptoms of Exposure	Ionization Potential	Action Level	Special Designations
	ACGIH TLV Not Established					
n-butylbenzene	NIOSH REL Not Established	Not Established	Drowsiness, dizziness, rapid/irregular heartbeat, headaches, tremors, confusion, unconsciousness	Not Established	Not Established	Probable Carcinogen
	OSHA PEL Not Established					
	ACGIH TLV Not Established					
sec-butylbenzene	NIOSH REL Not Established	Not Established	Drowsiness, dizziness, rapid/irregular heartbeat, headaches, tremors, confusion, unconsciousness	Not Established	Not Established	Probable Carcinogen
	OSHA PEL Not Established					
	ACGIH TLV Not Established					
Chrysene	NIOSH REL 0.1 mg/m <sup>3</sup>	80 mg/m <sup>3</sup>	Skin rash, eye irritation with redness or burning sensation. Exposure to sunlight can increase the effects	Not Established	Not Established	Probable Carcinogen
	OSHA PEL 0.2 mg/m <sup>3</sup>					
	ACGIH TLV 0.2 mg/m <sup>3</sup>					
Ethylbenzene	NIOSH REL 100 ppm 125 ppm STEL	800 ppm	Irritation eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	8.76 eV	20 ppm <sup>29</sup> C.F.R. 1910.1025	Probable carcinogen
	OSHA PEL 100 ppm					
	ACGIH TLV 20 ppm					

Contaminant	Exposure Limits (TWA unless noted) <sup>a</sup>	IDLH	Symptoms of Exposure	Ionization Potential	Action Level	Special Designations
dibenzo(a,h)anthracene	NIOSH REL Not Established	Not Established	Irritation to the nose, and throat. Headaches, dizziness, nausea, and vomiting	Not Established	Not Established	Probable Carcinogen
	OSHA PEL Not Established					
	ACGIH TLV Not Established					
1,2-Dichloroethene	NIOSH REL 1 ppm	1,000 ppm	Irritation to skin, CNS depression.	9.65 eV	10 ppm <sup>29</sup> C.F.R. 1910.1025	Probable Carcinogen
	OSHA PEL 50 ppm					
	ACGIH TLV 10 ppm					
indeno(1,2,3-cd)pyrene	NIOSH REL Not Established	Not Established	Irritation to the nose, and throat. Headaches, dizziness, nausea, and vomiting	Not Established	Not Established	Probable Carcinogen
	OSHA PEL Not Established					
	ACGIH TLV Not Established					
isopropyl benzene (Cumene)	NIOSH REL 245 mg/m <sup>3</sup> (skin)	900 ppm	Headache, dizziness, drowsiness, slight incoordination, and unconsciousness	8.75 eV	0.5 ppm <sup>29</sup> C.F.R. 1910.1027	Probable carcinogen
	OSHA PEL 245 mg/m <sup>3</sup> (skin)					
	ACGIH TLV 50 ppm					
p-isopropyltoluene	NIOSH REL Not Established	Not Established	Itching, blisters, headaches, dizziness, and nausea	Not Established	Not Established	Corrosive
	OSHA PEL Not Established					

Contaminant	Exposure Limits (TWA unless noted) <sup>a</sup>	IDLH	Symptoms of Exposure	Ionization Potential	Action Level	Special Designations
	ACGIH TLV Not Established					
n-propylbenzene	NIOSH REL Not Established	Not Established	Headache, nausea, vomiting, dizziness, drowsiness, and fainting, nose, and throat irritation	Not Established	Not Established	Possible Carcinogen
	OSHA PEL Not Established					
	ACGIH TLV Not Established					
Methyl tert-butyl ether (MTBE)	NIOSH REL Not Established	500 ppm (Industry Data)	Inhalation can cause lightheadedness, dizziness, weakness, nausea, and headache. Dermal contact may cause a mild skin irritant which causes loss of natural oils. Vapors can irritate eyes; splashes may cause damage to eye tissue.	9.24 eV	25 ppm <sup>29</sup> C.F.R. 1910.1025	Potential Carcinogen
	OSHA PEL Not Established					
	ACGIH TLV 50 ppm					
Naphthalene	NIOSH REL 10 ppm 15 ppm STEL	250 ppm		8.12 eV	5 ppm <sup>29</sup> C.F.R. 1910.1025	Probable Carcinogen
	OSHA PEL 10 ppm					

Contaminant	Exposure Limits (TWA unless noted) <sup>a</sup>	IDLH	Symptoms of Exposure	Ionization Potential	Action Level	Special Designations
	ACGIH TLV 10 ppm		Irritation eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage			
Silica, crystalline	NIOSH REL 0.05 mg/m <sup>3</sup> (r)	25 mg/m <sup>3</sup> (cristobalite, tridymite)	Cough, dyspnea (breathing difficulty), wheezing; decreased pulmonary function, progressive respiratory symptoms (silicosis); irritation eyes	N/A	0.025 <sup>29</sup> C.F.R. 1910.1025	Carcinogen
	OSHA PEL 0.05 mg/m <sup>3</sup> (r)					
	ACGIH TLV 0.025 mg/m <sup>3</sup> (respirable cristobalite, quartz)	50 mg/m <sup>3</sup> (quartz, tripoli)				
1,2,4,5- tetramethylbenzene	NIOSH REL Not Established	Not Established	Irritation to skin or eyes, muscle weakness, tiredness, diarrhea, low body temperature, coma	Not Established	Not Established	Flammable
	OSHA PEL Not Established					
	ACGIH TLV Not Established					
1,3,5- trimethylbenzene	NIOSH REL 25 ppm	Not Established		8.39 eV	25 ppm <sup>29</sup> C.F.R. 1910.1025	Flammable
	OSHA PEL None					

Contaminant	Exposure Limits (TWA unless noted) <sup>a</sup>	IDLH	Symptoms of Exposure	Ionization Potential	Action Level	Special Designations
	ACGIH TLV 25 ppm		Headaches, tiredness, dizziness, lightheadedness, coughing, wheezing, shortness of breath			
1,2,4-trimethylbenzene	NIOSH REL 25 ppm	Not Established	Irritation to eyes, nose, and throat, coughing, wheezing, shortness of breath, confusion	8.27 eV	25 ppm <sup>29</sup> C.F.R. 1910.1025	Flammable
	OSHA PEL None					
	ACGIH TLV 25 ppm					
Toluene	NIOSH REL 100 ppm 150 ppm STEL	500 ppm	Irritation eyes, nose; weakness, exhaustion, confusion, euphoria, Dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, insomnia; paresthesia; dermatitis; liver, kidney damage	8.82 eV	20 ppm <sup>29</sup> C.F.R. 1910.1025	Toxic
	OSHA PEL 200 ppm 300 ppm ceiling 500 ppm 10-min max peak in 8 hours					
	ACGIH TLV 20 ppm					
Trichloroethylene	NIOSH REL 25 ppm (10 hour TWA)	1000 ppm	Irritation to eyes, nose, skin, throat, respiratory tract. nausea, dizziness, flush face, headaches, drowsiness, liver damage, potential carcinogen.	9.45 eV	10 ppm <sup>29</sup> C.F.R. 1910.1025	Carcinogen
	OSHA PEL 100 ppm 200 ppm ceiling (300 ppm 5 Min Max peak within 2 hours)					

Contaminant	Exposure Limits (TWA unless noted) <sup>a</sup>	IDLH	Symptoms of Exposure	Ionization Potential	Action Level	Special Designations
	ACGIH TLV 10 ppm 25 ppm STEL					
Tetrachloroethylene	NIOSH REL None; Carcinogen – minimize exposure concentrations	150 ppm	Irritation to eyes, nose, skin, throat, respiratory tract. nausea, dizziness, flush face, headaches, drowsiness, liver damage, potential carcinogen.	9.32 eV	25 ppm <sup>29</sup> C.F.R. 1910.1025	Carcinogen
	OSHA PEL 100 ppm 200 ppm ceiling (300 ppm 5 Min Max peak within 2 hours)					
	ACGIH TLV 25 ppm 100 ppm STEL					
o,m,p-Xylenes	NIOSH REL 100 ppm 150 ppm STEL	900 ppm	Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis	8.44 – 8.56 eV	50 ppm <sup>29</sup> C.F.R. 1910.1025	Flammable
	OSHA PEL 100 ppm					
	ACGIH TLV 20 ppm					

Note <sup>a</sup>: If project work takes place in California, contact Health & Safety to determine if exposure limits need to be adjusted.

REL: NIOSH Recommended Exposure Limit

PEL: OSHA Permissible Exposure Limit

STEL: Short Term Exposure Limit

TLV: ACGIH Threshold Limit Value

TWA: Time Weighted Average

LFC: Lowest Feasible Concentration

N/A: Not applicable  
f/cc: fibers per cubic centimeter  
ppm: parts per million  
mg/m<sup>3</sup>: milligrams per cubic meter  
r: respirable fraction

## 7.2 Physical Hazard Analysis

Precautions will be taken to abate physical hazards identified for this project as well as chemical hazards as described in Section 7.1 above. The following physical hazards have been identified and will be minimized through a task hazard assessment described in Section 7.3 below. Additional hazard control information describing applicable precautions and controls to be taken are described in Section 14.

- Uneven Walking Surfaces/Terrain
- Heavy Equipment Operation
- Inclement Weather
- Heat Stress
- Heavy Traffic Areas
- Power Tool Operation
- High Noise Environment
- Corrosives Handling/Exposure
- Underground Utilities
- Overhead Utilities
- Slips, Trips, Falls
- Lifting
- Unnatural Postures (twisting, static movement)
- Repetitive Motions
- Fauna & Flora Hazards
- Cold Stress
- Compressed Gases
- Driving
- Drilling

## 7.3 Task Hazard Assessment

In order to eliminate hazards identified above in Sections 7.1 and 7.2 with the work to be completed at the Site, the SSO has completed a JSA for each of the tasks currently identified for completion on this project. The JSAs identify potential hazards associated with completing the identified project work tasks.

The SSO or worker most familiar with a task will be responsible for creating new JSAs. All personnel have a responsibility to review existing JSAs and are encouraged to provide comment and recommend changes. Any changes to project JSAs will be reviewed with affected personnel at the next Daily Safety Briefing and attached to a revised HASP.

A list of the JSAs created for the project is provided below. The JSAs are included in Appendix G to the HASP:

<https://woodardcurran.sharepoint.com/healthsafety/Documents/Forms/AllItems.aspx?RootFolder=%2fhealthsafety%2fDocuments%2fJSA%20Library&FolderCTID=0x0120008879271DF9C09C4BB1BC694F0B463D80>

- Construction Monitoring
- General Site Visit
- Soil Sampling
- Excavation and Trenching
- Environmental Drilling
- Groundwater sampling

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## 8. AIR MONITORING PLAN

The air monitoring plan presented in this section of the HASP is a plan to be implemented during certain activities conducted by W&C or W&C Contractors to identify and quantify airborne contaminants such as volatile organic vapors, dust, and combustible gas. Additional air monitoring will be performed by Contractors under the supervision of the CM as part of the remedial construction activities in accordance with project specification requirements. Details of the Contractor's air monitoring requirements and corrective actions are included in the Remedial Action Work Plan and in the project specifications.

The types of real time field monitoring instrumentation to be used on the Site are summarized below in Section 8.1. The air monitoring protocol to be implemented during this scope is summarized in Section 8.2 and 8.3.

### 8.1 Monitoring Instrumentation

All instruments must be validated to calibration standards at least daily or more frequently if required by the manufacturer, and must be in good working order. The following direct measurement field monitoring instruments may be utilized at the Site for continual and periodic monitoring:

- Photo Ionization Detector (PID): Minirae 3000 or equivalent for the monitoring and direct read of volatile organic vapors during certain work activities
- Dust Level Meter: Dust MiniRam(s) instruments or equivalent will be implemented for continuous monitoring during drilling and other ground disturbance activities around the perimeter of certain work activities.

### 8.2 Work Area Air Monitoring

Planned activities are not expected to cause off-Site migration of contamination (via volatile or dust emissions, for example) or result in field personnel's exposure to significant concentrations of Site contaminants. The most likely route of exposure to hazardous chemicals on this Site is direct contact or inhalation of contaminated dust. USEPA has established a National Ambient Air Quality Standard for PM-10 (particles less than 10 micrometers in diameter) of 0.150 milligrams per cubic meter (mg/m<sup>3</sup>) over a 24-hour period. If dust generating activities are to occur in areas of known contaminant impacts, a more conservative action level will be established based on the OSHA PEL or other established threshold limits (e.g. NIOSH REL or ACGIH TLV) for the primary contaminant of concern within that area.

When feasible, soil borings will be completed utilizing a direct push drilling rig, which will limit the potential for dust generation. A light water spray may be used to keep dust down (as weather conditions require) in certain sections of the Site, as determined by the SSO. The spray will reduce the possibility of contaminated dust drifting off-Site. Weather and soil conditions will be evaluated daily by the SSO and/or a W&C representative. Dust controls are implemented at the discretion of the SSO. Dust monitoring with an aerosol monitor may be conducted at the discretion of the SSO or as specified in a project work plan during activities such as drilling, test pitting, and soil/sediment sampling that may cause excessive dust levels. A PID may be used to monitor for VOCs during certain investigation activities at the discretion of the SSO or as specified in a project work plan.

Background levels of VOCs and particulate dust will be measured and recorded prior to the commencement of work activities during which VOC and particulate dust monitoring will be performed throughout the work activity. Action levels provided in Table 8-1 will be measured against these background levels so long as

background does not exceed OSHA permissible exposure limits (PELs (see Table 7-1 for PEL reference)). See Appendix H for an example air monitoring log sheet.

If continuous uncontrolled visible dust is observed being generated from work activities, or an established monitoring action level (see Table 8-1) is exceeded in the worker's breathing zone, affected Site work should cease and engineering controls (e.g., dust suppression methods, ventilation for VOCs, source removal, etc.) will be implemented. After the engineering control measures have been implemented, another reading and observation should be taken in the breathing zone to see if levels have decreased before proceeding. If the engineering control measures are not successful in reducing concentrations below the applicable action level work will cease and the PSO and PM will be notified.

Atmospheric monitoring for oxygen and combustible gas (lower explosive limit) may be conducted during drilling and excavation (including test pitting) activities at the discretion of the SSO or as specified in a project work plan. Atmospheric monitoring will be conducted in accordance with OSHA standards for excavations.

### **8.3 Personal Air Monitoring**

Based on the level of known contaminants likely to be encountered during activities included in this HASP, personal air monitoring is not expected to be required for the protection of W&C personnel. Task specific personal air monitoring may be required if the hazard analysis or results of work zone air sampling indicate that contaminants may be present at concentrations approaching the PEL.

**Table 8-1: Air Monitoring**

Instrument	Frequency	Concentration Expected	COC & Action Level	Action
<p>PID (with 11.7 eV lamp)</p>	<p>As required by the project work plan or at a minimum of once every 30 minutes during direct push and drilling activities, test pitting, and excavation activities within known source areas or within the limits of the landfill. An initial background reading will be recorded daily prior to starting the activity.  Increase frequency of readings if levels above background are observed.</p>	<p>Background readings below action level</p>	<p>All VOCs as listed in table 7-1  PID &gt; 5 ppm sustained for more than 2 minutes average  If &gt; 5 ppm sustained average cannot be reduced.</p>	<p>Back-off and ventilate until readings have reached background or zero.  Stop work and back off to a safe upwind location. Assess for implementation of controls (cover source, ventilate, remove source, etc.). Contact PSO and PM for direction.</p>
<p>Multi-gas Meter (O<sub>2</sub>, LEL)</p>	<p>As required by the project work plan or at a minimum of once every 30 minutes during direct push, drilling, test pitting, or excavation activities within known source areas or within the limits of the landfill area. An initial background reading will be recorded daily prior to starting the activity.  Increase frequency of readings if levels above background are observed.</p>	<p>Background readings below action level</p>	<p>Oxygen &lt; 19.5% - &gt;23.5%  LEL &lt; 5 %</p>	<p>Stop work and back off to a safe upwind location. Do not commence work until atmospheric levels are controlled to within safe limits. Assess for implementation of controls (cover source, ventilate, remove source, etc.).  If action levels cannot be met, cease work and notify the PSO and PM for direction.</p>

<b>Instrument</b>	<b>Frequency</b>	<b>Concentration Expected</b>	<b>COC &amp; Action Level</b>	<b>Action</b>
Dust Level Meter	As required by the project work plan or at a minimum of once every 60 minutes during dust generating activities such as test pitting and excavation. An initial background reading will be recorded daily prior to starting the activity.  Increase frequency of readings if levels above background are observed.	Background	> 0.150 mg/m <sup>3</sup> above background levels or as determined by the project work plan for areas of known contamination	Stop work and implement dust control measures such as wet methods. If action level cannot be met or if continuous visible dust is observed regardless of the reading, the work will cease and the PSO and PM contacted for direction.

## 9. PERSONAL PROTECTIVE EQUIPMENT

While PPE can be vitally important and useful, it should **not** be the first form of hazard control implemented. Engineering and administrative controls should be implemented first. OSHA has several regulations on PPE (29 CFR 1910.132-139) that will be followed by personnel covered by this HASP. This section also doubles as the OSHA-required written certification of PPE hazard assessment. See the HASP approval page for required date and the name of certifier.

**Table 9-1: PPE Requirements**

PPE Level	
PPE Required	Applicable Work Activities
<b>Level D Work Uniform:</b>	
<ul style="list-style-type: none"> <li>• Long-sleeved shirts and long pants</li> <li>• Composite or Steel Toed Boots with socks</li> <li>• Hard Hats</li> <li>• Safety glasses</li> <li>• Reflective safety/traffic vest</li> <li>• Cut-Resistant Gloves</li> </ul>	All Site work activities
<b>Level D Modifications:</b>	
<ul style="list-style-type: none"> <li>• Disposable nitrile gloves</li> <li>• Tyvek® or equivalent coveralls if particulate hazards only are present</li> </ul>	Handling of contaminated sediment, soil, water, and other media sampling activities;
<ul style="list-style-type: none"> <li>• Hearing protection devices</li> </ul>	Conducting drilling, direct push, and any other work within near vicinity of excavation or other heavy equipment.
<ul style="list-style-type: none"> <li>• Rubber waders or boots</li> </ul>	Surface water sampling or gauging
<ul style="list-style-type: none"> <li>• Personal flotation device</li> </ul>	Surface water sampling or gauging in water greater than 2 feet deep.
<ul style="list-style-type: none"> <li>• Tick prevention clothing (ankle gaters)</li> </ul>	Conducting activities in overgrown areas of high vegetation or brush.
<ul style="list-style-type: none"> <li>• No Cut-Resistant Gloves</li> </ul>	See JSA's for specific tasks that do not require the use of cut-resistant gloves
<p><b>Level C Protection is not anticipated for this scope of work, no Level C or higher protection level (A or B) work is NOT allowed without prior approval from the PSO, PM, and HSM.</b></p>	

## **9.1 Personal Protective Equipment**

The levels of PPE to be used for this Site are summarized in Table 9-1. The information in this table is based on the hazard analysis completed for the Site and summarized in Section 7. The specific job task will be evaluated by the PSO or designee, via a JSA, and the appropriate PPE level will be established. The use of respirators is not anticipated at this Site. If any respirator work is required, it will not be done without prior approval of the PSO and PM in consultation with the HSM. If Level C is determined to be required for work, a project specific respiratory protection program will be drafted and appended to this HASP. Any respirator work will be completed in accordance with OSHA regulations 29 CFR 1910.134.

## **9.2 IDLH Conditions**

Based on Site characterization data and past work experience, immediately dangerous to life or health (IDLH) conditions are not expected during Site activities. If IDLH conditions arise at any point based on monitoring, work will cease until additional engineering and administrative controls can be implemented, and personal protective equipment will be upgraded as appropriate. Work may not resume until approved by the PSO and PM in consultation with the HSM.

## 10. DECONTAMINATION PLAN

The Site is located in a commercial and residential area of White Plains, New York. As such, a thorough proper decontamination protocol is imperative to limit exposure to the community and personnel. Therefore, contamination reduction zones for each work area throughout the Site will be established by the SSO or designee to limit the possibility of contamination outside the work area. If the work is mobile in nature, the decontamination zone will be determined and established by the SSO or designee at the beginning of each work day. The general establishment approach of work zones are described in Section 6.

A decontamination line for personnel and equipment shall be established if the work to be completed at the Site has the potential for contaminating equipment or clothing. The procedures outlined below describe the decontamination protocol. Typically, this will involve plastic sheeting, disposal bags, and washing supplies.

### 10.1 Disposable PPE

Personnel wearing disposable PPE (outer cover boots, gloves, etc.) and disposable clothing will, following gross removal of visible contaminants, place the PPE in a receptacle established at the hot line before leaving the contamination reduction zone. Disposable PPE will be disposed in accordance with applicable state or federal regulations. Provisions for disposal of personal protective equipment are summarized in the Site Management Plan.

### 10.2 Decontamination of Non disposable PPE

To decontaminate non-disposable PPE, visibly or suspect contaminated areas of the PPE shall be washed with a detergent (TSP, Alconox, or Liquinox) and water solution.

Any clothing to be laundered will be bagged in the CRZ and labeled as such. The laundry service must be informed of the potential contaminants. Other reusable protective wear (such as waders) will be cleaned and decontaminated with appropriate solutions such as those listed above.

### 10.3 Decontamination of Respirators

Respirator filters and/or cartridges used during tasks identified in this HASP or subsequent addendums will be removed and either disposed or cleaned and bagged separately from the respirator. Respirators will be cleaned and decontaminated according to manufacturer's directions. Generally, this includes first cleaning with a detergent and water solution followed by a clear water rinse and air drying. The cleaned and inspected respirator shall then be stored in a clean, sealable, protective container.

### 10.4 Decontamination of Equipment

#### 10.4.1 Air Monitoring Equipment:

If contamination is likely, monitoring equipment shall be wrapped in plastic wrap or bags to avoid the need for decon. Do ***not*** cover the probe or inlet with plastic! If contaminated, leave the plastic wrap or bags in the designated disposal receptacle at the CRZ. If the equipment has to be decontaminated, manufacturer's recommendation will be followed. See owner's manuals.

#### **10.4.2 Excavating or Heavy Equipment:**

Heavy equipment that has entered the exclusion zone will be appropriately decontaminated (e.g., steam-cleaned and washed with a water spray) prior to leaving the contamination reduction zone (most likely by the contractor operating the equipment). Tracks and wheels of equipment that has entered the Exclusion Zone will be washed (e.g., with a steam cleaner) in the CRZ prior to entering or crossing a public road. Decontamination of heavy equipment will be conducted in accordance with the project specifications for the Remediation Action. Decontamination materials and fluids will be disposed of in accordance with the Site Management Plan.

## 11. EMERGENCY PROCEDURES

In the event of an exposure, incident, injury, or fire, the following general procedures are to be followed by all personnel.

If an emergency is immediately dangerous to life and/or limb, the SSO or designee will call 911 immediately and provide information that describes the location of the emergency to assist local City of White Plains Ambulance, Fire, and Police response. Following notification to emergency response personnel and implementation of the actions described below, the SSO will notify the PSO and PM as soon as possible.

### 11.1 Evacuation and Emergency Response

In the event of an emergency, immediately notify the SSO.

The signal to evacuate is ***three (3) sustained blasts on the air or car horn or very loud whistle***. The air horn is located in the site office. In the event that access to the air or car horn is not available, signal site workers using any methods available. Note that the emergency signal ***cannot*** be the same as other site signals, e.g., blasting warning.

The evacuation assembly point for the work Site is at the main entrance to the Site located on East Post Road. If the entry point is not accessible due to the on-site emergency, the alternate evacuation assembly point is the Site entrance located on Brookfield Street.

If you are in the exclusion zone, proceed to the access corridor of the CRZ for further instructions.

Following evacuation, the SSO will perform a head count, using the logbook, to account for all personnel who entered the site.

### 11.2 Fire or Explosion

In the event of fire or explosion, the incident will be immediately reported to the SSO. The SSO or designee will immediately notify the local Fire Department (911),

Incipient Fire Response: An incipient stage fire is generally defined as a fire in its beginning stage that can be controlled with portable fire extinguishers. Fire extinguishers may then be used for incipient stage fires by **trained personnel only**. Otherwise, evacuate!

### 11.3 Chemical Spills and Leaks

Personnel must report any chemical spills or leaks to the SSO. Should a spill or leak (e.g., gases, vapors, dusts, liquids, solids, radioactive materials, or any other hazardous materials) occur which is a threat to the environment or human health, the person observing the spill will:

- \* Evacuate or request evacuation of all people at risk or shelter-in-place (SIP)
- \* Inform the SSO

The decision as to whether to evacuate or SIP is an important one. Factors affecting the decision include the following (refer to the DOT's Emergency Response Guidebook [ERG] and the chemical MSDSs for more detailed information):

- \* Hazardous material(s) released (degree of hazard, amount, containment/control, and rate of vapor movement);
- \* Population Threatened (location, number of persons, available time, ability to control the process, building types and availability, and special institutions/populations [day cares, schools, hospitals, nursing homes, prisons, etc.]); and
- \* Weather conditions (effects on vapor and cloud movement, potential for change, and effect on the process).

The SSO or designee will contact the appropriate Federal, State, or Local agencies in the event of a chemical emergency. These typically include the following:

- \* Local police and fire departments,
- \* State Police,
- \* Sheriff,
- \* State DES,
- \* Local Health Dept.,
- \* National Response Center (NRC) (if reportable above the RQ),
- \* , and/or
- \* Others as applicable.

#### **11.4 Incident Reporting**

All personnel on this site must immediately report injuries and illnesses to the SSO. If the injury or illness is a result of, or could result in, a chemical exposure, the SSO will report it and take appropriate action to prevent further exposure. The HSM must be contacted as soon as possible for any incident resulting in off-site medical treatment, hospitalization or fatality.

Following an incident, an Incident Report will be completed and the HSM will be notified of the incident within 24 hours. Incidents are reported using Woodard & Curran's electronic event reporting system, the H&S HUB (see Appendix I).

Close calls involving W&C personnel will be reported similarly to injuries and illnesses as described above using Woodard & Curran's electronic event reporting system, the H&S HUB.

In the event of a hazardous material spill or chemical release above the reportable quantity, the appropriate federal and state agencies will be notified by the PSO or SSO.

## 12. SPILL CONTAINMENT MEASURES

Although anticipated activities should not warrant spill containment measures, it is never-the-less feasible (though remote) that incidental “spillable” quantities of chemicals may be present. Spillable quantities of chemicals such as acids and solvents are not anticipated to be utilized during decontamination activities. However, if such chemicals in quantities greater than one-gallon are stored at the Site, these chemicals will be stored within protective lockers based upon their specific chemical hazard and secondary containment will be implemented to avoid spills. Specific chemical handling and management procedures for Investigation Derived Waste are described in the Site Management Plan.

Gasoline, diesel fuel, hydraulic oils, and oil used in heavy equipment may constitute a “spillable” quantity. Spill containment equipment will be stored at the Site by the Contractor in order to immediately respond to a spill.

A minimum of spill containment equipment to be stored on-site will include the following:

- Absorbent material (such as speedy dry): 5 gallon bucket volume
- Absorbent hazmat spill socks: 4 – 8 to 10 foot lengths
- Non absorbent booms (for use on water): 4 – 10 foot lengths
- Absorbent pads: 1 standard bundle/package of hazmat spill pads
- 1 - Long handled shovel
- 1 - 55-gallon drum (removable top) for collection of contaminated spill material – drums retained shall be compatible with the wastes it is intended for (i.e. plastic drums shall be available for corrosive wastes etc.) this will be evaluated by the PSO.

The following containment procedure should be followed by the party responsible for the equipment in the event of a gasoline and/or oil spill:

Carefully contain and stop the source of the spill, if safe to do so. Protect nearby bodies of water and drains by diking, use of absorbents, or absorbent boom. Do not flush down sewer or drainage systems. Prevent contact with ignition sources or areas/equipment that requires protection. Apply sand or absorbent materials to the spill to prevent continued spread of the liquids. Carefully shovel, scoop or sweep into a compatible waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Ensure contaminated spill materials are properly disposed per state and federal requirements.

### 13. CONFINED SPACE ENTRY

Confined Space Entry (CSE) can be very hazardous work and it is W&C's policy that CSE work will be avoided whenever possible. Improper CSEs across the country have resulted in numerous deaths of both entrants and would be rescuers. W&C's CSE Program complies with the U.S. Occupational Safety and Health Administration (OSHA) standard, 29 CFR Part 1910.146, Permit-Required Confined Spaces (PRCSs). Confined space work presents unique hazards to workers who enter such spaces, as well as to those on the outside. Proper preparation and attention to detail during entry operations is required to avoid the occurrence of serious or fatal incidents. W&C's CSE Program applies to any entry of a PRCS, whether it is for the purposes of on-going operations, maintenance, construction related activities, and/or is made by an outside contractor.

1. A confined space is defined as a space that:
  - a. Is large enough to bodily enter;
  - b. Has limited or restricted means of entry or exit; and,
  - c. Is not designed for continuous employee occupancy.
2. A permit-required confined space (PRCS) is defined as a confined space that has:
  - a. The potential for a hazardous atmosphere, or
  - b. The potential for an engulfment hazard, or
  - c. A tapered floor or inwardly converging walls, or
  - d. Any other serious health or safety hazard.

The Federal OSHA standard 29 CFR Part 1910.146 is typically applicable to general industry and is more comprehensive than the construction standard 29 CFR 1926.21 (b) (6) (i) for confined space entry. In the event of an OSHA inspection the regulatory agency can and has cited employers utilizing the general duty clause. W&C's CSE Program applies to any entry of a PRCS, whether it is for the purposes of on-going operations, maintenance, construction related activities, and/or is made by an outside contractor.

W&C has a CSE policy which can be found in W&C's Health and Safety Manual at section 12 and is incorporated into this section of the HASP. W&C's CSE policy and OSHA's PRCS regulation 29 CFR 1910.146 will both be followed.

Confined Space Entry is not anticipated at this site. W&C employees are trained to recognize and identify confined spaces, but shall **not** enter or work in a confined space without additional proper training, backups, and requisite supplies and equipment. If confined space entry is determined to be required, modifications to this HASP will be made by the PSO and PM in consultation with the HSM prior to initiating entry.

## 14. HAZARD CONTROL INFORMATION

### 14.1 Warm and Cold Environments

Weather-related problems anticipated during operations include cold and heat stress. Cold stress will most likely occur during colder temperatures in the winter or early fall (however, hypothermia has been known to occur in the summer), if personnel or clothing gets wet during wind chill conditions. Heat stress will most likely occur when wearing protective clothing that decreases natural body ventilation. Workers should be aware of signs of cold or heat stress in themselves and other workers as described below. Cold-related symptoms range from a "chill" and "trench foot" to more serious conditions such as frostbite or hypothermia. Heat-related symptoms range from heat rash and heat cramps to more serious conditions such as heat exhaustion and heat stroke.

Under extreme environmental conditions workers will be required to use the "buddy system" to monitor for signs of chemical exposure, weather-related stress, and other health and safety hazards. Personnel will work in pairs and will maintain constant line of sight with each other. If a "buddied" person has to leave the work area, then his or her buddy must accompany them. First aid equipment and trained personnel will be available on-site.

#### 14.1.1 Hot Environments

To reduce the risk of heat-related illness, the following measures will be taken when temperatures are at or above 80°F:

- Employees will be trained prior to working outdoors.
- Working hours will be modified to work during the cooler hours of the day, when possible. When a modified or shorter work-shift is not possible, more water and rest breaks in shade will be provided.
- Employees working in warm or hot temperatures will carry cell phones, or other means of communication, to ensure that emergency services can be called without delay.
- Employees will have access to air conditioning in a vehicle, nearby building, etc.
- The SSO will regularly remind employees about the importance of rest breaks in hot weather and will encourage employees to drink water throughout the day.
- When chemical resistant clothing is worn, body ventilation and evaporation are greatly reduced. Additional breaks will be scheduled for personnel wearing coveralls in hot weather.

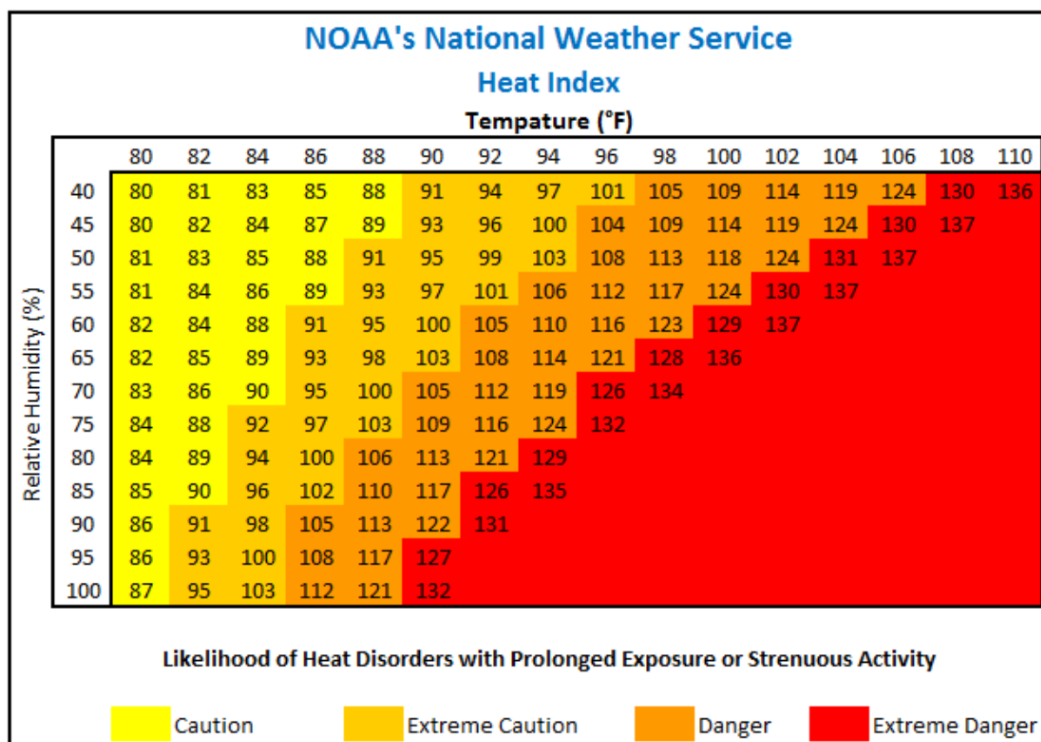
In conditions where the temperature is at or exceeds 95°F, the following controls will be implemented:

- The Project Manager considers if work can be rescheduled to a cooler day.
- Employees and their supervisors must maintain effective communication through voice, visual, or electronic means so that contact can be made if necessary.
- Observation/monitoring of employees for signs of heat illness by:
  - A supervisor or designee monitoring up to 20 employees, or
  - Use of a mandatory buddy system, or

- Regular communication with an employee working alone through electronic means, or
- Other productive observation means.
- Designate at least one employee on each worksite as authorized to call emergency medical services (EMS).
- Consistent reminders throughout the shift for employees to drink water.
- Holding pre-shift meetings prior to work to discuss the high-heat procedures in place.
- Any new or returning employees shall be observed for the first 14 days of employment to ensure acclimatization to the high heat.

As a recommended practice, NOAA’s National Weather Service Heat Index (Table 14-1) will be used as a screening tool on this project to evaluate if a heat stress situation may exist.

**Table 14-1: NOAA’s National Weather Service Heat Index**



Personnel should be aware of the effects of extreme temperature environments, provided with adequate liquids, and instructed to observe each other for signs of heat or cold related stress. Medical conditions associated with heat include: heat stress, heat stroke, heat exhaustion, heat cramps, and heat rash. Table 14-2 describes heat-related illness symptoms and what to do if these medical conditions occur

**Table 14-2: Heat-Related Illness Symptoms and Controls**

Heat Illness	Symptoms	What to Do
Heat stroke	<ul style="list-style-type: none"> <li>• Red, hot, dry skin (no sweating)</li> <li>• Throbbing headache</li> <li>• Dizziness</li> <li>• Nausea</li> <li>• Confusion</li> <li>• Unconsciousness</li> </ul>	<ol style="list-style-type: none"> <li>1. Call medical help immediately.</li> <li>2. Get the victim to a cool, shady area.</li> <li>3. Cool them off with a cool shower, garden hose, wet cloths, ice packs, etc.</li> <li>4. Do not give the victim fluids to drink.</li> <li>5. If emergency medical services is delayed, call the hospital for further instructions.</li> </ol>
Heat Exhaustion	<ul style="list-style-type: none"> <li>• Heavy sweating</li> <li>• Pale, clammy skin</li> <li>• Tiredness</li> <li>• Weakness</li> <li>• Headache</li> <li>• Dizziness</li> <li>• Confusion</li> <li>• Nausea, vomiting</li> <li>• Fainting</li> </ul>	<ol style="list-style-type: none"> <li>1. Get the victim to a cool, shady area to rest.</li> <li>2. Loosen and remove any heavy clothing.</li> <li>3. Give them cool water to drink unless they are sick to the stomach.</li> <li>4. Cool the body by spraying with cool water or apply a wet cloth to skin, preferably the back of the neck.</li> </ol>
Heat Cramps	Muscle pains or spasms, usually in the abdomen, arms, or legs	<ol style="list-style-type: none"> <li>1. Get the victim to a cool area and have them sit quietly.</li> <li>2. Give them clear juice or a sports beverage.</li> <li>3. Have them rest for a few hours.</li> <li>4. Seek medical attention for heat cramps if they do not subside in 1 hour.</li> </ol>
Heat Rash	Skin irritation looking like a red cluster of pimples or blisters	<ol style="list-style-type: none"> <li>1. Move employee to a cool, less humid area.</li> <li>2. Keep the affected area dry.</li> </ol>

These signs can be distinguished from those associated with chemical hazards as chemical hazards usually do not cause changes in skin temperature and/ or color, or the ability to sweat.

### 14.1.2 Cold Environments

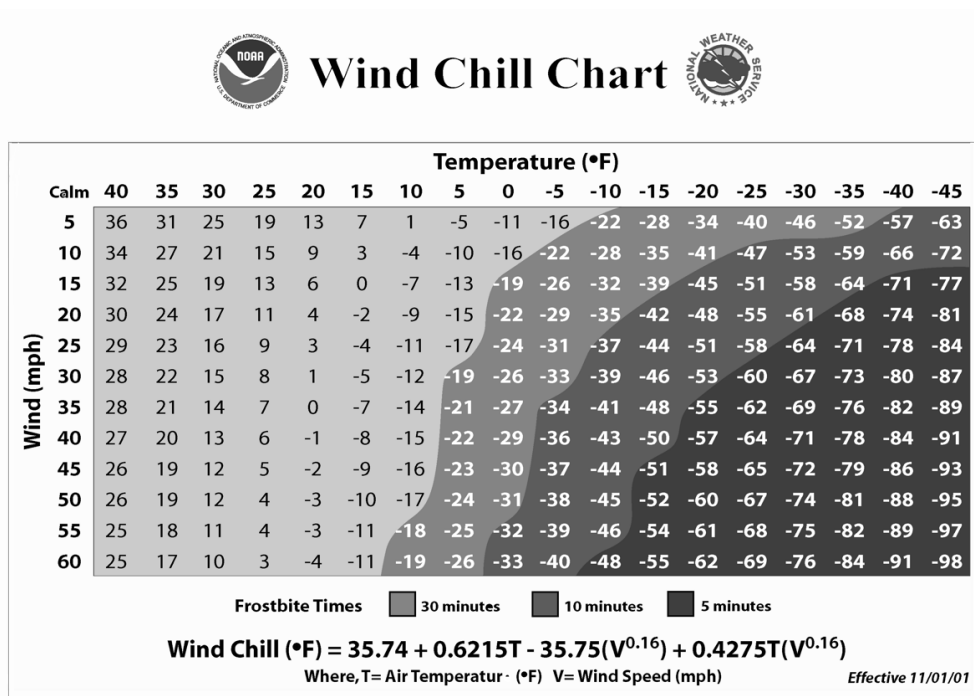
Cold stress occurs when the ambient air temperatures drop below normal ranges and there is an increase in wind speed. For some locations where winter weather is not a common occurrence, cold stress can occur at near freezing temperatures (32°F). Key factors that can bring about or aggravate cold stress are: age, body size, physical condition, length of exposure, wind, temperature, exhaustion, hunger, dehydration, alcohol intake, smoking, and improper clothing and equipment. Cold stress can lead to the development of hypothermia, frostbite, and trench foot.

The following are required controls for Woodard & Curran employees working in cold environments:

- The Project Manager considers rescheduling work to a warmer day if severe cold temperatures are expected.
- Dress for the weather, which includes at a minimum a warm jacket, hat or hood, insulated boots, warm socks, and gloves or mittens.

- Keep a change of dry clothing available in case work clothes become wet.
- Do not underestimate the wetting effects of perspiration. Oftentimes wicking and venting of the body's sweat and heat are more important than protecting from rain or snow.
- Take breaks in warm areas.
- In extremely cold conditions, where face protection is used, eye protection must be separated from the nose and mouth to prevent exhaled moisture from fogging and frosting eye shields or glasses.
- Clothing must be dry. Moisture should be kept off clothes by removing snow prior to entering heated shelters.
- If an employee experiences heavy shivering, frostbite, excessive fatigue, drowsiness, irritability, or euphoria return to a heated shelter immediately.
- Consider the windchill chart (Table 14-3) when performing work activities in cold weather.

**Table 14-3: NOAA Wind Chill Chart**



While working in cold environments, workers' best practices are eating and drinking properly, taking breaks in warm areas, using the buddy system, and always wearing a person floatation device (PFD) if employees are on or within three feet of water.

**Signs of cold stress are summarized as follows:**

**Hypothermia: uncontrollable shivering, confusion, weakness or loss of coordination, pale or cold skin, drowsiness.**

**Frostbite: progressive numbness or loss of sensitivity, tingling or burning feeling, color change (white or purple), most common in ears, nose, hands/fingers, and toes.**

**Trench foot: red skin, inflammation, blisters, and extreme pain after warming.**

Should signs of cold stress be detected, appropriate first aid measures will be taken to protect workers. Appropriate first aid measures are summarized below.

### 14.1.3 Cold Stress Treatment

1. Get the victim out of the cold.
2. Loosen tight clothing.
3. Remove perspiration soaked or wet clothing.
4. Apply warm blankets to the skin.
5. If conscious, give the victim cool water to drink.
6. Seek medical attention and call 911.

### 14.2 Noise Exposure/Hearing Conservation

Hazardous noise levels are ubiquitous on construction sites. Noise sources typically include the engines and/or motors of the equipment, the operating parts of the equipment, compressed air, and others. Noise-induced hearing loss (NIHL) is insidious and often occurs before one can notice it. Hearing protection devices (HPDs) including ear plugs and/or muffs as appropriate will be provided to personnel and will be used in areas with noise levels perceived as loud at or above 85 decibels by the SSO or designee. Such activities may include drilling, heavy equipment use during test pitting, and other activities observed to need HPDs for work at the Site. If necessary, a sound meter may be used by the SSO or designee to survey work area sound levels.

#### OSHA PEL for Noise

Noise limit	Time (hrs.)
90 dBA	8 hours
95	4
100	2
105	1
110	½
115	¼

#### ACGIH® TLV® and NIOSH REL for Noise

Noise limit	Time (hrs.)
85 dBA	8 hours
88	4
91	2
94	1
97	½
100	¼

Some examples of typical approximate sound levels include the following (also refer to Appendix I – “Noise Thermometer”):

<b><u>Sound Pressure Level</u></b>	<b><u>Activity/ies or Settings (varies depending on distance)</u></b>
180 decibels (dB)	Rocket launch from pad
170 dB	Shotgun blast
150 dB	Jet engine taking off, firecracker, artillery at 500 feet
140 dB	Pain threshold and jet engine at 25 meters distance
130 dB	Jackhammer, power drill, air raid, car race, symphony percussion
125 dB	Jet taking off at 100 meters distance, car stereo, chain saw
120 dB	Chain saw, hammering, siren, jet plane at ramp
110 dB	Pop/rock group/band, power saw, leaf blower
100 dB	Pneumatic chipper, factory machinery
90 dB	Heavy truck, tractor, blender, mixer
85 dB	Average street traffic, handsaw, noisy restaurant

Sources: Bruel & Kjar Instruments, Inc. and League for the Hard of Hearing.

### **14.3 Excavations and Trenching**

Excavations and trenches present potentially extreme hazards, which require 100% compliance with and adherence to proper protective measures. OSHA has a nation-wide Special Emphasis Program (SEP) that requires Compliance Safety and Health Officer (CSHO) to inspect any and all excavations that the CSHO observes. This is because an accident in an excavation is 17 times more likely to result in death than another accident in construction and 170 times more likely to result in death than another accident in general industry.

Personnel will not enter an excavation or trench without the required special training and adequate protective measures. W&C personnel will not enter trenches or excavations greater than 3 feet deep unless they have completed OSHA “Competent Person” training. Excavations 4 feet deep or greater will be tested for hazardous atmospheres prior to entry using a multi-gas meter and PID. No other “confined space entry (CSE)” is anticipated. Sampling will be performed from above ground using hose extensions whenever possible to reduce unnecessary exposure and to avoid congestion of personnel in confined areas.

There is also the potential for underground (UG) or buried utilities (including electrical lines). Dig Safe will be contacted prior to intrusive site work. However, Dig Safe will not be the sole means of identifying underground utilities. In addition to public utility mark-out (Dig Safe), the following utility clearance measures will be taken:

- State, local, and client ground disturbance rules will be followed.
- The proposed ground disturbance areas will be marked prior to utility mark-out.
- A private UG utility detection contractor will be used to assist in locating and identifying UG utilities.
- Reference available records (e.g., existing utility drawings) and have a plot plan, sketch, or photograph indicating the location of underground utilities available for reference at the worksite.

- The site owner (or their representative) will be interviewed for approval and to obtain knowledge of existing underground utilities.
- A site walk looking for signs of utility presence will be performed before ground disturbance activities occur.
- A pre-job safety meeting, including review of the JSA will be performed.
- Approved techniques for exposing underground utilities within five feet of ground disturbance will be used to verify the location of all known underground utilities. Approved techniques for exposing underground utilities are shovel, air knife, hydro-vac, and hand auger.
- Precautions will be taken to prevent contact with overhead power lines.

If any of the above measures cannot or will not be taken prior to ground disturbance, approval from the Woodard & Curran SBU Leader, or designee, is required.

Site personnel will comply with OSHA regulations 29 CFR Part 1926, Subpart P – Excavations 1926.650 – 1926.652 including having an OSHA CP for excavations on site. The following are required at a minimum:

- Excavated materials will not be placed within 2 feet of an excavation edge.
- Trenches 4 feet deep or greater will have ladders installed for ease of egress at least every 50 feet of trench length (such that a person need not travel more than 25 feet to exit via a ladder per OSHA).
- Excavations 5 feet deep or greater require protective systems prior to entry into the excavation to complete work.
- No water accumulation is allowed in the excavation or trench.
- Walkways 6 feet high or greater above trench bases require full OSHA guardrails.
- Excavations 20 feet deep or greater must be designed by a Professional Engineer.

#### **14.4 Drilling and Other Heavy Equipment**

This project will have heavy (such as drill rigs and backhoes) and other types of equipment (direct push vehicles) on Site presenting significant hazards to workers. Two areas of an OSHA “focused inspection” for construction include “struck by” and “caught in or between” hazards, accidents or injuries. Most incidents involving heavy equipment are due to a lack of awareness of the victim by the operator and/or of the impending motion by the victim.

Communication, eye contact, hand signals, and awareness of personnel locations and movements and equipment motions are critical to avoid incidents. Personnel will not “take breaks” under or behind heavy equipment (on average, 20 workers per year die when they are backed over while doing this). All heavy equipment will have back-up alarms. Personnel on the ground will not approach equipment (such as excavators or backhoes) from the operator’s “blind side” (the side with the arm and bucket). A minimum safe distance of 25 feet will be maintained by personnel from moving heavy equipment. Personnel may only approach heavy equipment when the equipment is stopped, buckets or other hydraulic arms lowered to the ground and visual contact with the operator is maintained. If operations require personnel to be in

closer vicinity of operating heavy equipment, then a spotter and job pre-briefing must be employed so that the team is aware of the operational hazards.

Site personnel will comply with OSHA regulations 29 CFR Part 1926, Subpart O – Motor Vehicles, Mechanized Equipment, and Marine Operations 1926.600 – 1926.606. Personnel will not repair, fix, service, or maintain heavy equipment without first locking out and tagging out all hazardous energy sources that the worker(s) may be exposed to during the repair. This includes “blocking” sources of gravitational energy (e.g., a falling bucket).

## **14.5 Working at Heights**

### **14.5.1 Aerial Lifts**

An aerial device is any vehicle-mounted device that telescopes, articulates or both, which is used to position personnel. One example is a scissors lift. [NOTE: A platform attached to the forks of a forklift would not be considered an aerial lift.] The aerial lift Safe work program is outlined in Section 17 of the W&C Health and Safety Manual. The following safe work practices shall be followed at a minimum:

- All new aerial devices must meet the design, construction and testing requirements of the American National Standards Institute (ANSI) standard for "Vehicle Mounted Elevating and Rotating Work Platforms," ANSI A92.2 - 1969, or a more recent version of the standard:
- Aerial lifts will not be modified without written permission from the manufacturer.
- Aerial lifts will only be used in accordance with the allowances stated by the manufacturer.
- Only allow trained personnel to operate aerial devices.
- Test lift controls each day prior to use to determine that such controls are in safe working condition.
- Always stand firmly on the floor of the basket, and do not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.
- When working from an aerial lift, wear a body belt and attach a lanyard to the boom or basket. Do not exceed boom and basket load limits specified by the manufacturer.

### **14.5.2 Overhead/Elevated Work**

A six foot fall protection rule will be in effect for all construction work activities. The walking/working surface on which personnel are to work must have the strength and structural integrity to safely support workers. Personnel are not permitted to work on those surfaces until it has been determined that the surfaces have the requisite strength and structural integrity to support the workers.

Where personnel are exposed to falling 6 feet or more from an unprotected side or edge, the employer must select a guard-rail system, safety net system, or personal fall arrest system to protect the worker.

A personal fall arrest system consists of an anchorage, connectors, body harness and may include a lanyard, a deceleration device, lifeline or a suitable combination of these. Each person in a hoist area must be protected from falling 6 feet or more by guardrail systems or personal fall arrest systems. If guardrail systems (or chain gate or guardrail) or portions thereof must be removed to facilitate hoisting operations, as during the landing of materials, and a worker must lean through the access opening or out over the edge of the

access opening to receive or guide equipment and materials, that person must be protected by a personal fall arrest system.

Personal fall arrest systems, covers, or guardrail systems must be erected around holes (including skylights) that are more than 6 feet above lower levels.

Where walkways are provided to permit persons to cross over excavations, guardrails are required on the walkway if it is 6 feet or more above the excavation.

Each person using ramps, runways, and other walkways must be protected from falling 6 feet or more by guardrail systems.

Areas outside of the construction zone not involved with construction activities, but general industry regulatory application must conform to a 4 foot fall protection rule for unguarded edges, stair wells, etc. with a fall greater than 4 feet.

## **14.6 Electrical Hazards**

The electrical safety program for W&C is detailed in Section 19 of the Company Health and Safety Manual. Electrical hazards are one of four aspects of an OSHA “focused inspection” for construction and present obviously life-threatening hazards. Equipment capable of reaching the overhead power lines shall always maintain a safe clearance of at least 10 feet. Lines rated above 50 kilovolts (kV) will have safe clearance of 10 feet plus at least 0.4 inches per additional 1 kV. W&C will request that lines are de-energized prior to work in the area or adequately insulate the lines, if and as necessary.

W&C and other employers will comply with OSHA regulations 29 CFR Part 1926, Subpart K – Electrical 1926.400 – 1926.

Ground fault circuit interrupter (GFCI) protection will be used for power equipment, etc. Only heavy-duty, 3-prong, outdoor-type extension cords approved for the work and load will be used as necessary.

The following activities may ONLY be completed by a qualified person using appropriate arc flash protection and safe work practice:

- Testing work on electrical circuits or equipment
- Working on energized circuit parts or equipment
- Defeating an electrical safety interlock.

Wherever feasible, the equipment or system must be totally de-energized before beginning work using control of hazardous energy procedure. Deenergization must be verified prior to commencement of work.

A decision to work on live electrical conductors instead of deenergizing must be made by a qualified person and is only acceptable when either:

- Deenergization introduces additional hazards (e.g., deactivation of emergency alarm systems, removal of illumination for an area, etc.)
- The equipment/system must be energized to facilitate the troubleshooting process.

## 14.7 Control of Hazardous Energy

Control of hazardous energy or lockout-tagout (LOTO) applies to all W&C employees who work on electrical circuits and equipment, or conduct other servicing and maintenance tasks on equipment with hazardous sources of energy. These provisions apply not only to those who use locks and tags to safely perform their work, but also to those who work in areas where others may use locks and tags. The minimum procedural requirements for the LOTO are located below. Site personnel shall also comply with control of hazardous procedures at Site as applicable.

### 14.7.1 Requirements for Energy Control Devices

1. LOCKOUT and TAGOUT DEVICES must be singularly identified and must only be used for controlling hazardous energy. They may not be used for other purposes and must meet the following requirements:
  - a. **Durable.** Devices must be capable of withstanding the environment to which they are exposed for the maximum time that exposure is expected (e.g., tags used in wet or damp locations must be constructed and printed so that the tag will not deteriorate, or the message become illegible).
  - b. **Standardized.** LOCKOUT DEVICES within the facility must be standardized by at least one of the following criteria: color, shape, or size. Print and format must be standardized on TAGOUT DEVICES.
  - c. **Substantial.** LOCKOUT DEVICES must be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as the use of bolt cutters or other metal cutting tools. TAGOUT DEVICES must be substantial enough to prevent inadvertent or accidental removal. Each TAGOUT DEVICE attachment must be non-reusable, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of not less than 50 pounds. The general characteristics and design must be at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.
  - d. **Identifiable.** Each LOCKOUT or TAGOUT DEVICE must indicate the identity of the employee applying it.
2. TAGOUT DEVICES must also warn against possible hazardous conditions if the machine or equipment is ENERGIZED. The tags must include a legend such as: *Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate*, or similar.

### 14.7.2 Application of Energy Control Procedure

The ENERGY CONTROL PROCEDURE shall cover the following elements and shall be done in the following sequence:

1. **Development of the procedure.** An initial survey must be completed to determine which switches, valves, or other isolating devices apply to the equipment being locked out. More than one energy source (electrical, mechanical, hydraulic, pneumatic, chemical, or others) may be involved.
  - a) **Energy Sources.** Clear any questionable identification of sources with plant/project management, the SSO, or other technical resources within the project.

2. **Preparation for shutdown.** Before an AUTHORIZED or AFFECTED employee turns off a machine or equipment, the AUTHORIZED employee must have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.
3. **Machine or equipment shutdown.** The machine or equipment must be turned off or shut down using the procedures required by this program. An orderly shutdown must be utilized to avoid any additional or increased hazards(s) to employees as a result of equipment de-energization.
4. **CAUTION:** Disconnect switches must not be pulled while under load, due to the possibility of arcing or even explosion. Personnel knowledgeable in equipment operation should be involved with shut down or re-start procedures.
5. **Machine or equipment isolation.** All ENERGY ISOLATING DEVICES that are needed to control the energy to the machine or equipment must be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).
6. **LOCKOUT or TAGOUT DEVICE application.** Each individual must apply his/her own locks and tags. A lock *and* a tag must be placed on each ENERGY ISOLATING DEVICE, with the following exceptions:
  - a. If the equipment will not accept a lock, a tag alone may be used but only after considering whether the ENERGY ISOLATING DEVICE can feasibly be modified to accept a lock, and discussing the issue with the SSO, CM, and HSM.
  - b. If a tag alone is used, at least one other safety measure must be taken. Examples include: removal of a circuit element, blocking the control switch, or opening an extra disconnect.

Tags must be affixed in a manner so that they clearly indicate that the operation or movement of ENERGY ISOLATING DEVICES from the "safe" or "off" position is prohibited.

1. **Stored energy.** After the application of LOCKOUT or TAGOUT DEVICES to ENERGY ISOLATING DEVICES, all potentially hazardous stored or residual energy must be relieved, disconnected, restrained, and otherwise rendered safe. For instance:
  - a. Capacitors must be discharged after their source is disconnected;
  - b. High capacitance elements must have their source disconnected, their charge released, their power inlet diverted, and the capacitor put to ground;
  - c. Springs; elevated machine members; rotating flywheels; hydraulic systems; and air, gas, steam, or water pressure must be released or restrained, etc.

If there is a possibility of *reaccumulation of stored energy* to a hazardous level, verification of isolation must be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

1. **Verification of isolation.** Prior to starting work on machines or equipment that have been locked out or tagged out, the AUTHORIZED employee must verify that isolation and de-energization of the machine or equipment have been accomplished. Both visual inspections and physical tests are important elements of verification.
  - a. **Visual.** Workers can visually confirm that switches, valves, breakers, etc. have been moved to or secured in the *off* or *safe* position. Visual inspection can also verify whether or not LOTO and other protective devices have been applied to the control points in a manner that would prevent the unsafe movement of switches or valves. Finally, a visual inspection can be used

to verify that isolation has taken place by determining that all motion has stopped and that all coasting parts such as flywheels, grinding wheels, saw blades, etc. have come to rest.

- b. **Physical.** In order to reliably ascertain whether hazardous energy has been effectively isolated, the AUTHORIZED worker generally will need to use a combination of visual inspection techniques and other physical tests (e.g., the use of a test instrument, such as a voltmeter and/or a deliberate attempt to start up the equipment).
- c. **Electrical Work.** Workers who are isolating and deenergizing electrical energy must use a Cat III voltage detection instrument (e.g., digital multimeter) to determine that the circuits or conductors are dead. It is not permissible to rely on other verification steps found in the ENERGY CONTROL PROCEDURE to verify that circuits or conductors are dead.

**Exception:** *Workers are permitted to use a non-contact proximity voltage detection device to verify an ELECTRICALLY SAFE WORK CONDITION if the following pre-condition is met: Electrical isolation is initially verified from outside of the electrical enclosure with covers closed via a permanently-mounted voltage detection device\*. In this case, the non-contact device may be used as the secondary means of verification in lieu of a digital multi meter. Additionally, in this instance, the worker would not be required to don arc flash PPE. \*Note: The device must be one that is approved by the SSO and HSM and must only be installed on equipment that was reviewed by the SSO and HSM.*

2. **Reenergization.** Each individual must remove his/her own LOCKOUT DEVICE. Prior to start-up, check that nonessential items and employees are out of the way, and that equipment components are operationally intact. Notify AFFECTED employees once LOCKOUT/TAGOUT DEVICES have been removed.

### 14.7.3 Single Energy Source Exemption

There are limited situations where ENERGY CONTROL PROCEDURES do not need to be written. This exemption is intended to apply to situations in which the LOTO process can take place without detailed interactions of energy sources, machines/equipment, and employees. If **all** of the following elements exist, then the ENERGY CONTROL PROCEDURE is not required to be written:

1. There is a single source of hazardous energy that can be easily identified and isolated, and there is no potential for stored or residual energy in the machine;
2. The isolation and locking out of that single energy source will totally de-energize and deactivate the machine;
3. A full LOCKOUT of the energy source is achieved by a single LOCKOUT DEVICE, which is under the exclusive control of the AUTHORIZED employee performing the servicing;
4. The servicing, while the machine is locked out, cannot expose other employees to hazards; and
5. No accidents involving the unexpected start-up of the machine/equipment have occurred.

### 14.8 Hazard Communication

All employers on Site must comply with 29 CFR Part 1910.1200 – Hazard Communication. Employers will maintain copies of safety data sheets (SDSs) on Site for all chemicals on-site. Personnel will have appropriate hazard communication training and each employer will have a written Hazard Communication Program for

any chemicals brought to and/or stored on the project Site. The W&C Hazard Communication Program is available for review in Appendix F.

#### **14.9 Hand and Power Tools**

All Site workers will comply with OSHA regulations 29 CFR Part 1926, Subpart I – Tools – Hand and Power 1926.300 – 1926.307. All tools shall be maintained in a safe condition. Tools shall be used only for their intended purpose. Employers are responsible for tools their employees use even if the tool is the property of the employee. Power tools will be appropriately guarded and guards will not be removed. Chain saws will be operated using appropriate PPE including safety glasses, face shield, hardhat, hearing protection devices, work gloves, steel toe boots, safety orange vest, and protective leggings (chaps).

#### **14.10 Slips, Trips, and Falls**

Slips, trips, and falls are responsible for most workplace incidents and hazards from falls are one part of an OSHA “focused inspection” for construction. There are likely to be many slip and trip hazards on-site due to topography and remediation activities. These include steep slopes, vegetation, rocks, rough terrain, air and water hoses, power cords, equipment and supplies, tools and materials, and potentially wet polyethylene sheeting for decontamination and/or erosion control. Site workers will exercise due care in traversing the Site. Footwear must be of adequate traction. Workers will not carry hazardous equipment or other materials that could contribute to an incident or fall while ascending or descending steep slopes or other dangerous terrain.

#### **14.11 Working On, Over or Near Water**

In the event of any work over or near water, it is important to exercise due care around water hazards. Work on or near water for this project may occur along Kelley Brook for surface water sampling, stream gauging, sediment sampling, and general site inspections. If Site Workers will be working over or near water where a risk of drowning could occur ( $\geq 2$  feet deep) the following precautions must be taken:

- Personnel must be provided with and use United States Coast Guard (USCG) approved personal flotation devices (PFDs, i.e., life jackets).
- Before and after each use, inspect the PFDs for defects.
- Not use defective PFDs.
- The buddy system must be utilized when working on or near water.

#### **14.12 Weather-Related Hazards**

In addition to heat and cold temperatures, weather-related hazards should be anticipated and appropriate protective measures taken. Given the multi-season work schedule and unpredictable New England weather, multiple seasons’ adverse weather should be anticipated. ***Always check the weather forecast for the Site locale before heading out!*** The following are some possible weather-related hazards and protective measures:

- **Lightning:** Do not work during electrical storms. If you hear distant thunder, or see ominous clouds indicative of a storm approaching, the occurrence of lightning may be imminent. Employees must follow the 30/30 rule. Begin counting as soon as you see lightning. If you hear thunder before you reach 30, stop work and go indoors. If shelter inside a permanent building

is not available, seek shelter in a fully enclosed vehicle with all windows and doors closed. Outdoor activities must be suspended for at least 30 minutes after the last sound of thunder and/or sight of lightning, whichever is longer. If being outdoors during lightning is unavoidable:

- Avoid open fields or hilltops as lightning typically strikes the tallest object in an area.
- Stay clear of trees, scaffolding, rooftops, cell phone towers, and other tall isolated objects.
- Crouch close to the ground in a ball-like position with your head tucked and your feet and knees together. Keep minimal contact with the ground; do not lie flat on the ground.
- If in a group during a thunderstorm, separate from each other to reduce the number of injuries if lightning strikes the ground.
- Avoid metal objects, equipment, and surfaces than conduct electricity.
- Avoid water as lightning can electrify the water body. Any employee in open water during lightning or a thunderstorm must return to land immediately.

Discuss the lightning safety protocol before work begins, including how employees will be notified about lightning warnings, identify location(s) for safe shelter, discuss check-in procedures when safe shelter is reached, specify approaches for determining when to suspend outdoor activities and when to resume outdoor work activities.

- Snow squalls, whiteouts, blizzards, northeasters, freezing rain, sleet, or ice: Do not schedule work when weather reports indicate potential storm or snowstorm watches or warnings. Send personnel home early in advance of an approaching storm. Alternatively, shelter workers if conditions are too hazardous to risk travel.
- Hurricane or tornado: Take appropriate shelter. Do not schedule work when weather reports indicate potential hurricane or tornado watches or warnings. Send personnel home early in advance of an approaching storm.
- Hail: Take appropriate shelter. Do not schedule work when weather reports indicate potential hail watches or warnings.
- Flash flooding: Take appropriate shelter. Do not schedule work when weather reports indicate potential flash flooding watches or warnings. Have workers vacate low-lying areas and seek high ground. Do not attempt to navigate across flooded areas or waterways.

### **14.13 Fauna and Flora Hazards**

During the course of field work, personnel are at risk of being exposed to poisonous plants, insects, spiders and snakes. Of these the most prevalent biological hazards include poison ivy, mosquitoes, ticks, and bees or wasps.

#### **14.13.1 Poison Ivy, Poison Oak, Poison Sumac**

Poison ivy, poison oak, and poison sumac are plants that cause an itchy, blistering rash that forms on the skin. Urushiol is an oil found within the plants that is responsible for irritation of the skin. All parts of poisonous plants (leaves, stems, roots, berries, etc.) may contain urushiol oil, even when the plant is dead. If the blisters on the skin are opened, there is an increased risk of infection. Therefore, it is important not to scratch the rash or blisters that form.

Poison ivy is most commonly observed in the Eastern and Midwestern United States in lake and stream habitats. Eastern poison ivy has a hairy ropelike vine (Figure 1) with three shiny green leaves in the summer (Figure 2) or red leaves budding from a small stem in the autumn (Figure 3). Poison ivy may have small, yellow flowers (Figure 4.)



Figure 1: Poison Ivy Vine



Figure 2: Eastern Poison Ivy

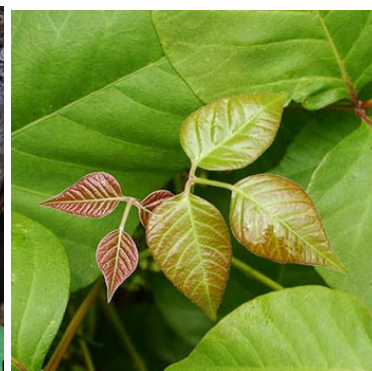


Figure 3: Eastern Poison Ivy  
(young leaves)



Figure 4: Poison ivy flowers

Poison oak is found throughout the United States in grassy hillsides, coniferous forests, and open shrubland. Poison oak has the appearance of a normal shrub with three leaves (Figure 5). Pacific poison oak may grow as a vine, meaning it could grow in higher levels than the forest floor. The flowers look very similar to the flowers of poison ivy. Poison oak is also known to produce berries (Figure 6.)



Figure 5: Poison Oak



Figure 6: Poison Oak Berries in the Fall

Poison sumac is found on the east coast, from Maine to Florida, and as far west as Minnesota and Texas. It grows in wetland and bog areas. It is the only sumac that grows in wetlands and bogs. Sumac growing

outside of bogs or wetlands is not typically poisonous. It is a woody tree that has stems that contains 7-13 leaves arranged in pairs. The stems of a poison sumac tree are red in color (Figure 7). The berries are glossy, pale yellow, or cream-colored. Berries of poison sumac tend to hang low (Figure 8), while berries of the staghorn sumac (non-poisonous) tend to stand straight up.



Figure 7: Poison Sumac



Figure 8: Poison sumac berries

### 14.13.2 Giant Hogweed and Wild Parsnip

1. Giant Hogweed is an invasive noxious weed from Asia that causes burns, blisters and blindness when exposed to the sap. Giant hogweed is a herb in the carrot family found in fields, forests, yards, and roadsides and along streams and rivers. It is a non-native plant and it can be found in New England, the Mid-Atlantic Region, and the Northwest Region. The plant can grow to 15 feet or more. It has hollow ridged stems that can grow two to four inches in diameter with dark reddish-purple blotches (Figure 9). The large compound leaves can grow up to five feet wide, and the white flower heads can grow up to 2 ½ feet in diameter (Figure 10).



Figure 9: Giant Hogweed Stem



Figure 10: Giant Hogweed Leaves

2. Wild parsnip is an invasive species found in all states except Alabama, Florida, Georgia, and Mississippi. It is commonly found in disturbed landscapes such as along roadways and fields. The plant has an array of small yellow flowers on at the end of hollow, grooved, hairless stems. The yellow-green, toothed leaves are arranged into a circular cluster (Figures 11-13).



Figure 11: Wild Parsnip Flower Cluster    Figure 12: Wild Parsnip Stalk    Figure 13: Wild Parsnip Leaf

### 14.13.3    **Poisonous Plant Controls**

The best way to protect against rash associated with poisonous plants is to avoid these plants. The following control measures are required when poisonous plants are onsite but will be avoided:

- Wear long pants, shoes, and socks.
- Notify the Project Manager and other site workers about the location of poisonous plants that are encountered.

Where poisonous plant exposure is likely, the following control measures below will be used. Activities with likely poisonous plant exposure involve touching poisonous plants with body, tools, or equipment (e.g., removing poisonous plants from an area, sampling a well where poisonous plants are growing up the well, walking over or through poisonous plants to access a work location, etc.). Employees highly susceptible to rash caused by urushiol oil who are working in areas with known poisonous plants should also consider implementing the control measures listed below even when not intending to contact poisonous plants

- The Project Manager must:
  - Consider whether poisonous plant removal can be done by a contractor or client before Woodard & Curran employees access the area.
  - Ensure all required personal protective equipment and supplies are available to the project team.
- Employees must cover skin by wearing pants, long sleeves, shoes, socks, and gloves to minimize exposure.
  - A best practice is to wear an outer layer of clothing that can be easily removed after contact with poisonous plants.
  - Tyvek coveralls or Tyvek sleeves are available upon request to meet the long sleeve and long pants requirement.
- Place plastic on the ground for tool/equipment staging to avoid contact with the sap/urushiol oil from poisonous plants.
- Upon completing field work (and before getting into vehicle), employees remove any easily-removable outer layers of clothing, such as jackets, Tyvek, and/or gloves, that may have contacted

poisonous plants with care and place them in a plastic bag to avoid spreading urushiol oil or poisonous sap.

- Clothing that contacted poisonous plants must be washed with regular soap/laundry detergent and hot water.
- Any tools or equipment (including boots) must be cleaned with hot water, soap, and a washcloth or paper towel.
- Wear gloves when handling clothing or tools contaminated with urushiol oil or sap.
- Take care in handling boots and tying boot laces after working in areas with poisonous plants. Boot gaiters may be used as a best practice to cover laces and most of the boot.
- Within two hours of contact with poisonous plants, employees must wash their skin with cold/lukewarm water using products designed for removal of urushiol oil (e.g. Tecnu) or use post-contact towelettes if working in areas of poison ivy, poison oak, or poison sumac. Note: washing skin with hot water may open the skin's pores allowing urushiol oil or sap to more easily enter the skin.
- Employees must notify the Project Manager and other employees about the location of poisonous plants that are encountered.
- Any employee in a situation where poisonous plants will be contacted who does not have Poisonous Plant training or personal protective equipment for protection against the poisonous plants must Stop Work and notify his/her Manager.

As a best practice, employees may (but are not required to) apply pre-exposure creams or wipes (e.g., IvyX) when working in or around poisonous ivy, poison oak, or poison sumac. Pre-exposure creams or wipes are encouraged for employees with known sensitivity to poisonous plants containing urushiol oil and may be used by any employee working in or around poison ivy, poison oak, or poison sumac. The above-listed PPE and post-work washing still apply, even if pre-exposure creams or wipes are utilized.

Any employee particularly susceptible to urushiol oil who is asked to perform work in an area where poison ivy, poison oak, or poison sumac are present, is encouraged to talk to their Manager about the potential for exposure and possible reassignment.

#### **14.13.4 Ticks**

Ticks transmit bacteria that cause illnesses such as Lyme disease or Rocky Mountain spotted fever. Ticks wait for host from the tips of grasses and shrubs (not from trees). When brushed by a moving person, they quickly let go of the vegetation and climb onto the host. Ticks can only crawl; they cannot fly or jump. Tick season typically lasts from April through October; peak season is May through July; seasons can vary depending on climate. Ticks can be active on winter days when the ground temperatures are about 45° Fahrenheit.

The best prevention of tick-borne illnesses is to prevent the ticks from attaching to the body. Woodard & Curran employees working in areas containing tick habitat are required to:

1. **Conduct regular spot checks to look for ticks on clothing.** This is best achieved through frequent visual inspections during the day including a more complete inspection (checking your body) at the end of the day.

2. **Wear light colored pants.** Tyvek pants are provided to all employees who request them to meet the requirement for wearing light colored pants;
3. **Tuck pant legs into socks or wear boot gaiters.** Tucking pants into socks is intended to keep the ticks on the outside of clothing where they can be spotted and removed during visual inspections. If you are not wearing the boot gaiters or Tyvek, your pants should be taped where they are tucked into your socks. Light-colored boot gaiters impregnated with Permethrin (or non-treated) are available to all Woodard & Curran staff with work-related field needs upon request. Permethrin kills ticks on contact.

Several best practices are encouraged when employees are working in areas known or suspected of having ticks. These include:

- For overgrown areas where employees must work or access, the Plant/Project Manager requests the client mow or clear the area prior to our employees accessing the area, as appropriate.
- Employees are encouraged to Stop Work and reschedule work activities if the area is not adequately mowed/cleared or if there is a large presence of ticks.
- Stay on cleared, well-traveled trails.
- If you intend to go off trail or into overgrown areas, use insect repellent.
  - Permethrin: Permethrin is the preferred repellent for tick exposure and will both deter and kill ticks. However, use permethrin with caution. Do not apply Permethrin directly to skin, it is to be applied only to clothing and allowed to dry (minimum of four hours) prior to use for maximum efficiency. Permethrin impregnated/treated clothing will require re-treatment but typically remains effective on clothing for multiple wash cycles. Follow manufacturer's instructions for safe usage.
  - DEET: Insect repellent containing DEET (Diethyl-meta-toluamide) can be used on skin or clothing as a tick deterrent. DEET acts as a tick repellent, but will not kill ticks.
- Keep work areas clear by removing brush or leaf litter.
- Avoid sitting directly on the ground or on stone walls (havens for ticks and their hosts).
- Be aware that ticks can also be above you on taller vegetation and branches (but they do not jump!).
- Keep long hair tied back.
- Wear easily-removable outer layers of clothing (e.g., jacket, long-sleeved shirt, Tyvek, etc.) when working in tick habitat. Remove outer layers of clothing and place them in a sealed plastic bag prior to entering company vehicles, if possible.
- Place clothing in dryer on high heat for 10 minutes. Ticks can survive the hot water wash cycle, but the dryer will kill them.
- Do a final, full-body tick-check at the end of the day. If possible, ask a spouse or significant other to assist.

Tick bites must be reported to your Manager. Monitor the site of the bite for the appearance of a rash or fever beginning 3 to 30 days after the bite. At the same time, learn about the other early symptoms of tick-borne disease, including Lyme disease, and watch to see if they appear in about the same timeframe. If a

rash appears or other early symptoms develop, call the Nurse Hotline for medical attention or advice. Call 911, or local emergency medical services, if experiencing a life-threatening event.

### 14.13.5 Mosquitoes

Mosquitoes, carriers of the West Nile Virus, Eastern Equine Encephalitis, and other diseases, are indigenous to the area. Employees working in areas where mosquito-borne illness is prevalent are required to cover as much of their skin as possible by wearing long sleeved shirts, long pants, and socks.

Best practices for mosquito bite prevention include:

- Eliminate standing water where mosquitos can breed. Mosquitos can develop in a standing body of water that persists for more than 4 days such as:
  - Stagnant pools
  - Ponds
  - Water troughs
  - Rain barrels
  - Irrigation ditches
  - Unused tires
  - Manure lagoons
  - Weedy, bushy, and wooded environments
- Disrupt areas that can act as breeding grounds: Inspect work areas and remove sources of stagnant or standing water, such as dumping out water pails or making sure spare tires have no water in them. If unable to remove the breeding grounds, avoid the area and consider staying indoors before dawn and after dusk when mosquitos are more active.
- Use insect repellent containing DEET, picaridin, or oil of lemon to exposed skin and clothing. Permethrin on clothing is also effective at repelling mosquitoes.
- Employees, including those who are pregnant or who plan (or whose partner plans) to become pregnant in the near future, may contact their Human Resources Talent Partner to request an accommodation.

### 14.13.6 Wasps and Bees

Wasps (hornets and yellow-jackets) and bees (honeybees and bumblebees) are common insects that may pose a potential hazard to the field team if work is performed during spring, summer or fall. Bees normally build their nests in the soil. However, they use other natural holes such as abandoned rodent nests or tree hollows. Wasps make a football-shaped, paper-like nest either below or above the ground. Yellow-jackets tend to build their nests in the ground but hornets tend to build their nests in trees and shrubbery. Bees are generally more mild-mannered than wasps and are less likely to sting. Bees can only sting once while wasps sting multiple times because their stinger is barbless. Wasps sting when they feel threatened. By remaining calm and not annoying wasps by swatting, you lessen the chance of being stung. Wasps and bees inject a venomous fluid under the skin when they sting. The venom causes a painful swelling that may last for several days. If the stinger is still present, carefully remove it with tweezers or scraping a credit card or other blunt object against the sting site in the opposite direction in which the stinger is embedded.

Employees must take the following steps to prevent bee, hornet, yellow jacket, and wasp stings:

- Wear clothing to cover as much of the body as possible. Note that wearing additional clothing may contribute to heat stress in warmer months.
- If a nest is known to be in a work area and the work task cannot be relocated, the nest may be removed provided: Manufacturer's instructions for insecticide use is followed in accordance with local and state laws.

Some people may develop an allergic reaction, i.e. anaphylaxis, to a wasp or bee sting. If such a reaction develops, **seek medical attention at once**. Persons who are allergic to bee and wasp stings should carry an epinephrine pen, e.g. epi-pen, with them that is prescribed by a doctor and used to help abate swelling that occurs due to their allergy. Even if a person utilizes their epi-pen, they still need to seek medical attention for follow-up care and observation.

#### 14.14 Asbestos Containing Materials

Asbestos-containing materials (ACM) has been identified within the existing Site building and may be present elsewhere on site. As required by both Federal USEPA regulation and by various States' regulations, if present friable ACM will be properly "abated" prior to demolition by a licensed asbestos abatement contractor. If suspected ACM is encountered during site activities, the materials will be tested to determine whether or not they are ACM prior to continuation of work activities.

#### 14.15 Lead Hazards

Lead-based paint (LBP) or other lead-containing materials (LCM such as lead roof flashing and piping) may be present in some building materials of various structures on site. As required by both Federal OSHA and EPA and HUD regulations, W&C will make this determination and if present, LBP or LCM will be properly removed prior to or during demolition by trained employees of said contractor who are monitored and enrolled in their company's medical surveillance plan for lead.

#### 14.16 Silica Hazards

Respirable crystalline silica is a common mineral found in many naturally occurring materials, such as sand and stone. Silica is used in the manufacturing of building products such as concrete, brick, and mortar. Routine, long-term exposure and inhalation of respirable crystalline silica can lead to silicosis, chronic obstructive pulmonary disease (COPD), lung cancer, kidney disease, autoimmune disorders, and cardiovascular disease.

##### 14.16.1 Tasks with Silica Exposure

The following materials may be cut, sanded, drilled, jackhammered, sawed, mixed, or otherwise disturbed and may generate respirable crystalline silica at this project:

<input checked="" type="checkbox"/> Asphalt	<input checked="" type="checkbox"/> Grout	sandstone, shale, slate, cultured, etc.)
<input checked="" type="checkbox"/> Brick	<input checked="" type="checkbox"/> Rock	
<input checked="" type="checkbox"/> Cement	<input checked="" type="checkbox"/> Sand	<u>Other: anthropogenic historic fill</u>
<input checked="" type="checkbox"/> Concrete	<input checked="" type="checkbox"/> Stone (Including granite, limestone, quartzite,	
<input checked="" type="checkbox"/> Concrete block		

##### 14.16.2 Silica Controls

Employees and contractors generating respirable silica dust will follow all controls in OSHA Silica Table 1 (see Appendix K). If all controls in Table 1 cannot be followed, then an exposure determination will be performed to evaluate employee exposure. The exposure determination may be performed using personal air monitoring data, objective data, or both to evaluate if employee exposure is at or above the action level.

Areas where airborne exposure to respirable crystalline silica is above the PEL will be labeled as a “Regulated Area.” These areas must be demarcated and signs must be posted at entrances to all regulated areas. Only those authorized people with appropriate respiratory protection will be allowed to enter regulated areas.

Proper housekeeping is important to reducing airborne silica dust. The following housekeeping measures will be instituted onsite:

- Maintain all surfaces as free as possible from silica dust.
- Dry sweeping of silica dust is prohibited. Instead, wet sweeping methods or HEPA vacuums will be used to clean-up silica dust.
- Compressed air will NOT be used to remove silica from any surface unless it is used with a ventilation system designed to capture airborne dust created while using compressed air.
- Workers may not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas.

Respiratory protection will be selected based on Table 1 (Appendix K) or, if Table 1 controls cannot be followed, based on an assessment of the potential airborne respirable crystalline silica exposure. Any employee required to wear a respirator for protection against respirable crystalline silica inhalation must be medically cleared to wear a respirator, have a current fit test, and have respirator training. If employees are required to wear respiratory protection, a [site-specific respiratory protection plan](#) will be created and attached to this HASP.

### **14.16.3 Silica Competent Person**

Any project falling under OSHA’s Silica construction regulation (29 C.F.R. 1926.1153) must have a competent person who performs routine observations of silica dust generating tasks. If visible dust increases, the competent person must take prompt, corrective action. The competent person must be capable of identifying existing and foreseeable silica hazards in the workplace and must have authorization to take corrective measures. The competent person for this project is Derek Matuszewski.

## **14.17 Bloodborne Pathogens**

### **14.17.1 Scope and Application**

This Bloodborne Pathogens (BBP) Exposure Control Plan has been developed as a supplement to the corporate Woodard & Curran Exposure Control Plan. The intent of this document is to describe the specific procedures used to protect employees from occupational exposure to bloodborne pathogens at the Site.

This plan applies to all employees with occupational exposure to blood or other potentially infectious materials (OPIM).

### **14.17.2 Responsibilities**

#### **14.17.2.1 Project Manager**

- Delegate responsibilities and provide the appropriate resources to implement the provisions of this exposure control plan for all projects they manage where employees have occupational exposure to BBP.

- Evaluate tasks that will be performed to determine if work involves occupational exposure to blood or OPIM, with technical assistance from Health & Safety as needed.
- Ensure that all personnel understand the potential hazards associated with exposure to blood or OPIM.
- Maintain this BBP Exposure Control plan meeting the requirements outlined Woodard & Curran Corporate Health and Safety Manual Section 14.
- Provide management support and resources for the BBP program:
  - Enforcing compliance with the policies and procedures outlined in this plan;
  - Helping ensure that exposure incidents are reported and investigated, and recommended corrective actions are implemented;
  - Checking that all employees with occupational exposure are provided with initial and annual refresher training and the opportunity to receive the Hepatitis B vaccination;
  - Ensuring that the project program is reviewed and updated as needed or at least annually.
- Ensure employees with occupational exposure participate in BBP training.
- Report the exposure incident using the H&S HUB (see Appendix I).

#### **14.17.2.2 Health and Safety**

- Develop the corporate written BBP Exposure Control Plan and coordinate a review of the program.
- Assist with the development of site-specific Exposure Control Plans.
- Provide guidance and technical support related to BBP.
- Work with Management to arrange for initial and annual refresher training for those employees with occupational exposure to blood or OPIM.
- Maintain Hepatitis B Declination Forms.
- Provide guidance on proper disposal of regulated waste.

#### **14.17.2.3 Employees with Occupational Exposure**

- Conduct work activities involving potential exposure to blood or OPIM in accordance with the requirements of the OSHA standard and the Woodard & Curran Exposure Control Plan.
- Immediately report all incidents involving potential exposure to blood and OPIM to your Manager.
- Participate in initial and annual refresher training.
- Receive the Hepatitis B vaccination series or sign the declination form. Notify your Manager if the vaccination was originally declined but is later desired.
- Provide feedback on opportunities for program improvement, including any known new technology. Participate in the annual program review upon request.

#### **14.17.3 Exposure Determination**

Those individuals with occupational exposure are listed in the table below.

Employee Name	Job Classification

## 14.17.4 Methods of Compliance

### 14.17.4.1 Universal Precautions

Universal precautions stress that all blood and certain body fluids should be assumed to be infectious for bloodborne pathogens regardless of the perceived status of the source individual. Other potentially infectious material (OPIM) includes any body fluid visibly contaminated with blood, as well as a number of body fluids (e.g., amniotic, pericardial, peritoneal, pleural, synovial, cerebrospinal).

In most occupational settings, universal precautions do not apply to fluids such as saliva, feces, vomit, urine, sweat, tears, and nasal secretions, unless these fluids are visibly contaminated by blood.

### 14.17.4.2 Engineering Controls

Engineering controls are used to eliminate or minimize the risk of employee exposure to BBP, and include methods that either remove the hazard or isolate the worker from the hazard.

#### Sharps Containers

In the event of a workplace accident, broken glass, tools, or damaged equipment with sharp edges may become potentially contaminated with blood or body fluids. All potentially contaminated sharps will either be properly decontaminated, or be discarded as soon as feasible in specified sharps containers that are:

- Puncture resistant;
- Color-coded or labeled with a universal biohazard warning sign;
- Leak-proof on the sides and bottoms;
- Closable.

In addition, these containers will remain upright during use and will not be allowed to overflow; this will minimize the risk of injury to personnel handling the containers.

### 14.17.4.3 Work Practice Controls

Work practice controls are modifications in procedures and practices that, if executed properly, will reduce the risk of worker exposure to blood or OPIM.

#### Hand Washing

- Employees will wash their hands with a non-abrasive soap as soon as possible, if not immediately after, removing gloves or coming in contact with potentially contaminated objects.

- At field sites or other locations where non-abrasive soap and running water are not provided, alternate arrangements will be made to provide hand washing capabilities. This will include either an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. When antiseptic hand cleansers or towelettes are used, hands will be washed with soap and running water as soon as feasible afterwards.
- Eating, drinking, and smoking are prohibited in any area where contamination of blood or OPIM exist and prior to hand washing following a potential exposure.

### **Sharps Handling**

- Since contaminated sharps are capable of inflicting injury and direct inoculation of bloodborne pathogens into the bloodstream, potentially contaminated sharps (e.g., broken glass, tools, damaged equipment with sharp edges, or syringes) will not be directly handled.
- Instead, employees will use mechanical means, such as a scoop or dustpan to clean-up and dispose of sharps. A damp paper or cloth towel in combination with heavy gloves will be used to collect small pieces that cannot be swept up.
- To avoid injury, employees will not reach by hand into containers of contaminated sharps, or transfer contaminated sharps by hand to another container.

### **Aerosol and Splash Control**

- All procedures involving blood or other potentially infectious materials will be performed in such a manner as to minimize splashing, spraying, splattering, or generation of droplets of these substances.

#### **14.17.4.4 Personal Protective Equipment**

All employees will be trained to use the appropriate personal protective equipment (PPE) whenever there is a potential for exposure to blood or OPIM. The following table provides details on the use of specific PPE for tasks that present an opportunity for exposure to bloodborne pathogens:

<b>TASK</b>	<b>HAZARD</b>	<b>MINIMUM PPE REQUIRED</b>
Providing first aid to treat a minor laceration, puncture or other similar wound	<ul style="list-style-type: none"> <li>• Hand contact with blood</li> <li>• General eye hazards</li> </ul>	<ul style="list-style-type: none"> <li>• Impervious gloves</li> <li>• Safety glasses with sideshields</li> </ul>
Handling contaminated items/ equipment or decontaminating surfaces/equipment (for blood or OPIM amounts limited to a few small drops; otherwise see below)	<ul style="list-style-type: none"> <li>• Hand contact with blood or OPIM</li> <li>• Eye contact with disinfectant; general eye hazards</li> </ul>	<ul style="list-style-type: none"> <li>• Impervious gloves (e.g., disposable nitrile)- double gloves recommended</li> <li>• Safety glasses with sideshields</li> </ul>
Cleaning up spill of blood or OPIM (for amounts greater than a few small drops)	<ul style="list-style-type: none"> <li>• Hand, eye, mucous membrane, and body contact with blood or OPIM</li> </ul>	<ul style="list-style-type: none"> <li>• Impervious gloves – double gloves recommended</li> <li>• Safety glasses with sideshields</li> <li>• Mask with eyeshield</li> <li>• Tyvek coat, coveralls or similar</li> </ul>

TASK	HAZARD	MINIMUM PPE REQUIRED
Providing first aid to treat a severe laceration or other injury with large amounts or spurting blood	<ul style="list-style-type: none"> <li>Hand, eye, mucous membrane, and body contact with blood or OPIM</li> </ul>	<ul style="list-style-type: none"> <li>Impervious gloves – double gloves recommended</li> <li>Safety glasses with sideshields</li> <li>Mask with eyeshield</li> <li>Tyvek coat, coveralls or similar</li> </ul>
Providing CPR	<ul style="list-style-type: none"> <li>Mouth-to-mouth transmission of saliva that may be contaminated with blood</li> </ul>	<ul style="list-style-type: none"> <li>Mouth barrier</li> </ul>
Walking on open waste piles at active, or recently active, landfills	<ul style="list-style-type: none"> <li>Improper disposal of syringes at landfill.</li> <li>Direct inoculation of blood or OPIM into bloodstream through needle stick in foot.</li> </ul>	<ul style="list-style-type: none"> <li>Puncture-resistant safety shoes</li> </ul>

### 14.17.5 Decontamination

All equipment and surfaces contaminated with blood or OPIM as a result of a personal injury will be cleaned and disinfected immediately after the initial response to stabilize the victim. The following disinfectant(s) can be found at the Site.

Disinfectant Name	Contact Time	Precautions
Bleach, 5.25%	10 minutes	Avoid contact with skin, eyes, and clothing. Do not ingest. Do not inhale. Follow first aid instructions on label.

#### 14.17.5.1 Procedure for Clean-up and Surface Disinfection

The following general guidelines apply, in addition to using professional judgment and prudence:

- Put on appropriate protective equipment.
- Control access to the affected area. Prevent people from walking through affected area and tracking blood or OPIM to other areas.
- Use plastic scoops or other mechanical means to remove any broken glass or other sharp objects from the area. Take care to avoid generation of aerosols.
- Place any contaminated sharps involved into a sharps container. If a sharps container is not available, place contaminated sharps into a small, lined cardboard box, or other container that will prevent the sharps from puncturing individuals' hands or the primary regulated medical waste container. Securely tape the box closed, label it as "contaminated sharps" or similar, and place it into the primary regulated medical waste container.
- For very small volumes or semi-viscous materials:

- a. Clean up and remove all visible material first with absorbents or disposable towels or other means that prevent direct skin contact with the blood.
  - b. Place soiled toweling immediately in a red bag or regulated waste bin to prevent contamination of other surfaces.
6. For larger volumes of blood, apply a thin layer of paper towels or wipes over the surface to contain any splattering when the disinfectant is applied. To minimize creation of aerosols, avoid spraying disinfectant directly onto spilled material.
  7. Pour or spray disinfectant over the towels and allow it to remain wet for at least 10 minutes, or other contact time specified for the particular disinfectant, before wiping up with clean absorbent pads or towels.
  8. After the specified contact time, bag the used clean-up material and place it in the red bag or regulated medical waste bin for disposal.
  9. Wipe all potentially affected surfaces with disinfectant.
  10. Remove and properly dispose of protective equipment, then wash hands.
    - a. Remove PPE in the following order (to the extent that such PPE was required and worn for the specific clean-up scenario): disposable coat/coverall, outer pair of gloves if double gloves were worn, mask and safety glasses with side shields, and then inner gloves.
    - b. Do not remove PPE from the face with potentially contaminated gloves. If only one pair of gloves were worn, they should be removed before touching the face and taking off safety glasses (or before touching other clean and uncontaminated items).

#### **14.17.6 Regulated Waste**

Regulated waste includes the following:

- Liquid or semi-liquid blood or OPIM;
- Contaminated items that would release blood or OPIM in a liquid or semi-liquid state if compressed;
- Items caked with dried blood or OPIM that are capable of releasing these materials during handling;
- Contaminated sharps;
- Pathological and biological waste containing blood or OPIM.

##### **14.17.6.1 Labeling & Containers for Regulated Waste**

- Labels affixed to containers of regulated waste at the worksite contain the biohazard symbol and the legend, "BIOHAZARD". The labels are fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color. Red bags or red containers may be substituted for labels.
- Regulated waste is placed in containers that are closable, constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping, and color-coded or labeled with the universal biohazard symbol that is readily visible from all approaches.
- These containers will be closed prior to removal to prevent spillage or protrusion of contents.

- If a primary regulated waste container is damaged, or its exterior contaminated beyond decontamination, then its contents it will be placed into a secondary container which meets the requirements outlined above. In these cases, the original container will be placed entirely in the secondary one, instead of transferring the contents by hand. All regulated waste containers (primary and secondary) will be closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

#### **14.17.6.2 Disposal of Regulated Waste**

- Disposal of all regulated waste will be in accordance with applicable federal, state, and local regulations.
- When a regulated waste container is full, contact Health & Safety for guidance on proper disposal.

#### **14.17.7 Hepatitis B Immunization**

- Woodard & Curran provides the opportunity for immunization against hepatitis B to employees with occupational exposure to bloodborne pathogens at no cost and at a reasonable place and time.
- The Hepatitis B vaccination will be made available after the employee has received the initial training and within 10 working days of initial assignment to a job duty with occupational exposure, unless:
  - The employee has documentation of previous receipt of the complete hepatitis B vaccination series
  - Antibody testing has revealed that the employee is immune, or
  - The vaccine is contraindicated for medical reasons.
- Records for the vaccinations are maintained by Woodard & Curran's medical monitoring provider.
- Employees who choose to decline the vaccine will sign a declination form. These forms will be maintained in the Corporate Health & Safety files in Portland, Maine.
- If an employee who declined the Hepatitis B vaccination later wishes to receive it, it will be provided at no cost and at a reasonable time and place if the employee still has occupational exposure.

#### **14.17.8 Exposure Incident**

An exposure incident is defined as a specific eye, mouth, mucous membrane, non-intact skin, or parenteral contact with blood or OPIM that results from the performance of an employee's duties. All Woodard & Curran employees covered under this program will be provided with post-evaluation and follow-up treatment in the event of occupational exposure to blood or OPIM.

##### **14.17.8.1 Initial Response**

1. Provide immediate care to the exposure site:
  - a. Wash wounds and skin with non-abrasive soap and water.
  - b. Flush mucous membranes with water.

2. Report the incident to Health & Safety using Woodard & Curran's electric event reporting tool (see Appendix I).
3. Contact the Nurse Hotline for post exposure evaluation direction.

#### **14.17.8.2 Post-Exposure Evaluation and Treatment**

1. The medical evaluation will be provided to the affected employee at no cost and at a reasonable time and place. Post-exposure evaluation and treatment will be coordinated through the Nurse Hotline).
2. The post-exposure evaluation and treatment protocol is provided in section 8.2 of the corporate program.

#### **14.17.8.3 Incident Evaluation**

1. The exposed employee's Manager will work with the involved employee(s) to perform the incident evaluation. Where appropriate based on the nature of the incident, Health & Safety or the occupational health professional will be asked to participate in the investigation.
2. In addition to the standard information required on an incident report, documentation for a BBP exposure incident must also include the following:
  - a. What potentially infectious materials were involved
  - b. Source of the material

#### **14.17.9 Information and Training**

- All employees with occupational exposure to BBP will be provided with initial and annual refresher training, at no cost to the employee and during working hours. Training will be provided prior to the employee's initial assignment which required inclusion in this program.
- Details on required training content and documentation requirements are provided in section 9 of the corporate program. Health & Safety will arrange for training that meets these minimum requirements.

#### **14.17.10 Program Review**

As described in section 10 of the corporate program, this Site-specific Energy Control Procedure will be reviewed and updated:

- Whenever there are new or modified tasks and procedures which affect occupational exposure;
- Whenever there are new or revised employee positions with occupational exposure;
- Whenever the results of exposure incident investigations indicate major deficiencies in the program, or opportunities for significant improvement in these policies and procedures are otherwise identified; or
- At least annually.

### 14.17.11 Recordkeeping

As described in section 11 of the corporate program, the following records related to this BBP exposure control plan will be maintained:

- Hepatitis B vaccination status;
- Medical records for each employee with occupational exposure;
- Sharps injury log;
- Training;
- Program review

### 14.18 COVID-19 CONTROLS

The following controls will be instituted on this project to reduce the spread of COVID-19:

1. If you or a family member is ill, stay home.
2. Project staff and visitors self-screen before coming to work and do NOT come to work if they are sick or have reason to believe they have COVID-19. Staff and visitors are prohibited from working at the site if they:
  - a. Have any symptoms of COVID-19;
  - b. Are under evaluation for COVID-19 (e.g., waiting for test results or have been asked to quarantine in the last 14 days); or
  - c. Have been diagnosed with COVID-19 and are not yet cleared to continue isolation.
3. Face coverings are required:
  - a. Indoors: Employees should check the COVID-19 Community Level for their work location. In areas where the [COVID-19 Community Level](#) is "high", W&C strongly recommends employees wear a face covering. (Note: CDC updates the COVID-19 Community Levels *weekly*.)
  - b. Outdoors: Employees do not need to mask or distance unless required by local law or client.
4. Wash your hands often with soap and water for at least 20 seconds especially after you have been in a public place, touched common objects, or after blowing your nose, coughing, or sneezing, and before eating or smoking.
5. If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands and rub them together until they feel dry.
6. Do not shake hands.
7. Hold toolbox talks outside, when possible.
8. Clean common areas and commonly touched objects (e.g., surfaces, door handles, restrooms, etc.) daily.
9. Disinfect areas and equipment used by a COVID-19 positive individual if it has been less than 24-hours since the COVID-19 positive case was in the area or used the equipment.

10. Stagger shift start times and break times, as needed, to reduce the number of people in one area at a time to allow for social distancing.
11. Limit access to job trailer to essential personnel.
12. Clean up after yourself to avoid spreading germs.
13. Comply with all Owner's Safety and COVID-19 compliance requirements.

#### **14.19 Sanitation**

Appropriate access to toilet and wash facilities along with sources of drinking water will be made available to all employees in accordance with 29 CFR 1926.51. Portable restrooms for this project will be located onsite. W&C representatives must supply their own potable drinking water.

#### **14.20 Oft-Forgotten Hazards**

There are many not so obvious hazards that are often forgotten or overlooked. Here is a partial list that should be considered and controlled as applicable to the scope of work.

- Allergies or medical conditions
- Lack of food and drink
- Repetitive motion (musculoskeletal disorders, ergonomics, lifting)
- Sun blindness (sunset, water or building reflection, snow blindness, etc.)
- Thin ice conditions
- Ultraviolet radiation (UV) – eyes and sunburns
- Other vehicles (snowmobiles, ATVs, trucks, boats, etc.)
- Dangerous neighborhoods
- Lack of needed supplies – change of clothes, flashlights and batteries
- Driving (routine driving – on/off-site, 4WD limitations, moving water, locking keys in vehicle)

## 15. APPROVALS AND SIGNATURES

### APPROVALS AND SIGNATURES:

(Also serves as OSHA-required PPE assessment certification)

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<b>Project Safety Officer</b>	<b>Date</b>
<i>Derek Matuszewski</i>	

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<b>Project Manager</b>	<b>Date</b>
<i>Evan Trumpatori</i>	

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<b>Woodard &amp; Curran H&amp;S Manager</b>	<b>Date</b>
<i>Joanna K. Wallace</i>	



## **APPENDIX A: SITE PLAN**



# Site and Surrounding Areas

34 East Post Road,  
White Plains, NY

Figure 2



### Legend

-  Site Boundary
-  Tax Parcels

0 5 10 20  
Feet



**Woodard  
& Curran**

Project #: 214155  
Map Created: September 2024

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data Sources:**

Figure Exported: 9/19/2024, By: srogacki Using: \\woodardcurran.net\shared\Projects\0214155\_04\_WP\_Hospital\_25 West Post Rd ESA\wp\GIS\Projects\04 East Post Road\2024 RAWP - GIS\2024 - RAWP.aprx Layout: Site and Surrounding Areas



New York State, Maxar, Microsoft



## **APPENDIX B: AMENDMENTS TO SITE HEALTH AND SAFETY PLAN**

**Record of Review & Revision**

HASP review and update is required annually for active projects or when: 1) a new work phase not previously identified for the project is identified; 2) new project hazards (including chemicals) are discovered; 3) a change in the scope of work affects the degree of safety exposure; 4) an administrative change occurs (e.g., contact information for site personnel changes); or 5) new technology to control project hazards is considered or implemented for project use (note: new technology includes products and equipment introduced by manufacturers to protect workers performing hazardous waste operations.)

Date	Description of Change	Name of Person Making Change	Reason for Change (check all that apply or specify)						
			Annual Review	New Work Phase	New Hazards	Scope of Work Change	Administrative Update	New Technology Considered	Other (specify)

## **APPENDIX C: DAILY SAFETY BRIEFING TOPICS & ATTENDANCE SHEET**

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## **DAILY SAFETY BRIEFING– CHECKLIST AND TIPS**

### **Checklist for Tail-Gate Safety Meetings:**

- ✓ Emergency numbers – review list and where posted
- ✓ Hospital(s) and route(s)
- ✓ Communications – routine and emergency
- ✓ Activities and tasks – hazards
- ✓ Medical issues – first aid, allergies, and conditions
- ✓ Hazards – obvious and oft-overlooked ones
- ✓ PPE – Level, availability, de-con
- ✓ Action levels – responses
- ✓ Zones – How marked and determined
- ✓ Security issues
- ✓ Buddy system
- ✓ Confined space entry – applicability (or not)
- ✓ De-contamination – personal and equipment
- ✓ Spill containment – types and supplies
- ✓ Other?

### **Top 12 Ways to Keep “Tail-Gate” or Daily/Weekly Safety Meetings Effective**

1. **Keep it “on-time”!** Everyone’s time is important. If the meeting doesn’t start and end on-time, people won’t want to attend or will be late!
2. **Keep it “short”!** The longer the meeting lasts, the less effective it becomes. People have short attention spans!
3. **Keep it “focused”!** Don’t ramble! Stay “on message”!
4. **Keep it “topical”!** Make sure that the topics are directly applicable to the daily/weekly operation/tasks! Make sure that the meeting relates to the job and what’s going on!
5. **Keep it “timely”!** Make sure that you’re covering only things that are happening (or are about to or just did happen). Adults don’t want training if does not matter.
6. **Keep it “fresh”!** Don’t do the same stuff repeatedly. Cover new items or in new ways!
7. **Keep it “organized”!** Be prepared! Don’t leave it to the last minute or people will pick up on that and it will lose its perceived value!
8. **Keep it “open”!** Be “open” to attendees input prior to and during the meeting. Adults like to contribute when/where it matters!
9. **Keep it “flexible”!** Be flexible enough to allow for attendees to ask questions!
10. **Keep it “diverse”!** People will get tired of the regularity. Change something about the meeting so people will look forward to it!

- 11. Keep it “safe and healthy”!** Don’t engage in any unsafe or unhealthy behaviors during the meeting. You’ll at best be sending a mixed message, more likely will lose any respect for the training, and could get hurt or ill!
- 12. Keep it “well fed”!** People love to be fed. Consider bringing or providing some refreshments!



## **APPENDIX D: SITE SIGN-IN/SIGN-OUT FORM**



**APPENDIX E: HAZARD COMMUNICATION PROGRAM  
INCLUDE CHEMICAL INVENTORY AND  
SDS HERE**

## **APPENDIX F: JOB SAFETY ANALYSIS (JSA)**

## **APPENDIX G: AIR MONITORING LOG**



***DRAFT***

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## **APPENDIX H: H&S EVENT REPORTING**

# ***DRAFT***

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Report a workplace injury/illness, safe act, unsafe act, unsafe condition, vehicle damage, property damage, or suggestion here (or use the QR code below): [Health & Safety HUB \(sharepoint.com\)](https://sharepoint.com)



***DRAFT***

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## **APPENDIX I: NOISE THERMOMETER**



**140 DECIBELS**  
Immediate danger to hearing  
Gunshot, Jet engine at take-off

**120 DECIBELS**  
Risk of hearing damage in 7.5 minutes  
Rock concert, Sandblasting



**110 DECIBELS**  
Risk of hearing damage in 30 minutes  
Snowmobile from driver's seat



**100 DECIBELS**  
Risk of hearing damage in 2 hours  
Chainsaw, Stereo headphones

**90 DECIBELS**  
Risk of hearing damage in 8 hours  
Lawn mower, Truck traffic



# NOISE THERMOMETER

**125 DECIBELS**  
Pain threshold  
Air raid siren, Firecracker



**115 DECIBELS**  
Risk of hearing damage in 15 minutes  
Baby's cry, Stadium football game



**105 DECIBELS**  
Risk of hearing damage in 1 hour  
Jackhammer, Helicopter



**95 DECIBELS**  
Risk of hearing damage in 4 hours  
Motorcycle, Power Saw



**85 DECIBELS**  
Beginning of OSHA regulations

**30 DECIBELS**  
Faint sound  
Whisper



***DRAFT***

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## **APPENDIX J:OSHA SILCA TABLE 1**

**Exposure Control Methods When Working with Materials Containing Crystalline Silica**  
(Information from Table 1 of OSHA 29 CFR 1926.1153)

Equipment/task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
Stationary masonry saws	<ul style="list-style-type: none"> <li>• Use saw equipped with integrated water delivery system that continuously feeds water to the blade</li> <li>• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> </ul>	None	None
Handheld power saws (any blade diameter)	<ul style="list-style-type: none"> <li>• Use saw equipped with integrated water delivery system that continuously feeds water to the blade</li> <li>• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> </ul>	<ul style="list-style-type: none"> <li>• None (when used outdoors)</li> <li>• APF 10 (when indoors or in enclosed area)</li> </ul>	APF 10 (indoors or outdoors)
Drivable saws	<ul style="list-style-type: none"> <li>• For tasks performed outdoors only: Use saw equipped with integrated water delivery system that continuously feeds water to the blade</li> <li>• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> </ul>	None	None
Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)	<ul style="list-style-type: none"> <li>• For tasks performed outdoors, use saw equipped with commercially available dust collection system</li> <li>• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> <li>• Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with ≤ 99% efficiency</li> </ul>	None	None.

Equipment/task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
Walk-behind saws	<ul style="list-style-type: none"> <li>• Use saw equipped with integrated water delivery system that continuously feeds water to the blade</li> <li>• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> </ul>	<ul style="list-style-type: none"> <li>• None (when outdoors)</li> <li>• APF 10 (when indoors or in enclosed area)</li> </ul>	<ul style="list-style-type: none"> <li>• None (when outdoors)</li> <li>• APF 10 (when indoors or in enclosed area)</li> </ul>
Rig-mounted core saws or drills	<ul style="list-style-type: none"> <li>• Use tool equipped with integrated water delivery system that supplies water to cutting surface</li> <li>• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> </ul>	None	None
Handheld and stand-mounted drills (including impact and rotary hammer drills)	<ul style="list-style-type: none"> <li>• Use drill equipped with commercially available shroud or cowling with dust collection system</li> <li>• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> <li>• Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with ≤ 99% efficiency and a filter-cleaning mechanism</li> <li>• Use a HEPA-filtered vacuum when cleaning holes</li> </ul>	None	None
Dowel drilling rigs for concrete	<ul style="list-style-type: none"> <li>• For tasks performed outdoors only: Use shroud around drill bit with a dust collection system. Dust collector must have a filter with ≤ 99% efficiency and a filter-cleaning mechanism</li> <li>• Use a HEPA-filtered vacuum when cleaning holes</li> </ul>	APF 10	APF 10

Equipment/task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
Vehicle-mounted drilling rigs for rock and concrete	<ul style="list-style-type: none"> <li>Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector OR</li> <li>Operate from within an enclosed cab and use water for dust suppression on drill bit</li> </ul>	None	None
Jackhammers and handheld powered chipping tools	<ul style="list-style-type: none"> <li>Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact.</li> </ul> OR <ul style="list-style-type: none"> <li>Use tool equipped with commercially available shroud and dust collection system</li> <li>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> <li>Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with ≤ 99% efficiency and a filter-cleaning mechanism.</li> </ul>	<ul style="list-style-type: none"> <li>None (when outdoors)</li> <li>APF 10 (when indoors or in enclosed area)</li> </ul>	APF 10 (when indoors or outdoors)
Handheld grinders for mortar removal ( <i>i.e.</i> , tuckpointing)	<ul style="list-style-type: none"> <li>Use grinder equipped with commercially available shroud and dust collection system</li> <li>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> <li>Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with ≤ 99% efficiency and a cyclonic pre-separator or filter-cleaning mechanism</li> </ul>	APF 10	APF 25

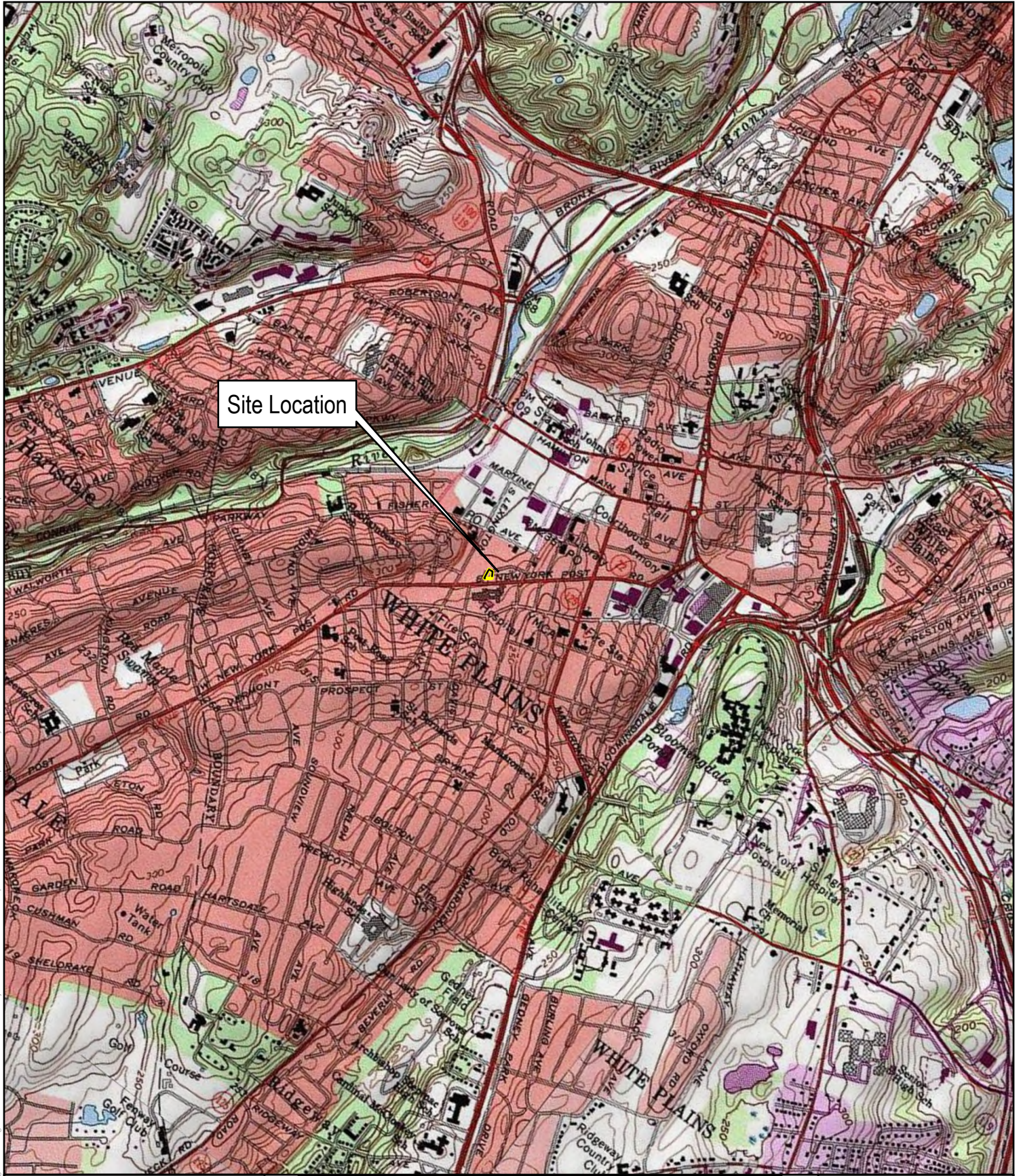
Equipment/task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
Handheld grinders for uses other than mortar removal	<ul style="list-style-type: none"> <li>For tasks performed outdoors only: Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface</li> <li>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> </ul> OR	None	None
	<ul style="list-style-type: none"> <li>Use grinder equipped with commercially available shroud and dust collection system</li> <li>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> <li>Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with ≤ 99% efficiency and a cyclonic pre-separator or filter-cleaning mechanism</li> </ul>	None (when used indoors or outdoors)	<ul style="list-style-type: none"> <li>None (when used outdoors)</li> <li>APF 10 (when used indoors or in an enclosed area)</li> </ul>

Equipment/task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
Walk-behind milling machines and floor grinders	<ul style="list-style-type: none"> <li>• Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface</li> <li>• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• Use machine equipped with dust collection system recommended by the manufacturer</li> <li>• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions</li> <li>• Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with ≤ 99% efficiency and a filter-cleaning mechanism</li> <li>• When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes</li> </ul>	None	None
Small drivable milling machines (less than half-lane)	<ul style="list-style-type: none"> <li>• Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant</li> <li>• Operate and maintain machine to minimize dust emissions</li> </ul>	None	None.
Large drivable milling machines (half-lane and larger)	<ul style="list-style-type: none"> <li>• For cuts of any depth on asphalt only: Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust</li> <li>• Operate and maintain machine to minimize dust emissions</li> <li>• For cuts of four inches in depth or less on any substrate: Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust</li> <li>• Operate and maintain machine to minimize dust emissions</li> </ul> <p>OR</p>	None	None

Equipment/task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
	<ul style="list-style-type: none"> <li>• Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant</li> <li>• Operate and maintain machine to minimize dust emissions</li> </ul>		
Crushing machines	<ul style="list-style-type: none"> <li>• Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points)</li> <li>• Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions</li> <li>• Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station</li> </ul>	None	None
Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g., hoe-ramming, rock ripping) or during demolition with silica-containing materials	<ul style="list-style-type: none"> <li>• Operate equipment from within an enclosed cab</li> <li>• When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions</li> </ul>	None	None.
Heavy equipment / utility vehicles for tasks such as grading and excavating but not including: abrading, demolishing, or fracturing silica-containing materials	<ul style="list-style-type: none"> <li>• Apply water and/or dust suppressants as necessary to minimize dust emissions</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab</li> </ul>	None	None

Notes:

1. When implementing the control measures specified in the table above, each employer must:
  - a. For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust;
  - b. For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust;
  - c. For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:
    - o Is maintained as free as practicable from settled dust;
    - o Has door seals and closing mechanisms that work properly;
    - o Has gaskets and seals that are in good condition and working properly;
    - o Is under positive pressure maintained through continuous delivery of fresh air;
    - o Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0µm range (*e.g.*, MERV-16 or better); and
    - o Has heating and cooling capabilities.
2. When an employee performs more than one task on the table above during the course of a shift, and the total duration of all tasks combined is more than four hours, the required respiratory protection for each task is the respiratory protection specified for more than four hours per shift. If the total duration of all tasks on the table above combined is less than four hours, the required respiratory protection for each task is the respiratory protection specified for less than four hours per shift.
3. For tasks not listed in the table, or where the employer does not fully and properly implement the engineering controls, work practices, and respiratory protection described in the table, the employer must ensure that no employee is exposed to respirable crystalline silica above 50 µg/m<sup>3</sup>, calculated as an 8-hour TWA.



### Site Locus Map

34 East Post Road  
White Plains, NY

FIGURE 1

Legend

 Site Boundary

0 0.15 0.3 0.6  
Miles



Project #: 214155  
Map Created: September 2024

Figure Exposed: 9/19/2024. By: sropackl. Using: woodardcurran.net\shared\Projects\2024\14155\04\_WP\_Hospital\25 West Post Rd ESA\wp\GIS\Projects\34\_East\_Post\_Road\2024\_RAWP - GIS\2024\_RAWP.aprx

# Historical Sample Locations

34 East Post Road,  
White Plains, NY

Figure 3



## Legend

### Boring

- BP Property
- WPHA Property

### Well

- ⊕ BP Property
- ⊕ WPHA Property

Site Boundary

Site Boundary

Remediation Boundary

Site Boundary

Remediation Boundary

0 5 10 20  
Feet



**Woodard  
& Curran**

Project #: 214155  
Map Created: November 2024

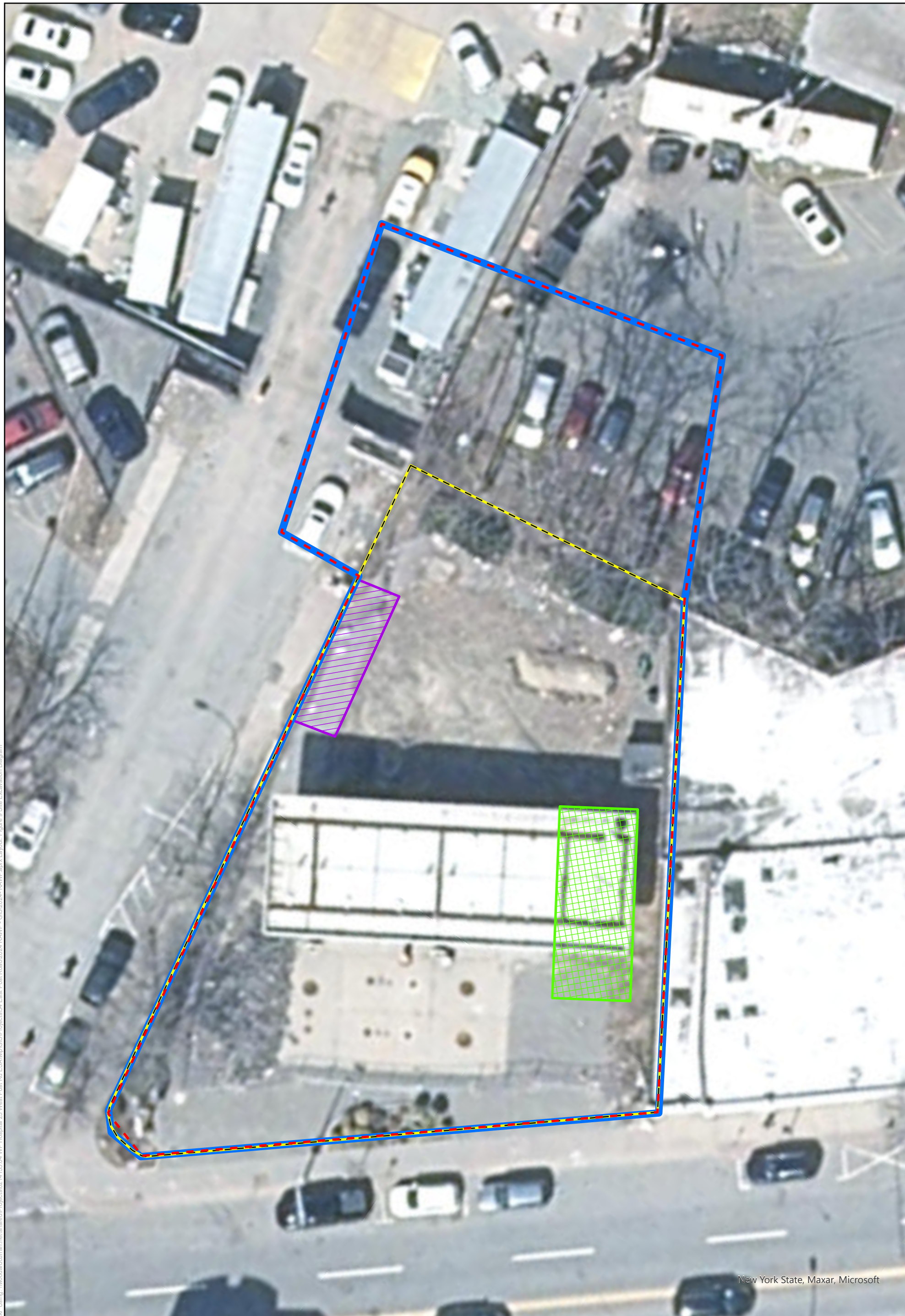
Service Layer Credits: World Imagery:  
New York State, Maxar, Microsoft

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.



Figure 3: Historical Sample Locations at 34 East Post Road, White Plains, NY. Project #: 214155. Map Created: November 2024. Service Layer Credits: World Imagery, New York State, Maxar, Microsoft.

Figure Exported: 11/9/2024 11:09:24 AM Using: \\woodardcurran.net\shared\Projects\0214155\04 WP Hospital 25 West Post Rd ESA\wp\GIS\Projects\34 East Post Road\2024 RAWP - GIS\2024-RAWP.aprx Layout: Figure 9 Site Excavation Diagram








New York State, Maxar, Microsoft

### Site Excavation Diagram

34 East Post Road  
White Plains, NY

Figure 9

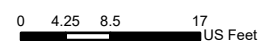
**Legend**

-  Site Boundary
-  Remediation Boundary
-  Ingress Egress Entrance
-  Proposed Stockpile Segregation Area
-  Proposed Backfill Area

**Note:**

CAMP locations to adjust on a daily basis due to upwind and downwind conditions.

The proposed stockpile segregation area may adjust as needed with the progression of the excavation areas.



**Woodard & Curran**

Project #: 0214155  
Map Created: November 2024

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.

# JOB SAFETY ANALYSIS

## WORKING IN COLD TEMPERATURES

**Scope of Work:** Working in temperatures at or below 30°F.

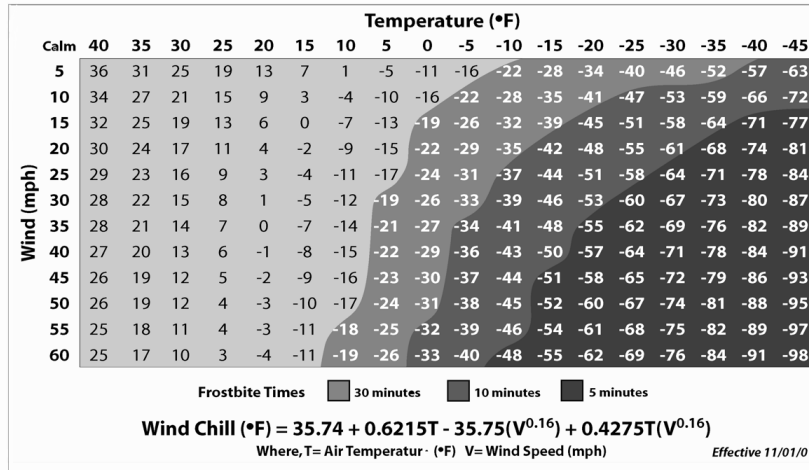
**General Precautions:** Cold stress occurs when the ambient air temperatures drop below normal ranges and there is an increase in wind speed. Key factors that can bring about or aggravate cold stress are: age, body size, physical condition, length of exposure, wind, temperature, exhaustion, hunger, dehydration, alcohol intake, smoking, and improper clothing and equipment. It is important for employees working in cold temperatures to dress for the weather and to keep dry. Have access to a warm location (on-site or offsite) for breaks.

TASK	HAZARDS	CONTROLS
1. Working in temperatures at or below 30°F.	Cold stress (i.e., hypothermia, frostbite, or trench foot)	Requirements for working in cold temperatures: <ul style="list-style-type: none"><li>• The Plant/Project Manager notifies the project team about the potential for working in cold temperatures.</li><li>• The project team discusses cold stress controls during the daily safety meeting.</li><li>• Plant/Project Manager considers rescheduling work to a warmer day if severe cold temperatures are expected.</li><li>• Dress for the weather, which includes multiple layers of appropriate clothing that may include at a minimum a warm jacket, hat or hood, insulated boots, warm socks, and gloves or mittens.</li><li>• Keep a change of dry clothing available in case clothes become wet.</li><li>• Do not underestimate the wetting effects of perspiration. Oftentimes wicking and venting of the body's sweat and heat are more important than protecting from snow.</li><li>• Take breaks in warm areas.</li><li>• Separate eye protection from the nose and mouth to prevent exhaled moisture from fogging and frosting safety glasses.</li><li>• Clothing must be dry. Remove snow before entering heated shelters.</li><li>• Consider the windchill chart (see "Other Information" section) when performing work activities in cold weather.</li><li>• If an employee experiences heavy shivering, frostbite, excessive fatigue, drowsiness, irritability, or euphoria return to a heated shelter immediately.</li></ul>

			<p>Best practices for working in cold temperatures (optional, but encouraged):</p> <ul style="list-style-type: none"> <li>• Wear at least three layers of clothing.             <ul style="list-style-type: none"> <li>○ An inner layer of wool, silk or synthetic to wick moisture away from the body.</li> <li>○ A middle layer of wool or synthetic to provide insulation.</li> <li>○ An outer wind/rain protection layer that allows ventilation to prevent sweating.</li> </ul> </li> <li>• When air temperatures are below 30°F, monitor temperature, wind speed, and worker conditions hourly to determine if additional or different controls are needed.</li> <li>• Wear liner socks made from polypropylene to help keep feet dry and warmer by wicking sweat away from the skin. Always wear the right thickness of socks for your boots.</li> <li>• Apart from a wicking layer do not wear tight clothing. Loose clothing allows better ventilation of heat away from the body.</li> <li>• Use the buddy system when temperatures are below 10°F (consider temperature with wind chill).</li> <li>• Follow the ACGIH work/warm-up schedule (see “Other Information” section).</li> <li>• Avoid work activities that cause sweating, as sweat will cause evaporation which will cool the body more quickly.</li> <li>• If heavy work must be completed, provide rest periods in heated shelters where employees may change into dry clothing.</li> <li>• Maintain hydration.</li> <li>• Be sure proper PPE, including appropriate cold weather gear i.e., glove liners, hand hat liners, are made available.</li> </ul>
	<p>2. Walking on snow or ice.</p>	<p>Slips, trips, falls</p>	<ul style="list-style-type: none"> <li>• When possible, avoid walking on snow or ice.</li> <li>• Request the client remove snow/ice from walkways, if appropriate.</li> <li>• If it is unavoidable to walk on snow or ice, employees must:             <ul style="list-style-type: none"> <li>○ Assume all wet, dark areas on pavements in cold temperatures are slippery and remember that ice could be under snow.</li> <li>○ Wear shoes or boots with good tread. Boots made of non-slip rubber or neoprene with grooved soles are good choices.</li> <li>○ Do the “Penguin Shuffle” - point your feet out slightly to increase your center of gravity, bend slightly and walk flat-footed with your body weight over the feet as much as possible.                 <ul style="list-style-type: none"> <li>▪ Take short steps or shuffle for stability.</li> <li>▪ Keep hands out of pockets; extend arms out to maintain balance.</li> <li>▪ Watch where you are stepping and walk slowly.</li> </ul> </li> <li>○ Wear ice traction cleats when walking on ice. Note that ice traction cleats are to be used on ice only and can be very slippery if worn indoors or in vehicles. Cleats with larger teeth are needed if walking on sheer ice. Stabilizers are appropriate for surfaces with some ice and some other traction.</li> </ul> </li> <li>• If you do fall, try to fall on a fleshy part of your body, such as your side; attempt to avoid landing on your knees, wrists, or back.</li> </ul>

**Required Training:**  
Cold Stress Awareness Training

**Required Personal Protective Equipment (PPE):**  
Warm jacket, hat or hood, insulated boots, warm socks, and gloves or mittens



**Other Information:**

**Work/Warm-up Schedule for a 4-Hour Shift**

Air Temperature—Sunny Sky °C (approximate)	No Noticeable Wind		5 mph Wind		10 mph Wind		15 mph Wind		20 mph Wind		
	Maximum Work Period	Number of Breaks	Maximum Work Period	Number of Breaks	Maximum Work Period	Number of Breaks	Maximum Work Period	Number of Breaks	Maximum Work Period	Number of Breaks	
-15 to -26	-15 to -19	(Normal Breaks) 1	(Normal Breaks) 1	(Normal Breaks) 1	75 min	2	55 min	3	40 min	4	
-20 to -29	-20 to -24	(Normal Breaks) 1	75 min	2	55 min	3	40 min	4	30 min	5	
-25 to -32	-25 to -29	75 min	2	55 min	3	40 min	4	30 min	5	Non-emergency work should cease ↓	
-30 to -35	-30 to -34	55 min	3	40 min	4	30 min	5	Non-emergency work should cease ↓			
-35 to -38	-35 to -39	40 min	4	30 min	5	Non-emergency work should cease ↓		Non-emergency work should cease ↓			
-40 to -43	-40 to -44	30 min	5	Non-emergency work should cease ↓		Non-emergency work should cease ↓		Non-emergency work should cease ↓			
-45 & below	-45 & below	Non-emergency work should cease		Non-emergency work should cease ↓		Non-emergency work should cease ↓		Non-emergency work should cease ↓		Non-emergency work should cease ↓	

Schedule applies to any 4-hour work period with moderate to heavy work activity; with warm-up periods of ten (10) minutes in a warm location and with an extended break (e.g. lunch) at the end of the 4-hour work period in a warm location.

*Adapted from ACGIH 2012 TLVs*

**JSA Author:** Joanna Wallace, Updated 2/28/23 by Michael Jannitto, Andrea Eagan, Ralph Simon, Vinny Martino  
**Created:** August 21, 2019

# JOB SAFETY ANALYSIS

## CONSTRUCTION MONITORING

**Scope of Work:** Monitoring construction activities at a non-HAZWOPER regulated work site.

**General Precautions:** Be aware of the hazards specific to the area. Review the day's expected task and hold a safety meeting upon arriving at the site.

TASK	HAZARDS	CONTROLS
Construction monitoring	Slips/trips from uneven terrain	<ul style="list-style-type: none"><li>• Be aware of your proximity to uneven surfaces/obstructions when walking.</li><li>• Wear work boots with ankle support.</li></ul>
	Excavations	<ul style="list-style-type: none"><li>• Avoid standing near the edges of excavation or trench walls</li><li>• In general, avoid the need to access a trench or excavation. Do not access a trench or excavation without permission from a competent person.</li><li>• If air monitoring is needed for the trench, do not enter without first verifying a clean atmosphere.</li><li>• Never access a trench greater than 5 feet deep without some form of trench protection system in place.</li></ul>
	Noise	<ul style="list-style-type: none"><li>• Wearing hearing protection around equipment that produces high noise levels is required.</li><li>• Employees are required to wear hearing protection for work areas and tasks that have noise levels greater than 90 dBA.</li></ul>
	Dust/sand/respirable crystalline silica	<ul style="list-style-type: none"><li>• Wear site/activity appropriate PPE: may include safety glasses, goggles, or a face shield, and a dust mask. Note: A dust mask is considered a respirator and employees must be trained and medically cleared to wear a respirator. Contact Health and Safety for more information.</li><li>• Stay out of areas where respirable crystalline silica is being generated.</li><li>• Encourage site workers generating respirable crystalline silica to follow controls in OSHA Silica <a href="#">Table 1</a>.</li></ul>

	Chemical exposure (inhalation hazard)	<ul style="list-style-type: none"> <li>• Maintain a safe distance from any potential sources of chemical exposure.</li> <li>• Wear site/activity appropriate PPE.</li> <li>• Position yourself upwind of activities that may be releasing chemicals.</li> <li>• Be aware of escape routes and evacuate immediately if strong odors or irritation are noted.</li> </ul>
	Sharp debris	<ul style="list-style-type: none"> <li>• Wear work boots.</li> <li>• Be aware of the potential for sharp debris around the site and watch your footing.</li> <li>• If any significant obstruction is encountered that presents a safety hazard, the location of the obstruction should be noted and marked to make it visible for others in the work area.</li> </ul>
	Flying projections	<ul style="list-style-type: none"> <li>• Safety glasses, goggles, or a face shield, and a hard hat should be worn anytime work operations could cause flying foreign objects.</li> <li>• Keep a safe distance of 25 feet away from the operating equipment. Unessential personnel should be cleared of the work area.</li> </ul>
	Working around heavy equipment (e.g., forklifts, cranes)	<ul style="list-style-type: none"> <li>• Ensure the operators are aware of your presence.</li> <li>• Notify that you will be in the area and your purpose for being on the site. Introduce yourself to the workers.</li> <li>• Try to walk on the operator's cab side of the machine to avoid being in their blind spot.</li> <li>• Make eye contact with the operators and use hand gestures to make them aware of your direction of travel.</li> <li>• Do not be distracted walking around the site. If you need to make a phone call, remove yourself from the work area.</li> <li>• Wear high visibility clothing.</li> <li>• Steel toed boots should be worn to protect against crushed toes when working around heavy equipment.</li> <li>• Keep a safe distance of 25 feet away from, and outside the swing radius of, operating equipment.</li> <li>• Do not cross barricades or work zone lines without notifying the equipment operator.</li> <li>• Unessential personnel should be cleared of the work area.</li> <li>• Do not stand downhill of equipment even if parked.</li> </ul>

		<p>Vehicular traffic</p>	<ul style="list-style-type: none"> <li>• The site owner/manager should be notified of work activities and locations.</li> <li>• Wear appropriate PPE including high visibility clothing such as a reflective vest.</li> <li>• Utilize truck flashers/strobes, cones, signs, flags or other traffic control devices as needed to divert traffic around working activities.</li> <li>• Where pedestrian traffic is an issue, set up a barricade surrounding the work area.</li> </ul>
		<p>Overhead hazards/falling objects (e.g., when changing shovels on an excavator)</p>	<ul style="list-style-type: none"> <li>• Be aware of what is going on around you.</li> <li>• Wear a hard hat.</li> <li>• Steel toed boots should be worn to protect against crushed toes when working around falling objects.</li> </ul>
		<p>Use of Ladders</p> <ul style="list-style-type: none"> <li>• Ladders may be used by the engineer to access certain areas of the site</li> </ul>	<ul style="list-style-type: none"> <li>• Only use or access ladders in good condition, conduct a visual inspection for hazards prior to use.</li> <li>• Maintain three points of contact when on a ladder at all times (i.e. two hands and one foot, or both feet and one hand).</li> <li>• Keep the trunk of your body within the boundary of the ladder rails at all times.</li> <li>• If tools are needed use a lift bag or wear a tool belt, in lieu of carrying items by hand up the ladder.</li> <li>• Ensure the ladder is of an adequate rating for use, ladders with duty ratings less than that of Type 1 should not be allowed on a construction site.</li> </ul>
		<p>Working at Heights</p> <ul style="list-style-type: none"> <li>• If monitoring activities require inspections or site walks at heights greater than 6 feet.</li> <li>• Work on scaffolds</li> <li>• Passenger in an aerial lift</li> </ul>	<ul style="list-style-type: none"> <li>• Only work in areas with proper fall protection systems such as guardrails, safety nets, or leading edge barriers.</li> <li>• If a personal fall protection system is required, the user must have received training in the use and limitations of such equipment.</li> <li>• A pre-use of personal fall protection equipment is required.</li> <li>• Ensure scaffolds are properly inspected for hazards by the scaffolding contractor prior to access.</li> <li>• Ensure the aerial lift operator has conducted a pre-use inspection of the lift prior to use including a controls test.</li> <li>• Avoid use of aerial lifts and access to scaffolding during thunderstorms and winds greater than 25 mph.</li> <li>• Maintain a safety distance in an aerial lift at least 10 feet from overhead power lines less than 50Kv.</li> </ul>

	Heat Stress	<ul style="list-style-type: none"> <li>• Be aware of the effects of heat stress and observe others for signs of heat stress.</li> <li>• Take frequent breaks in cooling areas during work in hot weather.</li> <li>• Drink adequate cool liquids, such as water and beverages containing electrolytes. Avoid beverages with caffeine.</li> </ul>
	Cold Stress	<ul style="list-style-type: none"> <li>• Wear appropriate clothing to prevent hypothermia (body temperature below 95°F) and other cold-related illnesses. Synthetic and wool fabrics are superior to cotton as they provide better insulation when wet and dry. Some synthetic fabrics, such as polyester and polypropylene, wick perspiration away from the body, keeping a person warmer.</li> <li>• Drink warm fluids and take frequent breaks in warming areas during cold weather.</li> </ul>
	Working at Night	<ul style="list-style-type: none"> <li>• Ensure adequate lighting is present.</li> <li>• Wear a high visibility vest with reflective materials.</li> <li>• Monitor self and others for signs of fatigue such as difficulty concentrating or irritability. If employee experiences signs of fatigue, allow to take a break in a safe location.</li> <li>• Maintain an increased awareness on site housekeeping to avoid slip, trip, fall hazards.</li> <li>• Attempt to plan projects in advance so employees have an opportunity to rest during the day if they will be working at night.</li> <li>• Be aware for nocturnal wildlife (e.g., skunks, etc.) and make noise to alert nocturnal animals of your presence to avoid startling them.</li> </ul>
	<p><b>Required Training:</b>            Fall protection training if using personal fall protection equipment. OSHA 10 hour Construction training is required for employees working on construction sites 5 or more days per year and may be required on some publically funded projects regardless of the duration onsite. Respiratory protection training if dust masks or other respiratory protection is worn. Hearing conservation training if hearing protection is worn.</p>	<p><b>Required Personal Protective Equipment (PPE):</b>            Steel toe boots, high-visibility vest, hard hat, safety glasses, and hearing protection as needed. Personal fall protection equipment if working at heights or riding in an articulating aerial lift.</p>

<b>Other Information:</b>  <b>JSA Author:</b> <b>Created:</b> <b>JSA Number:</b>	Medical clearance is required for any employee wearing a respirator and medical monitoring is required for any employee exposed to respirable crystalline silica above 25 µg/m <sup>3</sup> for 30 or more days per year.  Scott Luczko, Caitlyn DellaTorre, Mathew Hardison 8/16/12; updated 1/19/16 by Rob Little, Joanna Wallace; updated 9/14/17 by Joanna Wallace; updated 6/14/22 by Kevin Vandal
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# JOB SAFETY ANALYSIS

## OPERATING A VEHICLE

**Scope of Work:** Operating a vehicle for work travel.

**General Precautions:** Inspect vehicle before driving, obey traffic laws, maintain driver awareness, and avoid distracted driving. During inclement weather, determine if the trip can be postponed or performed remotely.

TASK	HAZARDS	CONTROLS
1. Plan your trip	Injury caused by improper planning	<ul style="list-style-type: none"> <li>Operator must possess a valid driver's license.</li> <li>Obtain directions.</li> <li>Identify alternate routes.</li> <li>Notify someone else about travel plans, including route and anticipated arrival and departure times.</li> <li>Drive during daylight hours if possible.</li> <li>Check email, text messages, and make necessary phone calls prior to starting the trip.</li> <li>Check weather forecasts for factors that may impact the safety of the trip. During inclement weather, determine if the trip can be postponed.</li> <li>Identify accidents along route.</li> <li>Carry a reliable form of communication. (e.g., cellphone)</li> </ul>
2. Conduct vehicle inspection	Vehicle malfunction causing vehicle damage, personal injury, or death.	<ul style="list-style-type: none"> <li>Conduct vehicle inspection using the <a href="#">checklist</a> from H&amp;S Manual.</li> <li>Some states may require additional automobile criteria to be road legal.</li> <li>Ensure vehicle is fully charged before departure.</li> </ul>
	Impaired Vision.	<ul style="list-style-type: none"> <li>Remove snow/ice from vehicle.</li> </ul>
3. Load equipment and enter vehicle	Unsafe operating condition	<ul style="list-style-type: none"> <li>Pack and store field equipment securely. Avoid obscuring view of road and mirrors</li> <li>Fasten seatbelt.</li> <li>Lock doors.</li> <li>Ensure all passengers have fastened seatbelts.</li> <li>Adjust mirrors and seat to fit your body.</li> <li>If using GPS on a mobile device, input the destination before driving the vehicle and ensure mobile device is connected for hands-free usage.</li> </ul>
4. Pull out of parking space	Vehicle Collison/Injury/Death	<ul style="list-style-type: none"> <li>Check mirrors</li> <li>Check over the shoulder in all directions.</li> <li>If parallel parked, use the turning signal.</li> <li>Take note of surroundings before moving vehicle, with special care to pedestrians and bicyclists</li> </ul>

	5. Operate vehicle	Vehicle Collisions/Injury/Death.	<ul style="list-style-type: none"> <li>• Follow Woodard &amp; Curran’s Vehicle Safety Program as well as all traffic safety/speed limit laws.</li> <li>• Do not drive when fatigued, if there is another licensed driver consider switching drivers. If there is not another driver pull over in a safe location, such as a parking lot or rest area, for fresh air or take a power nap. If driving late at night, consider renting a hotel room.</li> <li>• Do not operate a vehicle under the influence of alcohol, drugs, or prescription medication that causes drowsiness.</li> <li>• Drivers must be at least 18 years old to drive vehicles on company business.</li> <li>• If your vehicle breaks down, pull over to the shoulder and do not exit the vehicle.</li> <li>• Do not jump off/out/on a moving vehicle.</li> <li>• Do not ride in the bed of a truck.</li> <li>• Scan the road for driving hazards.</li> <li>• Practice defensive driving techniques always.</li> </ul>
		Distracted Driving	<ul style="list-style-type: none"> <li>• Follow state laws and Woodard &amp; Curran policy for handheld devices.</li> <li>• Pull off the road before using a cell phone whenever possible. If pulling off the road is not possible, cell phones may only be used in a hands-free method.</li> <li>• Avoid using a cell phone during heavy traffic, inclement weather, poor road conditions, or when involved in other conversations.</li> </ul>
		Tornado exposure	<p>If a tornado is spotting while driving:</p> <ul style="list-style-type: none"> <li>• Pull over, buckle your seatbelt, put your head down below the windows, cover your head and neck with your arms. Cover your body with a coat or blanket if one is available.                             <ul style="list-style-type: none"> <li>○ If you can safely get lower than the roadway, exit your car and lie in that low area, covering your head with your arms.</li> </ul> </li> </ul>
		Earthquake exposure	<p>If driving during an earthquake:</p> <ul style="list-style-type: none"> <li>• Pull over and stop the vehicle in a clear area to avoid falling debris/buildings.</li> <li>• Avoid stopping under bridges or overpasses.</li> </ul>

<p><b>JSA Author:</b> <b>Created:</b> <b>JSA Number:</b></p>	6. Park vehicle	Vehicle Collision/Injury/Death.	<ul style="list-style-type: none"> <li>• Park away from other cars.</li> <li>• Pull through when available.</li> <li>• Back into a parking spot when possible.</li> <li>• Remove keys from vehicle and lock vehicle.</li> <li>• If parking on a hill, turn tires toward curb and use parking brake.</li> </ul>
	7. Post trip	Vehicle Damage.	<ul style="list-style-type: none"> <li>• Company-owned vehicle: Report damage on the H&amp;S Hub and facilities. Maintenance or mechanical problems will be reported to facilities.</li> <li>• Rental Vehicles: Report damage on the H&amp;S Hub and facilities. Maintenance or mechanical problems will be reported to facilities..</li> </ul>
	<p><b>Required Training:</b> Awareness Level Driver Safety Training Valid driver’s license</p>	<p><b>Required Personal Protective Equipment (PPE):</b> Seat belt, sun glasses (optional)</p>	
	<p>Dylan Hovey 7/16/2015, Updated 3/7/2022 by Sarah Pierce, Emily Mischler, Lauren Hamill, Jared Port, John Sammon, Ralph Simon, Evan Trumpatori, and Brent Aigler</p>		

# JOB SAFETY ANALYSIS

## EXCAVATION OBSERVATION AND DOCUMENTATION

**Scope of Work:** Working around excavating equipment and open excavation or trenches.

**General Precautions:** Be aware of any site-specific conditions. Remain outside of the swing radius of the excavator, and a safe distance of 25 feet away from the open excavation to prevent falls in the case that the side walls cave in. Do not enter a trench or excavation unless absolutely necessary and proper safety control measures such as shoring, air monitoring, and access/egress is established as applicable.

STEPS	HAZARDS	CONTROLS
1. Pre-work planning	Injury from improper planning	<ul style="list-style-type: none"><li>• Notify the site owner/manager about work activities and locations.</li><li>• Review site-specific drawings with the manager/owner and the excavation contractor to prevent disruption of utilities or other damage during excavation.</li><li>• Mark out the intended excavation area(s) with white paint or other accepted means.</li><li>• Call dig-safe using 811 or the regional dig safe number to notify local utilities of the pending work for utility clearance. Typically a notification of at least 72 hours prior to work is required.</li><li>• Conduct ground penetrating radar (GPR) survey for utility clearance.</li><li>• As applicable, review if work will be conducted under Environmental Land Use Restriction (ELUR).</li><li>• Use the buddy system when working in busy areas or off hours.</li><li>• Have a local contact when working off Site or off hours.</li><li>• Make sure any equipment brought to the Site is tied down and secure in the back of a pickup truck.</li><li>• As applicable, ensure proper authorities are notified of any excavation work in public rights of way. Coordinate street opening permits.</li></ul>

	2. Approach the site	Slip/trip/fall from uneven terrain or obstructions	<ul style="list-style-type: none"> <li>• Watch for trip hazards such as uneven terrain, holes, ditches, stretched wires or ropes, or any other materials or pieces of equipment in their path.</li> <li>• Mark significant below-grade hazards (e.g., holes or trenches) with flagging, fencing or other means to identify the obstacle.</li> <li>• Wear footwear appropriate for the terrain and work to be performed.</li> <li>• Muddy, snowy, and icy conditions will warrant a more cautious work attitude. Adjust work speed to fit the weather conditions.</li> <li>• Keep areas well lit. Schedule to be on site during daylight hours if outside. Bring additional lighting as needed if inside or night work is required.</li> </ul>
		Traffic	<ul style="list-style-type: none"> <li>• Wear appropriate PPE including high visibility clothing, such as a reflective vest.</li> <li>• Utilize truck flashers/strobes, cones, signs, flags or other traffic control devices as needed to divert traffic around working activities.</li> <li>• Where pedestrian traffic is an issue, set up a barricade surrounding the work area. Ensure pedestrian traffic has a safe route of travel.</li> </ul>
		Insects/ticks	<ul style="list-style-type: none"> <li>• See Tick, Stinging Insect, and Spider JSA</li> </ul>
		Wildlife/animals	<ul style="list-style-type: none"> <li>• Inspect work areas upon arrival at the site to identify hazard(s).</li> <li>• Stay alert and a safe distance away from biological hazards.</li> <li>• Wear appropriate PPE including leather gloves, long sleeves and pants, and snake chaps if there is a probability of encountering.</li> </ul>
		Heat stress	<ul style="list-style-type: none"> <li>• See <a href="#">Heat Stress JSA</a>.</li> </ul>
		Cold stress	<ul style="list-style-type: none"> <li>• See <a href="#">Cold Temperature Work JSA</a>.</li> </ul>

	3. Carrying equipment/supplies	Back strain	<ul style="list-style-type: none"> <li>Use proper body mechanics when bending down. Bend at the knees and lift with your legs, keeping the back straight as possible and avoiding twisting postures.</li> <li>Use the buddy system when lifting/carrying heavy equipment.</li> <li>Carry items at your center of gravity, waist to chest level.</li> </ul>
	4. Working around the excavator or open excavation	Struck-by hazards.	<ul style="list-style-type: none"> <li>See Work Around Heavy Equipment JSA</li> </ul>
		Noise.	
		Overhead hazards.	<ul style="list-style-type: none"> <li>Stay at least 25 feet away from the excavation in case the side wall of the excavation caves in.</li> </ul>
	Falls into open excavation.		
	5. Conduct air monitoring as needed, or any excavation or trench greater than 4 feet deep.	Exposure to site contaminants, dusts from excavation work.	<ul style="list-style-type: none"> <li>Wear protective eyewear.</li> <li>Wear a dust mask or respiratory protection if it is appropriate, depending on the type of work activities and your proximity.</li> <li>Follow the site-specific air monitoring protocol and action levels for the work and exposures at hand.</li> </ul>
	6. Collecting samples from the excavation	Skin irritation from preservatives in sample jars.	<ul style="list-style-type: none"> <li>See Soil Sampling JSA</li> </ul>
Potential exposure to contaminated media or laboratory sample bottle preservatives.		<ul style="list-style-type: none"> <li>Wear safety glasses and appropriate gloves for specific hazard to protect from exposure.</li> </ul>	
Struck-by hazards.		<ul style="list-style-type: none"> <li>Coordinate with the operator of the excavator so that they can collect the sample. Employees should not enter inside the open excavation.</li> <li>Be aware of the swing radius of the excavator. As a general rule, maintain a safe distance of at least 25 feet outside the swing radius.</li> <li>Lock out excavator when bucket at rest to prevent struck-by hazard while collecting samples.</li> <li>Always remain in the line of sight of the operator while the machine is in operation. Ensure the operators are aware of your presence.</li> <li>Try to remain on the operator's cab side of the machine to avoid being in their blind spot.</li> </ul>	

		<ul style="list-style-type: none"> <li>• Make eye contact with the operators and use hand gestures to make them aware of your direction of travel.</li> <li>• Wear Level D PPE, including a hard hat and high visibility clothing.</li> </ul>
	Slips/trips, falls into open excavation.	<ul style="list-style-type: none"> <li>• Coordinate with the operator of the excavator so that they can collect the sample. Employees should not enter inside the open excavation.</li> <li>• Stay a safe distance of 25 feet away in case the side wall of the excavation caves in.</li> </ul>
	<p><b>Required Training:</b></p> <ul style="list-style-type: none"> <li>• HAZWOPER (40-hour) for data collection activities with hazardous material exposures. If hazards are removed or controlled, the need for 40 hour training may be evaluated based on the hazard that exists. Any non-hazwoper personnel must be escorted by a hazwoper employee in characterized safe areas.</li> <li>• Annual 8-hour refresher HAZWOPER training.</li> <li>• Managed field experience/job shadowing</li> <li>• 10-hour Construction Safety Certification preferred.</li> <li>• Knowledge of excavation hazards and protection requirements.</li> <li>• Knowledge and use of task specific PPE.</li> </ul>	<p><b>Required Personal Protective Equipment (PPE):</b></p> <p><b>Level D</b> – Impact and compression resistant safety boots or safety boots, hard hats, high visibility clothing, and safety glasses. Nitrile gloves or tyvek suits may also be required based on site specific conditions.</p>
<p><b>JSA Author:</b>  <b>Created:</b>  <b>Updated</b>  <b>JSA Number:</b></p>	<p>Daniel Clinton, Caitlyn DellaTorre              8/20/12              8/3/2015 by Dylan Hovey, 2/28/23 by Michael Orefice, Joseph Meltzer, Bill DePascale, Dan Wolfram</p>	

# JOB SAFETY ANALYSIS

## SITE VISIT

**Scope of Work:** Conducting a site visit at a hazardous location, including visual observations, physical inspections, and habitat assessment.

**General Precautions:** Evaluate the site specific conditions to prepare for potential hazards. There is the potential for exposure to physical hazards such as slips, trips, and falls, and contact with contaminated media. Communicate with other workers on the site to be sure all personnel are aware of the tasks being conducted on the site...

TASK	HAZARDS	CONTROLS
Inspect the site.	Hand tool use (screw driver, ratchet, pry bars, tape measure, shovel)	<ul style="list-style-type: none"> <li>• Use the appropriate tool for the job.</li> <li>• Inspect equipment prior to work. Do not use damaged or rusty tools or equipment.</li> <li>• Wear leather or cotton gloves if handling sharp tools, equipment or other objects.</li> </ul>
	Slip/trip/fall from uneven terrain or obstructions	<ul style="list-style-type: none"> <li>• All personnel should be constantly watching for trip hazards such as uneven terrain, holes, ditches, or any other materials or debris in their path.</li> <li>• Significant hazards (e.g., holes or trenches) should be marked with flagging, fencing, or other means to identify the obstacle.</li> <li>• Wear footwear appropriate for the terrain and work to be performed.</li> <li>• Adjust work speed to fit the weather conditions.</li> <li>• Keep areas well lit. Schedule to be on site during daylight hours if outside.</li> </ul>
	Traffic	<ul style="list-style-type: none"> <li>• The site owner/manager should be notified of work activities and locations.</li> <li>• When initiating going in reverse the driver should honk the vehicle horn as a warning.</li> <li>• Wear appropriate PPE including high visibility clothing such as a reflective vest.</li> <li>• Utilize truck flashers/strobes, cones, signs, flags or other traffic control devices as needed to divert traffic around working activities.</li> <li>• Set up barricades in areas of pedestrian traffic.</li> </ul>

	Insects/ticks	<ul style="list-style-type: none"> <li>• See Ticks, Spiders, Stinging Insects JSA.</li> </ul>
	Poisonous plants	<ul style="list-style-type: none"> <li>• See Poisonous plants JSA.</li> </ul>
	Wildlife/animals	<ul style="list-style-type: none"> <li>• Stay alert and a safe distance away from biological hazards.</li> <li>• Wear appropriate PPE including cut resistant gloves, long sleeves, and light colored pants.</li> </ul>
	Undesired Human Interaction <ul style="list-style-type: none"> <li>• Hostile neighbors</li> <li>• Criminal activity</li> <li>• Vagrants/transients</li> </ul>	<ul style="list-style-type: none"> <li>• Use a buddy system when feasible.</li> <li>• If the boundaries of the Site require access to private property, arrange for access ahead of time</li> <li>• If vagrants or related unexpected interactions occur during the visit, state your purpose and minimize the interaction as much as possible. Evacuate the Site if a threat is perceived. Report the interaction to established project contacts and the local authorities.</li> </ul>
	Heat stress	<ul style="list-style-type: none"> <li>• Employees should be aware of the effects of heat stress, provided with adequate cool liquids such as water and beverages containing electrolytes, and instructed to observe each other for signs of heat stress during hot weather.</li> <li>• Take frequent breaks in cooling areas during hot weather.</li> </ul>
	Cold stress	<ul style="list-style-type: none"> <li>• Wear appropriate clothing to prevent hypothermia. Synthetic and wool fabrics are superior to cotton as they provide better insulation when wet and dry.</li> <li>• Drink warm fluids and take frequent breaks in warming areas during cold weather.</li> </ul>
	Contact with contaminated media	<ul style="list-style-type: none"> <li>• Obtain and review site HASP and familiarize yourself with the site prior to the visit. Know the contaminants of concern and locations of suspected contaminant areas. Know the location of the nearest emergency medical facility equipped to handle chemical exposures.</li> <li>• Wear level D PPE with upgrades as</li> </ul>

<p><b>Other Information:</b>  <b>JSA Author:</b> Daniel Clinton, Caitlyn DellaTorre  <b>Created:</b> 8/20/12, Rev. 1 – 10/9/12  <b>JSA Number:</b> Updated 8/18/15 by Dylan Hovey; Updated 1/17/20 by Joanna Wallace</p>				<p>appropriate for the site.</p> <ul style="list-style-type: none"> <li>• Survey site for areas of discoloration, puddles, dead or stressed vegetation, and stay reasonably clear of such areas.</li> <li>• Identify an escape route and evacuate immediately if strong odors or irritation are noted.</li> <li>• Contaminated PPE should be disposed on site. Remove boots and soiled clothing for secure storage in trunk and decontaminate as soon as possible.</li> </ul>
	<p><b>Required Training:</b></p> <ul style="list-style-type: none"> <li>• HAZWOPER (40-hour) for data collection activities with hazardous material exposures. If hazards are removed or controlled, the need for 40 hour training may be evaluated based on the hazard that exists. Any non-hazwoper personnel must be escorted by a hazwoper employee in characterized safe areas.</li> <li>• Knowledge and use of task specific PPE</li> </ul>	<p><b>Required Personal Protective Equipment (PPE):</b></p> <p>Level D PPE, hearing protection when working around heavy equipment or noisy environments. Light colored pants and gators when working in potential tick infested areas.</p> <p>Additional tools such as a camera may also be useful. Use the buddy system when feasible, particularly at identified high hazard sites and especially if personnel are not familiar with the site.</p>		

Date: May 2023  
Client: WPH/PX  
Project #: 214155  
PM: Evan Trumpatori

## HASP Addendum Precautions to prevent spread of Coronavirus Disease (COVID-19)<sup>1</sup>

### Be aware:

- **The best way to prevent illness is to avoid being exposed to this virus.**
- The virus is thought to spread mainly from person-to-person.
  - Between people who are in close contact with one another (within about 6 feet).
  - Through respiratory droplets produced when an infected person coughs or sneezes.
- These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.

At a minimum, the following precautions should be followed to protect yourself and others.

### Steps to Protect Yourself and Others

1. **If work can be done remotely, do not go to the site.**
2. **Stay home if you are sick** or if you have been exposed to somebody who has exhibited COVID-19 symptoms (fever, cough, shortness of breath), or if you have been exposed to someone who tests positive for COVID-19. Notify your manager and Human Resources Partner immediately.
3. **If you develop symptoms while on the job, go home immediately.** Notify your manager and Human Resources Partner. Remotely request others to sanitize.
4. Prior to conducting field work or visiting a client site, confirm with the client contact that they are allowing access to their site.
5. Stay in **communication with the Project Manager** as risks change, as CDC or corporate guidelines change, your health or exposure profile changes, or if anything else changes.
6. Conduct inspection activities outdoors to the extent possible and minimize contact with other people.
7. Put at least **6 feet of distance between** yourself and other people.
8. Walk, rather than drive in a vehicle with other people, to access different areas of the site for inspection (or drive alone in your own vehicle).
9. **CLEAN YOUR HANDS OFTEN, PERIODICALLY THROUGHOUT THE DAY.**
  - Wash your hands with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, or sneezing.
  - If soap and water are not readily available, **use a hand sanitizer that contains at least 60% alcohol.** Cover all surfaces of your hands and rub them together until they feel dry.
  - **Avoid touching your eyes, nose, and mouth** with unwashed hands.
10. **DO NOT SHAKE HANDS.**
11. **DO NOT TOUCH IT IF YOU DON'T NEED TO TOUCH IT.**

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<sup>1</sup> Information primarily from CDC Website <https://www.cdc.gov/coronavirus/2019-ncov/prepare/prevention.html>

12. **CLEAN DOOR KNOBS, TABLES, AND ANY OTHER COMMONLY TOUCHED OBJECTS AT LEAST ONCE PER DAY**, or request this to be done. Disinfection supplies are available for employee use, if desired. NOTE: daily disinfection (in addition to cleaning is required on Massachusetts Construction Projects).
13. **KEEP 6 FEET OF SPACE BETWEEN PEOPLE.**
14. **DO NOT ENTER ANY HOMES.**
15. **SPEAK UP – IF YOU NEED SAFETY SUPPLIES CONTACT THE PROJECT MANAGER.**
16. **MINIMIZE IN-PERSON MEETING ATTENDEES. KEEP ATTENDEES TO LESS THAN 10 PEOPLE.**

Patients with COVID-19 have experienced mild to severe respiratory illness.

Symptoms\* can include

**FEVER**



**COUGH**



\*Symptoms may appear 2-14 days after exposure.

**SHORTNESS OF BREATH**



If you have been in China or in close contact with someone with confirmed COVID-19 in the past 2 weeks and develop symptoms, call your doctor.



For more information: [www.cdc.gov/COVID19](http://www.cdc.gov/COVID19)

## How should I use?

### Soap and Water

- **Wet** your hands with clean running water (warm or cold) and apply soap.
- **Lather** your hands by rubbing them together with the soap.
- **Scrub** all surfaces of your hands, including the palms, backs, fingers, between your fingers, and under your nails. Keep scrubbing for 20 seconds. Need a timer? Hum the “Happy Birthday” song twice.
- **Rinse** your hands under clean, running water.
- **Dry** your hands using a clean towel or air dry them.

### Alcohol-Based Hand Sanitizer

Use an alcohol-based hand sanitizer that contains at least 60% alcohol. Supervise young children when they use hand sanitizer to prevent swallowing alcohol, especially in schools and childcare facilities.

- **Apply.** Put enough product on hands to cover all surfaces.
- **Rub** hands together, until hands feel dry. This should take around 20 seconds.

**Note:** Do not rinse or wipe off the hand sanitizer before it's dry; it may not work as well against germs.



For more information, visit the CDC handwashing website, [www.cdc.gov/handwashing](http://www.cdc.gov/handwashing).

# JOB SAFETY ANALYSIS

## HEAT STRESS – WORKING IN TEMPERATURES ABOVE 80°F

### Scope of Work:

Employees working in hot environments are at a risk of heat stress and heat-related illnesses such as heat stroke, heat exhaustion, and heat cramps.

### General Precautions:

Employees must be knowledgeable in the prevention and recognition of heat stress. Reference the table in “Other Information” for information regarding heat related illnesses and controls. Employees working in temperatures greater than 80°F must have access to water, breaks, and shade.

TASK	HAZARDS	CONTROLS
1. Working in an area with temperatures greater than 80°F.	Heat related illnesses such as heat stroke, heat exhaustion, heat cramps, and heat rash	<p><u>Required Controls:</u></p> <ul style="list-style-type: none"><li>• The Project Manager communicates the potential for heat stress exposure to the project team and reviews controls with employees prior to performing work.</li><li>• Employees will discuss identification tips for signs of exposure to heat stress, controls for heat stress exposure, and heat stress response measures at the daily safety meeting.</li><li>• Provide workers with gradually increasing workloads and more breaks as they acclimatize to working in the heat.</li><li>• Modify working hours to cooler hours of the day, when possible.</li><li>• Provide workers with water, rest, and shade.</li><li>• Carry cell phone, or other means of communication, to ensure emergency services can be called without delay.</li><li>• Employees have access to air conditioning in a vehicle, office, construction trailer, nearby building, etc.</li><li>• Ensure employees have access to potable, cool drinking water and encourage employees to consume small amounts throughout the day.</li><li>• Managers will:<ul style="list-style-type: none"><li>○ Regularly encourage employees to drink water throughout the day.</li><li>○ Remind employees about the importance of rest breaks in hot weather.</li><li>○ Monitor employees for heat related symptoms. This can be done in person or remotely with periodic check-ins.</li></ul></li></ul>

	<p>2. Working in an area where the temperature is at or exceeds 95°F.</p>	<p>Heat related illnesses such as heat stroke, heat exhaustion, heat cramps, and heat rash</p>	<p>In addition to the controls listed above:</p> <ul style="list-style-type: none"> <li>• Managers consider if work can be rescheduled to another day.</li> <li>• Observe/monitor employees for signs of heat illness by:                             <ul style="list-style-type: none"> <li>○ A supervisor or designee monitoring up to 20 employees;</li> <li>○ Use of a mandatory buddy system;</li> <li>○ Frequent, consistent communication with an employee through electronic or cellular means; or</li> <li>○ Other productive observation means.</li> </ul> </li> <li>• Confirm onsite employees know how to summon emergency medical services (EMS) in the event someone experiences a medical emergency.</li> <li>• Provide reminders throughout the shift for employees to drink water.</li> <li>• Discuss high-heat control procedures in place during daily safety meetings.</li> <li>• Ensure communication methods exist between employees and supervisors so that contact can be made if necessary.</li> <li>• New or returning employees are required to be observed for the first 14 days of employment.</li> </ul>
	<p>3. Exposure to sunlight</p>	<p>Sunburn and an increased likelihood of developing heat-related illnesses such as heat stroke, heat exhaustion, heat cramps, sunburn, and heat rash</p>	<ul style="list-style-type: none"> <li>• Use sunscreen of at least 15 SPF that blocks UVA and UVB rays.</li> <li>• Wear a hat to protect the face, ears, and neck.</li> <li>• As needed, wear UV absorbent sunglasses. Note: if eye damage hazards exist, sunglasses that meet ANSI standard 87.1 must be used.</li> </ul>
	<p><b>Required Training:</b> Heat Stress Training</p>	<p><b>Required Personal Protective Equipment (PPE):</b> Loose fitting, moisture-wicking clothing (consider long sleeve shirt in the right material for additional sun protection); sunscreen rated SPF 15 or higher, UV absorbent sunglasses as needed (note: if eye damage hazards exist, sunglasses must meet ANSI standard 87.1).</p> <p>The addition of certain articles of PPE can increase the risk of developing a heat related illness.</p> <p>Required equipment: Water if potable drinking water is not readily available at the worksite.</p>	

<b>Heat Stress Symptoms and Controls</b>		
<b>Heat Illness</b>	<b>Symptoms</b>	<b>What to Do</b>
<b>Heat Stroke</b>	<ul style="list-style-type: none"> <li>• Red, hot, dry skin (no sweating)</li> <li>• Throbbing headache</li> <li>• Dizziness</li> <li>• Nausea</li> <li>• Confusion</li> <li>• Unconsciousness</li> </ul>	<ul style="list-style-type: none"> <li>• Call medical help immediately.</li> <li>• Get the victim to a cool, shady area.</li> <li>• Cool them off with a cool shower, garden hose, wet cloths, ice packs, etc.</li> <li>• Do not give the victim fluids to drink.</li> </ul> <p>If emergency medical services are delayed, call the hospital for further instructions.</p>
<b>Heat Exhaustion</b>	<ul style="list-style-type: none"> <li>• Muscle pains or spasms, usually in the abdomen, arms, or legs</li> </ul>	<ul style="list-style-type: none"> <li>• Get the victim to a cool area and have them sit quietly.</li> <li>• Give them clear juice or a sports beverage.</li> <li>• Have them rest for a few hours.</li> <li>• Call the Nurse Hotline at (800-350-4511) if you experience a fever of 102°F or higher, chills, severe pain, sunburn blisters that cover 20% or more of your body, or signs of dehydration</li> </ul>
<b>Heat Cramps</b>	<ul style="list-style-type: none"> <li>• Red, warm, tender skin</li> <li>• Peeling or flaking of the skin</li> </ul>	<ul style="list-style-type: none"> <li>• Apply a cold compress to the skin</li> <li>• Use rubbing cream or gel containing aloe, camphor, or menthol</li> <li>• Give the victim water to prevent dehydration</li> <li>• Call the Nurse Hotline (800-350-4511) if heat cramps do not subside in 1 hour.</li> </ul>
<b>Heat Rash</b>	<ul style="list-style-type: none"> <li>• Skin irritation looking like a red cluster of pimples or blisters</li> </ul>	<ul style="list-style-type: none"> <li>• Move employees to a cool, less humid area.</li> <li>• Keep the affected area dry.</li> </ul>

**Other Information:**

**JSA Author:**

**Created:**

**JSA Number:**

Katherine Audino  
 June 22, 2018, updated 6/8/2022 by Kevin Vandal. Updated 3/6/2023 by Brent Aigler, Justin Guerra, Kim Collins, Lauren Tibbens, Teri Demers, Mary Beth Miller

# JOB SAFETY ANALYSIS

## WORKING IN POISONOUS PLANT ENVIRONMENTS

**Scope of Work:** When working outdoors employees are at risk of being exposed to poisonous plants (i.e. poison ivy, poison oak, poison sumac, giant hogweed, and wild parsnip). See page 2 for example photos of these poisonous plants.

**General Precautions:** Poison ivy, poison oak, and poison sumac secrete urushiol oil, which can cause allergic rash to the skin upon contact or lungs upon inhalation. Giant hogweed and wild parsnip contain a sap in and on all parts of the plant that can cause skin burns when in contact with sunlight. To avoid the hazards associated with poisonous plants, it is important to be able to identify poisonous plants and take measures to avoid and protect yourself against them.

TASK	HAZARDS	CONTROLS
<p>1. Working in an area with known or suspected poisonous plants where contact with poisonous plants will be avoided.</p>	<ul style="list-style-type: none"> <li>Allergic skin or lung reaction to poisonous plant, exposure routes are direct skin contact, contact with contaminated clothing, contact from removing shoes, sitting in a contaminated vehicle, contact with tools</li> </ul>	<ul style="list-style-type: none"> <li>PM communicates potential for exposure to the project team prior to beginning work</li> <li>Employees discuss poisonous plant identification, location, and controls during the daily safety meeting</li> <li>Wear PPE including long pants, shoes, and socks. See Step 2 for required PPE when working in area where contact with poisonous is unavoidable.</li> <li>Place plastic on the ground for equipment / tool staging to avoid contact with poisonous plants.</li> <li>After field work remove any easily-removable outer layers of clothing with care and place in a plastic bag to avoid spreading urushiol oil. Gloves must be removed last.</li> <li>Wash skin with cold/lukewarm water and products designed for removal of urushiol oil (e.g. Tecnu).</li> <li>Notify the PM and other employees about the location of poisonous plants that are encountered.</li> </ul>
<p>2. Working in an area with likely poisonous plant exposure. Likely plant exposure is defined as touching poisonous plants with body, tools or equipment.</p> <ul style="list-style-type: none"> <li>Highly susceptible employees should also consider listing the following control measures.</li> </ul>		<ul style="list-style-type: none"> <li>In addition to the above controls, employees must               <ul style="list-style-type: none"> <li>Cover skin by wearing pants, long sleeves, shoes, socks, and gloves to minimize exposure</li> <li>Place plastic on the ground for tool/equipment staging</li> <li>Wash any clothing, tools or equipment that contacted the plants with hot water and soap</li> <li>Within two hours of contact with poisonous plants, employees must wash their skin with cold/lukewarm water using products designed for removal of urushiol oil (e.g. Tecnu) or use post-contact towelettes</li> </ul> </li> </ul>
<p><b>Required Training:</b> Task-specific training.</p>	<p><b>Required Personal Protective Equipment (PPE):</b> Tyvek coveralls, gloves, boot covers, long sleeves, and Tecnu cleaning product.</p>	

Poison Ivy can be found in all states excluding California. It grows in shaded areas, along the banks of streams and lakes or in wooded areas. Poison Oak can be found in the Mid-Atlantic to Texas, as well the pacific coast. Poison Sumac is found in the north and southeastern United States exclusively in wetlands. Giant hogweed is found in New England, the Mid-Atlantic, and Northwest along water bodies, in fields, forests, yards and roadsides. Wild parsnip is found in nearly all states except Alabama, Florida, Georgia, and Mississippi in disturbed landscapes such as fields and along roadways.

**Other Information:**



**Poison Oak**



**Poison Ivy**



**Poison Sumac**



**Giant Hogweed**



**Wild Parsnip**

**JSA Author:** Dylan Hovey  
**Created:** 7/24/2015, Updated 8/1/18 by Katherine Audino  
**JSA Number:**

# JOB SAFETY ANALYSIS

## SOIL SAMPLING

**Scope of Work:** Sampling performed using either mechanical or to evaluate potential impacts in surficial soils.

**General Precautions:** If the site is a remote location, use the buddy system. Use of Level D PPE required including cut resistant gloves. Use caution when classifying soils paying attention for foreign debris that could be a cut hazard (glass, nails, etc.).

STEPS	HAZARDS	CONTROLS
1. Approach the sampling location.	Poisonous plants, insects, ticks.	<ul style="list-style-type: none"> <li>• See Tick, Spider, and Stinging Insects JSA.</li> <li>• See Poisonous Plants JSA.</li> </ul>
	Heat stress/cold stress	<ul style="list-style-type: none"> <li>• Employees should be aware of the effects of heat stress, provided with adequate cool liquids such as water and beverages containing electrolytes, and instructed to observe each other for signs of heat stress during hot weather.</li> <li>• Take frequent breaks in cooling areas during hot weather.</li> <li>• During cold weather, employees should be aware of the effects of hypothermia.</li> <li>• Wear appropriate clothing to help prevent hypothermia.</li> </ul>
	Traffic	<ul style="list-style-type: none"> <li>• The site owner/manager should be notified of work activities and locations.</li> <li>• When initiating going in reverse the driver should honk the vehicle horn as a warning.</li> <li>• Wear appropriate PPE including high visibility clothing such as a reflective vest.</li> <li>• Utilize truck flashers/strobes, cones, signs, flags or other traffic control devices as needed to divert traffic around working activities.</li> <li>• Set up barricades in areas of pedestrian traffic.</li> </ul>
	Slips/trips/falls	<ul style="list-style-type: none"> <li>• All personnel should be constantly watching for trip hazards such as uneven terrain, holes, ditches, or any other materials or debris in their path.</li> <li>• Significant hazards (e.g., holes or trenches) should be marked with flagging, fencing, or other means to identify the obstacle.</li> <li>• Wear footwear appropriate for the terrain and work to be performed.</li> <li>• Adjust work speed to fit the weather conditions.</li> <li>• Keep areas well lit. Schedule to be on site during daylight hours if outside.</li> </ul>

<p><b>JSA Author:</b> Keri Stevens  <b>Created:</b> 10/9/2012; updated by Dylan Hovey 8/18/15; updated by Duff Collins, Dan Bryant, Justin Guerra, Jenn Beers, Taylor Nelson on 3/17/22  <b>JSA Number:</b></p>		Carrying heavy equipment (i.e., coolers)	<ul style="list-style-type: none"> <li>Use proper lifting techniques: bend your knees and lift with your legs, keeping the back straight and avoiding twisting positions.</li> </ul>
	<p>2. Collect the soil sample.</p> <ul style="list-style-type: none"> <li>Utilize hand tools as necessary.</li> <li>Potentially perform sample collection using a drill rig.</li> </ul>	Manual sampling	<ul style="list-style-type: none"> <li>Wear nitrile gloves while collecting samples.</li> <li>Use the proper tool for the job.</li> <li>Exposure to site contaminants</li> </ul>
		Hazards associated with drilling	<ul style="list-style-type: none"> <li>Refer to the Drilling JSA for information pertaining to the use of a Geoprobe or Hollow Stem Auger.</li> </ul>
		Back strain from bending	<ul style="list-style-type: none"> <li>Use proper body mechanics when bending down. Bend at the knees and lift with your legs, keeping the back straight as possible and avoiding twisting postures.</li> <li>Carry items at your center of gravity, waist to chest level.</li> </ul>
		Knee pain from kneeling on the ground	<ul style="list-style-type: none"> <li>Utilize a kneepad.</li> <li>Limit the amount of time in the kneeling or crouched position.</li> </ul>
	3. Soil classification	Contact with contamination or biological materials in soil	<ul style="list-style-type: none"> <li>Do NOT put soil in your mouth to determine grain size distribution.</li> <li>First examine soil in sampling device (shovel, probe sleeve, etc.) with minimum disturbance and particulate dispersal.</li> <li>Don't cut yourself with the liner cutter</li> <li>Observe soil, collect a small sample and roll a sample into a ribbon in fingers utilizing nitrile glove protection on hands to determine plasticity.</li> </ul>
	4. Filling sample containers for laboratory analysis	Splash hazards associated with exposure to preservatives in sampling jars (methanol)	<ul style="list-style-type: none"> <li>Wear safety glasses and nitrile gloves to protect from exposure.</li> </ul>
<p><b>Required Training:</b></p> <ul style="list-style-type: none"> <li>40 hour HAZWOPER training and current 8 hour annual refresher if the site is designated as HAZWOPER regulated.</li> <li>Managed field experience/job shadowing</li> <li>Knowledge and use of task specific PPE</li> </ul>		<p><b>Required Personal Protective Equipment (PPE):</b></p> <ul style="list-style-type: none"> <li>Level D PPE, hearing protection when working around heavy equipment or noisy environments. Light colored pants and gators when working in potential tick infested areas. Requirement for cut resistant gloves may be relaxed during soil classification and sample collection (i.e., filling jars). If using Geoprobe sleeves, use proper cutting tool with safety blade and place sleeve in vice or similar device to hold it steady (hands should not be needed to keep it steady). A high visibility vest or shirt is required when working in a traffic area and a hard hat is required when working in a construction zone.</li> </ul>	

# JOB SAFETY ANALYSIS

## TICKS, STINGING INSECTS, AND SPIDERS

### Scope of Work:

When working outdoors employers are at risk of being exposed to ticks, stinging insects, and spiders.

### General Precautions:

It is important to be able to recognize habitats where ticks, stinging insects, and spiders are known or suspected to be.

TASK	HAZARDS	CONTROLS
1. Working in an area with known or suspected ticks.	Tick borne diseases.	<ul style="list-style-type: none"><li>• Discuss tick identification and controls during daily safety briefing.</li><li>• Perform tick checks by scanning clothes and any exposed skin frequently.</li><li>• When possible, stay on cleared well-traveled trails.</li><li>• Keep work areas clear.</li><li>• Avoid sitting directly on the ground or on stone walls.</li><li>• Be aware that ticks can also be above you.</li><li>• Keep long hair tied back.</li><li>• Required PPE:<ul style="list-style-type: none"><li>○ Wear light colored pants.</li><li>○ Tuck pants into socks or wear boot gaiters.</li></ul></li><li>• Encouraged PPE:<ul style="list-style-type: none"><li>○ Use insect repellent containing DEET on skin or clothes.</li><li>○ Use permethrin-treated or impregnated clothing (do not apply to skin).</li></ul></li></ul>
2. Working in an area with known or suspect poisonous spiders. Below are examples of poisonous spiders and where they live. <ul style="list-style-type: none"><li>• Black Widows are found throughout North America but are more common in southern and western areas.</li><li>• Brown Recluse Spiders which are found in the Midwestern and Southern states.</li><li>• Hobo Spiders are found in the Pacific Northwest.</li></ul>	Illness caused by poisonous spider bite.	<ul style="list-style-type: none"><li>• Discuss poisonous spider identification and controls during daily safety meeting.</li><li>• Inspect or shake out any clothing, shoes, towels, or equipment before use.</li><li>• Wear protective clothing such as long-sleeved shirt and long pants, hats, gloves, and boots when handling stacked or undisturbed piles of materials that are indoors or outdoors.</li><li>• Minimize the empty spaces between stacked materials that are indoors or outdoors.</li><li>• Remove and reduce debris and rubble from around outside work areas.</li><li>• Trim or eliminate tall grasses from around outdoor work areas.</li><li>• Store apparel and outdoor equipment in tightly closed plastic bags.</li></ul>

<p><b>Other Information:</b></p> <p><b>JSA Author:</b> Dylan Hovey  <b>Created:</b> 7/24/2015, Updated 7/25/18 by Katherine Audino  <b>JSA Number:</b></p>	<p>3. Working in an area with known or suspected stinging insects such as:</p> <ul style="list-style-type: none"> <li>• Bees</li> <li>• Wasps</li> <li>• Hornets</li> <li>• Fire Ants</li> </ul>	<p>Being stung by stinging insects.</p>	<ul style="list-style-type: none"> <li>• Discuss controls for stinging insects during daily safety meeting.</li> <li>• Wear a Hooded Bee Jacket or face covering when disturbing a hive.</li> <li>• Wear light-colored, smooth-finished clothing.</li> <li>• Avoid perfumed soaps, shampoos, and deodorants.</li> <li>• Avoid bananas and banana-scented toiletries.</li> <li>• Wear clean clothing and bathe daily.</li> <li>• Wear clothing to cover as much of the body as possible.</li> <li>• Tuck pants into socks, or wear gaiters, to prevent fire ants from travelling up the leg.</li> <li>• Avoid flowering plants when possible.</li> <li>• Keep work areas clean.</li> <li>• Remain calm and still.</li> <li>• Workers with a history of severe allergic reactions to insect bites or stings should consider:                         <ul style="list-style-type: none"> <li>○ Carrying an epinephrine auto injector (EpiPen)</li> <li>○ Letting people working with you know about your allergy.</li> </ul> </li> </ul>
	<p><b>Required Training:</b> Job specific training.</p>	<p><b>Required Personal Protective Equipment (PPE):</b> Site specific PPE</p> <ul style="list-style-type: none"> <li>• Required Tick PPE includes light colored pants and gaiter, or pants tucked into socks. Recommended practices included using DEET and permethrin treated clothing (optional PPE).</li> <li>• Spider PPE includes long-sleeved shirt and pant, hat, gloves, and boots.</li> <li>• Bees, wasps, and hornets PPE includes an EpiPen if necessary, wear light-colored, smooth-finished, and long-sleeved clothing.</li> <li>• Tuck pants into socks or wear gaiters to prevent fire ants from travelling up the legs.</li> </ul>	
	<p>The site-specific risk of exposure to these hazards must be discussed during the daily safety meeting.</p>		

# JOB SAFETY ANALYSIS

## UTILITY CLEARANCE WORK

**Scope of Work:** To determine what underground utilities exist in the construction project area. Utility clearance is required before advancing anything into the ground.

**General Precautions:** Be prepared for site specific hazards. Ensure the client and appropriate parties know when you will be in the work area. Wear Level D PPE with additional requirements modified as appropriate for the site.

STEPS	HAZARDS	CONTROLS
1. Preliminary planning <ul style="list-style-type: none"><li>Obtain construction drawings</li><li>Identify project schedule/timeline/start date</li></ul>	Lack of proper planning can cause safety incidents and injury	<ul style="list-style-type: none"><li>Conduct preliminary procedures as noted and as otherwise required.</li><li>Note and correct any exceptions identified during this preliminary process to avoid incidents, note and correct exceptions in this JSA as necessary.</li></ul>
2. Access the site	Ticks/insects	<ul style="list-style-type: none"><li>Inspect work areas upon arriving at the site to identify hazard(s).</li><li>Use insect repellent as necessary, with DEET (on skin or clothing) or permethrin (on clothing). Products containing permethrin can be used to treat boots, clothing and camping gear which can remain protective through several washings. Repellents containing 20% or more DEET (N, N-diethyl-m-toluamide) can be applied to the skin, and they can protect up to several hours. Always follow product instructions.</li><li>Conduct periodic body checks for ticks and bites to help prevent transmission of tick borne illnesses.</li><li>Wear appropriate PPE including leather gloves, and Tyvek suits or long sleeves, long pants and socks.</li></ul>

	Poisonous plants	<ul style="list-style-type: none"> <li>• Wear long pants, long sleeves, and shoes that cover the whole foot.</li> <li>• If direct contact with poison ivy, oak, or sumac is encountered, utilize scrub wash products or irrigate the contact area with water for 15 minutes to minimize allergic rash effect/remove the urushiol. If available, utilize commercially available products such as scrub washes and contact wipes to remove urushiol and reduce rash potential.</li> </ul>
	Biologic/wildlife	<ul style="list-style-type: none"> <li>• Inspect work areas when arrive at site to identify hazard(s)</li> <li>• Stay alert and safe distance away from biological hazards</li> <li>• Wear appropriate PPE including leather gloves, long sleeves and pants, and snake chaps if probability of encountering</li> </ul>
	Traffic	<ul style="list-style-type: none"> <li>• The site owner/manager should be notified of work activities and locations.</li> <li>• Wear appropriate PPE including high visibility clothing such as a reflective vest.</li> <li>• Utilize truck flashers/strobes, cones, signs, flags or other traffic control devices as needed to divert traffic around working activities.</li> <li>• Where pedestrian traffic is an issue, set up a barricade surrounding the work area.</li> </ul>

	Slip/trip hazard	<ul style="list-style-type: none"> <li>• All personnel should be constantly watching for trip hazards such as uneven terrain, holes, ditches, stretched wires or ropes, or any other materials or pieces of equipment in their path.</li> <li>• Keep the work area free of excess material and debris.</li> <li>• Remove trip hazards whenever possible by keeping materials organized and out of walkways.</li> <li>• Significant below-grade hazards (e.g., holes or trenches) should be marked with flagging, fencing or other means to identify the obstacle.</li> <li>• Wear footwear appropriate for the terrain and work to be performed.</li> <li>• Muddy, snowy, and icy conditions will warrant a more cautious work attitude. Adjust work speed to fit the weather conditions.</li> </ul>
	Weather (heat or cold stress)	<ul style="list-style-type: none"> <li>• Be aware of the current weather conditions at the site and be prepared for potential changes in the weather.</li> <li>• Dress appropriately (rain gear as needed).</li> <li>• Take breaks as needed.</li> <li>• Stay hydrated.</li> <li>• If possible, adjust work schedule to avoid heat or cold stresses.</li> </ul>
	Injury from hunting activities	<ul style="list-style-type: none"> <li>• Ensure that you are wearing high visibility clothing during hunting season.</li> <li>• Site/property owners should be notified of work activities and locations.</li> </ul>

	<p>3. Mark out the excavation/work limits in white paint.</p> <ul style="list-style-type: none"> <li>• May involve brush clearing activities, including use of a machete or hatchet.</li> </ul>	<p>Ticks/insects</p>	<ul style="list-style-type: none"> <li>• Inspect work areas upon arriving at the site to identify hazard(s).</li> <li>• Use insect repellent as necessary, with DEET (on skin or clothing) or permethrin (on clothing). Products containing permethrin can be used to treat boots, clothing and camping gear which can remain protective through several washings. Repellents containing 20% or more DEET (N, N-diethyl-m-toluamide) can be applied to the skin, and they can protect up to several hours. Always follow product instructions.</li> <li>• Conduct periodic body checks for ticks and bites to help prevent transmission of tick borne illnesses.</li> <li>• Wear appropriate PPE including leather gloves, and Tyvek suits or long sleeves, long pants and socks.</li> </ul>
		<p>Poisonous plants</p>	<ul style="list-style-type: none"> <li>• Wear long pants, long sleeves, and shoes that cover the whole foot.</li> <li>• If direct contact with poison ivy, oak, or sumac is encountered, utilize scrub wash products or irrigate the contact area with water for 15 minutes to minimize allergic rash effect/remove the urushiol. If available, utilize commercially available products such as scrub washes and contact wipes to remove urushiol and reduce rash potential.</li> </ul>

		<p>Lacerations and flying objects from chainsaw activities</p>	<ul style="list-style-type: none"> <li>• Stay a safe distance from active clearing.</li> <li>• Wear high visibility clothing to ensure that chainsaw operators are aware of your presence.</li> <li>• Wear eye protection such as safety glasses or goggles.</li> <li>• Wear protective chaps to protect legs from kickback.</li> </ul>
		<p>Traffic</p>	<ul style="list-style-type: none"> <li>• The site owner/manager should be notified of work activities and locations.</li> <li>• Wear appropriate PPE including high visibility clothing such as a reflective vest.</li> <li>• Utilize truck flashers/strobes, cones, signs, flags or other traffic control devices as needed to divert traffic around working activities.</li> <li>• Where pedestrian traffic is an issue, set up a barricade surrounding the work area.</li> </ul>
		<p>Injury from hunting activities</p>	<ul style="list-style-type: none"> <li>• Ensure that you are wearing high visibility clothing during hunting season.</li> <li>• Site/property owners should be notified of work activities and locations.</li> </ul>
		<p>Biologic/wildlife</p>	<ul style="list-style-type: none"> <li>• Inspect work areas upon arrival at the site to identify hazard(s).</li> <li>• Stay alert and keep a safe distance away from wild animals.</li> <li>• Wear appropriate PPE including leather gloves, long sleeves and pants, and snake chaps if there is a probability of encountering.</li> </ul>
		<p>Cuts/lacerations, or muscle strain from use of cutting tools</p>	<ul style="list-style-type: none"> <li>• Wear cut resistant, non-slip leather work gloves.</li> </ul>

<p><b>Other Information:</b></p> <p><b>JSA Author:</b> Bob Severance, Caitlyn DellaTorre  <b>Created:</b> 8/8/12  <b>Revised:</b> 11/05/14 by Brent Aigler, Joanna Wallace  <b>JSA Number:</b></p>		Weather (heat or cold stress, rainy or icy conditions)	<ul style="list-style-type: none"> <li>• Be aware of the current weather conditions at the site and be prepared for potential changes in the weather.</li> <li>• Dress appropriately (rain gear as needed).</li> <li>• Take breaks as needed</li> <li>• Stay hydrated</li> <li>• If possible, adjust work schedule to avoid heat/cold stresses</li> </ul>
		Aerosol spray paint with contents under pressure	<ul style="list-style-type: none"> <li>• Aim the spray can away from face, toward ground</li> <li>• Wear appropriate PPE, especially safety glasses, to protect skin and eyes from spray paint</li> <li>• Do not try to troubleshoot malfunctioning spray cans. If the paint does not come out of the can when the nozzle is depressed, obtain a new spray paint can.</li> </ul>
	4. Call dig safe or the local utility clearing house	(Same as Step 1)	
	5. Access any other available utility information for non-dig safe companies (i.e., private properties.	(Same as Step 1)	
	6. Mark out the ground for non-dig safe utilities.	(Same as Step 3)	
	<p><b>Required Training:</b></p> <p>Competency in utility clearing process and use and limitations of PPE.</p>	<p><b>Required Personal Protective Equipment (PPE):</b></p> <p>Level D: Steel toe safety boots, cut resistant work gloves (leather or kevlar threaded), safety glasses, high visibility clothing, and a hard hat. Additional site specific modifications may be required as appropriate for the situation.</p>	