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REMEDIAL SYSTEM OPTIMIZATION & SUPPLEMENTAL INVESTIGATION WORK PLAN

US Chrome Corporation - Site # 819006
31 Swan Street
Batavia, New York

Prepared For:

Contract# D009808, Work Assignment No. 49
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7012

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HRP #: DEC1049.P2

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Report Date: 7/2/2025

QEP Certification:

I, David Stoll, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this 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).

David Stoll, P.G. – Senior Project Manager

1.0 INTRODUCTION

On November 22, 2024, HRP Associates, Inc. (HRP) was authorized to complete this New York State Department of Environmental Conservation (NYSDEC) Work Assignment (WA) No. 49 (D009808-49) for the preparation of a Remedial System Optimization and Supplemental Investigation Work Plan at the US Chrome Corporation, located at 31 Swan Street, Batavia, New York (herein referred to as "the Site"). The Scope of Work for this Remedial System Optimization and Supplemental Investigation Work Plan portion of the Work Assignment, discussed herein, was developed based on HRP's review of documents detailing previous subsurface investigations completed at the property between 1982 and 2019, as well as a site visit and discussions and planning with NYSDEC staff.

1.1 Purpose and Objectives

This site-specific Remedial System Optimization and Supplemental Investigation Work Plan describes the details of the scope of work, including all proposed field activities, laboratory analyses, and data QA/QC evaluation that will be associated with the work proposed at the US Chrome Corporation and off-site adjoining properties. This document is intended to supplement information provided in the NYSDEC-approved *Generic Field Activities Plan for Work Assignments*, completed by HRP on August 8, 2019.

The purpose of the work proposed is to determine the state and extent of contamination and the effectiveness of the current remedy to allow a decision by the NYSDEC regarding the necessity to complete any additional remediation. In accordance with DER-10 *Technical Guidance for Site Investigation and Remediation (May 2010),* the primary objectives of this RSO scope of work are to:

- Collect and evaluate all data necessary to define the current nature and extent of the chromium impacts both on and off site.
- Collect the data necessary to evaluate the current conditions of the groundwater recovery system, whether the system could still be used, and determine if another remedial system would or could be more effective in addressing observed impacts.
- Establish a Site Management Plan (SMP).

Currently, access to the Site, where the source and groundwater treatment system is located, is restricted. Therefore, at this time, the focus of the field work will be to collect necessary data outside of Site bounds until access to the Site can be gained.

1.2 Site Description and Background Information

The US Chrome Corporation Site (#819006), located at 31 Swan Street, Batavia, New York, (**Figure 1**) is the focus of this investigation. This property is approximately 0.41 acres in size according to the Genesee County online GIS map viewer. One building is currently present on the Site consisting of offices and chrome plating operation areas originally constructed in 1920 totaling approximately 14,563 square feet.

The Site is connected to the municipal water supply and serviced by the municipal sanitary sewer. No records of septic systems at the Site have been identified in available records. The Site is zoned for light industrial use, and surrounding properties in the area a combination of commercial, industrial, and residential zoning.

The US Chrome Corporation is a chrome plating facility which began operations in 1959 and remains in operation today. In 1982, a leak of chromic acid was discovered from a plating tank into the sand below before infiltrating the groundwater. Since then, several environmental investigations have occurred. The following is a general timeline of remedial activities that have occurred:

- In May 1982, well installation and groundwater sampling were completed by Ecology & Environment (E&E) near the Site and found concentrations of hexavalent chromium upwards of 46-800 ppm, exceeding the New York State Ambient Water Quality Standard (TOGS 1.1.1) criteria of 0.05 mg/L.
- By October 1983 a groundwater pump and treat system was put in place, extracting 28,000 gallons of contaminated groundwater per day from a single well point within the building. The well point was advanced to 25 feet below ground surface (ft bgs).
- Another round of groundwater sampling occurred in February 1984 by Parratt Wolff where the concentrations of hexavalent chromium generally did not change in comparison to the previous investigation.
- In July 1986, Parratt Wolff collected sewer samples and found hexavalent chromium concentrations above standard infiltrating the city sewer system in at least two locations. The city replaced the sewer line where it crossed part of the contaminated area in 1987.
- In 1988, Parratt Wolff collected a roof drain runoff sample (that measured 22.5 mg/L) from a roof drain collection tank located on the north side of the plant.
- In January 1989, US Chrome installed 15 boreholes in the northwest corner of the plant and pumped 1,000 gallons of water into these boreholes to flush the remaining chromium. Subsequent flushing events occurred in February, 1989 and January, 1990.
- The pump and treatment system remained active until 2002 when it was terminated. The concentration of hexavalent chromium had been decreasing throughout the system's operation. The last recorded concentration of hexavalent chromium was 1.1 mg/L in 1999 which was still above NY TOGS criteria.
- In 2019, NYSDEC returned to the Site to evaluate the state of contamination, assess the remedial system, and perform emerging contaminants testing. No emerging contaminants were detected, but total chromium concentrations were 1.542 milligrams per liter (mg/L) and 0.795 mg/L in the two wells sampled, and hexavalent chromium concentrations were 0.013 mg/L and 0.591 mg/L, respectively. The samples collected from wells exceeded the NY TOGS standards for total and hexavalent chromium which were both 0.05 mg/L.

1.3 Site Geology and Hydrogeology

According to the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey, 100% of the Site area is mapped as Palmyra gravelly loam, with 0 to 3 percent slopes. Soil boring logs from previous investigations were reviewed as part of the preparation of this Work Plan, which indicate that bedrock is found at depths ranging from ground surface to 70 ft bgs. A shallow aquifer sits above a dense confining layer of glacial till soil. The upper aquifer

ranges from 10-20 ft bgs and consists predominantly of loose medium to fine sand with some gravel and silt. The lower aquifer is made up of the Marcellus shale formation.

Previous investigations have explored the subsurface to depths of approximately 28 feet. Refusal was encountered at 28 ft bgs at the source, and weathered shale was found between 12 and 28 ft bgs surrounding the Site. Two locations reached refusal at the impermeable unit above the bedrock surface at the Site, and the other seven locations did not hit refusal.

Shallow groundwater in the overburden aquifer was encountered at depths ranging from 6 to 8 ft bgs and mapped to flow to the west-northwest with very little hydraulic gradient based on information from previous subsurface investigations.

1.4 Areas of Concern

According to previous environmental reports and available historic Site records, the following areas of concern (AOC) were identified that had the potential to impact environmental media at the Site and require further characterization. Additional AOCs warranting further characterization may be identified during the course of implementing the RSO.

- The extent and degree of subsurface chromium contamination on and off site; and
- The condition of the current remedial system.

The contaminant of concern (COC) that is potentially associated with onsite chrome plating operations is chromium. Based on the results of previous investigations, the highest concentrations of chromium have been reported in groundwater samples collected at the source beneath the chrome plating bath in the building. Chromium concentrations were also historically detected in stormwater associated with roof drain runoff at a collection tank on the north side of the Site building. The groundwater treatment system is also located in the building. However, because Site access is currently restricted, the RSO will first address defining the degree and extent of the chromium plume in the area surrounding the Site before investigating the current remedial system.

Previous investigations performed sampling and laboratory analysis of hexavalent and total chromium and PFAS; however, the presence of other potential onsite contaminants have not been evaluated in onsite soils or groundwater to date. Therefore, in order to complete site characterization at the Site, HRP will collect soil and groundwater samples for laboratory analysis of these predominant COC parameters (metals and PFAS), in addition to the following site characterization parameters: Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), mercury, Polychlorinated biphenyls (PCBs), chlorinated pesticides, and 1,4-dioxane.

2.0 SITE MANAGEMENT / REMEDIAL SYSTEM OPTIMIZATION (RSO) SCOPE OF WORK

This scope of work has been designed to gather data to evaluate each project objective listed in **Section 1.1**. The following sections provide specifics regarding the scope of work developed under this NYSDEC-approved Work Assignment (D009808-49) in support of a Site Management / Remedial System Optimization at the US Chrome Corporation Site (#819006).

2.1 Preliminary Activities

As part of the scope of work, the following documents have been prepared under this WA:

- Project-specific Work Plan (this document) to accompany the generic Field Activities Plan (FAP),
- Site-specific Health and Safety Plan (HASP)
- Site-specific Quality Assurance Project Plan (QAPP).

These NYSDEC-approved generic FAP, HASP, and QAPP are on file with the NYSDEC. The site-specific elements are provided below.

2.1.1 Work Plan

This RSO Work Plan has been prepared for use in performing the Site Management / Remedial System Optimization, and will serve as the "site-specific FAP." This RSO Work Plan identifies the components of the subsurface investigation and a description of the tasks to be performed including the specific methods or procedures that will be used to conduct the field sampling. A proposed project schedule is included in **Section 4.1** of this RSO Work Plan.

2.1.2 Health and Safety Plan

The site-specific HASP provides guidance to maximize health and safety of on-site workers during RSO - specific tasks including media sampling, installation of wells, surveying and other field related activities. The site-specific HASP is attached to this work plan as **Appendix A**. The generic HASP has guidelines for health and safety supervision, air monitoring, medical monitoring, personal protective equipment, site controls, safe work practices and decontamination, etc.

2.1.2.1. Community Air Monitoring Plan

To ensure the protection of receptors surrounding the Site, HRP has developed and will implement a Community Air Monitoring Program (CAMP), which requires real time monitoring of volatile organics and particulates during the investigation. The CAMP will be implemented during all intrusive activities, as described in **Section 2.2** of this Work Plan. The NYSDOH Generic CAMP can be found in **Appendix B**.

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 less

than 10 micrometers (10 µm) in size (PM-10) and capable of calculating a 15 minute (or less) time weighted average of particulate levels 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. VOC monitoring will be conducted as part of the CAMP during all ground intrusive activities as well.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter(µg/m^3) greater than the background (upwind perimeter) for the fifteen-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 no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 µg/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 PM-10 particulate concentration to within 150 µg/m^3 of the upwind level and in preventing visible dust migration.

In the event that subsurface work is completed within 20 ft of a residence or a receptor, a dedicated CAMP setup will be placed next to the receptor to ensure that no particulates or VOCs are affecting their air quality.

2.1.3 Quality Assurance Project Plan

A site-specific Quality Assurance Project Plan (QAPP) has been prepared and is included in **Section 3** of this RSO Work Plan. The site-specific QAPP was prepared as a supplement to the Generic QAPP with necessary site-specific information. Deviations from the protocols specified in the QAPP will be subject to the NYSDEC approval.

The Generic QAPP provides general information related to QA/QC procedures associated with the collection and analysis of samples of environmental media and includes specific representative standard operating procedures (SOPs) applicable to sample handling and field instrumentation use. Information provided in the Generic QAPP includes definitions and generic goals for data quality and required types and quantities of QA/QC samples. The procedures address field documentation; sample handling, custody, and shipping; instrument calibration and maintenance; auditing; data reduction, validation, and reporting; corrective action requirements; and QA/QC reporting specific to the analyses performed by the laboratories that are used for analysis of environmental media collected under Standby Contract No. D009808.

All laboratory analytical work will be performed by a NYSDOH Environmental Laboratory Approval Program (ELAP) approved laboratory certified in all categories of Contract Laboratory Protocol (CLP) and Solid and Hazardous Waste analytical testing. A Data Usability Summary Report (DUSR) will be included for each round of analytical work. Category B deliverables will be retained in the project files and available for full data validation by a qualified, independent third party.

2.2 Investigation, Environmental Sampling, and Implementation

The RSO will include the components described below and will consist of subsurface/intrusive characterization. The RSO will consist of characterizing and sampling of the subsurface soil and groundwater to meet project objectives. The number and type of samples to be collected is discussed below and summarized on **Table 1**. The field investigation tasks for the US Chrome Corporation Site are listed below in the order that they will be completed:

1. Site Visit
2. Underground Utility Identification, Clearance and, Location using Ground-Penetrating Radar (GPR)
3. Subsurface Soil Investigation (soil boring installation and sampling)
4. Groundwater Characterization (well installation and sampling)
5. Residential Sump Characterization (sump water sampling)
6. Characterization and Disposal of Investigation Derived Waste
7. Analytical Data Quality Evaluation
8. Base Map Development and Site Survey

2.2.1 Site Visit

The Site visit was completed on March 25, 2025 to evaluate the viability of existing monitoring wells. Two of the six existing wells selected for the investigation were sampled by NYSDEC in 2019.. No viable existing monitoring wells were identified. However, one injection well was identified and gauged for viability.

2.2.2 Underground Utility Clearance and Ground Penetrating Radar (GPR)

Prior to implementing any intrusive activities, a utility clearance will be conducted. HRP will rely upon multiple lines of evidence to ensure to the maximum extent practicable that subsurface features are identified prior to commencement of intrusive work.

The drilling contractor will request utility mark outs through NYS Code Rule 753/Dig Safe System. The dig safe system is limited to public right-of-way and will only identify utilities entering private property rather than utilities present on-site.

HRP will request that a knowledgeable party (client/site owner) provide all available Site utility information prior to the survey or drilling activities and that, if possible, a knowledgeable Site representative clear each boring location prior to drilling.

HRP will utilize a qualified subcontractor to conduct a survey to locate possible piping and utilities prior to drilling. In order to identify the potential for buried piping or subsurface anomalies, a GPR survey will be completed at the Site.

GPR is a non-destructive and non-intrusive geophysical exploration technique that uses radar waves to detect subsurface objects, such as tanks, drums and piping. The GPR is also capable of detecting discontinuities in the subsurface materials indicative of excavated and backfilled areas, such as those associated with possible underground storage tank (UST) graves. The objective of

performing this survey is not only to make subsurface investigation as safe as possible for the field staff while protecting utilities, but also to identify possible sources and migration pathways (utility corridors, etc.). All anomalies identified during the GPR survey will be marked out in the field. A report and map of GPR survey findings will be provided by the contractor.

If necessary, the upper 5 ft at all boring locations will be cleared of any underground utilities by non-mechanical means, such as a hand-digging methods.

2.2.3 Subsurface Characterization

In an effort to assess the nature of subsurface soil at the Site, the unconsolidated soils will be evaluated at representative locations. It is anticipated that any soil cuttings will be containerized and labelled in 55-gallon drums for proper disposal if any evidence of contamination is noted during the investigation. Further discussion of investigation derived waste is discussed in **Section 2.2.5**. These proposed boring and well locations are provided on **Figure 2**; exact locations may vary based on the results from the GPR survey.

2.2.3.1. Advancement of Soil Borings

Up to six (6) soil borings will be advanced using a hollow stem auger (HSA) drilling rig or similar to collect continuous soil samples and characterize subsurface conditions from surface grade to approximately 25 ft bgs or refusal. Specifically, HRP will collect data to determine the distribution of contamination in exterior soils. Soils will be collected with a split spoon sampler in 5-foot intervals or at each change of lithology, for descriptive characterization. All soil samples will be screened for volatile organic vapors using a Photoionization Detector (PID), and any evidence of contamination will be noted and used for selection of soil samples. Up to one soil sample will be collected from DEC-MW-1, DEC-MW-3, DEC-MW-5, and DEC-MW-6. Up to two soil samples will be collected from intervals 0-2 inches and 2-12 inches below grade from DEC-MW-2 and DEC-MW-4 to evaluate the potential for surface impacts. All soil samples will be submitted for laboratory analysis of the full list of characterization parameters:

- Target Compound List (TCL) of Volatile Organic Compounds (VOCs) including Tentatively Identified Compounds (TICs) via EPA Method 8260.
- TCL of Semivolatile Organic Compounds (SVOCs) via EPA Method 8270.
- Target Analyte List (TAL) Metals and Hexavalent Chromium via EPA Method 6010.
- Total Mercury via EPA method 7471.
- Pesticides via EPA Method 8081.
- Polychlorinated biphenyls (PCBs) via EPA Method 8082.
- Per- and polyfluoroalkyl substances (PFAS) via EPA Method 1633A.
- 1,4-Dioxane via EPA Method 8270 SIM.

Duplicate and matrix/matrix spike duplicates will be collected at a frequency of 1 per 20 samples. Trip blanks will be submitted at a frequency of one per cooler per day if analysis for VOCs is included in the sampling set within the cooler.

As described in **Section 1.3** of this Work Plan, soils previously identified on the Site are predominantly sand with some silt and gravel to depths of 10 to 20 ft bgs, where Geoprobe®

refusal was encountered. In order to evaluate the deeper subsurface lithology, a hollow stem auger will be advanced through the overburden as part of this assessment, which will allow for exploration of the subsurface through more challenging geologic conditions. If a confining layer is determined to be present at the base of the till materials, care will be taken during drilling activities to prevent puncturing the layer while obtaining sufficient data to demonstrate that it is a true confining layer, which may include the installation of one or more dry monitoring wells. The proposed boring locations are depicted in **Figure 2**.

2.2.3.2. Soil Sample Collection and Handling Procedures

Soil samples will be collected directly above the water table or at an interval that is impacted based on physical observation (above or below the water table), olfactory senses, or an elevated PID reading. The final soil sampling intervals will be selected in consultation with the NYSDEC Project Manager. Soil cores will be examined, photographed, classified, and screened using a photoionization detector (PID). Soil samples will be collected using split-spoons or disposable acetate liners with a 1.75-inch diameter macro-core sampler.

The sampling equipment to be used includes stainless steel trowels, bowls, spoons, or scoops, hand auger, sample containers, sampling zip lock bags, and coolers with regular ice (blue ice will not be permitted) due to the potential presence of PFAS under evaluation at the Site.

Nitrile gloves will be worn at all times by personnel collecting and handling the samples. All non-disposable equipment and tooling used for sampling will be properly decontaminated between sampling locations and intervals. Decontamination procedures are described in **Section 2.2.4**. Soil samples will be collected using clean laboratory-supplied, appropriate containers (as listed in **Table 1**) and will be preserved on ice in coolers during field sampling activities. Target samples will then be submitted for laboratory analysis and contingency samples will be stored at proper temperatures, as listed in **Table 1**, pending follow-up analysis as necessary. Duplicate and matrix/matrix spike duplicates will be collected at a frequency of 1 per 20 samples.

2.2.4 Groundwater Characterization

For the purpose of evaluating groundwater quality and to obtain groundwater flow information, a total of six overburden groundwater monitoring wells are proposed for installation as part of the RSO. The proposed locations were selected based on a previously-mapped west-northwest overburden groundwater flow direction. Samples will be collected from each of the newly-installed wells at the Site.

2.2.4.1. Monitoring Well Installation

A hollow-stem auger drilling rig will be used to advance through the overburden materials and set shallow overburden monitoring wells at the previously installed soil boring locations, which are anticipated to be completed at depths of 10 to 20 ft bg. The wells will ultimately be designed and installed such that the well screen will intersect the observed water table. The target depth and construction of these wells will be dependent on the subsurface conditions encountered in the field and in coordination with the NYSDEC Project Manager.

Newly installed monitoring wells will be installed using Number 40 2-inch PVC with a 0.010-inch slot screen and PVC riser. The well screen will be placed to target the top of the groundwater table. The final monitoring well screen intervals will be selected in consultation with the NYSDEC Project Manager. A sand filter pack will be placed in the annular space around the well screen to approximately two feet above the top of the screen. A bentonite seal will be placed above the filter pack and extend to a depth of approximately 2 ft bg. The remaining annular space will be filled with neat cement and will be completed with either a flush-mount protective cover or a 4-foot stick-up protective casing and a locking j-plug. All equipment will be appropriately decontaminated between sampling locations, as described in **Section 2.2.6**. Any soil cuttings generated during well install will be used as backfill, or in the event that impacts are observed, cuttings will be containerized as discussed in **Section 2.2.7**. The proposed monitoring well locations are depicted in **Figure 2**.

2.2.4.2. Well Development

Upon completion, monitoring wells will be developed to minimize turbidity in groundwater samples collected from each well and to improve their hydraulic properties. Development will be deemed complete upon removal of 6 to 10 well volumes and when a turbidity reading of 50 Nephelometric Turbidity Units (NTUs) or less is achieved or purged or water is visibly clear.

All purged water obtained during well development and sampling will be containerized and disposed of in accordance to NYSDEC DER-10. If impacts are observed, the contaminated groundwater will be segregated and handled as described in **Section 2.2.7**. All sampling equipment will be appropriately decontaminated between sampling locations or disposed of after a one-time use.

2.2.4.3. Sampling of Monitoring Wells

Depth to water measurements will be collected from all new and existing viable monitoring wells to the nearest 0.01 foot from the surveyed points prior to sampling activities and the data will be used to construct a groundwater contour map to determine the direction of groundwater flow and the hydraulic gradient on the Site. In addition to measuring the water level, the wells will be checked for both light and dense non-aqueous phase liquids (LNAPLs and DNAPLs) using an interface probe, if encountered.

Groundwater samples will be collected from the newly installed wells a minimum of seven days after well development has been completed. Groundwater samples may also be collected from any viable existing wells associated with the Site injection well network. All groundwater samples will be collected in accordance with low-flow groundwater sampling procedures and will be submitted to Eurofins, an NYSDOH ELAP and NYSDEC approved laboratory. Duplicate and matrix/matrix spike duplicates will be collected at a frequency of 1 per 20 samples. The samples collected from on-site monitoring wells will be submitted for laboratory analysis of the full list of characterization parameters:

- TCL VOCs including TICs via EPA Method 8260.
- TCL SVOCs via EPA Method 8270.
- TAL Metals and Hexavalent Chromium via EPA Method 6010.

- Total Mercury via EPA Method 7471.
- Pesticides via EPA Method 8081.
- TCL PCBs via EPA Method 8082.
- PFAS via EPA Method 1633A.
- 1,4-Dioxane via EPA Method 8270 SIM.

Protocols for the collection and analysis of water samples for PFAS will be in accordance with the most recent NYSDEC and NYSDOH guidance. Additional information related to methodology and materials used to sample for PFAS is provided in Section 14 of the Generic FAP.

2.2.5 Off-Site Residential Sump Water Sampling

2.2.5.1. Property Access

HRP and the NYSDEC will work to obtain access from off-site property owners for completion of sump water investigations. HRP will identify and gather contact information for off-site property owners using available resources including online municipal databases. In coordination with the NYSDEC and NYSDOH, HRP will prepare property access agreements to property owners including cover letters explaining investigation purposes and procedures. Property access solicitations will be reviewed and sent by NYSDEC. If sufficient responses are not received to the access letters, HRP may conduct a visit to solicit access from property owners.

2.2.5.2. Sampling of Residential Sumps

Sump water samples are anticipated to be collected from each of three residential properties adjacent and west of the Site, 19-21 Swan St, 23 Swan St, and 25 Swan St, provided that access agreements are signed by their respective property owners. Off-site residential properties to be solicited and sampled are depicted on **Figure 2**. All samples will be collected and submitted to Eurofins, an NYSDOH ELAP and NYSDEC approved laboratory. The samples collected from basement sumps will be submitted for laboratory analysis of the following characterization parameters:

- TAL Metals via EPA Method 6010.
- Hexavalent Chromium via EPA Method 6010.

2.2.6 Decontamination Procedures

Equipment will be thoroughly decontaminated before being brought to the Site. All efforts will be taken by HRP and any subcontractors to return work areas to the state they were found in prior to the start of any work.

Non-dedicated sampling equipment (i.e., submersible pumps, water level indicators, etc.) will be subject to decontamination procedures prior to each sample collected to reduce the potential for cross-contamination, as described in the Generic Field Activities Plan. The decontamination procedures will include the use of a scrub wash with a solution consisting of Alconox® detergent and potable water followed by a rinse with DI water. Liquinox® will not be used if samples are to

be collected for 1,4-dioxane analysis, since Liquinox® may contain a small amount of 1,4-dioxane. The decontaminated equipment will be stored in clean environments (i.e., the manufacturer's storage case). Decontamination fluids will be properly labeled and securely stored in the designated waste-container staging area.

2.2.7 Disposal of Investigation Derived Waste

Investigation Derived Waste (IDW) that is generated from the boring installation, monitoring well installation and the development of monitoring wells will be handled in accordance with NYSDEC DER-10. The drilling contractor will be responsible for supplying the equipment and materials necessary for the proper handling and storage of the IDW, such as DOT-approved 55-gallon drums, roll-off containers and/or holding tanks. All containers will be labeled and stored properly.

Soil shall be handled and disposed of in accordance with DER-10. If off-site disposal of the derived waste is required, it will be disposed of or treated according to applicable local, state and federal regulations. Soils from the RSO may be disposed of within their respective soil boring/monitoring well locations as to backfill boreholes given that the holes did not penetrate an aquitard nor an aquiclude, and backfilling with cuttings will not create a significant path for vertical movement of contaminants. Soil additives (bentonite) may be added to the cuttings to reduce permeability. Six inches of cohesive, compacted soil should be placed over the area of any borehole installed that is not converted to a monitoring well.

Soil cuttings and spoils may be collected in 55 gallon drums. Material that is visually stained, creates high PID measurements, or exhibits strong odors will be sampled and analyzed to ensure chemical compatibility with other cuttings before placing the materials in a common storage/disposal area and characterized for off-site disposal.

The purge water generated during the development and sampling of the monitoring wells will be handled and disposed of in accordance with DER-10. Groundwater that is apparently contaminated based on field observations will be segregated from groundwater that does not exhibit evidence of apparent contamination.

Decontamination fluids will be containerized separately from other RI derived waste, and any decontamination fluids that do not exhibit evidence of contamination will be containerized separately from those exhibiting evidence of contamination.

2.2.8 Base Map Development and Site Survey

The subject property and surrounding areas will be surveyed by a New York State licensed land surveyor. The field survey will include establishing project horizontal control and the collection of planimetric features for the development of 2D mapping. As discussed in **Section 1.4** of this Work Plan, building access is currently restricted; therefore, only the exterior Site features will be recorded on the survey until access can be gained. Subsequently, a base map of the Site will be developed using Computer Aided-Design (CAD) software that will be utilized to place all sampling locations from previous on-site and off-site investigations. The sample locations will be placed on the base map by geo-referencing previous figures into the local CAD coordinate system, and will include all monitoring wells, Geoprobe® locations, borings, and bedrock profile data.

Upon completion of the investigation fieldwork, a survey will be conducted in order to properly locate all sampling points such as monitoring wells, soil borings, and any other sample locations. The well location, ground surface elevation, and inner and outer casing elevations will be surveyed. Generally, a local baseline control will be set; this local baseline control can then be tied into the appropriate vertical and horizontal datum, such as the National Geodetic Vertical Datum of 1929 or 1988 and the State Plane Coordinate System. At a minimum, the elevation of the top of the inner casing used for water-level measurements should be measured to the nearest 0.01 foot. Elevations will be established in relation to the National Geodetic Vertical Datum of 1929. A permanent mark will be placed on top of the inner casing to mark the point for all future water-level measurements.

2.3 Deliverables

2.3.1 Investigation Summary Report

The Investigation Summary Report (ISR) will be prepared as part of this WA following completion of the field activities. The ISR will provide a description of field activities, present data collected during field characterization, present a physical description of the Site including geology and hydrogeology, and provide an analysis and interpretation of the available data in the context of existing Site conditions. The report will include tabulated laboratory analytical results, Site maps and a discussion of contaminant concentrations, including a comparison to NYSDEC Standards, Criteria and Guidelines as described in **Section 3.13** of DER-10.

The ISR prepared as part of this assignment will also provide a data validation/usability evaluation, identification and location of contaminants, assessment of potential contaminant migration pathways, impact on human and environmental receptors, and conclusions regarding the significance of the findings. The proposed work will provide delineation and extent of contamination, if present, at the Site. The ISR will also include supporting data, such as analytical data packages, field log forms (boring logs, soil core logs, groundwater sampling logs, vapor intrusion logs), and monitoring well construction diagrams for newly installed monitoring wells.

The submitted report will include the report text, appropriate tables, figures, photographs, data summary tables, and boring logs in a PDF format. The electronic file will contain 'bookmarks'.

The Remedial System Optimization will include analysis of data collected as part of the field activities and development of a Remedial System Optimization Report.

2.3.1.1. Analytical Data Quality Evaluation

This Work Plan and the associated site-specific QAPP Section detail the data quality objectives and analytical requirements needed for this WA. All quality assurance protocols will be provided in the Generic QAPP.

During the final Work Plan review period, the site-specific QAPP Section and Work Plan will be reviewed and modified according to NYSDEC requirements and comments. Once the plans are finalized, deviations, if required, from protocols specified in the plans will be approved in advance

by NYSDEC. As required, the selected analytical laboratory will maintain NYSDOH ELAP certification in all categories of CLP and Solid and Hazardous Waste analytical testing for the duration of the project.

The selected laboratory will supply all required data deliverables (USEPA CLP and NYSDEC ASP deliverable format) to enable the data to be validated. All environmental data will be submitted electronically in a specified format named 'NYSDEC' in accordance with the data submission procedures outlined on the NYSDEC's website (http://www.dec.ny.gov/chemical/62440.html).

Upon receipt of the sample data, the validation contractor will quantitatively and qualitatively validate the laboratory data. The validation of the analytical data will be performed according to the protocols and QC requirements of the analytical methods, the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic and Inorganic Data Review (February 1994), the USEPA Region II CLP Data Review SOP, and the reviewer's professional judgment.

2.3.1.2. Electronic Data Delivery

In addition to appropriate data summary tables and boring logs included in the report, all environmental data will be submitted electronically in a specified Electronic Data Deliverable (EDD) format named in accordance with the data submission procedures outlined on the NYSDEC's web site (http://www.dec.ny.gov/chemical/62440.html).

2.3.2 Remediation Optimization Plan

After all Site data has been collected and the groundwater recovery system has been evaluated, a Remediation Optimization Plan (ROP) will be prepared. The ROP will provide a description of field activities, present data collected during field investigation, description of the current remedial system infrastructure, and an evaluation of the efficacy of the current remedial system. The results of the RSO will assist the NYSDEC in determining if the remedial system at the Site be restarted or if another remedial system may be more appropriate.

2.3.3 Site Management Plan

Subsequent to the field activities, a Site Management Plan (SMP) will be prepared for the property as described in DER-10 Section 6.2 using the latest SMP template. This plan will include identification of institutional controls, operation and maintenance manual, groundwater monitoring plan and schedule, and Site management forms. Any potential remedial alternatives will be evaluated with the understanding that additional characterization (geochemical data, evaluations of site-specific hydraulic parameters, and fracture analysis) and/or pilot testing at the Site may be valuable towards final remedial selection and design.

3.0 SITE-SPECIFIC QUALITY ASSURANCE PROJECT PLAN

A site-specific QAPP will be prepared as a companion Section to accompany the Generic QAPP for the standby subcontract prepared by HRP for the NYSDEC under Standby Contract No. D009808. The purpose of the QAPP is to specify QA/QC procedures for the collection, analysis, and evaluation of data that will be legally and scientifically defensible.

3.1 Site Specific Sampling

3.1.1 Sample Handling

Soil and groundwater will be collected during this RSO. Detailed sampling procedures are detailed in **Section 4.0** of the Generic QAPP. Matrix types, number of samples (including QA/QC) and analytical details are summarized in **Table 1** (follows text). Proposed sample locations are depicted on **Figure 2.**

3.1.1.1. PFAS Sampling

Sampling for PFAS will occur at the Site during the planned activities covered in this Work Plan. Specific requirements for field sampling procedures including precautions to be taken, pump and equipment types, decontamination procedures, and a list of approved materials to be used during sampling for PFAS compounds are included in Section 14.1 of HRP's Generic Field Activities Plan. Only regular ice will be used in the transport of samples being analyzed for PFAS.

The PFAS compounds will be analyzed by methods based on EPA Method 1633A. Specific PFAS compounds to be analyzed include:

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonic acids	Perfluorobutanesulfonic acid	PFBS	375-73-5
	Perfluorohexanesulfonic acid	PFHxS	355-46-4
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanesulfonic acid	PFOS	1763-23-1
	Perfluorononanesulfonic acid	PFNS	68259-12-1
	Perfluorodecanesulfonic acid	PFDS	335-77-3
	Perfluorododecanesulfonic acid	PFDoS	79780-39-5
Perfluoroalkyl carboxylic acids	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	PFHpA	375-85-9
	Perfluorooctanoic acid	PFOA	335-67-1
	Perfluorononanoic acid	PFNA	375-95-1
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUnA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1

Group	Chemical Name	Abbreviation	CAS Number
	Perfluorotridecanoic acid	PFTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTeDA	376-06-7
Per- and Polyfluoro-ether carboxylic acids	Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
	4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
	Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
	Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
	Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6
Fluorotelomer sulfonic acids	4:2 Fluorotelomer sulfonic acid	4:2-FTS	757124-72-4
	6:2 Fluorotelomer sulfonic acid	6:2-FTS	27619-97-2
	8:2 Fluorotelomer sulfonic acid	8:2-FTS	39108-34-4
Fluorotelomer carboxylic acids	3:3 Fluorotelomer carboxylic acid	3:3 FTCA	356-02-5
	5:3 Fluorotelomer carboxylic acid	5:3 FTCA	914637-49-3
	7:3 Fluorotelomer carboxylic acid	7:3 FTCA	812-70-4
Perfluorooctane-sulfonamides	Perfluroroctane sulfonamide	PFOSA	754-91-6
	N-methylperfluorooctane sulfonamide	NMeFOSA	31506-32-8
	N-ethylperfluorooctane sulfonamide	NEtFOSA	4151-50-2
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols	N-methylperfluorooctane sulfonamidoethanol	MeFOSE	24448-09-7
	N-ethylperfluorooctane sulfonamidoethanol	EtFOSE	1691-99-2
Ether sulfonic acids	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major)	9Cl-PF3ONS	756426-58-1
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	11Cl-PF3OUdS	763051-92-9
	Perfluoro(2-ethoxyethane) sulfonic acid	PFEESA	113507-82-7

The minimum method achievable Reporting Limits for PFAS will be less than or equal to 2 ng/l (part per trillion [ppt]) for aqueous samples and 0.5 µg/kg (parts per billion [ppb]) for solids samples.

The laboratory Minimum Detection Limits as provided by Eurofins for the PFAS compounds to be analyzed are as follows:

Analyte Description	MDL	Units	MDL	Units
	Aqueous		Solid	
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	1	ng/l	0.5	µg/kg
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	1	ng/l	0.5	µg/kg
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	1	ng/l	0.5	µg/kg
3:3 Fluorotelomer carboxylic acid (3:3 FTCA)	1	ng/l	0.5	µg/kg
5:3 Fluorotelomer carboxylic acid (5:3 FTCA)	1	ng/l	0.5	µg/kg
7:3 Fluorotelomer carboxylic acid (7:3 FTCA)	1	ng/l	0.5	µg/kg
Perfluroroctane sulfonamide (PFOSA)	10.0	ng/l	0.00880	µg/kg
N-methylperfluorooctane sulfonamide (NMeFOSA)	5	ng/l	1	µg/kg
N-ethylperfluorooctane sulfonamide (NEtFOSA)	5	ng/l	1	µg/kg
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.70	ng/l	0.0340	µg/kg
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.50	ng/l	0.0300	µg/kg
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	5	ng/l	1	µg/kg
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	5	ng/l	1	µg/kg
N-methylperfluorooctane sulfonamidoethanol (MeFOSE)	5	ng/l	1	µg/kg
N-ethylperfluorooctane sulfonamidoethanol (EtFOSE)	5	ng/l	1	µg/kg
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1	ng/l	0.1	µg/kg
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1	ng/l	0.1	µg/kg
Perfluoro-3-methoxypropanoic acid (PFMPA)	0.5	ng/l	0.1	µg/kg
Perfluoro-4-methoxybutanoic acid (PFMBA)	0.5	ng/l	0.1	µg/kg
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.5	ng/l	0.1	µg/kg
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major) (9Cl-PF3ONS)	0.5	ng/l	0.1	µg/kg
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor) (11Cl-PF3OUdS)	0.5	ng/l	0.1	µg/kg
Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)	0.5	ng/l	0,1	µg/kg
Perfluorobutanesulfonic acid (PFBS)	0.490	ng/l	0.00880	µg/kg
Perfluorobutanoic acid (PFBA)	1.00	ng/l	0.190	µg/kg
Perfluorodecanesulfonic acid (PFDS)	0.900	ng/l	0.0190	µg/kg
Perfluorodecanoic acid (PFDA)	0.770	ng/l	0.0210	µg/kg
Perfluorododecanoic acid (PFDoA)	0.590	ng/l	0.0150	µg/kg
Perfluoroheptanesulfonic acid (PFHpS)	0.950	ng/l	0.0150	µg/kg
Perfluoroheptanoic acid (PFHpA)	0.910	ng/l	0.0230	µg/kg
Perfluorohexanesulfonic acid (PFHxS)	0.800	ng/l	0.0150	µg/kg
Perfluorohexanoic acid (PFHxA)	0.760	ng/l	0.0240	µg/kg
Perfluorononanesulfonic acid (PFNS)	0.459	ng/l	0.0500	µg/kg
Perfluorononanoic acid (PFNA)	0.270	ng/l	0.0200	µg/kg
Perfluorooctanesulfonic acid (PFOS)	0.610	ng/l	0.0670	µg/kg
Perfluorooctanoic acid (PFOA)	0.810	ng/l	0.0140	µg/kg

Analyte Description	MDL	Units	MDL	Units
Perfluoropentanesulfonic acid (PFPeS)	0.475	ng/l	0.0500	µg/kg
Perfluoropentanoic acid (PFPeA)	0.630	ng/l	0.0180	µg/kg
Perfluorotetradecanoic acid (PFTeA)	0.920	ng/l	0.0190	µg/kg
Perfluorotridecanoic acid (PFTriA)	0.600	ng/l	0.0130	µg/kg
Perfluoroundecanoic acid (PFUnA)	0.780	ng/l	0.0240	µg/kg

3.1.1.2. 1,4-Dioxane Sampling

Sampling for 1,4-dioxane will occur at the Site during the planned activities covered in this Work Plan. Specific requirements for field sampling procedures include precautions to be taken, pump and equipment types, detailed decontamination procedures, a prohibition on using Liquinox, and approved materials only to be used for 1,4-dioxane are included in Section 14.2 of HRP's Generic Field Activities Plan.

The minimum method achievable Reporting Limits for 1,4-dioxane will be less than or equal to 0.35 µg/l (ppb) for aqueous samples and 0.1 mg/kg (parts per million [ppm]) in solids samples.

Laboratory provided specifics for 1,4-dioxane sampling MDLs and RLs is as follows:

Method	Analyte	Matrix	MDL	RL
8270D	1,4-Dioxane	Soil	0.055 mg/kg	0.1 mg/kg
8270D SIM	1,4-Dioxane	Water	0.1 µg/l	0.2 µg/l

The ELAP approved laboratories to be utilized for this project include:

- Eurofins Environmental Testing – a NYSDOH ELAP and NYSDEC-approved laboratory

Data provided by Eurofins will adhere to the minimum reporting limits. For all data generated during the WA, a Category B Data package and DUSR will be prepared to provide a thorough evaluation of analytical data utilizing third-party data validation.

3.2 Data Quality Assessment and Usability

Data quality objectives for the US Chrome Site are focused towards 1) the characterization of releases of hazardous substances impacting environmental media at the Site and the downgradient study area and 2) the evaluation of the requirements and feasibilities of remediation in significantly impacted areas and/or a specific source area, if defined.

To achieve these objectives, QA/QC measures will be implemented throughout the RSO investigation to provide input as to the validity and usability of data generated through soil and groundwater. The procedures for data QA/QC management includes field documentation; sample handling, custody, and shipping; instrument calibration and maintenance; auditing; data reduction, validation, and reporting; corrective action requirements; and QA reporting specific to the analyses performed by the laboratory under subcontract to HRP. **Table 2** lists the sample containers,

preservation, and holding time requirements for the parameters specific to this Site. These tables will be referenced by field personnel.

For all data generated during the RSO, a Category B Data package and DUSR will be prepared to provide a thorough evaluation of analytical data utilizing third-party data validation. Environmental Data Solutions (EDS) will be the third-party data validator for this project.

4.0 PROJECT MANAGEMENT

HRP has the responsibility of the overall management of this project and will respond to any NYSDEC requests. A proposed project schedule, key milestones, key project personnel, and project-specific subcontractors follow.

4.1 Project Schedule and Key Milestones

The proposed project schedule for this work assignment is outlined below. Key milestones are identified to monitor work progress. The following milestones will be applicable for this project:

		Est. Start Date
• Milestone 1:	RSO WA Field Activity Plan development	Completed
• Milestone 2:	NYSDEC review of all site-specific plans	March - July 2025
• Milestone 3:	Field activities	July 2025
• Milestone 4:	Deliverables	July - August 2026

Field work (Milestone 3) will begin within 1-2 weeks of NYSDEC review and approval of all site-specific plans, contingent upon availability of subcontractors. Soil and groundwater samples will be submitted for laboratory analysis within 24 hours of field collection and laboratory results can generally be expected within 30 days of submission. Any IDW generated from the Site during the RSO will be scheduled with the contractor to be removed within 1 week of the completion of sampling of the monitoring wells. The timeframe of pickup and removal of this waste will be determined by the contractor upon scheduling. Data validation will begin upon receipt of the first set of Category B laboratory results, and will continue to be submitted for validation as the results are received from the laboratory. Data validation is expected within a 4-week timeframe. The ISR and ROP (Milestone 4) will be submitted as a draft report within 60 days after HRP receives the last round of analytical data from the laboratory. A second draft ISR and ROP will be submitted, if needed, within 2-weeks after the data validation company has reviewed the final analytical submitted for the investigation. A final version of the ISR and ROP will be submitted within two weeks after the NYSDEC Project Manager's comments on both draft reports are received by HRP. The schedule for development of the Site Management Plan will be discussed and agreed upon with NYSDEC following additional investigations.

4.2 Key Project Personnel

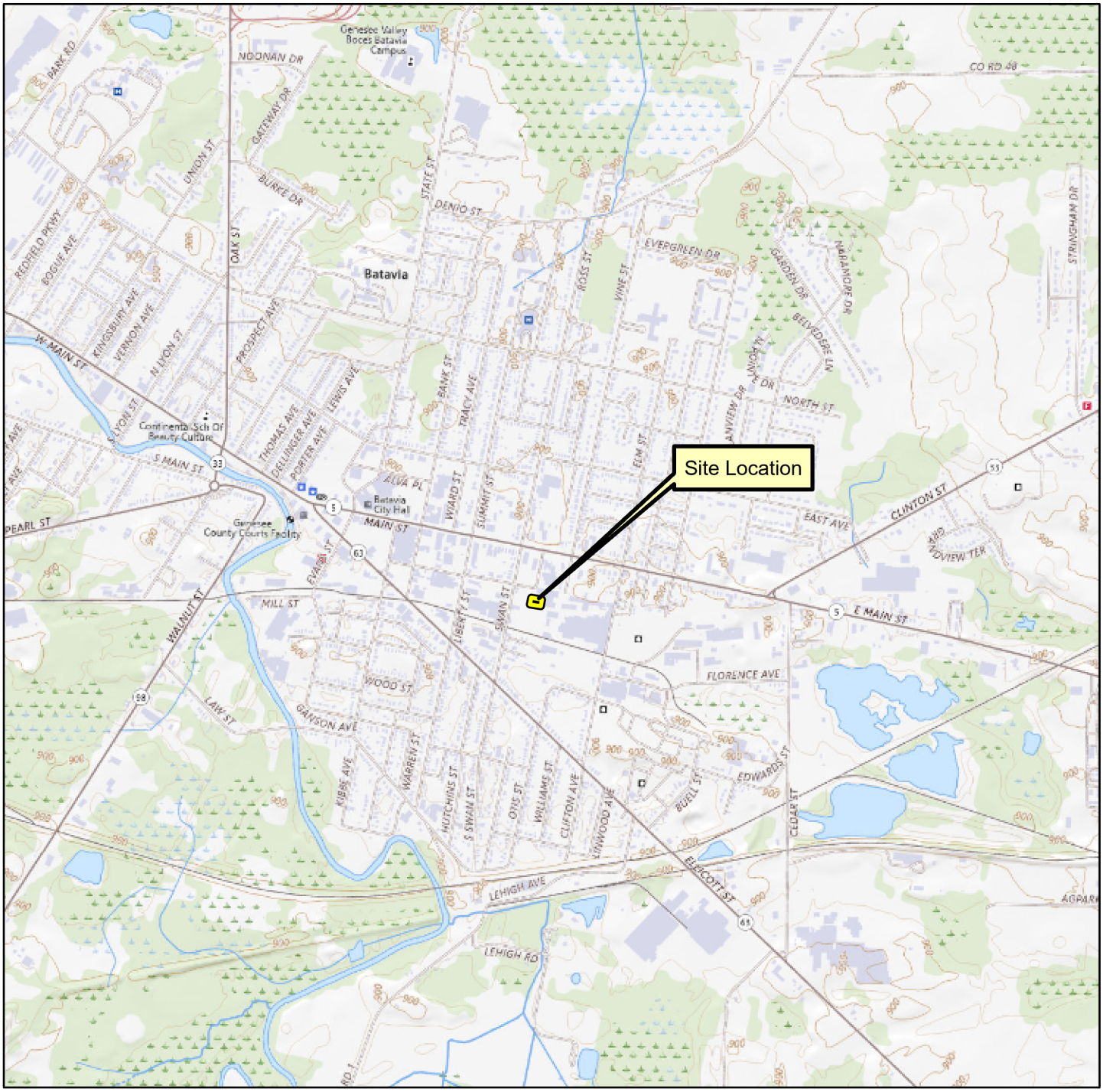
A list of the project personnel of the prime consultant and subcontractors responsible for performance of the investigation has been submitted to the NYSDEC for approval. Primary project staff are listed below:

Personnel	Company	Title for this Work Assignment	Responsibility
David Stoll, PG (Sr. Project Manager)	HRP Associates, Inc. (Prime Consultant)	Project Manager	Overall management of the WA
Bryan Sherman ASP (Project Manager)	HRP Associates, Inc.	Office Health & Safety Manager	Approval of HASP and responsible for overall health and safety issues with the WA
Michael Varni (Associate Technical Chief)	HRP Associates, Inc.	Corporate QA/QC Officer	Responsible for QA/QC on the WA
John Gorman (Senior Consultant)	HRP Associates, Inc.	Field Manager and Site Health & Safety Officer	Responsible for the on-site sampling and investigative tasks

Subcontractors for this project will include:

- Survey – Fagan Engineers & Land Surveyors PC
- GPR – East Coast Geophysics
- Drilling – EPhase 2, LLC
- Laboratory – Eurofins Environmental Testing to provide all media sample analyses
- Data Validation - Environmental Data Services , Inc.
- Company to dispose of any investigation-derived waste (contingent upon analytical results).

FIGURES



USGS Quadrangle Information
Quad ID: 42078-H2
Name: Batavia South, New York
Date Rev: 1976
Date Pub: 1979

Figure 1
Site Location
US Chrome Corporation
Batavia, New York
HRP # DEC1049.P2
Scale 1" = 2,000'

HRP
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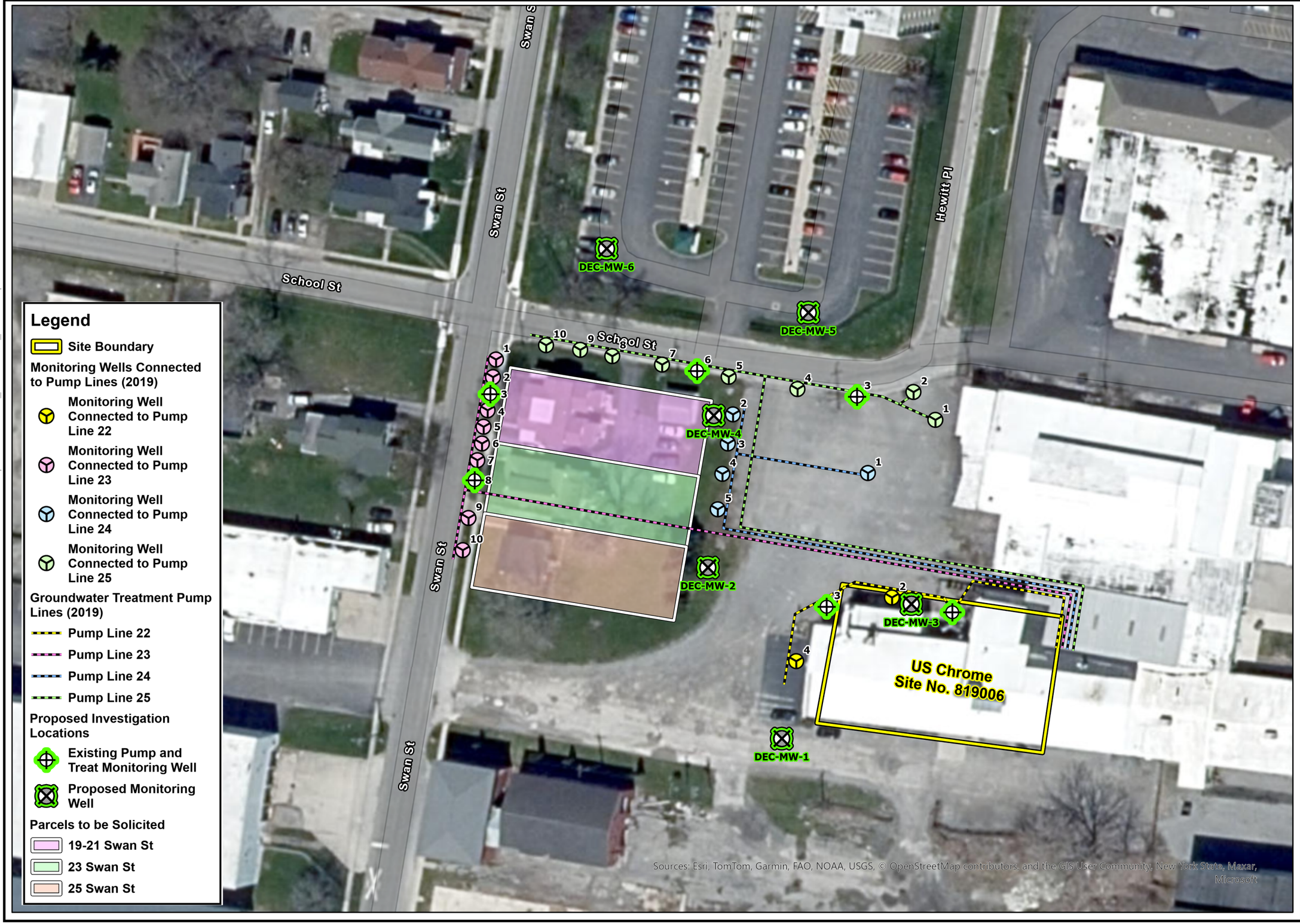
ONE FAIRCHILD SQUARE
SUITE 110
CLIFTON PARK, NY 12065
(518) 877-7101
HRPASSOCIATES.COM

Path: S:\Data\NYDEC - NYSDEC\US CHROME CORPORATION\DEC1049P2 - US Chrome Corporation\GIS\US_Chrome\US_Chrome.aprx



Legend

- Site Boundary

Monitoring Wells Connected to Pump Lines (2019)

- Monitoring Well Connected to Pump Line 22
- Monitoring Well Connected to Pump Line 23
- Monitoring Well Connected to Pump Line 24
- Monitoring Well Connected to Pump Line 25

Groundwater Treatment Pump Lines (2019)

- Pump Line 22
- Pump Line 23
- Pump Line 24
- Pump Line 25

Proposed Investigation Locations

- Existing Pump and Treat Monitoring Well
- Proposed Monitoring Well

Parcels to be Solicited

- 19-21 Swan St
- 23 Swan St
- 25 Swan St

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North

0 30 60 Feet

Revisions						
No.	Date					

Designed By:	Drawn By:	Reviewed By:
CMS	EY	

Issue Date:	Project No:	Sheet Size:
06/26/2025	DEC1049.P2	11x17

Site Plan

US Chrome Site No. 819006
31 Swan Road,
Batavia, New York

Figure No.

5

Path: S:\Data\NYDEC - NYSDEC\US CHROME CORPORATION\DEC1049P2 - US Chrome Corporation\GIS\US_Chrome\US_Chrome.aprx

TABLES

Table 1
Sample Summary
US Chrome Corporation
NYSDEC Site # 819006
City of Batavia
Genesee County, New York

Activity/Matrix	Number of Sample Locations	Proposed Sample Location	Number of Samples to be Collected	Analyses
Soil	6	6 Proposed Soil Borings, 1 sample from each of 4 borings, 2 samples from each of 2 borings	12 (8 regular, 4 QA/QC)	All 12 Samples: VOCs by EPA Method 8260 SVOCs by EPA Method 8270 1,4-Dioxane by EPA Method 8270SIM TAL Metals and Hexavalent Chromium, Mercury by EPA Method 6010/7471 Pesticides via EPA Method 8081 PCBs by EPA Method 8082 PFAS by EPA Method 1633A QA/QC: 1 Duplicate, 1 MS, 1 MSD, 1 Field Blank per 20 samples
Groundwater	7	6 Samples from newly installed monitoring wells and 1 sample from existing injection well	11 (7 regular, 4 QA/QC)	All 11 Samples: VOCs by EPA Method 8260 SVOCs by EPA Method 8270 1,4-Dioxane by EPA Method 8270SIM TAL Metals and Hexavalent Chromium, Mercury by EPA Method 6010/7471 Pesticides by EPA Method 8081 PCBs by EPA Method 8082 PFAS by EPA Method 1633A QA/QC: 1 Duplicate, 1 MS, 1 MSD, 1 Field Blank per 20 samples
Sump Water	3	3 Samples from residential sumps	3 (3 regular)	All 3 Samples: TAL Metals and Hexavalent Chromium by EPA Method 6010

Acronym List:
MS/MSD: Matrix Spike/Matrix Spike Duplicate
TAL: Target Analyte List
TCL: Total Compound List
VOCs: Volatile Organic Compounds
SVOCs: Semi-Volatile Organic Compounds
PCBs: Polychlorinate Biphenyls
PFAS: Per - and Poly Fluorylalkyl Substances
EPA: Environmental Protection Agency

Table 2
Analytical Methods/Quality Assurance Summary
US Chrome Corporation
NYSDEC Site # 819006
City of Batavia
Genesee County, New York

				Containers per Sample			Preservation Requirements			
Parameter	**Number of Samples (including Field QC)**	**Preparation Method**	**Analytical Method**	**No.**	**Size**	**Type**	**Temp.**	**Light Sensitive**	**Chemical**	**Maximum Holding Time**
Soil										
VOCs by GC/MS	12	5035A	SW-846 Method 8260B	3 vials 1 jar	40 ml vials, any size jar	glass vials clear glass jar	2-6º C	No	MeOH/ sodium bisulfate/ freezing	14 days
Base/Neutral/Acid Extractables	12	3546	SW-846 Method 8270C	1	4 oz	amber glass jar	2-6º C	Yes	NA	14 days
1,4 Dioxane	12	3546	SW-846 Method 8270 SIM		8 oz	amber glass jar	2-6º C	Yes	NA	14 days
TAL Metals and Hexavalent Chromium, Mercury	12	3050B	SW-846 Method 6010/7471	1	2 oz	clear glass jar	2-6º C	No	NA	6 months
Pesticides	12	3546	SW-846 Method 8081A	1	8 oz	clear glass jar	2-6º C	No	NA	15 days
PCBs	12	3546	SW-846 Method 8082	1	8 oz	clear glass jar	2-6º C	No	NA	16 days
PFAS	12	NA	EPA Method 1633A	2	8 oz	polypropylene	2-6º C	No	NA	14/28 days
Groundwater										
VOCs by GC/MS	11	5053	SW-846 Method 8260B	3	40 ml vials	glass vials	2-6º C	No	HCl	14 days
Base/Neutral/Acid Extractables	11	3510C	SW-846 Method 8270C	2	liter	amber bottle	2-6º C	Yes	NA	7 days
1,4 Dioxane	11	3510C	SW-846 Method 8270 SIM	2	500 mL	amber bottle	2-6º C	Yes	NA	7 days
TAL Metals and Hexavalent Chromium, Mercury	11	3050B	SW-846 Method 6010/7471	1	500 mL	plastic bottle	2-6º C	No	Nitric Acid	6 months
Pesticides by GC	11	3546	SW-846 Method 8081A	2	liter	clear glass bottle	2-6º C	No	NA	14/28 days
PCBs by GC	11	3546	SW-846 Method 8082	2	liter	clear glass bottle	2-6º C	No	NA	7 days
PFAS	11	NA	EPA Method 1633A	3	250 mL	polypropylene	2-6º C	No	NA	28 Days
Sump Water										
TAL Metals and Hexavalent Chromium	3	3050B	SW-846 Method 6010/7471	1	500 mL	plastic bottle	2-6º C	No	Nitric Acid	6 months

MOVE YOUR ENVIRONMENT FORWARD

APPENDICES

MOVE YOUR ENVIRONMENT FORWARD

SITE-SPECIFIC HEALTH AND SAFETY PLAN (HASP)

US Chrome Corporation – Site # 819006
31 Swan Street
Batavia, New York 14020

Prepared For:

Contract# D009808, Work Assignment No. 49
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7012

Prepared By:

HRP Associates, Inc.
1 Fairchild Square
Clifton Park, New York 12065

HRP #: DEC1049.P2

Issued On: June 9, 2025

ADDENDUM LOG		
Addendum Number	**Date Issued**	**Modification(s) Needed/Reason(s)**

DISCLAIMER

HRP Associates, Inc. does not guarantee the health or safety of any person entering this site. Due to the potential hazards of this site and the activity occurring thereon, it is not possible to discover, evaluate, and provide protection for all possible hazards which may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury at this site. The health and safety guidelines in this plan were prepared specifically for this site for use and should not be used on any other site.

If unexpected conditions were to arise, any employee will have "Stop Work Authority." Employees should be capable of identifying existing and predictable hazards in their surroundings or working conditions that are unsanitary, hazardous, or dangerous to the workers. The employee(s) has the authority to impose prompt corrective measures to eliminate these hazards. Some examples include the ability to stop work, close a jobsite, or evacuate workers if needed.

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Appendices

1.0 INTRODUCTION

This Health and Safety Plan (HASP) has been prepared for the US Chrome Corporation Remedial System Optimization (RSO) and Supplemental Investigation (SI). The general and contact information of the site can be found on **Table 1** below.

This HASP has been developed in accordance with HRP Associates, Inc.'s (HRP) Health and Safety (H&S) procedures as required under the Occupational Safety and Health Administration's (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) regulation (Code of Federal Regulations (CFR), 29 CFR 1910.120). Specific H&S information for the project is contained in this HASP. This Plan has also been developed to establish minimum standards necessary for onsite investigation activities to protect the H&S of HRP personnel.

HRP personnel and associated contractors shall be familiar with this HASP prior to conducting proposed site work. This plan must be present onsite and be available for reference/inspection when the subject site work is being conducted.

All project personnel shall sign the certification page acknowledging that they have read and understand this HASP. Changes in the scope of the project or introduction of new hazards to the project shall require revision of the HASP, and approval by the Project Manager (PM) under the Addendum Log.

TABLE 1 GENERAL INFORMATION		
Project Number	DEC1049.P2	
Site/Project Name	US Chrome Corporation Site # 819006	
Site Address/Location	31 Swan Street, Batavia, New York	
CONTACTS		
HRP's Contacts		
Title	**Name**	**Phone Number**
Project Manager	David Stoll, P.G.	838-746-9063
Site Safety Officer	John Gorman	716-225-5545
Site-Specific Contacts		
Name	Nathan Varland (400 East Main Street), Brian Corcoran (26 & 34 Harvester Avenue)	
Title	Site Contacts	
Phone	Varland – 585-344-1888, Corcoran – 614-562-2278	

2.0 EMERGENCY CONTACTS AND PROCEDURES

2.1 Contacts

Table 2 presents the Emergency Contact information associated with the planned US Chrome Corporation RSO and SI work. The following information, including directions to the nearest hospital shall be posted at the Site. When contacting the local authorities, be sure to provide: your name, facility name, full address, telephone number, and the nature of the emergency. The information on **Table 2** should be revised, if necessary, upon review of the work to be completed and prior to initializing the activities.

TABLE 2
EMERGENCY CONTACTS

Contact	Name	Phone Number
Local Police	Batavia Police	585-345-6350
Local Ambulance	United Memorial Medical Hospital	585-343-6030
Local Fire Department	Batavia FD	585-345-6375
Poison Control Center		1-800-222-1222
National Response Center		800-424-8802
Spill Response Agency	DEC Spills Hotline	1-800-457-7362
Local Hospital	United Memorial Medical Hospital	585-343-6030
Local Hospital Address (Map in **Figure 3**)	127 North Street, Batavia, NY	
HRP's Site Safety Officer	John Gorman	716-225-5545
Project Manager	David Stoll	838-746-9063
State Agency PM (if applicable)	Michael Ormanoski	585-226-5480
Site Owner/Contacts	Nathan Varland Brian Corcoran	585-344-1888 614-562-2278

For the police, ambulance, and fire department, contact 9-1-1.

The Site Safety Officer will coordinate the entry and exit of response personnel in the event of an emergency.

Map and directions to the following medical facilities are provided on **Figure 3**.

2.2 Emergency Procedures

In the event of a worker injury, fire, explosion, spill, flood, or other emergency that threatens the safety and health of site workers, the following procedure will be followed:

1. If the emergency originates within the work area covered by this Plan, the HRP Site Safety Officer shall act as the Emergency Coordinator. The emergency evacuation signal is an air horn or a loud yell. All emergency situations (including worker injuries, no matter how

small) will be reported to the Site Safety Officer, who will determine the appropriate emergency response, up to and including evacuation. The Site Safety Officer will be responsible for reporting any emergency situation to the appropriate authorities, using a telephone or other appropriate method.

2. In the case of an evacuation, site workers will exit the site along the safest route(s) and assemble with team members at a safe rally point. Those workers in the Exclusion Zone will follow the emergency decontamination procedures outlined in **Section 6.4**. Accounting for all site personnel will be conducted by the Site Safety Officer using the personnel log at a location determined by the Site Safety Officer.
3. HRP personnel are not permitted to participate in handling the emergency. Fire and medical emergencies will be handled by the local fire department and ambulance service. In the case of a spill of hazardous materials, a local commercial spill clean-up firm should be contacted.
4. In New York, petroleum spills must be reported to the NYSDEC within two hours of discovery if they exceed five gallons, are not contained, and have reached or will reach New York's waters or lands. This also applies if the spill is not cleaned up within two hours.

   NOTE: If the work is completed in New York, the New York State Department of Environmental Conservation (NYSDEC) may be contacted.

   If the spill begins to flow overland and threatens to contaminate a storm drain or surface water, HRP personnel may attempt to contain and isolate the spill using any available resources, but only if, in the judgment of the Site Safety Officer, such action will not expose the workers to dangerous levels of hazardous substances and is necessary to preserve life or property. In the event that a spill of material of any amount threatens to reach navigable waters, the National Response Center (NRC) shall be contacted.
5. Once initial emergency procedures to protect worker safety and health have been addressed, and control of emergency has been completed, the Site Safety Officer will complete HRP's Incident Investigation Report and submit this form to the appropriate personnel (HRP and/or client contact).
6. All site workers will be familiarized with the above procedures during the pre-entry briefing to be conducted before site work begins.

In the event of an evacuation, meet at the following rally points:

- Parking lot located at 400 East Main Street, Batavia

2.3 Emergency Supplies and Equipment

Table 3 presents the appropriate Emergency Supplies and Equipment List for the planned listed work. Select the appropriate supplies and equipment based on the proposed work. The information on **Table 3** should be revised, if necessary, upon review of the listed work and prior to initializing the activities.

TABLE 3 EMERGENCY SUPPLIES/EQUIPMENT	
SUPPLY ITEM	**LOCATION ONSITE**
☒ First Aid Kit	Company Truck/Vehicle
☐ Fire Extinguisher	Company Truck/Vehicle
☐ Eye Wash (Bottle)	Company Truck/Vehicle
☒ Spill Kit	Company Truck/Vehicle
☒ Hand Sanitizer	Company Truck/Vehicle
☒ Caution Tape, Cones	Company Truck/Vehicle
☐ Air Horn	Company Truck/Vehicle
☒ Flashlight	Company Truck/Vehicle
☒ Water or Other Fluid	Company Truck/Vehicle
☐ Wash and Dry Towels	Company Truck/Vehicle
☒ Sunscreen	Company Truck/Vehicle
☒ Insect Repellant	Company Truck/Vehicle
☐ Cooling Aids (cooling towels, vests, etc.)	Company Truck/Vehicle
☐ Other	

3.0 SCOPE OF WORK

3.1 Site's Background

The US Chrome Corporation Site (#819006), located at 31 Swan Street, Batavia, New York, (**Figure 1**) is the focus of this investigation. This property is approximately 0.41 acres in size, according to the Genesee County online GIS map viewer. One building is currently present on the Site consisting of offices and chrome plating operation areas originally constructed in 1920 totaling approximately 14,563 square feet. Site operations are currently active.

The Site is connected to the municipal water supply and serviced by the municipal sanitary sewer. No records of septic systems at the Site have been identified in available records. The Site is zoned for light industrial use, and surrounding properties in the area a combination of commercial, industrial, and residential.

The US Chrome Corporation is a chrome plating facility which began operations at the Site in 1959 and remains in operation today. In 1982, a leak of chromic acid from the plating tank into the sand below before infiltrating the groundwater was discovered. Since then, several environmental investigations have occurred. **Figure 1** shows the site's location map.

3.2 Project's Description

According to previous environmental reports and available historic Site records, the following areas of concern (AOC) were identified that had the potential to impact environmental media at the Site and require further characterization. Additional AOCs warranting further characterization may be identified during the course of implementing the RSO.

- Extent and degree of subsurface chromium contamination on and off site; and
- The condition of the current remedial system.

The contaminant of concern (COC) that is potentially associated with onsite chrome plating operations at the US Chrome Corporation Site is chromium. Based on the results of previous investigations, the highest concentrations of chromium have been reported in groundwater samples collected at the source beneath the chrome plating bath in the building. The groundwater treatment system is also located in the building. However, because site access is currently restricted, the RSO will first address defining the degree and extent of the chromium plume in the area of the Site before investigating the current remedial system.

Previous investigations performed sampling and laboratory analysis of hexavalent and total chromium and PFAS; however, the presence of other potential onsite contaminants have not been evaluated in onsite soils or groundwater to date. Therefore, in order to complete site characterization at the Site, HRP will collect soil and groundwater samples for laboratory analysis of these predominant contaminant of concern parameters (metals and PFAS), in addition to the following site characterization parameters: VOCs, SVOCs, mercury, PCBs, chlorinated pesticides, and 1,4-dioxane.

Figure 2 shows the areas of environmental concern.

Refer to the Introduction (**Section 1.0**) for the site's information and contacts.

3.3 Site Type

TABLE 4 **SITE TYPE** (Check all that may apply to the site/project.)	
☒ Active	☐ Abandoned
☐ Industrial	☐ Landfill
☐ Inactive	☐ Unsecured
☐ Well Field	☐ Water Work
☐ Residential	☐ Railroad
☒ Undeveloped	☒ Commercial
☐ Secure	☐ Service Station
☐ Other – Specify	

3.4 Scope of Work

In general, the work to be performed by HRP and/or HRP's subcontractors consists of investigative methods to evaluate the environmental condition of the Site. The fieldwork for this task includes the following subtasks:

Up to six (6) soil borings will be advanced using a hollow stem auger (HSA) drilling rig or similar to collect continuous soil samples and characterize subsurface conditions from surface grade to approximately 25 feet bgs or refusal. Specifically, HRP will collect data to determine the distribution of contamination in exterior soils. Soils will be collected with a split spoon sampler in 5-foot intervals or at each change of lithology, for descriptive characterization. All soil samples will be screened for volatile organic vapors using a PID, and any evidence of contamination will be noted and used for selection of soil samples.

Soil samples will be collected directly above the water table or at an interval that is impacted based on physical observation (above or below the water table), olfactory senses, or elevated PID reading. The final soil sampling intervals will be selected in consultation with the NYSDEC project manager. Soil cores will be examined, photographed, classified, and screened using a PID. Soil samples will be collected using split-spoons or disposable acetate liners with a 1.75-inch diameter macro-core sampler.

A hollow-stem auger drilling rig will be used to advance through the overburden materials and set shallow overburden monitoring wells, which are anticipated to be completed at depths of 10 to 20 feet below grade. The wells will ultimately be designed and installed such that the well screen will intersect the observed water table. The deeper wells are intended to be paired with existing or newly-installed shallow overburden monitoring wells, and are anticipated to be installed to depths greater than 20 feet below grade.

Number 40 2-inch PVC with a 0.010-inch slot screen and PVC riser will be used for monitoring well construction. The well screen will be placed to target the top of the groundwater table. The final monitoring well screen intervals will be selected in consultation with the NYSDEC project manager. A sand filter pack will be placed in the annular space around the well screen to approximately two feet above the top of the screen. A bentonite seal will be placed above the filter pack and extend to a depth of approximately two feet below grade. The remaining annular space will be filled with neat cement and will be completed with either a flush-mount protective cove or 4-foot stick-up protective casing and a locking j-plug.

For the purpose of evaluating groundwater quality and to obtain groundwater flow information, a total of six (6) overburden groundwater monitoring wells are proposed for installation as part of the RSO. The proposed locations were selected based on a previously-mapped west-northwest overburden groundwater flow direction. Samples will be collected from the newly-installed wells in addition to up to six viable existing wells at the Site.

Upon completion, monitoring wells will be developed to minimize turbidity in groundwater samples collected from each well and to improve their hydraulic properties. Development will be deemed complete upon removal of 6 to 10 well volumes and when a turbidity reading of 50 Nephelometric Turbidity Units (NTUs) or less is achieved or purged water is visibly clear.

Check the box for the following topics that are applicable to the project being completed (**Table 5**).

TABLE 5 TASKS	
☒ Site Inspections (e.g., ESA)	☒ Drum Sampling
☐ Industrial Hygiene	☒ Ground Water Sampling
☐ Asbestos Survey	☐ Landfill Sampling
☐ Bridge Inspections	☐ Product Sampling
☒ Drilling/Probing	☐ Remediation Monitoring (air/water)
☐ Well Repair/Abandonment	☐ Soil Gas Sampling
☐ Stack Testing	☐ Stormwater Sampling
☐ Surface Water Sampling	☒ Surveying
☐ Wastewater Sampling/Benchmark Test	☐ Confined Space Entry
☐ Excavation	☐ Emergency Spill Response Oversight
☐ Chemical/Waste Exposure/Handling	☐ Other

Should conditions or the scope of work described herein change significantly; a HASP Addendum will be completed.

A Safety and Logistics Planning call will be held prior to conducting any intrusive activities at the site. Representatives from HRP and each subcontractor will attend the call to discuss logistical and safety challenges general to the scope of work and specific to the Site. This call is documented on the Safety and Logistics Planning Log in **Appendix A**.

Specific procedures may be needed for certain job tasks, include at the end of this HASP.

4.0 ROLES AND RESPONSIBILITIES

The following personnel on **Table 6** are designated to perform the stated project activities and to ensure that the requirements of this HASP are met. The same person may fill more than one role, and/or serve as an alternate in the absence of the designated team member.

A complete list of HRP employee and subcontractor responsibilities (as applicable) can be found in the HRP's H&S procedures.

NOTE: Any employee has the STOP WORK AUTHORITY (sometimes known as PAUSE WORK).

TABLE 6 ROLES AND RESPONSIBILITIES	
Project Team Member	**Responsibilities and Tasks**
John Gorman, Senior Consultant	**HRP's Site Safety Officer:** Ensuring all site work is performed in accordance with HRP's H&S Programs, as well as in accordance with local, state, and federal regulations. • Directing and implementing HRP's HASP. • Reviewing the Subcontractor's HASP and being aware of the hazards detailed therein. • Conduct a job orientation meeting and routine safety meetings for HRP employees and subcontractors, as applicable. • Provide copies of these inspections, recordkeeping/personnel logs to the engineer/contractor as required. • Ensuring all project personnel have been adequately trained in the recognition and avoidance of unsafe conditions. • Address Stop Work Orders that shall be executed upon the determination of an imminent H&S concern and will notify the appropriate contacts upon issuance of this order. • Authorizing work to resume, upon approval from the Contractor. • Directing activities, as defined in the HRP's and the Contractor's written HASP, during emergency situations. • Providing personnel monitoring where applicable. • Ensuring that adequate personal protective equipment (PPE) and first aid supplies are available. • Ensure site security, to the extent practicable. • Ensure accident victims are promptly cared for, and the incident is investigated and properly reported. • Communicating with HRP's PM, Office H&S Manager (OHSM), and others when needed. • Report all injuries, illnesses, and other incidents to the PM.
David Stoll, P.G., Senior Project Manager	**HRP's Site Supervisor/Project Manager** • Monitor and assist the Site Safety Officer. • Maintain appropriate rules, regulations, and codes at the job site. • Provide advanced safety planning for all activities through the use of scheduling and administrative controls. • Obtain site-specific H&S information and communicate that information with the appropriate personnel (i.e., contractors, client, etc.) • Report all injuries, illnesses, and other incidents to the Regional Office Manager (ROM) and Corporate H&S Officer (CHSO). If ROM or CHSO cannot be reached, contact Chief Operating Officer (COO) or Human Resources. • Ensure all HRP personnel are trained and qualified to perform site work.
Site Workers (Subcontractors)	**Site Workers** • Read and work in accordance with this HASP. • Report all unsafe work practices to the Site Safety Officer. • Report all incidents, including near-misses to the Site Safety Officer. • Work in a safe manner. • Provide designated Competent Person

*A list of site workers will be maintained in the Personnel Log (**Appendix B**).

5.0 PROJECT HAZARDS AND CONTROL MEASURES

5.1 Identifying Hazards

The Site Supervisor/PM shall complete the Job Safety Analysis (JSA) in **Appendix C** prior to the start of the project. The JSA identifies the steps of the task to be performed with its hazards, unsafe conditions, and materials that are known or suspected to be onsite. The hazards that are listed in the JSA must be ranked using HIGH (H), MEDIUM (M), or LOW (L) based on current site knowledge. Use the results of this analysis to verify that controls in the JSA are adequate to mitigate task hazards.

Details of specific hazards associated with individual tasks will be discussed in the Toolbox Talk (formerly known as the Daily Job Brief Record (**Appendix D**)). **The Toolbox Talk is the key to the entire operation**. We are writing this HASP prior to going onsite and therefore cannot anticipate all of the site-specific hazards. The PM must do a thorough job on the Toolbox Talk, so we remain compliant. The Daily Toolbox Talk records will be reviewed by the PM at the conclusion of the field work.

5.2 Task Policy Reminders

Confined Spaces

Only properly trained HRP personnel are authorized to enter confined spaces. Confined space entry may be performed by subcontractors who have the proper training and experience to conduct this work.

Emergency Spill Response Oversight

HRP personnel are not permitted to participate in handling the emergency, only the oversight of such activities.

Excavations

It is HRP's policy to ensure that for excavation projects the subcontracted environmental contractor will provide a competent person to perform daily and as needed inspections of excavation sites. This policy will be conveyed through the subcontract agreement with the environmental contractor. At a minimum HRP will provide our employees involved with construction projects with awareness level training regarding excavation hazards and notify the subcontracted firm if any obvious excavation safety hazard exists during the course of onsite activities.

Drilling

HRP employees will not perform drilling, rather HRP will use a competent subcontractor to perform drilling services. At a minimum, HRP will provide our employees involved with this type of project with awareness level training regarding drilling, the hazards of the equipment and distance of the drilling.

Chemical Hazards

Hazardous materials and/or chemicals are listed on **Table 9**. Contaminants that are known or suspected onsite are listed at the end of this document on **Table 13** includes Chemical name, odor threshold OSHA permissible exposure limit (PEL), the American Conference of Governmental

Industrial Hygienists (ACGIH) threshold limit value (TLV), OSHA short-term exposure limit (STEL), Immediately Dangerous to Life or Health (IDLH) Concentrations, routes of exposure, and symptoms of acute exposure. Chemicals likely to be encountered during site work are highlighted.

Physical Hazards

Physical hazards known or suspected to be onsite are listed on **Table 8**. **Table 8** includes description of potential hazards, methods to identify/minimize them, potential for occurrence and potentially affected tasks.

Air Monitoring

In order to determine potential health hazards and to determine the level of personal protection needed during drilling, excavation, and sampling activities within the areas of concern, a photoionization detector (PID) will be periodically operated to monitor air quality for the purpose of ensuring minimal exposure to volatile organic compounds.

Background ambient air levels will be established outside the exclusion zone prior to commencement of site work. Ambient air sampling will occur in the breathing zone of site workers for comparison to the action levels (described below). Additionally, air sampling will be conducted in the vicinity of any intrusive exploration (i.e., near excavations, trenches, etc.) to determine if any contaminants are present. See **Table 7** for action levels to be used.

TABLE 7
ACTION LEVELS
Use the following Action Levels

INSTRUMENT	ACTION LEVEL	LEVEL OF PROTECTION OR ACTION REQUIRED
PID	<5 ppm	• Continue to monitor • Recheck levels after fifteen minutes • If levels are sustained, reassess • Use engineering controls to lower breathing zone vapors • Level C protection (at the H&S Officer's (HSO) discretion)
PID	>5 ppm	• Stop work and evacuate exclusion zone • Recheck levels after fifteen mins • Use engineering controls to lower breathing zone vapors • If levels are sustained, contact CHSO and/or OHSM, and re-evaluate HASP

NOTE: When the background reading is >1 ppm, assess the area and equipment, but continue PID monitoring and wear Level D protection

ppm = parts per million

When an action level is equaled or exceeded, the work area should be evacuated, and the area re-tested with the sampling device. If the appropriate action level continues to be exceeded, the Site Safety Officer will have to assess the use of engineering controls to lower vapor levels or availability of required increased personal protection equipment before authorizing re-entry.

5.3 Community Air Monitoring (required by DER 10)

AWARENESS FOR NEW YORK ONLY:

To ensure the protection of receptors surrounding the site HRP has developed and will implement a Community Air Monitoring Program (CAMP), which requires real time monitoring of volatile organics and dust during the remedial investigation. The CAMP will be implemented during all intrusive activities.

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 less than ten micrometers (10 µm) in size (PM-10) and capable of integrating over a period of fifteen 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.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter($\mu g/m^3$) greater than the background (upwind perimeter) for the fifteen-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 no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 $\mu g/m^3$ 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 PM-10 particulate concentration to within 150 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.

In the event subsurface work is within 20 feet of a residence or a receptor, a dedicated CAMP setup will be placed next to the receptor to ensure that no particulates or VOCs are affecting their air quality.

TABLE 8
HAZARDS KNOWN OR SUSPECTED ONSITE
*Check all that may potentially apply to the tasks being performed. Chemical Hazards are included on **Table 8**.

PHYSICAL HAZARDS	SAFETY HAZARDS	BIOLOGICAL HAZARDS	ERGONOMIC HAZARDS	PSYCHOLOGICAL HAZARDS
☐ Structure Unsafe	☒ Slipping/Tripping/Falling	☐ Bacteria	☒ Repetitive Movements	☒ Workload
☐ Uneven Floors/Surfaces	☐ Improper Machine Guard	☐ Viruses	☐ Improper Work Setup	☐ New Worker
☐ Ceiling Unsafe	☒ Equipment Malfunction	☐ Insects	☐ Poor Equipment Design	☐ Lone Worker
☐ Falling Objects/Loads	☒ Struck By	☐ Plants	☒ Poor Workstation Design	☐ Stress
☐ Flying Debris	☐ Homeless Encampments	☐ Animals/Birds	☐ Postural/Workflow	☐ Harassment
☐ Slippery Floor/Ground	☐ Falling Into	☐ Other (Specify)	☒ Manual Handling	☐ Communication Issue
☒ Obstructed Walking Areas	☐ Cave In/Collapses		☐ Other (Specify)	☐ Other (Specify)
☐ Misuse of Machinery	☒ Underground Utilities			
☒ Excessive/Loud Noise	☐ Excavation Spoils			
☐ Poor Lighting	☐ Superimposed Loads			
☐ Fire	☒ Mobile Equipment/Machinery			
☐ Radiation	☒ Electrical			
☐ Magnetic Fields	☐ Poor Housekeeping			
☐ Pressure Extremes	☐ Suspicious Activity/Person			
☒ Extreme Heat/Cold	☐ Security			
☒ Inclement Weather	☒ Traffic			
☐ Confined Space Entry	☐ Other (Specify)			
☐ Atmosphere				
☐ Drowning				
☐ Flooding				
☐ Poor Visibility				
☐ Other (Specify)				

CONTROL MEASURES AND WORK PRACTICES

NOTE: Hand signals are encouraged to communicate during a job where hearing is limited, but vision is not. These hand signals should be listed within the Toolbox Talk and JSA.

REQUIRED PERMITS

☒ None ☐ Excavation ☐ Encroachment ☐ Confined Space Entry ☐ Hot Tap ☐ Street Open/Closing ☐ Hot Work
☐ Energized Equipment ☐Other (Specify)

***These permits may not be issued by HRP employees. You may reference them as needed.**

TABLE 9
HAZARDOUS MATERIAL SUMMARY
Check all that may apply onsite. Attach Safety Data Sheets (SDS) in **Appendix F** for each chemical that will be brought to the site.

HAZARDOUS MATERIAL LIST		**KNOWN CHEMICALS** List the actual chemical name that HRP employees are exposed to.
☐ Acids ☐ Pickling Liquors ☐ Caustics ☐ Pesticides ☐ Dyes/Inks ☐ Cyanides ☐ Phenols ☐ Halogens ☐ Dioxins ☐ Fly Ash ☐ Asbestos ☐ Millings/Mine Tailings ☐ Ferrous Smelter ☐ Non-Ferrous Smelter ☒ Metals ☐ Chlorinated Solvents ☐ Hydrocarbons ☐ Alcohols ☐ Ketones ☐ Esters ☐ Ethers ☐ Oily Wastes ☐ Gasoline	☐ Diesel Fuel/Oil ☐ Lubricants ☐ PCBs ☐ PAHs ☐ Kerosene ☐ Propane ☒ PFAS ☐ Mold ☐ Distillation Bottoms ☐ Fecal Matter/Animal Waste ☐ Laboratory Waste ☐ Pharmaceuticals ☐ Hospital Waste ☐ Radiological Waste ☐ Municipal Waste ☐ Construction Debris ☐ Aluminum ☐ Paint ☐ Pigments ☒ Metal Sludges ☐ POTW Sludges ☐ Other (Specify)	Chromium concentrations in groundwater wells, possible PFAS. **CONTROL MEASURES:** Wear nitrile gloves when handling groundwater/soil that may have come in contact with groundwater.

5.4 Equipment Usage

Table 10 below lists the equipment that will be used for the above task(s). Equipment must be included in the JSA and/or Toolbox Talk for proper hazard identification of tasks being performed.

TABLE 10
EQUIPMENT USAGE

EQUIPMENT/ INSTRUMENT	USED FOR	CALIBRATION BY	CALIBRATION DATE
Peristaltic Pump	Lowflow Sampling		
Whale Pump	Well Development		
PID	Soil Screening		
PID	VOC Monitoring		
DustTrack	Particulate Monitoring		
Water Level Meter	Groundwater Depth Measurement		

6.0 SUSPECTED CONTAMINATION AND DECONTAMINATION

6.1 Suspected Contamination

Prior to commencement of work in the area of suspected contamination, protective zones specific for each phase of the HASP will be established by the Site Safety Officer, if necessary, prior to the start of field work. These zones will be defined during the Toolbox Talk.

The purpose of the protective zones is to prevent potential cross-contamination of adjacent areas as well as to protect project personnel from exposure to contaminated areas.

6.2 Protective Zones

Protective zones shall be delineated as follows:

- **Exclusion Zone:**

  This is the contaminated area in which intrusive activities are performed. The area of environmental concern (AOEC) is located within this area. A single access point for entrance and exit should be established and maintained, if possible. This zone should be delineated from the Contaminant Reduction Zone via perimeter cones or caution tape, or other applicable method. Work areas are shown on **Figure 2**. The Exclusion Zone delineation and any necessary modifications will be based onsite conditions.

- **Contaminant Reduction Zone:**

  This zone is a transition zone located between the Exclusion Zone and the Support Zone and is utilized to decontaminate personnel and equipment.

- **Support Zone:**

  This zone will be utilized by equipment and vehicle storage and will be kept free of contaminated material. The Site Safety Officer will determine the location of this zone. In the event of a site evacuation, see **Figure 2** and Section 2.0 for the rally point. The designated rally point may be relocated by the Site Safety Officer based on project or site conditions. All site workers will be notified of any relocation prior to implementation.

NOTE: Protective zones are not anticipated for this project.

6.3 Decontamination Procedures

All personnel and equipment leaving the exclusion zone must be properly cleaned and decontaminated. When there is evidence of chemical contamination during the site operations, all personnel will be decontaminated under the direction of the Site Safety Officer. Clean-up and/or decontamination of personnel shall consist of washing off excessively soiled PPE with a disinfectant detergent scrub and water. At the very least, all personnel should wash their hands and face before leaving the exclusion zone. After washing, all disposable clothing (Tyvek, gloves, etc.) will be removed and placed in a double lined plastic bag.

Sampling tools and any other non-disposable items will be decontaminated between sampling points, and at the direction of HRP personnel, to prevent cross-contamination of work areas or environmental samples, as applicable.

6.4 Emergency Decontamination

If immediate medical attention is required in an emergency, decontamination will be performed after the victim has been stabilized. If a worker has been exposed to an extremely toxic or corrosive material, then emergency decontamination will consist of flushing with copious amounts of water. If the victim cannot be decontaminated because it will interfere with emergency medical aid being administered, then the victim should be wrapped with plastic or other available items (i.e., an uncontaminated coverall) to reduce potential contamination of other personnel or medical equipment.

If a site worker has been overcome by heat related illness, then any protective clothing should be removed immediately. In the case of non-medical emergency evacuation, decontamination should be performed as quickly as possible, unless instant evacuation is necessary to save life or prevent injury.

6.5 Personal Hygiene

All employees will be required to wash their hands and face prior to eating, smoking, drinking, and going to the bathroom. Workers will be required to remove contaminated PPE and clothing prior to leaving the Contaminant Reduction Zone. All field personnel should avoid contact with potentially contaminated substances such as puddles, pools, mud, etcetera.

7.0 PERSONAL PROTECTIVE EQUIPMENT

There is different equipment that is worn to minimize exposure to hazards that can cause serious work injuries and illnesses. **Table 11** will list out the PPE that is required onsite and for the job that needs to be performed.

TABLE 11
PERSONAL PROTECTIVE EQUIPMENT
Check all the PPE that may apply and give the description of PPE.

TYPE of PPE	DESCRIPTION of PPE
HEAD AND FACE: ☐ Not Needed ☒ Safety Glasses ☐ Safety Goggles ☐ Face Shield ☒ Hard Hat ☒ Hearing ☐ Other	
FEET: ☐ Not Needed ☒ Steel Toes ☐ Overboots ☐ Disposable Booties ☐ Rubber Boots ☐ Electrostatic Discharge (ESD) ☐ Chemical Resistant ☐ Other	
PROTECTIVE CLOTHING: ☐ Not Needed ☐ Encapsulated Suit ☐ Splash Suit ☐ Apron ☒ High Visibility Vest ☐ Coveralls ☐ Other	
HANDS: ☐ Not Needed ☐ Cut Resistant ☐ Chemical Resistant ☐ Under Gloves ☐ Over Gloves ☐ Heat Resistant ☒ Other	Nitrile Gloves
RESPIRATOR: ☒ Not Needed ☐ Supplied Air ☐ APR	☐ Filtering Face Piece (N95/Dust Mask) ☐ Half Face ☐ Full Face

7.1 Levels of Personal Protective Equipment

As identified in **Section 5.0**, the overall H&S risk associated with chemical hazards for HRP, and associated contractors is considered significant. This is primarily due to the moderate concentrations of chemical contaminants expected based on minimal contact personnel will have with any potentially contaminated media. Therefore, the minimal level of protection for HRP personnel during the conduct of all the environmental work performed at the site will be Level D PPE. The following constitute Level D PPE; it may be used as appropriate:

- Coveralls
- Gloves, as applicable
- Chemical-resistant steel toe and shank shoes
- Boots, outer, chemical-resistant (disposable), as applicable
- Safety glasses or chemical splash goggles
- Hard hat, as applicable
- Escape mask, as applicable
- Face shield, as applicable

If site conditions warrant, an upgrade to Level C PPE may be required. If required, the Contractor will make Level C PPE readily available. The following constitute Level C PPE; it may be used as appropriate:

- Full-face or half-mask, air purifying respirators (National Institute for Occupational Safety and Health (NIOSH) approved)
- Hooded chemical-resistant clothing (e.g., Tyvek, overalls, two-piece chemical-splash suit, disposable chemical-resistant overalls)
- Coveralls, as applicable
- Gloves, outer, chemical-resistant
- Gloves, inner, chemical-resistant
- Boots (outer), chemical-resistant steel toe and shank, as applicable
- Boot-covers, outer, chemical-resistant (disposable), as applicable
- Hard hat, as applicable
- Escape mask, as applicable
- Face shield, as applicable

NOTE: Safety vest may or may not be required depending onsite conditions/location and will be addressed at the time of task assignment by the Site Safety Officer.

If the Toolbox Talk determines that protection beyond Level D is required, HRP will re-evaluate the HASP as well as the site conditions, and will revise the HASP as required.

NOTE: The level of protection identified here does not include the necessary equipment for entering confined spaces.

The following table provides a general description of potential field activity tasks to be performed and associated (recommended) PPE. The use of this PPE may or may not vary depending onsite conditions and will be addressed at the time of task assignment by the Site Safety Officer.

TABLE 12
POTENTIAL FIELD ACTIVITY TASKS AND ASSOCIATED PPE

Task Description	Invasive (Y/N)	Protection Level
Site Mobilization - Surveying, fence and barrier installation, hay bale installation, decon and work zone set up, soil staging areas preparation	N	Level D
Soil and Water Sampling - Drilling, sampling, soil moving as needed.	Y	Modified Level D or Level C – Respirator as needed based on monitoring. Eye protection required during collection of any liquid sample
Soil Excavation, Staging and Load-Out	Y	Modified Level D – or Upgrade to Level C dependent on monitoring
Decontamination - Truck dry sweeping, decon pressure wash of equipment, PPE change out	Y	Modified Level D – or Upgrade to Level C dependent on monitoring
Waste Management - Soil load-out for offsite disposal, water removal for disposal, PPE disposal	Y	Modified Level D – or Upgrade to Level C dependent on monitoring
Site Control (Exclusion, Decontamination, Support Zones)	N	Modified Level D – or Upgrade to Level C dependent on monitoring
Communications - Use of hand signals, backup alarms, and voice	N	NA
Site Restoration	Y	Level D

8.0 TRAINING/MEDICAL SURVEILLANCE

8.1 Training Requirements

All HRP and HRP subcontractor personnel who enter the work zone and/or Exclusion Zone must have successfully completed the 40-hour or 24-hour training requirement outlined in 29 CFR 1910.120(e). If the 40-hour or 24-hour training of any person occurred more than twelve months prior to commencement of work, then that person must have attended an 8-hour refresher course within the twelve months prior to commencement of work.

If respirators are in use in the Exclusion Zone, then all personnel must have undergone respirator training and a fit test within the last twelve months.

Training certificates and records for HRP employee(s) are maintained by HRP. All other contractors will be required to supply written proof of training before being allowed into the Exclusion Zone.

8.2 Pre-Entry Briefing

Prior to commencement of work in an area of suspected contamination, HRP's HSO will conduct a pre-entry briefing with onsite contractors, which will include the following:

- Name of the Site Safety Officer and person responsible for the visitor log
- Description of the parcel as well as location of emergency telephones and the location/boundaries of the Exclusion Zone, Contamination Reduction Zone, and Support Zone, if established
- Review of hospital locations and directions
- Review of tasks to be conducted within the parcel by the site workers
- Review of the Emergency Action Plan and rally point, including the nearest emergency communications and telephone numbers
- The nature, level, and degree of anticipated hazards (physical and chemical) involved in the site work
- Required PPE
- Decontamination procedures

The Site Safety Officer should also, at this time, ensure that all onsite HRP and HRP subcontractor personnel have read the HASP and signed the Field Team Acknowledgement (**Section 12.0**). If additional information on the site becomes available, the Site Safety Officer will call additional briefings, as necessary.

8.3 Toolbox Talk (Daily Job Brief)

The HRP Site Safety Officer will conduct a safety overview meeting at the beginning of each workday on the site. The meeting will be given in addition to any safety meetings that the subcontractor conducts. A summary of the meeting topics signed by the personnel attending the meeting is included in **Appendix D**.

8.4 Medical Surveillance

All HRP and HRP subcontractor personnel entering the Exclusion Zone must have had a physical within the twelve months prior to commencement of site work. A physician's written opinion regarding fitness for work for each employee including work limitations, if any, is on file at HRP, as applicable. A written opinion for all other site personnel must be supplied prior to commencement of site work to the HRP Site Safety Officer. Any work limitations for site personnel, or relevant medical information (i.e., allergic reactions to medication) should be included in this Plan.

9.0 AUTHORIZATION

Personnel authorized to enter the Exclusion Zone include the personnel listed from **Table 6** of this plan. Persons not listed on **Table 6** may enter the Exclusion Zone only if the appropriate training and medical fitness certifications have been supplied to either the HRP PM or OHSM and the Site

Safety Officer or his/her designee onsite has approved site entry. All personnel entering or leaving the Exclusion Zone must sign in and sign out with the recordkeeper.

10.0 RECORDKEEPING

By the completion of the Project this Site-Specific HASP document, and all associated records (Toolbox Talks, JSA, Monitoring data, etc.) must be provided to the appropriate personnel at the office that implemented the Project. The appropriate personnel will then electronically store these records into the project folder. It is expected that some scanning will be necessary.

11.0 SITE-SPECIFIC HEALTH AND SAFETY PLAN APPROVAL

This plan meets the minimum requirements of 29 CFR 1910.120 and 29 CFR 1929.65 and has been written for specified site conditions, dates, and personnel, and must be amended if conditions change. By their signature, the undersigned certify that this HASP is approved and will be utilized during activities at the project.

John Gorman — 6/9/2025
Site Safety Officer

David Stoll, P.G. — 6/6/2025
Senior Project Manager

Bryan Sherman, ASP — 6/6/2025
Office Health and Safety Manager

Subcontractor:
I have been provided a copy of this HASP for review.

[Name] — Date

Representing _____

The Designated Competent person representing [subcontractor] at the site will be:

_____.

Any alternate Competent Person will be noted in the Toolbox Talk (**Appendix D**).

ADDITIONAL APPROVALS (or Re-Approvals)	
Name:	**Date:**

12.0 FIELD TEAM ACKNOWLEDGMENT

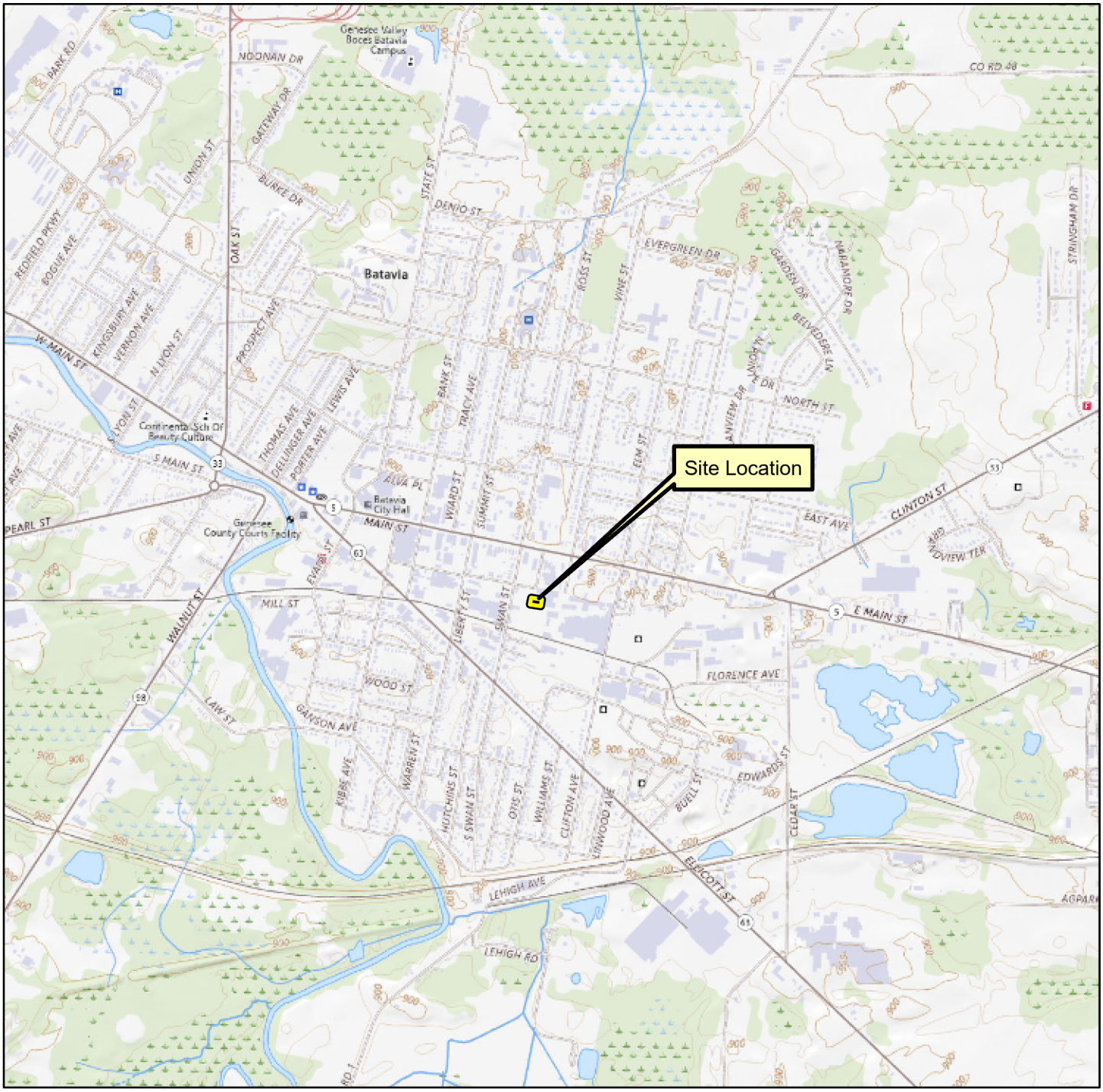
All HRP personnel shall sign below after reading this HASP and shall agree with the following statement:

"I have read and understand this Site-Specific Health and Safety Plan.
I will comply with the provisions set forth therein."

Printed Name	Signature	Date

FIGURES

Figure 1
Site Location Map



USGS Quadrangle Information
Quad ID: 42078-H2
Name: Batavia South, New York
Date Rev: 1976
Date Pub: 1979

Figure 1
Site Location
US Chrome Corporation
Batavia, New York
HRP # DEC1049.P2
Scale 1" = 2,000'

HRP
MOVE YOUR ENVIRONMENT FORWARD
ONE FAIRCHILD SQUARE
SUITE 110
CLIFTON PARK, NY 12065
(518) 877-7101
HRPASSOCIATES.COM

Path: S:\Data\NYDEC - NYSDEC\US CHROME CORPORATION\DEC1049P2 - US Chrome Corporation\GIS\US_Chrome\US_Chrome.aprx

Figure 2
Site Plan with Areas of Environmental Concern

HRP
MOVE YOUR ENVIRONMENT FORWARD
ONE FAIRCHILD SQUARE
SUITE 110
CLIFTON PARK, NY 12065
(518) 877-7101
HRPASSOCIATES.COM

North

0 30 60
Feet

Revisions						
No.						
Date						

Designed By:	Drawn By:	Reviewed By:
CMS	CMS	

Issue Date:	Project No:	Sheet Size:
12/9/2024	DEC1049.P2	11x17

Site Plan

US Chrome Site No. 819006
31 Swan Road,
Batavia, New York

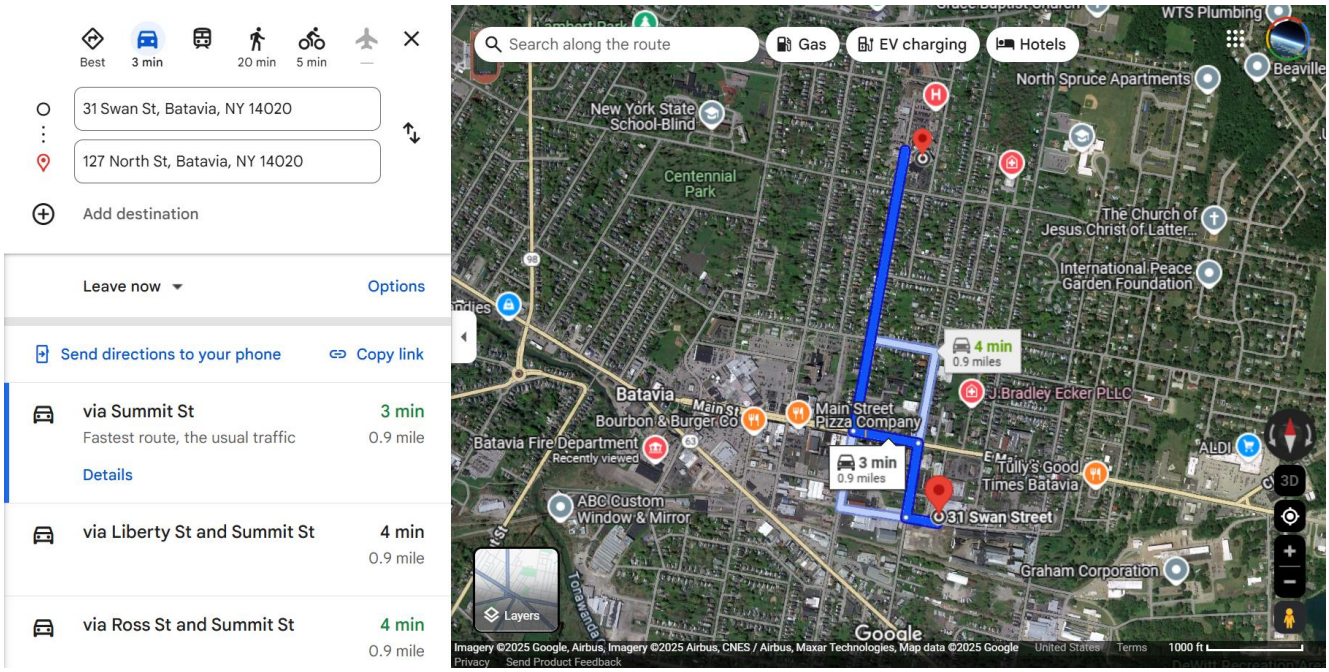
Figure No.
2

Figure 3
Route and Map to Nearest Hospital

Directions to United Memorial Medical Center

Starting Address: 31 Swan Street, Batavia, New York
Ending Address: 127 North Street, Batavia, New York

Total Estimated Time: 3 minutes
Total Estimated Distance: 0.9 miles



TABLES

TABLE 13
CONTAMINANTS OF CHEMICALS KNOWN OR SUSPECTED ONSITE
*HIGHLIGHT THOSE THAT APPLY TO THE TASK BEING PERFORMED.

CONTAMINANT	ODOR THRESHOLD	OSHA PEL[1]	TLV (ACGIH)	OSHA CEILING[2] /STEL	IDLH CONC.	ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE[3]
1,1,1 Trichloroethane	44 ppm	350 ppm	350 ppm	---	700 ppm	Inh, Ing, Con	Head, Lass, CNS, Derm
1,1,2-Trichloroethane	---	10 ppm	10 ppm	----	[100 ppm]	Inh, Ing, Abs, Con	Eyes, Nose Irrit, Resp Irrit, CNS, Liver, Kidney Damage, Derm, [Carc]
1,2,4 Trimethylbenzene 1,3,5 Trimethylbenzene		25 mg/m^3	25 ppm	25 mg/m^3	ND	Inh, Ing, Con	Irrit Eyes, Skin, Nose, Throat, Resp Sys, Bron, Hyprochronic Anemia, Head, Drow, Ftg, Dizz, Nau, Inco, Vomit, Conf, Chemical Pneu (aspir lig)
1,1′ Biphenyl	0.0062 mg/m^3	0.2 ppm	0.2 ppm	---	100 mg/m^3	Inh	
1,1-Dichloroethane	120 ppm	100 ppm	100 ppm	---	3,000 ppm	Inh, Ing, Con	CNS Depres, Skin Irrit, Liver, Lung, and Kidney Damage
1,1-Dichloroethylene***	500 ppm	---	5 ppm	---	---	Inh, Con	CNS depress, Resp, [Carc]
1,2-Dichlorobenzene	50 ppm	50 ppm	25 ppm		200 ppm	Inh, Ing, Abs, Con	Irrit, Resp
1,2-Dichloroethylene	26-87 ppm	200 ppm	200 ppm	---	1,000 ppm	Inh, Ing, Con	Vomit, Irrit Eyes, Resp Sys; CNS Depres
1,2-Dichloropropane	130-190 ppm	75 ppm	75 ppm	---	[400 ppm]	Inh, Con, Ing	Eye irritation, Drow, light-headedness; irritated skin, [Carc]
1,3-Dichlorobenzene	---	----	---	----	---	----	----
1,4-Dichlorobenzene	20 ppm	75 ppm	10 ppm	----	[150 ppm]	Inh, Ing	[Carc], Eye Irrit, swelling around eye, headache, nausea, vomiting
1-Methylnaphthalene	0.02 ppm	---	---	---	---	---	---
2,4-Dichlorophenol	1.4007 mg/m^3	---	---	---	---	---	---
2,4-Dimethylphenol	0.001 mg/m^3	---	---	---	---	---	---
2-Methylnaphthalene	0.01 ppm	---	---	---	---	---	---
2-Methylphenol (o-cresol) [skin]	1.4 mg/L	5 ppm	5 ppm	---	250 ppm	Inh, Abs, Ing, Con	Confusion, depression, Resp Fail; difficulty breathing, irregular rapid respiration, weak pulse; skin, eye burns; dermatitis

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CONTAMINANT	ODOR THRESHOLD	OSHA PEL[1]	TLV (ACGIH)	OSHA CEILING[2] /STEL	IDLH CONC.	ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE[3]
3, 3'-Dichlorobenzidine	---	None	**---**	---	---	Inh, Abs, Ing, Con	Sens, Derm, Head, Dizz, Burns, GI Upset, [Carc]
4-Isopropyltoluene	---	---	---	---	---	Con, Inh, Ing	Defat, Eryt
Acenephthene	0.5048 mg/m^3	---	---	---	---	---	---
Acenaphthylene	---	---	---	---	---	---	---
Acetone	47.5 mg/m^3	1,000 ppm	500 ppm		2,500 ppm	Ing, Inh, Con	Head, Dizz; Irrit Eyes, Nose, Throat; Derm, CNS, Depress, Derm
Acetonitrile	70 mg/m^3	40 ppm	20 ppm	---	500 ppm	Inh, Ing, Abs, Con	Asphy; Nau, Vomit; Chest Pain; Weak, Stupor, Convuls; Eye Irrit
Aldrin	---	0.25 mg/m^3	0.25 mg/m^3	---	25 mg/m^3	Inh, Abs, Ing, Con	Head, Dizz, Nau, Vomit, Mal, Myo, [Carc]
Anthracene (Coal Tar Pitch)	---	0.2 mg/m^3			[80 mg/m^3]	Inh, Con	Derm, bron, [carc]
Antifreeze		50 ppm	100 mg/m^3 (aerosol)	---	ND	Inh, Ing, Con	Irrit Eyes, Skin, Nose, Throat, Nau, Vomit, Abdom Pain, Lass, Dizz, Stup, Conv, CNS, Depres, Skin Sen
Arsenic	----	0.010 mg/m^3	0.01 mg/m^3	----	[5 mg/m^3]	Abs, Inh, Con, Ing	Derm; GI; Resp Irrit; ulceration of nasal septum; Resp, Irrit, Hyper Pig of Skin, [Carc]
Barium (elemental)	---	0.5 mg/m^3	0.5 mg/m^3		50 mg/m^3 (barium components)	Inh, Ing, Con	Resp. Irrit, GI, Muscle Spasm, Eye Irrit, Slow Pulse; skin burns
Benzene*	4.7 ppm	1 ppm	0.5 ppm	5 ppm	[500 ppm]	Inh, Ing, Abs, Con	Irrit Eyes, Nose, Throat; Head, Nau, Derm, Ftg, Anor, Lass, [Carc]
Benzo(a)anthracene (coal tar pitch)	---	0.2 mg/m^3			[80 mg/m^3]	Inh, Con	[Carc], Derm, Bron
Benzo(a)pyrene (coal tar pitch)	---	0.2 mg/m^3	---		[80 mg/m^3]	Inh, Con	[Carc], Derm, Bron

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CONTAMINANT	ODOR THRESHOLD	OSHA PEL[1]	TLV (ACGIH)	OSHA CEILING[2] /STEL	IDLH CONC.	ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE[3]
Benzo(b)fluoranthene (coal tar pitch)	---	0.2 mg/m^3	---		[80 mg/m^3]	Inh, Con	[Carc], Derm, Bron
Benzo(g,h,i)perylene (coal tar pitch)	---	0.2 mg/m^3			[80 mg/m^3]	Inh, Con	[Carc], Derm, Bron
Benzo(k)fluoranthene (coal tar pitch)	---	0.2 mg/m^3			[80 mg/m^3]	Inh, Con	[Carc], Derm, Bron
Bis (2-ethylhexyl) Phthalate**	N/A	5 mg/m^3	5 mg/m^3	10 mg/m^3	[5,000 mg/m^3]	Inh, Ing, Con	[Carc], Irrit Eyes
Cadmium (dust)	---	0.005 mg/m^3	Lowest concentration feasible 0.01 mg/m^3	---	[9 mg/m^3]	Inh, Ing	CNS, Resp, Irrit, Vomit, Cough, Head, Chills, Nau, Diarr, Pulm Edema, Dysp, Chest Tight, [Carc]
Carbazole	---	---	---	---	---	Inh	---
Carbon disulfide	0.1-0.2 ppm	20 ppm	1 ppm	30 ppm	500 ppm	Inh, Abs, Ing, Con	Diz, Head,Ftg, Ner, anorexia, trembling hands, loss of fine motor coord, gastritis, eye, skin burns, Derm
Carbon Tetrachloride***	21.4 ppm	10 ppm	5 ppm	25 ppm	[200 ppm]	Inh, Abs, Con, Ing	CNS Depres, Nau, Vomit, Irrit, Irrit Eyes, Skin, Drow, Dizz, [Carc]
Chlorobenzene***	0.98 mg/m^3	75 ppm	10 ppm	---	1,000 ppm	Inh, Ing, Con	Irrit, Drow, CNS, Depres, Eyes, Skin, Nose, Inco.
Chloroform***	85 ppm	50 ppm	10 ppm	50 ppm	[500 ppm]	Inh, Ing. Con, Abs	Dizz, Dullness, Nau, Head, Ftg, Irrit Eyes, Skin, Conf, [Carc]
Chromium	---	1 mg/m^3	0.5 mg/m^3	---	250 mg/m^3	Inh, Ing, Con	Irrit Eyes, Sens Derm
Chrysene (coal tar pitch)		0.2 mg/m^3	---		[80 mg/m^3]	Inh, Con	Derm, Bron, [Carc]
Cis-1-2-Dichloroethylene	---	200 ppm	200 ppm	----	1000 ppm	Inh, Con, Ing	Irrit Eyes, Resp, CNS Depress
Copper (dusts and mists) (fumes)		1 mg/m^3 0.1 mg/m^3	1 mg/m^3 0.2 mg/m^3	----	100 mg/m^3	Inh, Ing, Con	Vomit, Derm, CNS, Irrit, Derm, Nau, Taste (metallic)

TABLE 13
CONTAMINANTS OF CHEMICALS KNOWN OR SUSPECTED ONSITE
*HIGHLIGHT THOSE THAT APPLY TO THE TASK BEING PERFORMED.

CONTAMINANT	ODOR THRESHOLD	OSHA PEL[1]	TLV (ACGIH)	OSHA CEILING[2] /STEL	IDLH CONC.	ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE[3]
Cyanide	0.9 mg/m^3	5 mg/m^3	5 mg/m^3 (10 min)	5 mg/m^3	25 mg/m^3	Inh, Ing, Abs, Con	Weak, Head, Nau, Conf, Cyan
Dibenzo(a,h)anthracene						Inh, Ing	
Dichloromethane	540 mg/m^3	25 ppm	50 ppm	125 ppm	[2,300 ppm]	Inh, Abs, Ing, Con	Irrit Eyes, Skin, lass, drow, dizz, Numb, tingl, Nau, [Carc]
Diethylphthalate**	---	None	5 mg/m^3	---	N.D.	Inh, Ing, Con	Irrit Eyes, Skin, Nose, Throat, Head, Dizz, Nau, Lac, Possible Polyneur, Vestibular Dysfunc, Pain, Numb, lass, Spasms in Arms and Legs
Di-n-octylphthalate	---	---	---	---	---	Inh, Ing, Con	---
Dimethylpthalate	---	5 mg/m^3	5 mg/m^3	---	2,000 mg/m^3	Inh, Ing, Con	Irrit, Resp, Abdom
Ethyl Benzene*	8.7 mg/m^3	100 ppm	100 ppm	125 ppm	700 ppm	Inh, Abs, Con	Head. Irrit, Derm, Narc., Irrit Eyes, Skin; Coma
Fluoranthene		0.2 mg/m^3	0.2 mg/m^3			Ing, Inh	[Carc]
Fluorine*	6 mg/m^3	0.1 ppm	1 ppm	2 ppm	25 ppm	Inh, Con	
Fuel Oil/#2	----	----	300 ppm	----		Inh, Abs, Ins, Con	Irrit Eyes, Skin, Derm, Head, Ftg, Blurred Vision, Dizz, Conf
Ideno(1,2,3-cd)pyrene		0.2 mg/m^3				Ing, Inh	
Lead (inorganic forms and dust as Pb)****		0.05 mg/m^3	0.05 mg/m^3		100 mg/m^3	Inh, Ing, Con	Irrit, Cns, Vomit, Narco, Weak, Pall, Insom, Lass, Abdom, Constip
Mercury (organic alkyl compounds) [skin]		0.01 mg/m^3	0.01 mg/m^3	0.03 mg/m^3	2 mg/m^3	Inh, Abs, Ing, Con	Irrit Eyes, Skin; Cough & Chest Pain, Bron Pneu, Tremor, Insom, Irrty, Indecision, Head, Ftg, Weak, Stomatitis, Salv, GI Dist, Anor, Low-wgt, Ataxia

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CONTAMINANT	ODOR THRESHOLD	OSHA PEL[1]	TLV (ACGIH)	OSHA CEILING[2] /STEL	IDLH CONC.	ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE[3]
Mercury (compounds)	----	0.1 mg/m^3	0.025 mg/m^3	0.1 mg/m^3	10 mg/m^3	Inh, Abs, Ing, Con	Irrit Eyes, Skin; Cough & Chest Pain, Bron Pneu, Tremor, Insom, Irrty, Indecision, Head, Ftg, Weak, Stomatitis, Salv, GI Dist, Anor, Low-wgt, Ataxia
Methanol	13.1150 mg/m^3	200 ppm	200 ppm	---	6,000 ppm	Inh, Abs, Ing, Con	Irrit Eyes, Skin, Resp, Head, drow, dizz, Nau, Vomit, vis dist, Optic, derm
Methyl Ether	----	----	---	----	---	Inh	Poison
Methyl Ethyl Ketone (2-Butanone)***	0.7375 mg/m^3	200 ppm	200 ppm	300 ppm	3,000 ppm	Inh, Con, Ing	Irrit Eyes, Skin, Nose, Throat, Head, Dizz, Vomit, Derm
Methylene Chloride	540 mg/m^3	25 ppm	50 ppm	125 ppm	[2,300 ppm]	Inh, Ing, Con, Abs	Ftg, Weak, dizz, drow, Numb, Tingle [carc], Irrit Eyes, Skin, Nau
Mineral Spirit	20 ppm	500 ppm	100 ppm	---	20,000 mg/m^3	Inh, Ing, Con	Irrit Eyes, Nose, Throat, Dizz, Derm, Chemical pneu
Methyl tert butyl ether (MTBE)	---	---	50 ppm	---		Inh, Abs	
Naphtha	0.86 ppm	100 ppm	400 ppm	---	1,000 ppm	Inh, Con, Ing	Light Head, Drow, Irrit, Derm, Irrit Eyes, Skin, Nose
Naphthalene*	0.084 ppm	10 ppm	10 ppm	15 ppm	250 ppm	Inh, Abs, Ing, Con	Eye irritation; headache; confusion, excitement, malaise (vague feeling of ill-being); nausea, vomiting, abdominal pain; irritated bladder; profuse sweating; renal shutdown; dermatitis
Nickel (metal)	---	1 mg/m^3	1.5 mg/m^3	---	[10 mg/m^3]	Inh, Ing, Con	Head, Verti, Nau, Vomit, Pain, Cough, Weak, Convuls, Delirium, Pneu, ,[Carc]
Nitrobenzene	0.0235 mg/m^3	1 ppm	1 ppm	---	200 ppm	Inh, Abs, Ing, Con	Irrit Eyes, Skin, Anoxia, Derm, Anem, Methem

TABLE 13
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CONTAMINANT	ODOR THRESHOLD	OSHA PEL[1]	TLV (ACGIH)	OSHA CEILING[2] /STEL	IDLH CONC.	ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE[3]
n-Butylbenzene	---	---	---	---	---	---	---
n-Propylbenzene	---	---	---	---	---	---	---
PCBs 42% chlorine (Aroclor 1242)	---	1 mg/m^3 (skin)	1 mg/m^3 (skin)	---	[5 mg/m^3]	Inh, Abs, Ing, Con	Irrit Eyes, Chloracne, Liver Damage [carc]
PCBs 54% chlorine (Aroclor 1254)	---	0.5 mg/m^3 (skin)	0.5 mg/m^3 (skin)	---	[5 mg/m^3]	Inh, Abs, Ing, Con	Irrit Eyes; Chloracne, Liver Damage [carc]
PFAS	There are currently no established exposure limits for PFAS. If your project involves potential exposure to PFAS, reach out to the CHSO or OHSM about current best practices relative to exposure controls.						
Petroleum Distillates	---	500 ppm	100 ppm		[1,100 ppm]	Inh, Ing, Con	Dizz, Drow, Head, Dry Skin, Nau, Irrit Eyes, Nose, Throat, [Carc]
Phenanthrene (Coal Tar Pitch)		0.2 mg/m^3	0.2 mg/m^3		[80 mg/m^3]	Inh, Con	Derm, bron, (carc)
Phenol**	0.1786 mg/m^3	5 ppm	5 ppm	---	250 ppm	Inh, Abs, Ing, Con	Irrit Eyes, Nose, Throat, Anor, Low Wgt, Weak Musc Ache, Pain, Dark Urine, Cyan, Liver, Kidney Damage, Skin, Burns, Derm, Ochronosis, Tremor, Convuls, Twitch
Pyrene		0.2 mg/m^3			[80 mg/m^3]	Inh, Con	[Carc]
Sec-Butylbenzene	---	---	---	---	---	---	---
Selenium	N/A	0.2 mg/m^3	0.2 mg/m^3	Unknown	1 mg/m^3	Inh, Ing, Con	Irrit, Head, Fever, Chills, Skin/Eye Burns, Metallic Taste, GI, Dysp, Bron
Silver (metal and soluble compounds as Ag)	----	0.01 mg/m^3	Metal = 0.1 mg/m^3 Soluble 0.01 mg/m^3		10 mg/m^3	Inh, Ing, Con	Blue-gray Eyes, Nasal Septum, Throat, Skin; Irrit, Ulcer, Skin, GI Dist
Tetrachloroethylene (a.k.a. perchloroethylene)***	4.68 ppm	100 ppm	25 ppm	200 ppm	[150 ppm]	Inh, Ing, Con, Abs	Irrit Eyes, Skin, Nose, throat, Resp. Nau, flush face, Neck, dizz, inco, head, drow, eryth, [Carc]

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Toluene*	2.14 ppm	200 ppm	50 ppm	300 ppm	500 ppm	Inh, Abs, Ins, Con	Resp, Irrit, Ftg, Conf, Dizz, Head, Derm, Euph, Head, Dilated Pupils, Lac, Ner, Musc FTg, Insom, Pares, Derm, lass
Petroleum Distillates (naphtha)	10 ppm	100 ppm	400 ppm	---	1,000 ppm	Con, Inh, Ing	---
Trans 1,2-Dichloroethylene	0.3357 mg/m^3	200 ppm	200 ppm	---	1,000 ppm	Inh, Con	Irrit, Resp, CNS depress
Trichloroethylene***	21.4 ppm	100 ppm	50 ppm	200 ppm	[1,000 ppm]	Inh, Con, Abs, Ing	Head, Vert, Nau, Vomit, Derm, Vis Dist, Tremors, Som, Nau, Irrit Eyes, Skin, Card Acc., Ftg, [Carc]
Trichlorofluoromethane	28 mg/m^3	1,000 ppm	1,000 ppm		2,000 ppm	Inh, Con, Ing	Inco, trem, derm, card, asph, frost
Trichlorotrifluoroethane	45 ppm	1,000 ppm	1,000 ppm	1,250 ppm	2,000 ppm	Inh, Con, Ing	Irrit Skin, throat, Drow, Derm, CSN, Depress
Vinyl Chloride***	10-20 ppm	1 ppm	1 ppm	5 ppm	ND	Inh, Con	Lass, Abdom, Gi Bleeding; Hepatomegaly; Pallor or Cyan of Extremities; Liq: Frostbite; [Carc]
VM&P Naphtha (petroleum naphtha)	---	---	300 ppm	---	ND	Con, Ing, Inh	Irrit Eyes, Nose, Throat, Dizz, drow, head, nau, dry skin, chem. Pneumonitis
Xylene*	4.5 mg/m^3	100 ppm	100 ppm	150 ppm	900 ppm	Inh, Ing, Abs, Con	Dizz, Drow, Irrit, Excite, Nau, Vomit, Eyes, Skin, Nose, Throat
Zinc (oxide)	---	5 mg/m^3	2 mg/m^3	---	500 mg/m^3	Inh	Dry Throat, Cough, Chills, Tight Chest, Blurred Vision
4,4′ DDD	---	---	---	---	---	Ing, Inh, Con	---
4,4′ DDE	---	---	---	---	---	Ing, Inh, Con	---
4,4′ DDT	5.0725 mg/m^3	1 mg/m^3	1 mg/m^3	---	[500 mg/m^3]	Inh, Abs, Ing, Con	Irrit Eyes, Skin, Pares, Tongue, Lips, Face, Trem, Anxi, Dizz, Conf, Mal, Head, Lass, Conv, Paresi Hands, Vomit, [Carc]

TABLE 13
CONTAMINANTS OF CHEMICALS KNOWN OR SUSPECTED ONSITE
*HIGHLIGHT THOSE THAT APPLY TO THE TASK BEING PERFORMED.

CONTAMINANT	ODOR THRESHOLD	OSHA PEL[1]	TLV (ACGIH)	OSHA CEILING[2] /STEL	IDLH CONC.	ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE[3]
Aldrin		0.25 mg/m^3	0.25 mg/m^3	---	[25 mg/m^3]	Inh, Abs, Ing, Con	Head, Dizz, Nau, Vomit, Mal, Myo [Carc]
Chlordane [skin]	0.0084 mg/m^3	0.5 mg/m^3	0.5 mg/m^3		[100 mg/m^3]	Inh, Abs, Ing, Con	Blurred vision, confusion, delirium, cough; abdominal pian, nausea, vomiting diarrhea; irritability, tremor, convulsions [Carc]
EDB	76.8 mg/m^3	20 ppm		30 ppm	[100 ppm]	Inh, Abs	Resp. Irr, Eye Irr. [Carc]
Endosulfan I Endosulfan II	---	0.1 mg/m^3	0.1 mg/m^3	---	N.D.	Inh, Abs, Ing, Con	Irrit, Skin, Nau, Conf, Agit, Flush, Dry, Trem, Conv, Head
Endosulfan Sulfate		---	0.1 mg/m^3	---	---	Ing, Con	---
Endrin	1.8 x 10^{-2} ppm	0.1 mg/m^3	0.1 mg/m^{-3}	---	2 mg/m^3	Inh, Abs, Ing, Con	Epil Conv, Stup, Head, Dizz, Abdom, Nau, Vomit, Insom, Agress, Conf, Drow, Lass, Anor
Endrin Aldehyde	1.8 x 10^{-2} ppm	---	---	---	---	Inh, Con	---
Endrin Ketone	---	---	---	---	---	---	---
Heptachlor	0.02 ppm	0.5 mg/m^3	0.05 mg/m^3	---	[35 mg/m^3]	Inh, Abs, Ing, Con	In animals, Trem, Conv, [Carc]
Heptachlor epoxide	0.02 ppm	---	0.05 mg/m^3	---	---	Ing, Inh	Trem, Conv, [Carc]
Hydrogen Cyanide(Hydrocyanic Acid)	0.9 mg/m^3	10 ppm (11 mg/m^3)	4.7 ppm	4.7 ppm	50 ppm	Con, Inh, Ing, Abs	Asphy & death at high levels; Weak, Head, Conf, Nau, Vomit, Incr. Rate and Depth of Respiration or Respiration Slow and Gasping

TABLE 13
CONTAMINANTS OF CHEMICALS KNOWN OR SUSPECTED ONSITE
*HIGHLIGHT THOSE THAT APPLY TO THE TASK BEING PERFORMED.

CONTAMINANT	ODOR THRESHOLD	OSHA PEL[1]	TLV (ACGIH)	OSHA CEILING[2] /STEL	IDLH CONC.	ROUTES OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE[3]

NOTES

* = Constituent found in ETPH

**=Constituent found in Acid/Base/Neutral Extractable Compounds

***=Constituent found in Volatile Organic Compounds

****=Constituent found in Leaching Lead

[1]PEL = Permissible Exposure Limit. If no PEL is available, then the NIOSH Threshold Limit Value (TLV) should be used, if available.

[2]Ceiling limit or Short-Term Exposure Limit (STEL), if available. Again, the NIOSH TLV may be used if no OSHA standard exists.

[3]Abbreviations are contained on the next page

[ ] = Potential Occupational Carcinogen

ND = Not Been Determined

ABBREVIATIONS

abdom = Abdominal
abs = Absorption
aggress = Aggressiveness
agit = Agitation
anor = Anorexia
anos = Anosmia (loss of the sense of smell)
Anxi = anxiety
anem – Anemia
aspir = Aspiration
asph – asphyxia
bron = Bronchitis
bron pneu = Bronchitis pneumonitis
[carc] = Potential occupational carcinogen
Card = Cardiac arrhythmias
CNS = Central nervous system
conf = Confusion
constip = Constipation
con = Skin and/or eye contact
conv = Convulsions
corn = Corneal
cyan = Cyanosis
defat = Defatting
depres = Depressant/Depression
derm = Dermatitis
diarr = Diarrhea
dist = Disturbance
dizz = Dizziness
drow = Drowsiness
dry = Dry mouth
dysp = Dyspnea (breathing difficulty)
emphy = Emphysema
epil-conv = Epileptiform convulsions
eryth = Erythema
euph = Euphoria
fib = Fibrosis
frost = frostbite
ftg = Fatigue
flush = Flushing
GI = Gastrointestinal
head = Headache
hyperpig = Hyperpigmentation
inco = Incoordination
ing = Ingestion
inh = Inhalation
inj = Injury
insom = Insomnia
irrit = Irritation
irrty = Irritability
lac = Lacrimation (discharge of tears)
lass = Lassitude (weakness, exhaustion)
li-head = Lightheadedness
liq = Liquid
low-wgt = Weight loss
mal = Malaise (vague feeling of discomfort)
malnut = Malnutrition
methem = Methemoglobinemia
myo = Myochonic (jerks of limbs)
mg/m = milligrams/cubic meter
muc memb = Mucous membrane
mus ftg = Muscle fatigue
narco = Narcosis
nau = Nausea
ner = Nervousness
numb = Numbness
optic = Optic nerve damage (blindness)
pall = Facial pallor
parap = Paralysis
ppm = Parts per million
pares = Paresthesia
paresi = Paresis
peri neur = Peripheral neuropathy
pneu = Pneumonitis
prot = Proteinuria
pulm = Pulmonary
peri neur = Peripheral neuropathy
pneu = Pneumonia
prot = Proteinuria
pulm = Pulmonary
repro = Reproductive
resp = Respiratory
skin sen = skin sensitization
salv = Salvation
som = Somnolence (sleepiness unnatural drowsiness)
subs = Substernal (occurring beneath the sternum)
stup = Stupor
sys = System
tingle = tingle limbs
trem – Tremors
verti = Vertigo
vis dist = Visual disturbance
vomit = Vomiting
weak = Weakness

APPENDIX A
Safety and Logistics Planning Log

Safety and Logistics Planning Log
DEC009808

Date of Call	
Work Assignment Number / Task	
DEC Site Name and Number	

ATTENDEES		
HRP		
POSITION	**NAME**	**NUMBER**
HRP PM		
HRP SSO		
HRP Other:		
HRP Other:		
SUBCONTRACTORS		
POSITION	**NAME**	**NUMBER**
Driller Contact		
Utility Survey		
Surveyor		
Construction		
Other		
DEC		
POSITION	**NAME**	**NUMBER**
DEC PM		
DEC Other:		
DEC Other:		

BRIEF DESCRIPTION: SCOPE OF WORK (Task Specific)	*Use additional forms for additional tasks

LOGISTICS			
Date of Work		Time to Meet	
Site Contact (phone)			
Notification of Site Contact made by			
Describe any unusual site-specific conditions/logistics here (if any):			

QUESTIONS	**Y/N**	**NOTES**
Water Needed? Source Confirmed?	Y / N	
Electricity Needed? Source Confirmed?	Y / N	
Water Storage Needed?	Y / N	
Water Discharges? Permits Needed/Attained?	Y / N	
Air Monitoring – CAMP?	Y / N	
Will there be intrusive work?	Y / N	
Locations marked in the field?	Y / N	
NYS Code Rule 753/Dig Safe System	Y / N	Ticket Number:
Confirmed that mark-out complete?	Y / N	
Anticipated Subsurface Conditions (Geology, Utilities, etc.):		
Anticipated Depth to Groundwater:		
Will NAPL/Product be Present?	Y / N Describe:	
Will there be any other parties entering the work zones? Describe control measures.		

APPENDIX B
Personnel Log

PERSONNEL LOG				
Name	**Representing**	**Date**	**Time In**	**Time Out**

APPENDIX C
Job Safety Analysis (JSA)

HRP Associates, Inc.
Job Safety Analysis (JSA)

JSA Completed By:	John Gorman

HAZARD RANKING CHART

SEVERITY	CONSEQUENCE	PROBABILITY				
	Injury	Frequent	Likely	Occasional	Seldom	Unlikely
	Fatality	H	H	H	H	M
	Injury Requiring Hospitalization	H	H	H	M	L
	Injury Requiring Medical Treatment Beyond First Aid	H	M	M	L	L
	Injury Requiring First Aid	M	L	L	L	L

TASK:	Overeseeing drillers installing soil borings/monitoring wells with Geoprobe drill rig		
LOCATION OF TASK PERFORMED:	Various proposed locations on offsite properties	DATE OF JSA:	6/9/25

TASK DESCRIPTION

*There are different categories of hazards to include: Biological, Physical, Safety, Chemicals, and Ergonomics.

STEPS	HAZARD	CONTROL MEASURES	RISK RATING
Soil boring installation	Hearing Damage from Loud Drill	Wear hearing protection (earplugs), maintain safe distance from drill rig	Low
Soil Sampling/Groundwater Development/Groundwater Sampling	Coming in Contact with Chromium Contaminated soil/water	Wear nitrile gloves, avoid direct skin contact with media	Low
Drillers moving geoprobe through traffic zone	Struck by/struck against	Wear high visibility clothing, drillers to use spotter	Low

JSA Completed By	

HAZARD RANKING CHART

SEVERITY	CONSEQUENCE	PROBABILITY				
	Injury	**Frequent**	**Likely**	**Occasional**	**Seldom**	**Unlikely**
	Fatality	**H**	**H**	**H**	**H**	**M**
	Injury Requiring Hospitalization	**H**	**H**	**H**	**M**	**L**
	Injury Requiring Medical Treatment Beyond First Aid	**H**	**M**	**M**	**L**	**L**
	Injury Requiring First Aid	**M**	**L**	**L**	**L**	**L**

TASK			
LOCATION OF TASK PERFORMED		**DATE OF JSA**	

TASK DESCRIPTION

*There are different categories of hazards to include: Biological, Physical, Safety, Chemicals, and Ergonomics

STEPS	HAZARD	CONTROL MEASURES	RISK RATING

APPENDIX D
Toolbox Talk

TOOLBOX TALK

GENERAL INFORMATION		
Person Conducting	**Site Name/Address**	**HRP Client Name/Job #**
Client Contact/Phone	**HRP H&S Rep.**	**HRP Supervisor**
Date/Time	**Number Attending**	**Weather**
Designated Competent Person:		
Description of Work		

ATTENDEES (Use additional sheets as needed)		
Name	**Company**	**Signature**

EMERGENCY CONTACT INFORMATION		
Emergency Telephone Numbers	FIRE / POLICE / AMBULANCE: 911	
Hospital Name & Location:		
NYSDEC Spill Line: 1-518-457-7362	National Response Center: 800-424-8802	CBYD: 800-922-4455
Health & Safety Manager:		

HAZARDS		
☐ Toxic	☐ Extreme Cold/Heat	☐ Soil Excavation
☐ Corrosive	☐ Drains/Sumps	☐ Tank Excavation
☐ Flammable	☐ Sharp Objects	☐ Trenching
☐ Combustible	☐ Drilling in Soil	☐ Floor Holes
☐ Reactive	☐ Lighting	☐ Working on/near Water
☐ Path Waste	☐ Slips/Trips/Falls	☐ Underground/Overhead Utilities
☐ Asbestos	☐ Lead	☐ Power washing
☐ Abrasive Blasting	☐ Abrasive Blasting	☐ Lifting
☐ Drum Handling	☐ Live Electrical Circuits	☐ Noise
☐ Pneumatic Tools	☐ Elevated Work Area	☐ Ladders
☐ Vac Truck	☐ Hot Work	☐ Vehicle Traffic
☐ Other (s):		

TOOLBOX TALK

PERSONAL SAFETY / PERSONAL PROTECTIVE EQUIPMENT (PPE)			
☐ Supplied Air Respirator	☐ SAR w/Egress Bottle	☐ SCBA	☐ Air Purifying Respirator Cartridge:
☐ Fully Encapsulating Suit	☐ Flash Suit	☐ NOMEX (flam resistant)	☐ Protected Coveralls, Type:
☐ Overboots	☐ Lifebelt/Lanyard	☐ Hardhats	☐ Outer Gloves, Type:
☐ Safety Glasses	☐ Chemical Goggles	☐ Face Shield	☐ Inner Gloves, Type:
☐ Reflective Vests	☐ Eye Wash	☐ Safety Shower	☐ First Aid Kit
☐ Hearing Protection	☐ Evacuation Plan	☐ Communications	☐ Properly Sloped Excavation/ Trench
☐ PFD's	☐ Ventilation	☐ Steel Toe Boots	

FIRE SAFETY			
☐ Fire Extinguishers	☐ Hot Work Permit	☐ Fire Blanket	☐ Explosion-Proof Equipment
☐ Equipment Grounded & Bonded	☐ Non-Sparking Tools	☐ Eliminate Ignition Sources	☐ Area Kept Wet
☐ Smoking Area Designated Location:	☐ Fire Hose Laid Out	☐ Alarm Box in Area, Location:	

ISOLATE EQUIPMENT & ELECTRICAL EQUIPMENT			
☐ Establish Exclusion Zone/Traffic Cones	☐ Work Signs	☐ LockOut/TagOut	☐ Non-Conductive Tools
☐ Stop Transfers	☐ Caution Tape Area	☐ Equipment Grounded	☐ FR Suits/Coveralls
☐ GFCIS	☐ Temporary Fencing		

AIR MONITORING			
Type of Meter:		Date last calibrated:	
SUBSTANCE	**LEVEL B MAX.**	**ACTION LEVEL/LEVEL C MAX.**	**LEVEL D MAX.**

HEALTH & SAFETY COMMENTS-QUESTIONS-CONCERNS / TOPICS & SAFET RULES REVIEWED

Contaminants of Concern:			
HEALTH & SAFETY SIGNATURE:		Date:	

Is there a Health & Safety Plan available on-site? Yes ☐ No ☐

☐ HAZARD ZONES NOT APPLICABLE, GENERAL WORK AREA Level D ☐ Modified Level D ☐ Level C ☐

Anything above Level C, foreman should use a Confined Space Permit/Form.

Note: HOT WORK requires a hot work permit and minimum 20# fire extinguisher. Foreman or HSM must record at least one contaminant of concern above. Toxic plants may be considered a COC if no chemical hazards are expected.

LEVEL C

Respirator Type:	

Name	Zone	Time In	Time Out	Decon Type

Before performing Level C work, ALL employees must review HRP's Respiratory Protection Program - a copy of which must be on-site along with a HASP.

APPENDIX E
Specific Procedures

APPENDIX F

Safety Data Sheets

(for chemicals brought to the site)

REVISION HISTORY

REVISION AND APPROVAL LOG			
REVISION DATE	**REVISION CONTENT**	**REVISED BY**	**APPROVED BY**
1/18/2021	Initiation of document/Reviewed by Jackie Baxley	SF	TAG
6/6/2024	- Update formatting - Update order of headers - Implemented tables within HASP, not as Appendix - Combining NY and other states – generic HASP to make site-specific - Checkbox formatting - Updated Action Levels Table	JLE	TAG

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing 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, monitoring during well baling/purging, 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 required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should 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 must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

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 must 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 must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/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 must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/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 PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Site Specific Additions to Generic CAMP:

DOH has requested a daily copy of the CAMP data as it becomes available.
Daily reports will be emailed to :
jacquelyn.nealon@health.ny.gov
If there are any exceedances to the CAMP, DEC and DOH will be notified as soon as possible.

DOH contact is Jacquelyn Nealon
518 402 7883