



REVISED INTERIM REMEDIAL MEASURE WORK PLAN

**950 5TH STREET
WATERVLIET, NEW YORK 12189
NYSDEC BCP SITE NO. C401082 (LINCOLN AVE SITE)**

Prepared for:

New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-0001

Prepared by:

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19 British American Boulevard
Latham, New York 12110

On behalf of:

Lincoln Avenue Development II, LLC
49 Railroad Avenue
Albany, New York 12205

Submitted: November 22, 2023

Project No: 20-03399-001

A decorative graphic in the bottom right corner of the page, consisting of several overlapping, diagonal, triangular shapes in shades of blue and grey, pointing towards the top right.



REVISED INTERIM REMEDIAL MEASURE WORK PLAN
950 5th Street, Watervliet, New York 12189

“I, Janet Tallman, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Interim Remedial Measure 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).”

Signature

11/22/2023

Date



TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	SITE DESCRIPTION AND BACKGROUND.....	1
2.1	HISTORICAL SITE USE AND INFRASTRUCTURE	2
2.2	PETROLEUM INFRASTRUCTURE INVESTIGATIONS	3
3.0	DESIGN APPROACH.....	4
3.1	OBJECTIVES.....	4
3.2	GPR SURVEY	4
3.3	LINE TRACING.....	5
3.4	TEST PITS.....	5
3.5	REMNANT PETROLEUM PIPELINE CLEANING	5
3.6	SURVEY	7
4.0	DESIGN SCOPE.....	7
5.0	PERMITS OR OTHER AUTHORIZATIONS.....	8
6.0	SCHEDULE.....	8

TABLES (in-text)

TABLE 1	Site Parcel Characteristics
TABLE 2	Occupants Adjacent to the Site
TABLE 3	Relevant Tank Records
TABLE 4	Schedule
TABLE 5	Project Personnel

FIGURES

FIGURE 1	Site Location Map
FIGURE 2	Tax Parcel Map
FIGURE 3	Aerial Map of Site
FIGURE 4	Petroleum Infrastructure Investigation Summary

APPENDICES

APPENDIX A	Health and Safety Plan
APPENDIX B	CAMP



1.0 INTRODUCTION

An Interim Remedial Measure (IRM) means limited remedial activities to address site conditions, which can be undertaken without extensive investigation and evaluation, to prevent, mitigate or remedy environmental conditions at a site. Actions taken before the completion of the Remedial Investigation (RI) and remedial alternative selection, are considered Interim Remedial Measures.

This Interim Remedial Measures Work Plan (IRMWP) has been prepared by JMT of New York, Inc. (JMT) on behalf of Lincoln Avenue Development II, LLC and is being submitted as part of the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) requirements. This plan addresses remedial activities associated with remnant petroleum pipes and possible USTs. The IRMWP has been prepared in accordance with 6NYCRR Part 375 and NYSDEC Guidance Document DER-10.

2.0 SITE DESCRIPTION AND BACKGROUND

The site is positioned along the east border of the Town of Colonie, west of 9th Avenue and east of Lincoln Avenue. Topography is fairly level, ranging from 40 to 50 feet (ft.) above mean sea level and sloping east-southeast (see Figure 1). The site is comprised of one parcel owned by Lincoln Avenue Development II, LLC (see Figure 2). Parcel specifications are shown in the table below.

TABLE 1: SITE PARCEL CHARACTERISTICS	
Street Address	950 5 th Street
Tax ID	44.10-1-32.1
Acreage	44.85 (portion of tax parcel 44.10-1-32.1)
Current Site Use	Unoccupied, remnant structures

The site did contain some wooded areas, but all trees and roots have now been cleared. Several unoccupied structures and multiple remnants of structural foundations remain. Figure 3 is an aerial map of the site.

Surrounding land use is a mixture of residential, commercial, industrial (manufacturing, junkyard, railroads, Watervliet Arsenal). See Table 2 below for occupants directly adjacent to the site.



TABLE 2: OCCUPANTS ADJACENT TO THE SITE	
Direction	Occupant (Address)
North	United States of America, Watervliet Arsenal (950A 5 th St.)
South	Lincoln Ave Development, LLC (861 1 st St.)
East	Lincoln Ave Development, LLC; various residential properties
West	Delaware & Hudson Railway Co. (49 Lincoln Ave.)

Proposed site use is industrial with the possibility of commercial activities.

2.1 HISTORICAL SITE USE AND INFRASTRUCTURE

The site was developed as a railyard prior to 1916 by the Delaware and Hudson Railroad Corporation (D&H Estates, Inc.) and was used for repairs, maintenance, and fueling of locomotives until 2010. Additional site uses during various portions of that time included electricity generation, bulk petroleum storage, metal smelting, and warehousing of transported goods.

Historical aerial photographs and facility maps indicate the prior existence of several structures onsite during historical operations; some of these buildings and/or foundations still exist. Petroleum related features that remain include the foundation for a former oil house, some or all of three former pump houses, subsurface fuel or oil pipelines, and pipe stick-ups. The approximate locations of these features - as determined using historical D&H Facility maps, visible aboveground remains, and underground remains encountered during test pit explorations - are shown on Figure 4.

According to former D&H Railyard facility maps for the site and NYSDEC FOIL records provided in the approved Remedial Investigation Work Plan (RIWP), two underground storage tanks (USTs) and seven aboveground storage tanks (ASTs) existed within the footprint of the BCP site. All of the ASTs at the Site have been removed. Three of the former ASTs are unlikely to have included underground piping associated with them, as they were small aboveground tanks located directly adjacent to the buildings for which they likely supplied heating oil. The remaining three ASTs and the two USTs are listed in Table 3. Figure 4 shows the approximate location of these known past tanks, as determined using historical D&H Facility maps, Petroleum Bulk Storage Records, and miscellaneous maps from a December 2021 NYSDEC FOIL response.



TABLE 3: RELEVANT TANK RECORDS

Tank IDs from Historical Facility Maps	Tank ID From DEC Tank Database Records	AST or UST	Size (gallons)	Material Stored	Status	Source of Information
5	1	AST	12,000		Closed before 4/1/1991, Removed	EDR records database search, 3/23/2017 & 12/15/2021 NYSDEC FOIL Request
6	90354 (#6)	UST	2,000	Gasoline	Closed before 3/1991, Removed	
7	90355 (#7)	UST	2,000	Diesel	Closed before 3/1991, Removed	
11	N/A	AST	406,560	Fuel Oil	Removed	D&H Railyard Facility Map, 1944
12	N/A	AST	600,000	Fuel Oil	Removed	

According to historical maps, most of the remaining petroleum pipes in the subsurface once extended between the two largest tanks listed above, their corresponding pump houses (Pump Houses 1 and 3, shown in Figure 4), and several fuel offloading and dispensing locations.

2.2 PETROLEUM INFRASTRUCTURE INVESTIGATIONS

During a JMT field inspection in December 2020, multiple vertical stick-up pipes were observed directly east of Building 5 and on the east side of Pump House 3. Additionally, single stick-up pipes were observed near Pump Houses 1 and 2. The approximate locations of those stick-ups are shown on Figure 4. These pipes appear to be related to oil pipelines rather than USTs, based on a ground penetrating radar investigation. Some of these contained petroleum products and were subsequently capped.

As part of a prior Phase II ESA, JMT conducted ground penetrating radar (GPR) surveys at multiple locations on the site to locate any potential USTs and determine the existence of underground pipes. The GPR surveys were performed with a 400-megahertz (MHz) antenna, which has a maximum penetration depth of about 8 ft., depending upon soil conditions. Forty GPR transects, ranging in length from about 20 to 135 ft., were collected across the BCP site. The data collection areas (shown on Figure 4), focused on locations that would most likely contain underground fuel pipes or a UST (i.e., the former pump houses, the oil house, and the fueling stations).



The GPR data was recorded in the field for later processing and interpretation in the office. Data quality was generally good and subsequent computer processing with RADAN (developed by GSSI), primarily focused on noise removal and signal strength adjustment. No anomalies consistent with USTs were observed on any of these initial GPR transects. As shown in Figure 4, several anomalies likely associated with subsurface piping were observed. Many of the anomalies were located near remnant stick-up pipes at the surface. The GPR reflection responses were generally weak in signal strength. This could be due to the possible presence of asbestos around some of the pipes, which was observed in Test Pit 30, but not in Test Pits 39, 40, and 41 (see Figure 4 for test pit locations).

Prior to performing the remedial investigation, additional geophysical activities were completed using GPR and a Fisher TW82P Digital Line Tracer. Additional portions of the remaining subsurface pipes were further identified, as well as two geophysical anomalies at a depth of 5 feet. These two deeper anomalies were located near the estimated location of the two historical USTs (see Figure 4).

3.0 DESIGN APPROACH

The purpose of this section is to identify the methodologies that will be used to complete the design and include work plans for any investigations to gather this information.

3.1 OBJECTIVES

To prevent possible releases during future construction or leaks from remnant petroleum pipes, the property owners plan to expose and remove any remaining petroleum liquids within the pipelines/stick-ups. Any pipes wrapped in asbestos will be treated appropriately and in accordance with all regulations while handling.

3.2 GPR SURVEY

An additional GPR survey will be performed with a 400-MHz antenna in areas where the two former USTs were previously located and two GPR anomalies were identified, as mentioned above. GPR will also be performed on the east side of Building 5, where other stick-up pipes were observed, and at the location of the former fueling station, directly due east of Pump House 3.



3.3 LINE TRACING

As previously mentioned, a Fisher TW82P Digital Line Tracer was used prior to the remedial investigation to identify potential pipes that were in close proximity to proposed test pits and soil borings. During the IRM, additional line tracing will be performed in areas where remnant stick-up pipes come to the surface and also in other areas where existing maps indicate that subsurface piping may remain. A field “mark out” of any potential pipes will be performed.

3.4 TEST PITS

Test pits will be excavated to confirm suspected pipe locations. The test pit excavation equipment will be operated by Luizzi Brothers personnel. A subsurface log will be created by JMT for each test pit. The soil from the test pits will be returned to its original location and depth unless grossly contaminated soil is encountered. As per 6 NYCRR 375-1.2(u), “grossly contaminated media” is defined as soil, sediment, surface water, or groundwater which contains sources or substantial quantities of mobile contamination in the form of NAPL that is identifiable wither visually, through strong odor, by elevated contaminant vapor levels, or is otherwise readily detectable without laboratory analysis. Grossly contaminated soil, if present, will be stockpiled on poly sheeting, sampled, and covered. Once the analytical results are obtained, the DEC will be consulted to determine whether the soil may be placed back in the original excavation or taken off site for disposal at a permitted facility.

3.5 TANK AND REMNANT PETROLEUM PIPELINE REMOVAL

Based on previous investigations, it is unlikely that any USTs remain onsite. However, if any USTs are discovered during investigation activities, closure and removal will be completed in accordance with DER-10.

Once remnant petroleum pipelines have been carefully exposed, a qualified operator will access the pipelines with a “sparkless” line-tapping device in multiple locations to determine if any product is present. If there is product, vacuum extraction will be used to remove the liquid contents and the pipeline will be swabbed with an oil-absorbent “pig” device. Extracted liquid will be placed in sealed containers (i.e., drums frac tank, etc.) and tested prior to disposal at a permitted facility. During the liquid extraction process, spill control measures such as plastic sheeting, oil booms,



and absorbent material will be utilized as necessary. Once empty, petroleum pipes will be carefully excavated.

Once fully uncovered, the condition of the piping will be examined for pitting, holes, or leak points. The condition of the pipes will be documented with descriptions and photographs. The pipes will then be removed. The floor and sidewalls of the excavated pipe trench will be examined for any physical evidence of soil or groundwater contamination. The floor and sidewalls will then be screened with PID screening every 5 feet along the trench. If there is evidence of grossly contaminated soils, excavation will continue until contaminated soil is removed (based on field visual/PID observations). Non-contaminated soil will be used as backfill at the same area where it was excavated. All grossly contaminated soil will be separated, placed on plastic, and covered with plastic until it is sampled and sent for proper disposal.

If LNAPL is observed on groundwater, “best efforts” will be made to skim off the LNAPL via absorbent pads and/or vac truck and containerize it for proper disposal. All liquids produced from decontamination of the vac truck will also be containerized for proper disposal at a permitted facility.

As per DER-10, soil samples will be collected beneath the piping runs at approximately 20-foot intervals. Sample locations will be biased to the suspected locations of greatest contamination. This will include areas of high PID measurements and/or joints, dispensers, and other potential discharge areas. Soil samples will be collected at depths ranging from zero to six inches below the piping, except in areas where the piping is laid directly on the bedrock. In those areas, samples will be collected from soil adjacent to the pipes. Because there were very few elevated VOC concentrations detected in the soil or groundwater during the recent remedial investigation, and because historical petroleum uses included primarily diesel and rarely gasoline, soil samples will be analyzed for SVOCs. If elevated PID readings are observed (50 ppm or greater), the corresponding sample may also be analyzed for VOCs.

One suspected asbestos-wrapped pipe was encountered at a test pit (i.e., TP-30) during a prior Phase II Environmental Site Assessment investigation (see Figure 4). If suspected ACM is encountered during activities subject to this IRM, a New York State Department of Labor (NYS DOL) licensed asbestos inspector/sampler will confirm the presence of ACM, and a licensed asbestos project designer will apply for an Industrial Code 56 variance as necessary prior to any



pipeline handling. If required, a licensed asbestos remediation contractor will ensure compliance with the variance to complete IRM activities in the ACM area.

Following soil sampling, the trenches will be left open until the soil sample results confirm that remaining concentrations in the soils are not significantly elevated and that NYSDEC agrees that they can be backfilled. In the event that offsite backfill is required, it will be sampled per DER-10 and a request for use will be sent to NYSDEC.

If any investigation derived waste is generated, it will be managed in the accordance with DER-10, Chapter 3, Section 3.3, Subdivision (e) - Management of investigation derived waste.

3.6 SURVEY

All discovered pipe locations will be documented with a survey-grade GPS using a North American Vertical Datum of 1988 to provide coordinate and elevation data.

3.7 CONSTRUCTION COMPLETION REPORT

At the completion of the IRM, all work conducted during the IRM will be documented in a Construction Completion Report (CCR).

4.0 DESIGN SCOPE

Line tracing, GPR, and test pits will be used to confirm the location of the subsurface pipes and facilitate oil draining activities. The areas where these strategies will be deployed are as follows:

- The area between Pump House 2 and the Former Oil House,
- The area around Pump House 1,
- The area in the location of the two former USTs, where the two anomalies were identified at 5 feet below grade,
- The area just east of Building 5 where there are several stick-up pipes,
- The area between Pump House 3 and the former 600,000 AST location,
- The area between Pump House 3 and the former fueling stations, and



- The former fueling stations to the east and southeast of Pump House 3.

A Health and Safety Plan for JMT field staff present for IRM field work is provided in Appendix A. All ground intrusive activities in this work plan will be subject to a Community Air Monitoring Program (CAMP) presented in Appendix B. If an asbestos variance is required by the DOL, a separate air monitoring plan specifically for asbestos will be created, and both air monitoring plans will be implemented in the area where asbestos is present.

5.0 PERMITS OR OTHER AUTHORIZATIONS

The purpose of this section is to identify all required permits and/or exempted permits or other authorizations, in accordance with section 1.10 of DER-10.

NYSDEC approval is required to begin implementation of the IRMWP. NYS Department of Labor (DOL) approval is required for an asbestos variance if Industrial Code 56 regulations cannot be met for these activities. A qualified asbestos contractor will be consulted to determine its applicability for the planned work. If required, a NYSDOL variance will be obtained prior to beginning work with asbestos-wrapped pipes.

6.0 SCHEDULE

This section provides a schedule for the completion of the IRM. The schedule is shown in Table 4 below.

TABLE 4: SCHEDULE	
Task	Date
Revised IRMWP Submittal	November 22, 2023
Begin IRM Activities	7-14 days after DEC Approval
Complete Field Work	60 to 90 days
Submit CCR	30 to 60 days
Note: Timeframe is sequential	



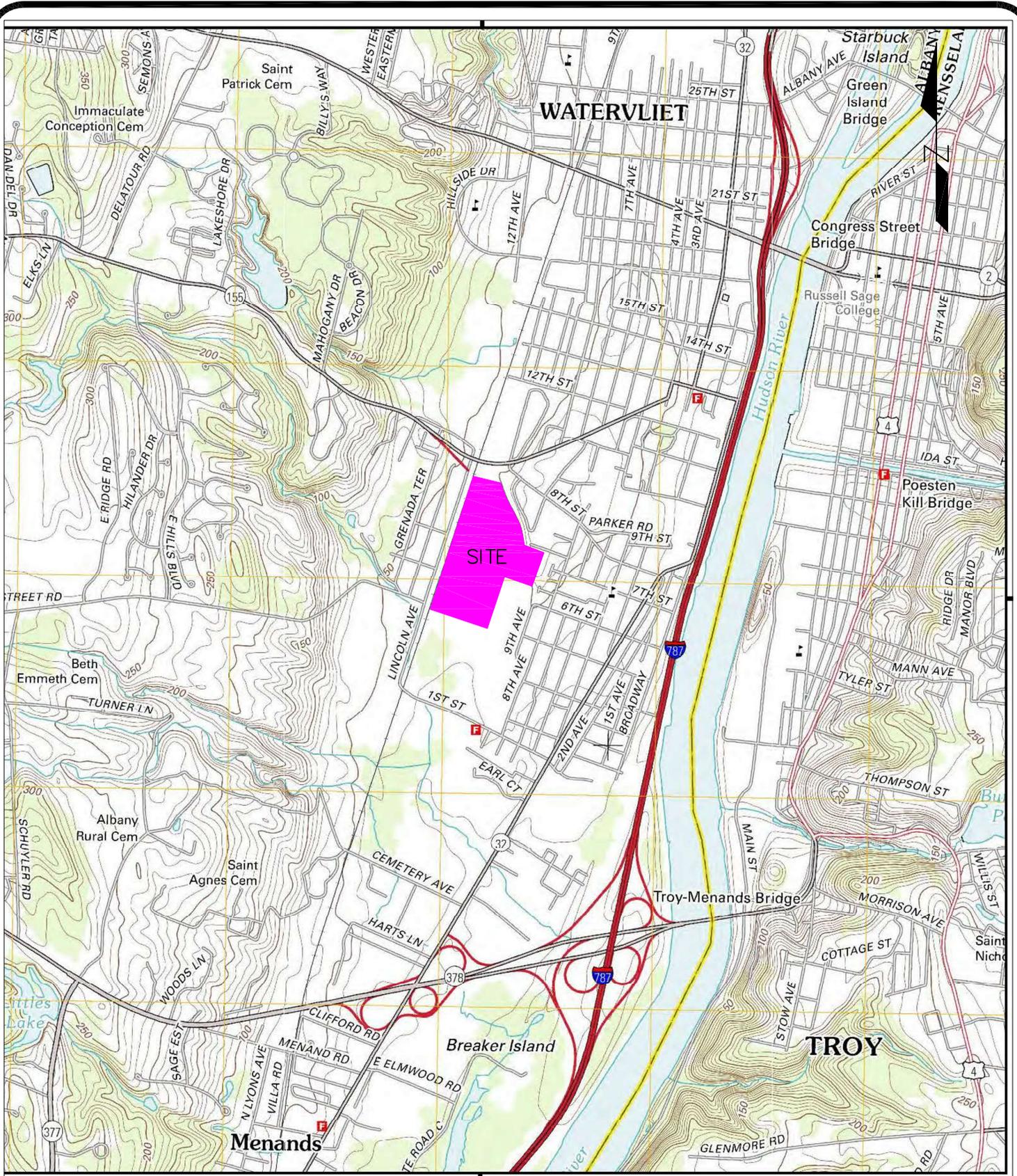
REVISED INTERIM REMEDIAL MEASURE WORK PLAN
950 5th Street, Watervliet, New York 12189

The primary site representative and JMT personnel participating in the proposed activities are shown in Table 5 below.

TABLE 5: PROJECT PERSONNEL				
Personnel	Organization	Email	Phone Number	Role
Chuck Pafundi	Lincoln Avenue Development II, Inc.	cpafundi@luizzibros.com	518-482-8954	Representative of BCP Applicant
Janet Tallman, PE	JMT	jtallman@jmt.com	518-218-5958	Project Manager
Matt Gaffuri	JMT	mgaffuri@jmt.com	518-218-5644	JMT Field Supervisor and Inspector
Nylang Suthar	JMT	ebower@jmt.com	518-218-5952	Field Staff
TBD	Ambient Environmental	TBD	TBD	Asbestos Removal Designer
TBD	Greenbriar Construction	TBD	TBD	Asbestos Contractor



FIGURES



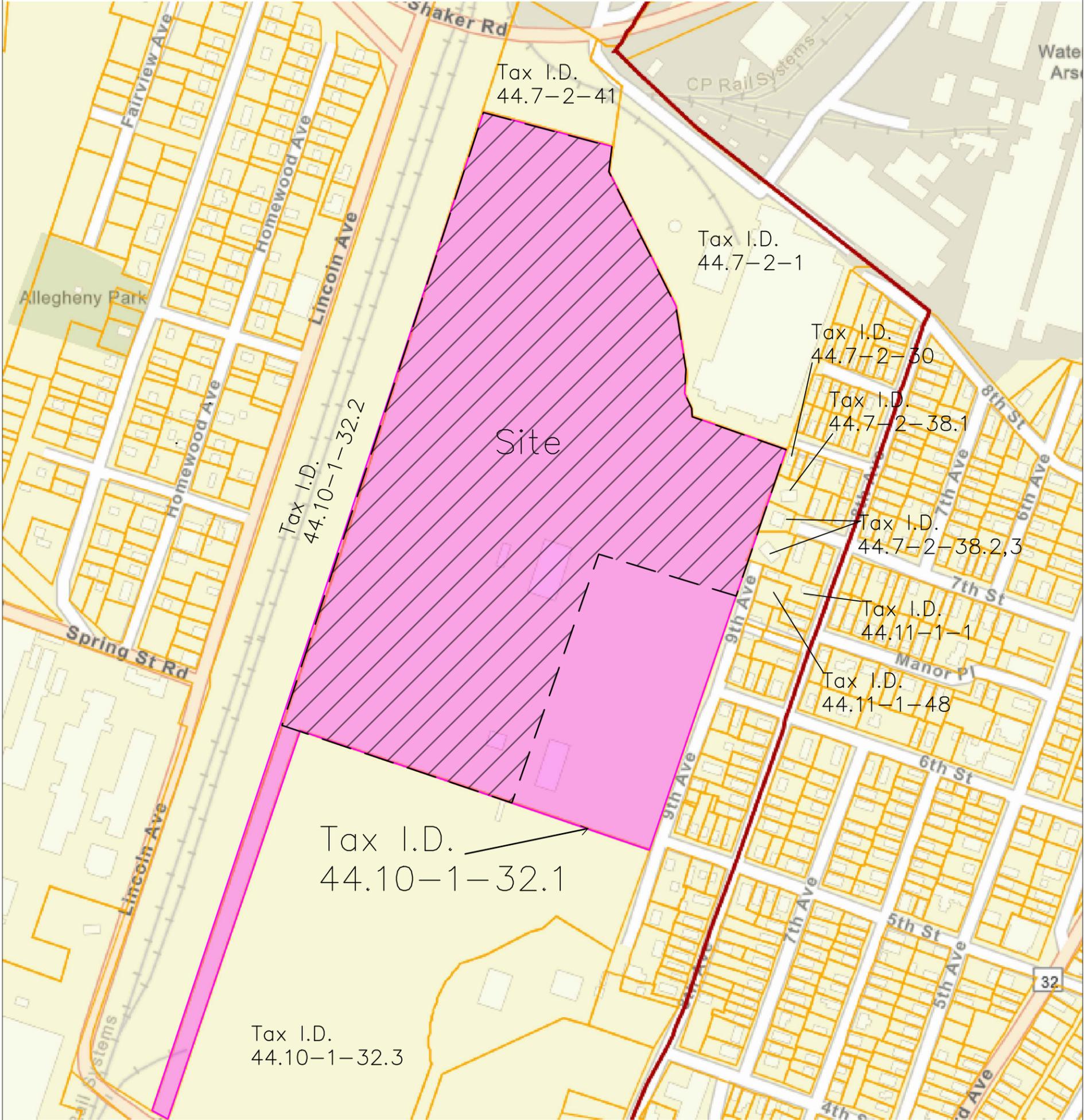
19 British American Blvd., Latham, New York 12110
 P: (518) 782-0882 F: (518) 782-0973 www.jmt.com

BCP Site No. C401082

Site Location Map
 950 5th Street
 Watervliet, New York

CITY OF WATERVLIIET

ALBANY CO., NY



*Source is Albany County Interactive Tax Parcel Map.
 Tax Parcel Boundaries last revised: October 2020.
 Real Property Info last updated: March 2, 2020

Legend

-  Tax Parcel 44.10-1-32.1 (71 Acres)
-  Proposed BCP Site Boundary (Portion of tax parcel 44.10-1-32.1) (44.85 Acres)



19 British American Blvd., Latham, New York 12110
 P: (518) 782-0882 F: (518) 782-0973 www.jmt.com

Tax Parcel Map
Lincoln Avenue Development II, LLC
 950 5th Street - BCP Site No. C401082

Town of Colonie Albany CO., NY



19 British American Blvd., Latham, New York 12110
P: (518) 782-0882 F: (518) 782-0973 www.jmt.com

BCP Site No. C401082

Aerial Map of Site
950 5th Street
Watervliet, New York

CITY OF WATERVLIET

ALBANY CO., NY



REVISED INTERIM REMEDIAL MEASURE WORK PLAN

950 5th Street, Watervliet, New York 12189

APPENDIX A

HASP



SITE SPECIFIC HEALTH & SAFETY PLAN

950 5TH STREET, WATERVLIET, NEW YORK 12189

Prepared by:
JMT of New York, Inc.
19 British American Boulevard
Latham, New York 12110

Prepared: May 2023
JMT Project No: 20-03399-001
BCP Site No: C401082





TABLE OF CONTENTS

1.0 INTRODUCTION.....1

2.0 SCOPE OF WORK.....2

3.0 DESIGNATION OF RESPONSIBILITIES.....3

4.0 SITE SPECIFIC HEALTH AND SAFETY CONCERNS.....5

4.1 SITE LOCATION5

4.2 SITE HISTORY AND SETTING.....5

4.3 CHEMICAL CONSTITUENTS OF CONCERN5

5.0 SITE SPECIFIC HEALTH AND SAFETY REQUIREMENTS6

5.1 KEY PERSONNEL6

5.2 TRAINING.....6

5.3 AIR MONITORING.....7

5.4 PERSONAL PROTECTIVE EQUIPMENT.....7

5.5 OTHER PROTECTIVE EQUIPMENT8

5.6 DECONTAMINATION PROCEDURES8

6.0 SITE CONTROL9

7.0 EMERGENCY PLAN10

7.1 NOTIFICATION10

7.2 PERSONNEL INJURY.....11

7.3 FIRE/EXPLOSION11

7.4 PERSONAL PROTECTION EQUIPMENT FAILURE.....11

7.5 OTHER EQUIPMENT FAILURE11

7.6 OFF-SITE EMERGENCY RESPONSE.....11

7.7 DIRECTIONS TO NEAREST HOSPITAL12

7.8 RECORD KEEPING12



TABLES

Table 1	Personal Protective Equipment for Level C and D Protection
Table 2	Personnel Protective Equipment Associated with Each Project Task

FIGURES

Figure 1	Site Location Map
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APPENDICES

Appendix A	General Field Safety Rules
Appendix B	First Aid Equipment List
Appendix C	Protective Clothing
Appendix D	Donning and Doffing Protective Clothing Level C and D
Appendix E	General Health and Safety Guidelines for Drum Handling
Appendix F	Temperature Stresses: Policies and Procedures
Appendix G	Soil and Well Sampling Health and Safety Guidelines
Appendix H	Hearing Protection
Appendix I	Procedures for Excavation, Trench or Test Pit Digging
Appendix J	Asbestos Supplement



SITE SPECIFIC HEALTH AND SAFETY PLAN

This site specific Health and Safety Plan (HASP) is designed to assure compliance with OSHA’s regulations covering hazardous waste sites (29 CFR 1910.120).

The purpose of the HASP is to assure clear delegation of responsibilities, consistent work practices and proper oversight of health and safety issues during activities at 950 5th Street, Watervliet, NY as identified in the attached Figures 1.

This plan is site-specific and has been reviewed and approved by JMT’s Project Manager prior to adoption. A copy of this plan will be available at the site.

APPROVED BY:

JMT Project Manager
Janet Tallman, PE

Date:

Matthew Gaffuri

6/26/2023

JMT On-Site Supervisor (OSS)
Matthew Gaffuri

Date:



1.0 INTRODUCTION

This HASP has been developed to identify potential hazardous substances and conditions known or suspected to be present on the site and ensure that they do not adversely impact the health or safety of personnel conducting field activities. It is also intended to ensure that the procedures used during these field activities meet reasonable professional standards to protect human health and safety of workers and the surrounding community. This plan incorporates by reference to applicable requirements of the Occupational Safety and Health Administration in 29 CFR Parts 1910 and 1926.

The requirements in this HASP are based on review of site-specific information and an evaluation of potential hazards identified during the completion of site background research.

All field personnel working on this project must familiarize themselves with this HASP and abide by their requirements. Since every potential health and safety hazard encountered at a site cannot be anticipated, it is imperative that personnel are equipped and trained to respond promptly to a variety of possible hazards. Adherence to this plan will minimize the possibility that personnel at the site and the public will be injured or exposed to significant hazards. Information on potential health, safety, and environmental hazards is discussed in conjunction with appropriate protective measures including assignment of responsibility, personal protective equipment requirements, work practices, and emergency response procedures.

In general, subcontractors are responsible for complying with all regulations and client policies applicable to the work they are performing.

JMT personnel can and must stop work if a JMT subcontractor is observed to not be following health and safety procedures required by the plan.

This HASP is specifically intended for those personnel who will be conducting activities within the defined scope of work at the site.



2.0 SCOPE OF WORK

Specific tasks covered by this HASP may include, but are not limited to:

- Performing inspections to characterize environmental hazards;
- Observing the movement of earthen materials, fill, debris;
- Investigating areas where contaminated or hazardous substances are, or may be present;
- Decontaminating personnel and equipment;
- Containerizing of contaminated materials into 55-gallon drums for disposal;
- Stockpiling of contaminated soil; and
- Collecting environmental samples from vapor implants, wells, drums, drilling activities, excavation equipment, or hand tools.



3.0 DESIGNATION OF RESPONSIBILITIES

The responsibility for implementing this HASP is shared by the Project Manager and Safety Officer (CHSO) and the On-Site Supervisor (OSS). The Project Manager (PM) will recommend policy on all safety matters including work practices, training, and response actions, and will provide the necessary resources to conduct the project safely.

The PM has overall responsibility for developing safety procedures and training programs, maintaining a high level of safety awareness; ensuring compliance with applicable federal, state, and local health and safety regulations; determining appropriate protection including the selection of protective equipment, maintenance schedules, and monitoring protocols; and maintaining close communication with the OSS and field personnel. The CHSO is the final decision point for determination of health and safety policies and protocols for all projects.

The OSS is responsible for establishing operating standards and coordinating all safety activities occurring at the site, with guidance from the PM. Specifically, the OSS is responsible for:

- Assuring that a copy of this HASP is at the site prior to the start of field activities and that all workers are familiar with it;
- Conducting training and briefing sessions if appropriate, prior to the start of field activities at the site and repeat sessions as necessary;
- Ensuring the availability, use, and proper maintenance of specified personal protective, decontamination, and other health or safety equipment;
- Maintaining a high level of safety awareness among team members and communicating pertinent matters to them promptly;
- Assuring that all field activities are performed in a manner consistent with Company policy and this HASP;
- Monitoring for dangerous conditions during field activities;
- Assuring proper decontamination of personnel and equipment;
- Coordinating with emergency response personnel and medical support facilities, and other Health and Safety representatives of the client and contractors;
- Initiating immediate corrective actions in the event of an emergency or unsafe condition;



- Notifying the Project Manager and CHSO promptly of any emergency, unsafe condition, problem encountered, or significant exceptions to the requirements in the HASP; and
- Recommending improved health and safety measures to the Project Manager, or the Corporate Health & Safety Officer.

The OSS has the authority to:

- Suspend field activities or otherwise limit exposures if the health and safety of any person appears to be endangered;
- Direct Company or subcontractor personnel to alter work practices that are deemed not properly protective of human health or the environment; and
- Suspend an individual from field activities for significant infraction of the requirements in this HASP.

However, the presence of the OSS shall in no way relieve any person, company, or subcontractor of its obligations to comply with the requirements of this Plan and all applicable federal, state, and local laws and regulations.

The key element in the responsibility for health and safety is the individual field team member. Everyone must be familiar with and conform to the safety protocols prescribed in this HASP and communicate any relevant experience or observations to provide valuable inputs to improving overall safety.



4.0 SITE SPECIFIC HEALTH AND SAFETY CONCERNS

4.1 SITE LOCATION

Lincoln Avenue Development II, LLC
950 5th Street
Watervliet, New York 12189

4.2 SITE HISTORY AND SETTING

This Health and Safety Plan applies to the real property shown on Figure 1. The site was historically used a rail yard for train maintenance and fueling. The site is not currently being used for any purpose.

4.3 CHEMICAL CONSTITUENTS OF CONCERN

The primary health concerns and routes for exposure at this site are injection, ingestion, and absorption of petroleum related compounds and metals contamination through injection, inhalation, ingestion, puncture, and direct skin contact while collecting soil, vapor, and groundwater samples. PCBs may also be present at limited locations.

Skin and eye contact hazards are also potentially high. The protective equipment specified in Section 5.0 will provide adequate protection. Any symptoms are to be reported to the OSS, Project Manager, and CHSO immediately.

The potential for exposure will be further reduced by prohibiting drinking alcoholic beverages or smoking during all activities within the fieldwork areas.

Unknown or unexpected materials of a hazardous nature may be encountered during site activities. No work will be conducted if field measurements or observations indicate that a potential exposure is greater than the protection afforded by the requirements in this Plan.

- Anticipated contaminants include; metals, PCBs and petroleum contamination

Table 1 identifies the personal protective equipment for Level C and D protection.

Table 2 identifies personnel protective equipment associated with each potential task.

Note: Tables are at the end of the plan.

Use of the specified personal protective equipment and air monitoring will minimize the risks.



4.3 GENERAL HAZARDS

Rocky, sandy, muddy, or other unstable terrains may be present during site activities. These conditions can create slip, trip, and fall conditions as well as sprain and strain hazards. The following measures should be taken to avoid general site hazards.

- Use appropriate footwear (safety toe boots with ankle support)
- Slow down, watch where you are walking, and stay aware of foot placement.
- Use a rod or hiking stick to aid in maintaining balance if necessary.
- In extreme conditions, use gaiters to prevent sand and/or gravel from entering your boots.
- Do not enter soft, deep mud. If necessary, special footwear should be considered.

5.0 SITE SPECIFIC HEALTH AND SAFETY REQUIREMENTS

5.1 KEY PERSONNEL

Site Contact

Name: Chuck Pafundi, Lincoln Avenue Development II, Inc.

Telephone Number: (518) 605-5711

Project Manager

Name: John D. Ciampa, PG, JMT

Telephone Number: (518) 782-0882

On-Site Supervisor

Name: Matt Gaffuri, JMT

Telephone Number: (518) 218-5644

5.2 TRAINING

The Project Manager, OSS, and all personnel working inside a regulated area must have received training at least meeting the requirements established by the Occupational Safety and Health Administration in 29 CFR 1910.120 prior to the start of field activities.

Before authorized persons enter the active site for the first time, they will be briefed by the Project Manager or OSS as to the potential hazards that may be encountered. Topics will include:

- This HASP and the nature of its contents;
- Selection and use of personal protection equipment (PPE) to be worn;



- Decontamination procedures for personal protection and other equipment, as necessary;
- Emergency forms of notification, and evacuation routes to be followed;
- Prohibitions on smoking and carrying of tobacco products, eating, drinking, and open fires (except by permit) in the work area;
- Methods to obtain outside emergency assistance and medical attention;
- Specific health, safety, and emergency response requirements imposed by the facility's owner or operator; and
- The frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment.

5.3 AIR MONITORING

Site-specific monitoring programs have been designed and are consistent with known or suspected exposure to hazardous materials. The following monitoring is planned as part of this project.

All areas are adequately ventilated and do not present a potential for accumulation of harmful or ignitable quantities of vapors. During ground intrusive activities, a photoionization detector will be used to measure total volatile organic compounds both around the intrusive area and in the worker's breathing zone.

5.4 PERSONAL PROTECTIVE EQUIPMENT

The following procedures should be followed when donning protective equipment as appropriate: (NOTE: Specific donning and doffing procedures for each protection level are found in the appendices along with minimum requirements for quality of protective clothing). All PPE will be inspected by a competent person prior to use each day. The condition of PPE will be assessed at the end of each workday to determine the need to replace damaged PPE. Any PPE in need of daily maintenance/cleaning (respirators) will be cleaned and stored in an appropriate area at the end of each work day.

Table 1 indicates the general levels of personal protective equipment (PPE) that will be used for on-site activities. Site and task specific levels of PPE assigned according to the chemicals of concern are listed in Table 2 at the end of this plan.

Unless the Corporate Health & Safety Officer or PM directs otherwise, when respirators are used, the cartridges should be changed after eight hours of use, or at the end of each shift, or when any indication of breakthrough or excess resistance to breathing is detected.



5.5 AVAILABLE SAFETY RESOURCES

A first aid kit, portable eyewash, and vehicle will be kept in close proximity to the site.

5.6 DECONTAMINATION PROCEDURES

Refer to Tables 1 and 2 and Appendix D for decontamination procedures.

Responsibility for treatment and disposal or decontamination waste products is the sole responsibility of the site owner/operator unless specific contractual arrangements have been established for the project. At no time will JMT or its agents become the owner of wastes.



6.0 SITE CONTROL

If appropriate, the work site will be segregated into work zones based upon monitoring data, the nature of work to be performed, and site topography. The on-site coordinator will establish and clearly mark the following areas with consultation of the project health and safety coordinator and project team lead:

1. Exclusion Zone – This will be the actual work site involved with the site activity. An outer boundary will be established and clearly marked. The area of the exclusion zone will be established based on on-site work conditions, exposure monitoring, etc.
 - a. Access to the exclusion zone will be limited to those employees who have the requisite training, protective equipment, and responsibilities for work in this area.
 - b. The area of exclusion zone will be changed as necessary depending on the site coordinators judgment regarding work conditions, air sampling, etc.;
2. Contamination Reduction Zone (CRZ) – An area between the actual work site (exclusion zone) and support zone will be established to facilitate employee and equipment decontamination, protective equipment storage, and supply.
 - a. The location of the CRZ will be established in an area offering minimal contamination and will be subject to change based on the site coordinators judgment considering work conditions, air monitoring, etc.;
3. Support Zone – An area free of contamination will be identified and clearly marked where administrative and other support functions (not requiring entrance to the exclusion or contamination reduction zone) can be performed. The actual siting of the support zone will be established by the project leader and site coordinator considering distance from exclusion zone, visibility, accessibility, freedom of cross contamination from the exclusion zone, air monitoring data, etc.; and
4. Security measures will be established by the site owner to control access to the site and prevent unauthorized access during working and non-working hours. The entire perimeter of the Brownfield site will be fenced. Existing fencing along the BCP site boundary will be tied into new fencing. Gates will be located on the southern boundary of the site and the eastern boundary of the site by 9th Ave. The southern gate will be unlocked during normal business hours (Mon.-Fri. 7:00 AM to 5:00 PM) and the eastern gate will remain locked with periodic monitoring from Luizzi staff. Remedial investigation work at the site will typically be done during normal business hours, Monday through Friday, 7:00AM to 5:00 PM. JMT and the drilling contractor staff will sign in at Luizzi Brother’s main office, located just south of the BCP site, when they arrive and leave.



7.0 EMERGENCY PLAN

The following standard emergency procedures will be used by on-site personnel. The OSS will be notified of any on-site emergency and be responsible for ensuring the appropriate procedures are followed and the CHSO and Project Manager are notified. A first aid kit, eye wash unit, and fire extinguisher will be readily available to field personnel. Questions regarding procedures and practices described in this plan should be directed to the CHSO.

7.1 NOTIFICATION

Upon the occurrence of an emergency including an unplanned chemical release, fire or explosion, personnel will be alerted and the area evacuated immediately. Reentry to the site will be limited to that necessary to assist injured personnel and only after appropriate protective equipment is donned.

The following alarm system will be utilized to alert personnel to evacuate the restricted area.

Audible Alarm _____

Describe

Direct Verbal Communication (10 employees or less)

Radio Communication or Equivalent (Remote Sites)

Other _____

Describe

The following standard hand signals will also be used as necessary:

Hand gripping throat	Can not breath / Out of air
Grip Partner's wrist	Leave area immediately (No debate)!
Hands on top of head	Need assistance
Thumbs up	Yes / Okay
Thumbs down	No / A problem

Upon activation of the alarm, employees will proceed to the designated assembly area. The designated assembly area will be determined on a daily basis and updated as necessary depending upon work conditions, weather, air monitoring, etc. The location of the designated assembly area will be clearly marked and communicated to employees daily or upon relocation of the area.



Employees gathered in the designated assembly area will remain there until their presence has been noted. A comparison of employees against the daily restricted area access roster will be necessary to assure all employees have been properly evacuated.

7.2 PERSONNEL INJURY

If anyone within a restricted area is injured and cannot leave the restricted area without assistance, all site personnel will assemble in the designated decontamination area. After donning appropriate protective equipment as determined by the OSS, a rescue team will enter the area to assist or remove the injured person. If entry requires the use of PPE, similarly equipped support personnel shall be on hand to lend assistance as necessary. The OSS will evaluate the nature of the injury, and the affected person will be decontaminated to the extent feasible prior to movement. Appropriate first aid will be initiated, and if required, contact will be made for an ambulance and with the designated medical facility. No person will re-enter the work area until the cause of injury or symptoms is determined.

7.3 FIRE/EXPLOSION

Upon the occurrence of a fire beyond the incipient stage or an explosion anywhere on the site, the fire department will be alerted, and all personnel will be moved to a safe distance from the effected area.

7.4 PERSONAL PROTECTION EQUIPMENT FAILURE

If any worker in a Level C area experiences a failure or alteration of protective equipment that affects the protection factor (e.g. torn protective suit, odor inside respirator), that person (and his/her buddy, if in a regulated area) will immediately leave the work area. Re-entry will not be permitted until the equipment has been repaired or replaced and the cause of the problem is known.

7.5 OTHER EQUIPMENT FAILURE

If any other equipment at the work site fails to operate properly, the Project Manager and/or OSS will be notified and will then determine the effect of this failure on continuing operations. If the failure affects the safety of personnel (e.g. failure of monitoring equipment) prevents completion of the planned tasks, all personnel will leave the work area until appropriated corrective actions have been taken.

7.6 OFF-SITE EMERGENCY RESPONSE

Emergency response requiring actions beyond evacuation of personnel from the work area will be handled by notification of off-site emergency response agencies. Phone numbers for these agencies and other support services are listed below:

Fire Department: 911
Ambulance: 911



Poison Control Center: (800) 222-1222

Chemical Emergency Advice (CHEMTREC): (800) 424-9300

7.7 DIRECTIONS TO NEAREST HOSPITAL

Samaritan Hospital
2215 Burdett Ave.

Troy, New York 12180

(518) 271-3300

- 1: Start out going NORTHWEST on 1ST STREET toward LINCOLN AVE.
- 2: Follow LINCOLN AVE. to NY-155 E.
- 3: Continue on NY-155 E. Take NY-2 E to 8TH ST. in Troy
- 4: Turn left onto 8th ST.
- 5: Turn right onto PEOPLES AVE.
- 6: End at Samaritan Hospital
2215 Burdett Avenue
Troy, New York 12180

Estimated Time: 11 minutes Estimated Distance: 4.1 miles

7.8 RECORD KEEPING

JMT shall maintain records in accordance with all applicable OSHA regulations, including but not necessarily limited to:

29 CFR 1904 - Recording and Reporting Occupational Injuries and Illnesses.

29 CFR 1910.120 - Hazardous waste operations and emergency response.

29 CFR 1910.134 - Respiratory protection.



TABLES

TABLE 1
PERSONAL PROTECTIVE EQUIPMENT FOR LEVEL C AND D PROTECTION

Equipment	Protection Level	
	C	D
Air-purifying respirator	Yes	No
Chemical-resistant disposable coveralls	Yes	(1)
Chemical-resistant outer gloves	Yes	Yes
Disposable inner gloves	Yes	No
Over boots (chemically resistant)	Yes	(1)
Leather shoes/boots or safety shoes	Yes	Yes
Safety glasses, goggles, or face shield	Yes	(1)
Hard Hat	Yes	Yes
Coveralls (Non Chemical Resistant)	(1)	(1)

(1) Optional at the discretion of the employee and OSS depending on site-specific hazards.

Level C respiratory protection is to be full-face-piece or half-face-piece NIOSH approved air purifying respirators equipped with organic vapor cartridges and/or high efficiency particulate filters.

TABLE 2
PERSONNEL PROTECTIVE EQUIPMENT ASSOCIATED WITH EACH PROJECT TASK

Task	Chemicals of Concern	PPE Level	Cartridge Type	Protective Eye Wear	Gloves	Hard Hat	Coveralls
General Field Surveys (No direct chemical contact) (2)	Chemicals	D	Not applicable	Optional (1)	Optional (1)	Optional (1)	Optional
Media sampling (2)	Chemicals	D*	As needed	Required	Nitrile, Latex, or Leather Gloves with Nitrile overtop	Required (1)	Tyveck, Poly-Coated Tyveck or Sararex-Tyveck Standard Work Coveralls
Working around heavy equipment (drill rigs, front loaders, etc.), (2)	NA	NA	NA	Required	NA	Required	NA

* Level C upgrade may be required depending on breathing zone air monitoring. If upgrade is required, utilize a combination cartridge type protective of particulates and organic vapors (P100/OV). A Level C upgrade is required if a breathing zone PID reading of 5ppm or greater is detected (based on benzene).

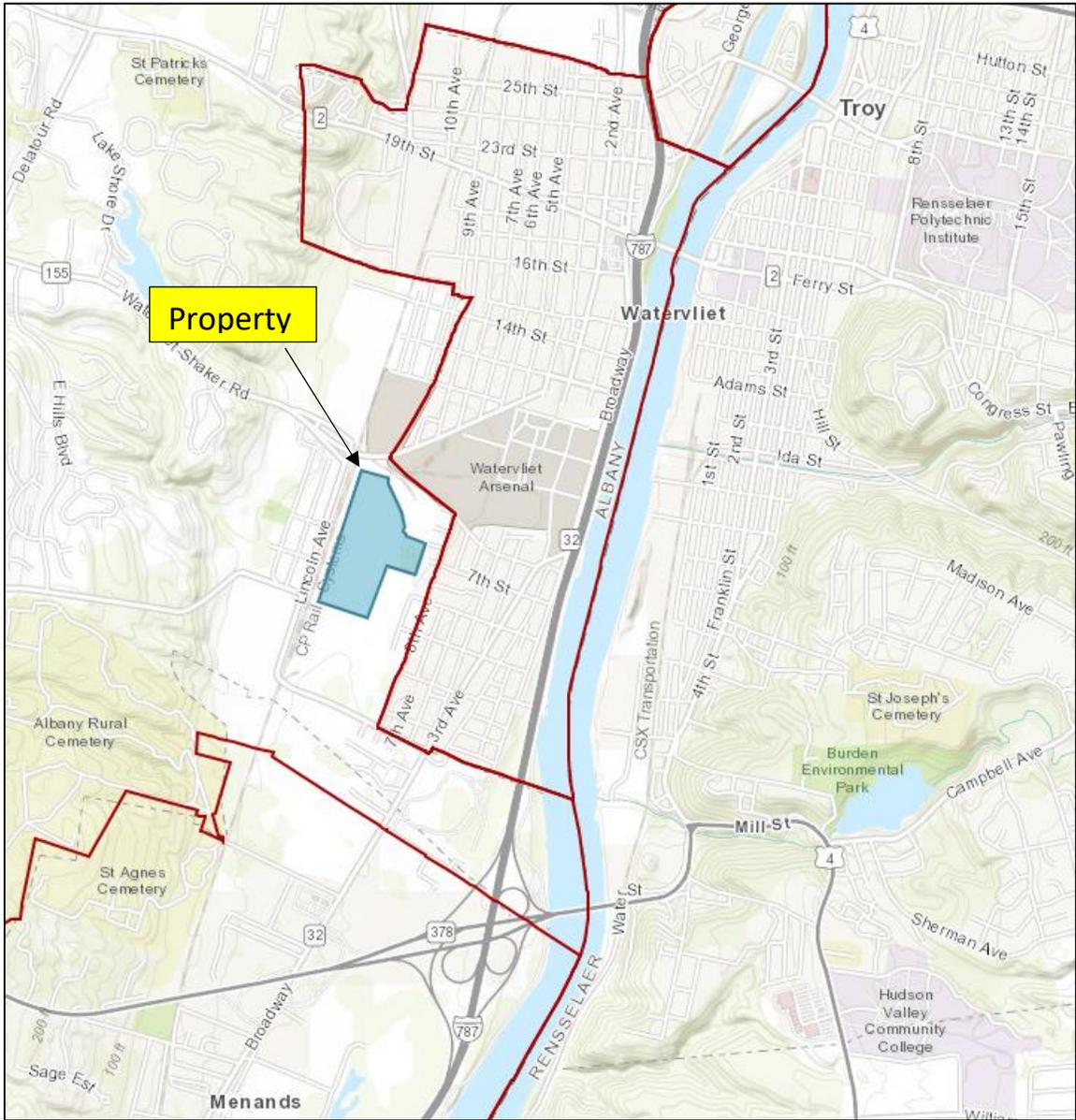
(1) Hard hat required if bump hazards or heavy equipment usage in work area. Protective eyewear is required at all times unless in a vehicle/equipment cab or in an office environment. Cut and puncture-resistant gloves are required when handling material that can cause cuts or abrasions.

(2) OSHA appropriate footwear always required during all site operations.



FIGURES

Figure 1: Location Map





APPENDIX AA

COVID-19 PROTOCOLS AND MITIGATION

COVID-19 Protocols and Mitigation Efforts

JMT has developed these minimum protocols based on federal, state, and local regulations, along with CDC guidance to establish clear and effective practices for our employees. We are requiring all employees to implement these protocols, along with any unique adaptations specific to their location and work practices. If more stringent local or client regulations exist, staff must follow them in coordination with JMT's Human Resources and Health and Safety departments.

JMT will update this document, including any supporting materials, and communicate with employees regularly to reflect current evidence-based guidelines and best practices. JMT's goal is and will remain a safe and sustainable return to business. Furthermore, we will base any additional influencing factors on federal, state, and local government responses. Once these agencies have established clear and evidence-based controls, JMT will adopt and initiate end-phase protocols.

We encourage all employees to provide feedback on the effectiveness of these practices and assist us in improving them over time. The efforts outlined in this guidance will help JMT to:

- limit transmission among employees
- promote business operations
- maintain healthy work environments
- allow employee work flexibility

Employees should assume everyone may have been exposed to the virus and take precautions accordingly. All staff should frequently communicate safety protocols, recommend improvements or enhancements, and consider including them as regular agenda items during staff meetings. We are all responsible for a clean and healthy work environment, and everyone is accountable for following these and all safety protocols.

If you have any questions, concerns, or recommendations about these guidelines, please email us at JMTsafety@JMT.com

COVID-19 SELF-ASSESSMENT SCREENING

All JMT employees must perform a daily Self-Assessment Symptom Screening using JMT's Electronic Certification Application prior to reporting to work. These assessments will be emailed automatically to every employee on a daily basis and must be completed Monday through Friday. If you are working an alternative schedule, you must complete the assessment prior to starting your shift. Employees who refuse to participate in the assessment are prohibited from reporting to work. JMT will work with and encourage all individuals who are considered high risk per the CDC to continue to stay home.

Any employee who develops one or more of the following symptoms while at work should go home immediately, seek medical attention, and report their symptoms to JMT's Human Resources department.

- fever or feeling feverish – oral temperature of 100° F or higher
- chills
- cough (either new or different than your usual cough)
- sore throat or shortness of breath
- any other flu-like symptoms

Any employee who believes they may have been exposed to or tests positive for the virus will need to provide the following information to JMT's Human Resources department as soon as possible:

- date symptoms began or date of exposure.
- degree of exposure
 - a. Do you live with someone in your household who is positive for COVID-19?
 - b. Were you exposed to someone who tested positive for COVID-19 at any time? (i.e. at a family BBQ, out to dinner with friends, etc.)
- date of testing
- last day in the office or field or last day with symptoms or first day symptoms fully subsided (if applicable)

CONFIDENTIALITY PROTOCOLS FOR HEALTH INFORMATION

It JMT's policy to fully comply with all HIPAA and ADA privacy regulations. All health-related information, including COVID19 test results, are considered confidential information and are only accessible to Human Resources. By law, we are required not to share any employee health information, which includes testing status and/or COVID-19 diagnosis. Please do not share employee medical information with anyone without their consent. We can only share employee health information with if they have explicitly expressed consent.

Remember, you are **not required** to share any health information or COVID-19 testing results with your supervisor or colleagues. You can voluntarily share that information at your discretion. However, you are still required to contact Human Resources to report symptoms, exposure, and test results.

For more information on JMT's policies and procedures as they relate to confidentiality of health information and COVID-19 results, please contact Human Resources directly at JMThr@jmt.com.

WORKPLACE PROTOCOLS

Preparing the workspace

- Identify and communicate with owner representatives about specific precautions or operational changes including scope and scheduling for cleanings; access changes; elevator, equipment, bathroom, and common area protocols; and confirmation that emergency evacuation procedures, if applicable, are unchanged.
- Post signs, visual cues, and reminders around the workspace about frequent handwashing, physical distancing, face coverings, and promoting safety practices.

- Minimize cross contamination in common areas by removing or minimizing shared amenities such as chairs, magazines, note pads, kitchen tools and sponges, and writing materials. Other shared amenities such as office equipment, layout tables, and restrooms must be properly cleaned and sanitized regularly.
- Place hand sanitizer dispensers in plain view particularly in high touch locations such as areas with printers, plotters, kitchen areas, pool cars, etc. to promote proper hygiene. Use disposable tools and utensils and provide ample quantities of paper towels and soap in kitchen areas and restrooms.
- Limit access or reduce entry/exit points. All other points should be restricted for emergency use. Hand sanitizer should be provided at each access point.
- Disposable masks shall be provided for guests.
- Establish allowable capacity in common areas and conference rooms to ensure staff can maintain physical distancing.
- Restrict nursing rooms to new and nursing mothers only. Each room shall have sufficient hand sanitizer and disinfectant cleaner. New and nursing mothers shall wash their hands and put on face coverings prior to entering the room and wipe down all surfaces before and after using it. Each occupant shall bring their own pump and pump cleaning devices (sponge, brush, etc.). Do not leave pumps/cleaning devices in the rooms once you are finished.

Cleaning common areas and equipment

- Cleaning assignments and a schedule shall be set and will generally include provisions for regular cleaning and disinfecting high touch areas with EPA recommended disinfectant cleaner such as Clorox bleach, Lysol Disinfectant, Germicide etc. High touch areas include:
 - restrooms (if controlled by JMT)
 - copiers, printers, and plotters
 - refrigerators (ice makers should be disabled from use)
 - small appliances (microwaves, toasters, coffee pots)
 - doorknobs, tables, chairs, desks, light switches
 - instruments or equipment (e.g. laptops, tablets, data collectors, GPS receivers, hand tools, etc.)
- Employees shall keep their desk and floor area clean and free of clutter and are encouraged to clean and disinfect their work surfaces and equipment. Less commonly used items will be placed in cabinets and drawers.
- Personal handheld items (phones, tape measurers, etc.) and PPE (hard hats, safety glasses, hi-visibility vests, etc.) should be cleaned regularly and not shared with others.

SUBCONSULTANTS/SUBCONTRACTORS

- Subconsultants, subcontractors, and other equipment/service providers must verify staff compliance. They shall be solely responsible for the health, safety, and compliance of their personnel and shall take substantially similar and equally protective measures and precautions to educate their staff and mitigate/reduce the risks of COVID-19 exposure and transmission.

- All subconsultant partners and/or staff assigned to a JMT office or project site shall adhere to JMT guidelines. In certain circumstances, subconsultants may propose their own COVID-19 Safety Plan, or we may ask them to submit one for review and acknowledgement. If so, the subconsultant's plan must meet or exceed the protections, restrictions, and requirements expressed in this document.
- JMT will hold a conference call to determine if the subconsultants plan is acceptable to govern their on-site activities. Once approved, JMT will review the governing COVID-19 Safety Plan with staff during the restart or site-safety meeting, and all attendees must sign off on the plan to ensure they fully understand all requirements and protocols.
- If only one subconsultant is assigned to the site, they will need to adhere to this document or submit their own plan for review. In either case, the guiding document will be reviewed with the individuals involved at an initial meeting/conference call between JMT and the subconsultant staff in accordance with the requirements set forth, above. All completed forms shall be shared and maintained at both the subconsultant's and JMT's office.

SAFE WORK PRACTICES

Personal Hygiene

- Practice frequent and thorough hand washing with soap and water or hand sanitizer, particularly after accessing shared documents and materials
- Avoid touching your eyes, nose, and mouth with unwashed hands. Cough or sneeze into a tissue first, or if not available, use your elbow. Do not use your hands.
- Use a face covering when entering or exiting indoor facilities, while in close and prolonged contact with others, moving about within common spaces or away from your desk or personal space where physical distancing cannot be maintained. While you are not required to wear a face covering at your desk, should someone stop by your cubicle or office, you should put on your face covering. Employees are encouraged to use their own washable mask or face covering. Disposable face coverings will be provided as needed. All disposable PPE must be disposed of properly and in a hygienic manner. Non-disposable PPE (respirators, gloves, goggles/face shields, etc.) should be cleaned on a regular basis but no less than once daily (refer to the manufacturers cleaning instructions). Please refer to JMT's Health and Safety Plan Supplement Guidance on the Proper Use of Face Coverings and Voluntary Use of Respirators for additional information.
- Note: individuals who cannot wear a face covering because of a medical condition will be asked to work from home to ensure the safety of their colleagues.

Physical Distancing

- Maintain physical distance whenever possible, particularly in conference rooms, kitchens/cafes, and other shared or common spaces.
- When feasible, meetings should be conducted outside, virtually, or by phone to maintain physical distance.
- Avoid touching others, shaking hands, or using other's phones, desks, and offices.

- Limit in-person meetings and continue to use collaborative software and host virtual meetings to reduce physical interaction and limit unnecessary foot traffic.
- In-person vendor presentations are prohibited, and internal group trainings and development activities should be limited and only held after approval.
- Employees should only travel for critical business activities and only with the approval of their office manager. When feasible, minimize overnight travel. If during any travel you were put in an unnecessarily risky situation and have a cause for concern, or it is mandated by local regulations, it is encouraged to self-quarantine for 14 days or until a negative test result is received for your safety and the safety of your colleagues.
- Use alternative visual inspection such as binoculars, zoom lens on mobile phone, or video recorder. When tasks require close inspection, communicate with others to have them move away from the area during the inspection.

Vehicles (Cars, Trucks, Boats, etc.)

- Avoid having more than one person in a vehicle at a time to prevent cross-contamination. If ride sharing must occur, due to project or vehicle constraints (i.e. airport runway projects, type of vehicle), employees shall use proper face coverings while together in the vehicle, limit their time in the vehicle with others, and if in a closed cab (i.e. car/truck), turn the HVAC system on high, turn off air recirculation, and/or open the windows
- Employees must wash their hands thoroughly with soap and running water or use hand sanitizer before entering a vehicle.
- Employees should keep easily accessible hand sanitizer, tissues, and trash bags in their vehicle.
- Employees should wipe down any part of the vehicle that is likely contacted during operation (i.e. steering wheel, gear shift/throttle control, handles, controls, life jackets, etc.) with a surface disinfectant periodically throughout the day.
- When handling any public object (i.e. gas pumps, credit card readers, public touch screens, etc.) employees should disinfect their hands immediately after contact and before encountering personal or company owned item(s).

SAFETY PROTOCOLS FOR COVID-19 EXPOSURE

If you or a JMT employee has or have been exposed COVID-19

- Contact JMT's Human Resources (HR) department to inform them of the situation. If you have been exposed to or tested positive for the virus, it is imperative that you stay home, call your healthcare provider, and follow guidance from the CDC. For the safety of our fellow employees, HR must be notified as early as possible so we may determine whether others in the organization were exposed or face any risk of exposure (443-662-4363).
You may return to work when:
 - approval or authorization is provided by HR
 - at least ten days have passed since symptoms first appeared
 - at least three days have passed since recovery (defined as the resolution of all symptoms)

- If you have a non-COVID related illness that causes similar symptoms such as the flu, common cold, sinusitis, etc., you must stay home. The [CDC](#) recommends you stay home until at least 24 hours after your fever is gone. JMT will use the following [flowchart](#) to make decisions on the management of COVID-19 risk and exposure.

Sample Scenarios:

1. If an individual is exhibiting symptoms, they are prohibited from coming to the office/project site. The individual can return to the office/project site after 10 days from the onset of symptoms AND three days after the symptoms are fully resolved. They are not required to be tested or produce a negative test result.
2. If an individual was exposed by someone living in their household with a confirmed case of COVID-19, they are required to self-quarantine for 14 days before returning to the office/project site. Unless, in that time, the individual begins to exhibit symptoms, in which case, see scenario 1.
3. If an individual was simply in the presence of someone with symptoms or a confirmed case of COVID-19 that lives outside of their household (for example: at dinner with friends, a child's soccer game, a graduation party, etc.) they are not required to quarantine or be tested. Circumstances should be shared with HR to determine the best course of action. If feasible to work from home, this individual may be encouraged to do so for a brief period.



APPENDIX A

GENERAL FIELD SAFETY RULES

FIELD SAFETY

GENERAL SAFETY RULES

1. Field Service personnel should maintain communications with their office counterparts. Periodic phone calls may be warranted to assure no mishaps have occurred.
2. The location and phone numbers of the nearest emergency care facility and local fire and police department should be determined and be readily available to field service employees prior to site access.
3. During initial site characterization potential hazards arising from unstable topography, presence of water, construction debris, plants, insects or animals should be identified and measures taken to avoid them.
4. Access to remote locations warrants careful consideration of protective clothing and/or first aid supplies to prevent and/or address insect or animal bites/stings, etc. Proper first aid supplies and use of a buddy system are especially important for employees who have known allergies. Employees requiring immediate access to special first aid supplies (e.g. prescription drugs for allergies), shall be responsible for obtaining and arranging for administration of these medications as prescribed by their physician.
5. JMT's employees who are at a customer's facility will be expected to adhere to the plant or facility safety and health rules in addition to the health and safety plan for the project. Where there are conflicts between facility rules and JMT's health and safety plan, the project manager and corporate health and safety officer should be contacted for resolution of inconsistencies. Wherever possible, the two plans should be reviewed prior to site access to identify and resolve any conflicts.



APPENDIX B

FIRST AID EQUIPMENT LIST

FIRST AID EQUIPMENT LIST

The first aid kits that will be kept at the site will consist of a weatherproof container with individually sealed packages for each type of item. The kit will include at least the following items:

- 50 Adhesive Bandages, 1" x 3"
- 2 Adhesive Tape 2.5 yards
- 25 Antibiotic Treatment Applications
- 50 Antiseptic Applications
- 1 Breathing Barrier
- 2 Burn Dressing, Gel Soaked 4" x 4"
- 25 Burn Treatment
- 2 Eye Covering
- 1 Eye Wash, 4 ounces
- 1 First Aid Guide
- 10 Hand Sanitizer
- 4 Pair Exam Gloves
- 2 Roller Bandage, 2" x 4 yards
- 1 Roller Bandage, 4" x 4 yards
- 1 Scissor
- 1 Splint, minimum 4" x 4 yards
- 4 Sterile Pads, 3" x 3"
- 1 Tourniquet
- 4 Trauma Pads, 5" x 9"
- 2 Triangular Bandage, 40" x 40" x 56"



APPENDIX C

PROTECTIVE CLOTHING

PROTECTIVE CLOTHING

Protective clothing shall meet the following minimum requirements:

1. They shall provide adequate protection against the particular hazards for which they area designed.
2. They shall be reasonably comfortable when worn under the designated conditions.
3. They shall fit snugly and shall not unduly interfere with the movement.
4. They shall be durable.
5. They shall be capable of being disinfected.
6. They shall be easily cleanable.
7. Protective clothing should be kept clean and in good repair.



APPENDIX D

DONNING AND DOFFING PROTECTIVE CLOTHING LEVEL C AND D

DONNING AND DOFFING PROTECTIVE CLOTHING

LEVEL C Donning

1. Inspect equipment to ensure it is in good condition.
2. Place feet into the legs of chemically resistant protective suit (as specified in task specific health and safety plan and gather suit around waist.
3. Put on chemically resistant outer boots (as specified in the task specific health and safety plan) over feet of the suit and tape at boot/suit junction.
4. Don inner gloves (if required) placing wrist of glove beneath the chemically resistant suit.
5. Close suit and tape closure flaps.
6. Don air purifying respirator equipped with appropriate cartridges.
7. Perform negative/positive pressure tests.
8. Don safety glasses and hard hat (as required).
9. Don chemically resistant outer gloves and tape at glove/suit junction.
10. Have assistant check all closures and observe wearer to ensure fit and durability of protective gear.

LEVEL C Doffing

1. Wash outer boots, gloves, and protective suit.
2. Remove tape at seams.
3. Remove boot covers and outer gloves.
4. Wash safety boots (as necessary).
5. Remove safety boots and suit.
6. Wash inner gloves.
7. Wash and remove face piece (and set aside for final decontamination).
8. Remove inner gloves.
9. Remove inner clothing (as necessary).
10. Field wash (as necessary).
11. Redress.

LEVEL D Donning

1. Inspect equipment to ensure it is in good condition.
2. Place feet into the legs of protective suit and gather suit around waist.
3. Put on outer boots over feet of the suit and tape at boot/suit junction.
4. Don inner gloves (if required).
5. Don suit over top of inner gloves.
6. Don safety glasses and hardhat as (required).
7. Close suit and tape closure flaps.
8. Don outer gloves and tape at glove/suit junction.
9. Have assistant check all closures and observe wearer to ensure fit and durability of protective gear.

LEVEL D Doffing

1. Wash outer boots and gloves.
2. Remove tape at seams.
3. Remove boot covers and outer gloves.
4. Wash suit/safety boots.
5. Remove safety boots and suit.
6. Wash inner gloves.
7. Remove inner gloves.
8. Remove inner clothing (as necessary)
9. Field wash (as necessary).
10. Redress.



APPENDIX E

GENERAL HEALTH AND SAFETY GUIDELINES FOR DRUM HANDLING

GENERAL HEALTH AND SAFETY GUIDELINES FOR DRUM HANDLING

Drum handling can pose serious hazards such as detonation, fire, explosion, vapor generation, and physical injury if proper precautions and procedures are not taken. To eliminate such potential hazards, the following precautions should be followed when handling drums:

1. Visual Inspection: Prior to handling, the drums should be checked for symbols or labels indicating potential contents, signs of deterioration (i.e. corrosion, rust, leaks), evidence of pressure (i.e. swelling and bulging), drum type, and the configuration of the drum head.
2. Assess conditions in the immediate vicinity of the drum: Monitor around the drums using organic vapor monitors and a combustible gas meter to possibly determine drum contents and associated hazards. Radiation Surveys should be performed where drum contents may include Radioactive Materials.
3. Based on this preliminary investigation, develop a plan to specify the extent of handling necessary; the personnel selected for the activity and the most appropriate precautions to be taken. Be aware that negative determinations regarding organic vapors and radiation do not rule out hazards such as corrosives, unstable compounds, spontaneous ignition, or reactive materials.
4. Select drum handling equipment:
 - a. Drum handling grapple attached to a hydraulic excavator.
 - b. Small front-end loader.
 - c. Rough-terrain fork-lift.
 - d. Roller conveyor equipped with solid rollers.
 - e. Drum cart designed specifically for drum handling.

NOTE: The drum grapple is the preferred method because it allows the operator to be remote from the activity.

5. Prior to initiation of drum handling operations:
 - a. Personnel designated to handle drums should be trained in the proper lifting and movement techniques.
 - b. Vehicle selection: vehicles should have a sufficient load capacity to handle the anticipated load to be carried.

- c. Respirator protection: a health and safety professional should recommend the proper respiratory protection to be utilized.
- d. Overpacks: there should be a sufficient number of overpacks available in case of accidental spills or leaks.
- e. Movement: an appropriate sequence of events regarding movement should be determined.

6. Site Specific Conditions

Contents/Condition of Drums

Special Precautions

Radioactive Waste:

- Only personnel specifically trained to work with radioactive waste should handle drums.
- If background levels are in excess of 2.0 mRem/Hr, contact a health professional immediately.

Explosive or Shock Sensitive Waste

- Evacuate non-essential personnel.
- Employ a grappler unit specifically designed for exposure containment.
- Palletize drums securely.
- Use audible siren signal system to identify the commencement and completion of explosive waste handling activities.
- Maintain continuous communication with site safety officer.

Bulging or Swelling Drums

- Same as for explosive drums.
- Carefully overpack as necessary.

Leaking, Open or Deteriorating Drums

- If ruptures are noted, transfer contents to a drum in sound condition, using a pump designed for transporting that liquid.
- Using a drum grappler, immediately place drum in an overpack.

Buried Drums

- Prior to subsurface excavation, use ground-penetrating systems such as electromagnetic wave, electrical sensitivity, ground penetrating radar, magnetometry, or a metal detector to locate and determine the depth of the drum.
- Have a dry chemical fire extinguisher available.

7. Drum Opening: The following procedure should be followed when opening drums:
- a. Have a sufficient supply of air cylinders available for Supplied Air Respirators outside the work area and supply air to operator via airline and escape SCBA's.
 - b. Place explosion resistant shields between operators and drums where drum contents are suspected to include explosives or unstable materials. All controls for drum opening equipment, monitors, and fire suppression equipment should be located behind the shield.
 - c. Monitor continuously during opening. Place sensor as close to the drum opening as possible.
 - d. Utilize remote control devices to open drums. Examples of such devices are:
 1. Pneumatically operated impact wrench to remove drum bungs.
 2. Hydraulically or pneumatically operated drum piercers.
 3. Backhoes equipped with bronze spikes for penetrating drum tops in large scale operations.
 - * Do not use chisels, picks, or firearms to open drums.
 - ** Hang or balance the drum opening equipment to minimize worker exertion.
 - *** If the drum exhibits signs of swelling and/or bulging, relieve excess pressure prior to opening it. When possible, remote control devices should be employed. If manual opening is necessary an explosive resistant plastic shield should be used.
 - e. PVC/polyethylene or exotic metal drums should be opened by removing or drilling the bung. The drum should then be re-sealed as soon as possible. When re-sealing is not possible, overpacks should be used and any holes plugged with 5 psi pressure venting caps.
8. Sampling: Since one of the most dangerous tasks associated with drum handling is sample collection, the following precautionary measures should be taken when collecting samples:
- a. Research background information about the waste.
 - b. Determine, which drums, should be sampled.
 - c. Select an appropriate sampling device and container.

- d. Develop sampling strategy.
 - e. Develop standard procedures for opening, sampling, sample packaging, and transportation.
 - f. Have a health and safety professional determine the level of protection to be used during sampling, decontamination and packaging.
 - g. Obtain samples with glass rods or vacuum pumps.
9. Characterization: obtain necessary information to determine how to deal and efficiently package and transport wastes for treatment and disposal.
10. Staging: to facilitate characterization, remedial action and to protect from potentially dangerous site conditions, a staging area should be identified. The staging area is site specific and can consist of up to five separate areas (i.e. opening area, sampling area, second staging area, and final staging area). When staging drums, they should be in two rows spaced 7-8 feet apart.
11. Bulking: once characterized, wastes can be mixed together and placed in tanks or vacuum trucks for shipment and treatment at a disposal facility (i.e. bulking) wastes:
- a. Inspect each tank and trailer and remove any residual materials from trailer prior to transporting (e.g. to prevent mixing of incompatible materials).
 - b. Use pumps for removing hazardous liquids. These pumps must be appropriately rated and have a safety relief valve with a splash shield. Hoses, gaskets, valves, and fittings should be compatible with the material being pumped.
 - c. Store flammable wastes in appropriate containers.
12. Shipment:
- a. All shipments must comply with US DOT and EPA regulations pertaining to the shipment of hazardous materials.
 - b. The bulking area should be as close to the site exit as possible.
 - c. Prepare a circulation plan to minimize the conflict between clean-up teams and waste haulers.
 - d. Allow adequate space for vehicles to turn around.
 - e. Require drivers to remain in cabs in vehicle staging area.
 - f. Provide for the proper protection for vehicle drivers.

- g. Do not double stack drums.
- h. Tightly seal drums.
- I. Make sure the truck and bed walls are clean and smooth.
- j. Keep bulk solids several inches lower than the top of the truck bed.
- i. Make sure the truck and bed walls are clean and smooth.
- j. Keep bulk solids several inches lower than the top of the truck bed.
- k. Cover loads with a clean layer of soil, foam, or a tarp.
- l. Weigh vehicles to assure safe operation.
- m. Decontaminate vehicle tires.
- n. Check vehicle for visible emissions.
- o. Develop procedures to be followed in the event that the vehicle has a mechanical malfunction or accident.



APPENDIX F

TEMPERATURE STRESSES

POLICIES AND PROCEDURES

TEMPERATURE STRESSES POLICIES AND PROCEDURES

Cold Stress

Exposure to cold environments can result in reduced mental alertness, confusion, irritability, and loss of consciousness. These effects are due to a lowering of the body's core temperature and can occur even if exposure is to air (or water) above freezing temperature (32°F, 0°C). High wind currents can aggravate exposure to cold temperatures by increased perceived cooling known as wind chill. Bodily extremities are at risk of "frost bite" when temperatures in the work environment are below freezing. The extremities are particularly sensitive to frostbite because of circulatory changes the body makes to maintain body core temperature. Symptoms of excessive exposure to cold include severe shivering and or pain in the extremities.

Fatal exposures are almost always due to an inability to escape from the cold environment (air or water).

Older employees or those with circulatory problems are more susceptible to cold stress.

Controls

The objectives of a cold stress management program are to maintain body core temperatures above 96.8°F (36°C) and prevent injury to the extremities (frost bite). The methods by which this is done include provision of appropriate clothing (including face, hand, and foot coverings), scheduling periodic "warm-up" breaks in heated shelters, and careful monitoring of employees and conditions in which they are working. If possible, employees should acclimate to cold weather conditions before performing extended field work.

Clothing

Insulated clothing may be necessary for sustained work in environments below 40°F. Exposure to air currents at temperature below 40°F requires additional protective insulated clothing including outer windbreak garments.

Light work around water under cold conditions may require the use of impervious outer clothing to prevent wetting of inner insulating layers. Heavy work involving the use of impervious outer clothing is of concern as sweat may wet inner clothing and actually leads to cold stress. Impervious clothing should be equipped with provisions for adequate "breathing" to allow for evaporation of sweat. Wet clothing must be changed immediately when working in air temperatures near freezing.

Breathability of undergarments should also be high to encourage sweat evaporation. Good examples include special weaves of synthetic or wool socks which encourage wicking away of sweat from inner to outer layers.

Working in temperatures below freezing requires special protection of extremities through face and head covers, insulated gloves, and boots.

Warm-up Breaks

Periodic warm-up breaks in heated shelters should be scheduled for work below 20°F. The frequency of breaks should be increased and the duration should be shortened as temperature decreases, wind chill increases (winds > 5-20 mph) or based on careful observation of employees. The onset heavy shivering, occurrence of frost bite, or feelings of excessive fatigue or euphoria should trigger prompt return to the shelter.

Shelter areas should offer protection from the wind. When the employee first enters the shelter, the outer layer of clothing should be removed and remaining clothing loosened to allow for sweat evaporation. Dry clothing should be issued as necessary. Reentry to cold stress environments with wet clothing is to be avoided.

Provision of warm, sweet fluids or hot soups can help control dehydration. Coffee is not recommended due to its diuretic effect.

Monitoring/Work Scheduling

Employees should be closely monitored for development of cold stress symptoms. Constant observation is recommended at temperatures below 10°F.

Ambient air temperature measurements may be of value in establishing prescribed work/warm-up regiments for environments below 60°F. Wind speed measurements are necessary when air temperatures are below freezing. The American Conference of Industrial Hygienists (ACGIH) has published work/warm-up schedules based on air temperature and wind velocity when air temperatures are -15°F or colder.

Working intensity should be paced slow enough to avoid heavy sweating (without provisions for changes of dry clothing), but heavy enough to minimize prolonged periods of sitting or standing still.

Heat Stress

The stress of working in a hot environment can cause a variety of strains on the body, including heat exhaustion or heat stroke; the latter can be fatal. Personal protective equipment can significantly increase heat stress. You should learn to recognize the symptoms of heat stress in

yourself and coworkers and take necessary actions when they occur. Your supervisor should provide instructions on ways to reduce or prevent heat stress, including frequent rest cycles to cool down and replace the body fluids and salts lost through perspiration. Some of the symptoms, which indicate heat exhaustion, are:

- Clammy skin
- Light-headedness
- Confusion
- Slurred speech
- Weakness, fatigue
- Fainting
- Rapid pulse
- Nausea (vomiting)

If these conditions are noted, take the following actions in the order given:

- Take victim to a cooler and uncontaminated area
- Remove protective clothing
- Give water to drink, if conscious.
- Allow to rest.

Symptoms that indicate heat stroke include:

- Staggering gait
- Hot skin, temperature rise (yet may feel chilled)
- Incoherent, delirious
- Mental confusion
- Convulsions
- Unconsciousness

If heat stroke conditions are noted, take the following actions in the order given:

- Take victim to a cooler and uncontaminated area
- Remove protective clothing
- Give water to drink, if conscious

- Cool victim with water, cold compresses, and/or rapid fanning
- Transport victim to a medical facility for further cooling and monitoring of body functions. HEAT STROKE IS A MEDICAL EMERGENCY.

Background

Heat stress is one of the most common stresses encountered in work at hazardous waste sites. This is especially true when work tasks require the wearing of impervious personal protective equipment. Heat stress can occur in environments where the ambient temperature is as low as 75°F (24°C) depending on humidity, solar load, work schedules, and use of personal protective equipment.

The goal of heat stress management is to maintain the body temperature of employees below 100.4°F (38°C). The key to a successful program is to recognize when a potential heat stress condition exists. Carefully monitor employees, work conditions, schedules, and control heat build up by work rotation, employee selection, training, provision of fluids, and cooling aids ranging from a shaded rest area to vortex cooled suits depending on the severity of conditions.

Preparation for prompt response to the occurrence of heat stress symptoms is essential. Appropriate levels of response range from observed rest in a cool area to immediate medical attention. The location of and access to necessary support services including emergency medical care should be firmly established prior to work in potential heat stress environments.

Recognition

Individual employees vary greatly in their ability to withstand heat stress. The most important factors related to ability to work in heat stress environments include physical conditioning, general health status, and acclimatization to heat environments, weight, job demands, and age.

Acclimatization is a process in which the body gradually becomes better able to withstand heat stress through more effective sweating without extreme loss of body salts, while maintaining lower heart rates and body temperature. The acclimatization process usually takes from several days to a week to take effect. Acclimatization can be lost within one week's absence from the work environment.

Reactions to heat stress progress from discomfort to inefficiency, physiological risk, collapse, and pain as exposure increases. It is important to be alert to the appearance of heat stress symptoms among exposed employees. Initial symptoms include confusion, altered behavior (including sudden fits of anger), and affected judgments. The onset of these symptoms is often unrecognized by the victims of heat stress.

The classic symptoms of heat stress include:

Heat Rash

Due to blockage of sweat glands, this is often perceived as a tingling or burning sensation on the skin. Recommended treatment is removal to a cool environment. Cool showers and gentle drying may help.

Heat Cramps

The occurrence of intense and painful cramps in the skeletal and abdominal muscles often caused by salt depletion due to heavy sweating. Prevention consists of maintaining adequate salt intake through a balanced diet. Supplemental fluids containing minerals may also help (such as fruit juices, Gatorade, etc.). No caffeinated beverages or alcoholic beverages.

Heat Exhaustion

General feelings of fatigue culminating with circulatory insufficiency due to dehydration. The skin is wet and pale. Nausea and fainting may occur but the body temperature is not unusually elevated. Treatment consists of placing the patient in a cool environment and providing water.

Heat Stroke

The most serious reaction to heat stress as a result of failure of the temperature regulatory system. Medical attention is required immediately to avoid fatalities or possible brain damage. Symptoms of heat stroke include elevated body temperature (>104°F) often accompanied with hot, dry skin with decreased or no sweating.

Treatment consists of immediate reduction of body core temperature and immediate medical attention. If heat stroke symptoms are noted in the field, accompanying personnel should attempt any measures available to reduce body temperature immediately. Such steps may include ice and cold packs, water immersion, fanning, etc.

Monitoring

When heat stress conditions are suspected, it is important to monitor environmental conditions and the employees. There are a number of heat stress indices based upon environmental combinations of ambient temperature, humidity, and solar loading. The most popular indices are the Wet Bulb Globe Temperature Index (W.B.G.T. – ACGIH-TLV's) and Apparent Temperature

(A.T.). Unfortunately none are universally accepted due to limitations of study populations or conditions on which they are based. Most common concerns with heat stress indices relate to variables in physical condition, solar and convective heat loading, and clothing. No heat stress index is appropriate for work in impervious clothing, a frequent requirement for hazardous waste site work. As such, heat stress indices should be viewed as indicators of potential heat stress conditions but control measures are based on keen observation and monitoring of the employees themselves.

With normal work clothing and heavy work loads, one should be alert to potential heat stress at ambient temperatures of 75-80°F and high humidity. With very low humidity and similar work conditions observers should be alert for signs of heat stress at temperatures of 80-90°F.

Impervious work clothing interferes with one's primary cooling mechanism; evaporative cooling of sweat. As the sweat cannot evaporate, heat storage and elevated body temperature could be expected at much lower ambient temperatures, probably better correlated with work level and intensity than ambient temperature. NIOSH has recommended frequent (hourly) monitoring of employees working in impervious clothing in full sunlight at ambient temperatures as low as 70-75°F.

An effective means to monitor employees in addition to observation for signs or symptoms of heat stress is through a heart rate check at the beginning of scheduled cycles. The goal is to establish a work-rest schedule, which maintains heart rates below 110 beats per minute. Heart rate checks above 110 beats per minute should be followed by reducing the subsequent work period duration by 1/3.

The frequency of employee monitoring should be increased up to 4 times per hour in extreme conditions, for employees wearing impervious clothing.

Monitoring of oral temperature (<99.6°F) and/or water loss (<1.5% of body weight) has been suggested by NIOSH. These measures, while useful, may prove difficult under field conditions.

Control Measures

The most common and universally applicable control for management of heat stress involves adjustment of work loads and work-rest scheduling. Work breaks should be scheduled at a frequency of between 1 every 2 hours up to 1 every 15 minutes depending upon work rate, heat load, personal protective equipment used, and workers' physical condition. The use of a WGBT can determine the accurate measure of the heat index, which can be used to provide an accurate and correct work schedule. If possible, employees should acclimate to hot weather conditions before performing extended field work.

As newly exposed employees begin work in hot environments their work schedules should be set at 50% and increased 10% per day to allow for acclimatization. Employees will generally self limit exposure based on signs or symptoms of heat strain, but the insidious nature of heat stress symptoms warrants caution in relying on oneself to control heat stress.

Work break areas should be shaded or cooler than the work environment, if possible. Cool, portable water should be immediately available to workers and administered in a manner which encourages frequent drinks of small amounts (approximately 4 oz.). Mineral supplemented water (e.g. Gatorade) may be found more acceptable to employees under hot conditions. Once acclimated, employees are generally able to obtain adequate minerals (and salt) from a well balanced diet.

NOTE: Additional salt tablets should not be used in field.

Extreme conditions of temperature, humidity, or impervious protective clothing, warrant provision of additional cooling measures, e.g. fans, field showers, and possibly artificially cooled suits.

The most effective control for management of heat stress is thorough training of employees to enable recognition of potential heat stress conditions and taking of appropriate preventative actions. Any behavior exhibiting signs or symptoms of heat stress should be promptly investigated and appropriate treatment rendered.

Susceptible Populations

Employees who are not physically fit or who suffer cardiovascular insufficiency are more susceptible to heat stress. Employees under the influence of drugs or alcohol may be an increased risk. Employees who have previously suffered sun or heat strokes are also more susceptible to repeat occurrences of heat stress.



APPENDIX G

SOIL AND WELL SAMPLING HEALTH AND SAFETY GUIDELINES

SOIL AND WELL SAMPLING HEALTH AND SAFETY GUIDELINES

Collection of soil, waste, and/or other environmental samples at hazardous waste sites presents a variety of potential health and safety hazards, many of which are due to the use of required equipment decontamination agents to assure appropriate quality control. Health and safety concerns due to potential hazards posed by the particular work site under investigation are addressed by the formal health and safety plan for that site. The following are key health and safety issues and recommend practices for field work involving sample collection at any work site. They address concerns posed by work activities necessary as part of proper sample collection techniques and quality assurance practices.

1. Protection from skin contact with soil, water, or waste borne chemicals requires the selection and use of garments and protective coverings that will stop the chemicals in question and will not degrade upon chemical contact. This is especially important for highly concentrated chemicals (e.g., free product, concentrated wastes, and decontamination chemicals).
 - A. Thin, disposable latex or vinyl gloves are not designed to prevent entry of or withstand prolonged contact with many chemicals for which sampling is performed or which are used to decontaminate sampling equipment. These gloves are used primarily for quality control purposes as part of sample collection techniques.
 - B. Where protection is necessary to prevent skin contact with suspect contaminants, the protective coverings should be worn under outer disposable gloves used for quality control purposes. This may require the use of large or extra large disposable gloves to accommodate inner coverings and not rip during donning/doffing.
2. Collection of samples containing high solvent concentrations may liberate volatile organics at levels sufficient to warrant respirator use (in addition to skin protection). This is especially true where high concentrations of materials or chemical layers (floating product) are encountered. Potential emissions should be monitored and protective equipment upgraded as specified in the health and safety plan.
3. During equipment decontamination activities involving extensive use of acetone, hexane, methanol, or other solvents, Level C protection including organic vapor cartridges or equivalent, may be warranted.

In addition, eye and skin protection may be required during decontamination activities requiring the use of nitric acid. It should be noted that improper preparation by the laboratory of acid preservatives in sampling containers might release irritating fumes unexpectedly upon addition of liquid samples.

4. Transport and storage of chemicals required for decontamination procedures require appropriate safeguards to prevent contact between incompatible and/or combustible materials. Nitric acid is an oxidizer capable of starting a fire upon contact with flammable or combustible materials.

The attached table highlights key precautions for safe work with common sample decontamination materials.



APPENDIX H

HEARING PROTECTION

HEARING PROTECTION

1. Hearing protection (ear muffs or plugs) is required whenever employees are exposed to noise levels of 85 decibels or greater as an 8-hour time weighted average (TWA). Industrial Hygiene workers exposed to noise levels in excess of 85 dBA will wear hearing protection regardless of the duration.
2. Hearing protection is to be inspected before each use for tears and contamination. If deficiencies are noted, the hearing protector should be cleaned, repaired, or replaced before use.



APPENDIX I

FIELD PROCEDURES

PROCEDURES FOR EXCAVATION, TRENCH, OR TEST PIT

A. TRENCH OR TEST PIT DIGGING

Trench or test pit digging can be expected to present hazards in addition to those encountered during general field work or drilling. Added control measures to be considered include the following:

1. Careful positioning of equipment with respect to the presence of known submerged objects.
 - a. Where possible, power to underground electrical lines should be turned off (and locked out) while excavation activities are in process or until the area is secure from entrance of personnel.
 - b. Known gas (or chemical) lines adjacent to the immediate excavation site should also be secured (valves turned off and locked out) while excavation is underway or access by outside personnel possible. Where possible, it is desirable to purge these lines of their contents prior to start of excavation.
2. Controlled digging under careful observation of a watch person who has clear communication with the equipment operator. The watch person should be alert to notice the presence of (unknown) buried objects by visual inspection or metal detection surveyance of the immediate excavation area.
3. Significant surface area of ground is exposed to the atmosphere as part of the trenching process. This may increase vapor exposures from volatile contaminants. Provisions should be made for air monitoring to trigger appropriate protective actions including temporary work stoppage. Use of vapor emissions controls or suppressants space entry procedures for greater details regarding control measures considerations.
4. Trenches or pits greater than 4 feet deep should be considered confined spaces, which may contain concentrated vapors, gases, or oxygen deficient atmospheres. These areas must be checked to assure non-explosive, non-hazardous atmospheres before allowing entry and periodically (or continuously) thereafter. See confined space entry procedures for greater details regarding control measures considerations.
5. OSHA provisions regarding shoring and sloping of trench sides may apply.

Subcontractors performing trenching or pit digging as part of sub-surface investigation must be aware that they will be expected to follow provisions under 29 CFR 1926.

6. Pits or trenches should be inspected daily for evidence of cracks, slides, or scaling. Inspection should be more frequent if it is raining.
7. Heavy equipment should be kept away from the sides of trenches or pits.
8. Means of egress (e.g., steps, ladders) should be readily available (within 25 ft.) of employees working in pits or other excavations from which rapid exit is difficult.
9. Excavations, mud pits, etc., must be protected with barricades or covers. Temporary pits/trenches should be back filled upon completion of work.



APPENDIX J

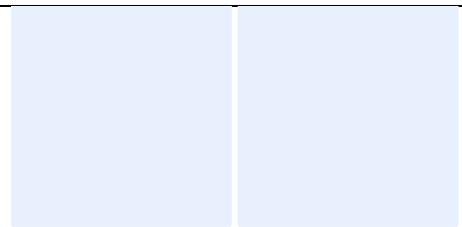
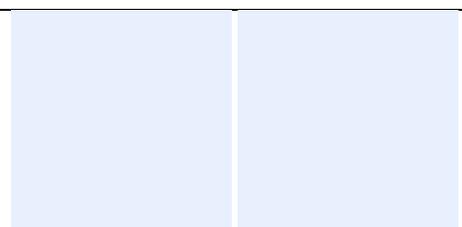
ASBESTOS SUPPLEMENT

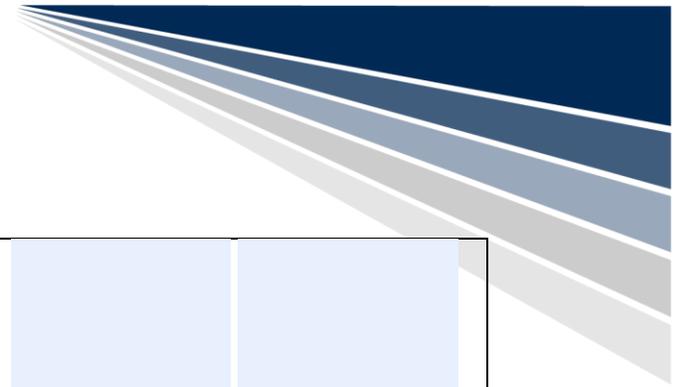


Job Hazard Analysis

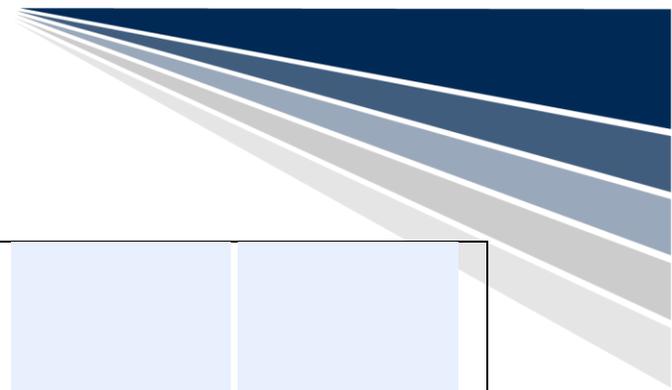
Activity or Process: Asbestos Sampling	Department: Natural and Cultural Resources
Prepared By: Frank Tiralla, CSP, ASP, OHST	Supervisor: Peter Kaplan, CSP
Approved By: Peter Kaplan, CSP	Date: 10/12/2022

For instructions on completing this form, see the last page. Contact JMT's Health and Safety Department if you have questions about this form. Use additional JHAs if needed.

<i>This document is the certification of hazard assessment for PPE for the workplace.</i>			
TASKS/STEPS	HAZARDS - CONSEQUENCES	CONTROLS (SAFEGUARDS)	PHOTO (IF HELPFUL)
1 Visually determine the areas of sampling/survey	<ul style="list-style-type: none"> • Touching could disturb fibers 	<ul style="list-style-type: none"> • Asbestos is not to be touched during the initial visual assessment 	
2 Limit all access to the area containing asbestos	<ul style="list-style-type: none"> • People unknowingly coming into contact with asbestos 	<ul style="list-style-type: none"> • Place Signs and/or barricades 	

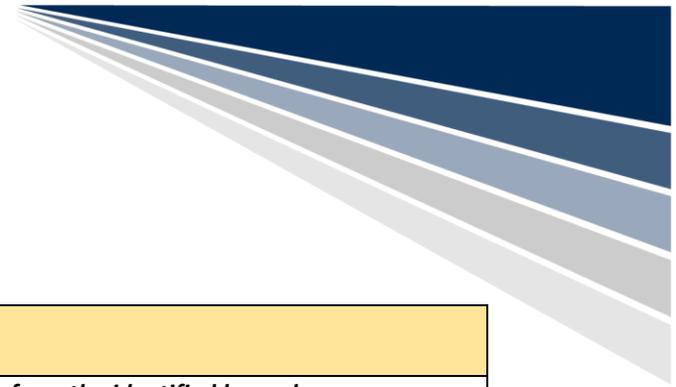


<p>3 Conduct a risk assessment for the specific situation including all related work activities and environments. This will dictate the removal methodology</p>	<ul style="list-style-type: none"> • Situation-specific hazards could put a worker at risk, such as slip, trip, and fall hazards • Consider items such as required tools and equipment (ladder) 	<ul style="list-style-type: none"> • Assess the specific situation to determine other hazards – Implement controls as needed • Inspect and follow any safety procedures for items to be used (tools, ladder, etc.) 		
<p>4 Don the appropriate PPE</p>	<ul style="list-style-type: none"> • Failure to use PPE will expose you to the asbestos dust particle 	<ul style="list-style-type: none"> • Using PPE will aid in reducing exposure to asbestos particles 		
<p>5 Take samples</p>	<ul style="list-style-type: none"> • Fibers could be disturbed during the sampling 	<ul style="list-style-type: none"> • Use a spray bottle to wet the area • Use tools that do not generate large amounts of dust. • Follow any/all industry best practices for sampling 		
<p>6 Place samples into a suitable container</p>	<ul style="list-style-type: none"> • Fibers could be disturbed during 	<ul style="list-style-type: none"> • Use proper containers that will securely contain sample(s) 		
<p>7 Decontamination: All contaminated items, tools, equipment and clothing</p>	<ul style="list-style-type: none"> • Fibers could still be attached and removed with items 	<ul style="list-style-type: none"> • Items are to be wiped down with a wet disposable cloth. They are only to be used once 		

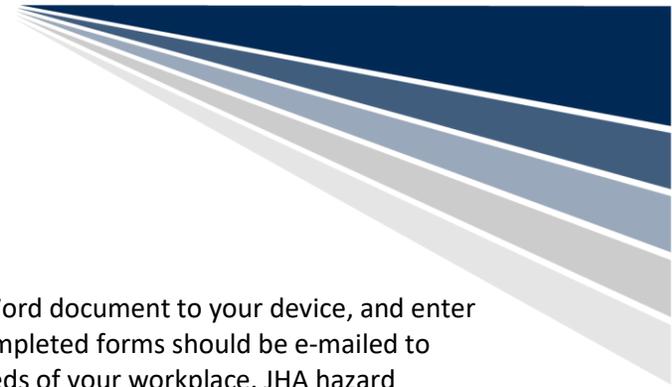


<p>8 Decontamination: Personal decontamination</p>	<ul style="list-style-type: none"> Fibers could still be attached and removed with items 	<ul style="list-style-type: none"> Personal decontamination involves the removal of all visible asbestos dust. Only do personal decontamination AFTER all other decontamination work 		
<p>9 Disposable PPE to be removed and placed into an appropriate container</p>	<ul style="list-style-type: none"> Fibers could still be attached and removed with items 	<ul style="list-style-type: none"> Before leaving the sampling area, all disposable PPE is to be removed and placed in an appropriate container Seal container as necessary 		
<p>10 Click to add the tenth task/step.</p>	<ul style="list-style-type: none"> Click to add a hazard and consequence. Click to add a hazard and consequence. Click to add a hazard and consequence. 	<ul style="list-style-type: none"> Click to add a control. 		

Required Training	Required/As Needed PPE
<p>Asbestos inspection certificate PPE Awareness Respirator training (including fit test and medical clearance)</p>	<p>Safety glasses – Required; Safety Goggles – As Needed Hardhat – As Needed Protective Clothing – As Needed N100 Dust mask – Required; Tight-fitting respirator – As Needed Hand Protection - Required Foot protection – As Needed</p>



Acknowledgment	
<i>I read and understand the contents of the job hazard analysis and the controls required to mitigate the risks from the identified hazards</i>	
Name	Date
Click to enter text.	Click to enter a date.
Click to enter text.	Click to enter a date.
Click to enter text.	Click to enter a date.
Click to enter text.	Click to enter a date.
Click to enter text.	Click to enter a date.



Instructions:

Use this form “as is” to identify hazards, controls, and PPE at each job task (or step) level. Save the Word document to your device, and enter information electronically in shaded areas, or print the document to enter information manually. Completed forms should be e-mailed to jmtsafety@jmt.com for retention for future use. You can modify the form to meet any additional needs of your workplace. JHA hazard information can be used to develop separate safe work procedures for employee use.

Activity or Process: You need to first select a job (or main activity) to observe and analyze.

Tasks or Steps: List tasks or steps that are part of the job you selected in the “Task/Steps” column.

Example: “Operating a table saw” would be the activity/process while “Installing a blade” and “Ripping” would be separate tasks.

Hazards/ Consequences: Note any condition in the workplace that can potentially cause occupational injury, death, or disease. Assume that no personal protective equipment is being worn- even if it is because hazards could persist if PPE isn’t used. You may choose to add detail about how injuries could occur due to the hazard.

Examples of hazards include: working at heights, slippery surfaces, exposed moving machinery parts, fire, explosion, noise, electricity, toxic emissions, corrosive chemicals, low oxygen, repetitive tasks, heavy lifting, infectious Bloodborne pathogens, assault, and homicide, etc..

Examples of how injuries can occur: work at height can result in falls that can result in broken bones, paralysis, or death; noise exposure can cause permanent and severe ringing in the ears and hearing loss; exposure to corrosive chemicals can cause permanent skin damage and blindness; and working in low oxygen areas can lead to sudden suffocation, unconsciousness, and death.

Controls (Safeguards): Note how you will eliminate or minimize the hazard. This doesn’t include PPE.

Examples of controls include: Using a safer tool or equipment or chemical, adding safeguards to machinery, using safer work practices, using local exhaust ventilation for toxic emissions, and enclosing noisy equipment or moving workers away from such equipment to reduce exposure levels.

Required Training: Detail what type of training is needed for the *Activity or Process*.

PPE (Personal Protective Equipment): Detail what type of PPE is needed for each hazard that can’t be eliminated or minimized using controls.



REVISED INTERIM REMEDIAL MEASURE WORK PLAN

950 5th Street, Watervliet, New York 12189

APPENDIX B

CAMP

APPENDIX B

Community Air Monitoring Plan

A. Introduction

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection because the staff are covered by project-specific health and safety plans. Rather, its intent is to provide a measure of protection for the downwind community 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. This version of the CAMP is provided for site investigation activities. If necessary, it will be modified for Remedial Activities.

B. Proposed Monitoring

Site investigation activities subject to this CAMP include excavation of test pits and subsurface utility/infrastructure work.

Continuous monitoring will occur during the installation of soil borings or monitoring wells and excavation of test pits wells, which are all minimally invasive activities. Because the proposed work will occur throughout the brownfield site, the perimeter of the “designated work area” will be defined as the Brownfield Site Boundary (BSB). At the beginning of each work day, the prevailing wind direction at the Albany International Airport (ALB) will be checked and compared to the wind direction observed onsite. Monitoring equipment will be placed upwind and downwind of the work area and will be monitored continuously for VOCs and particulates during intrusive activities.

Periodic monitoring will also be performed during non-intrusive activities such as the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection will consist of taking a VOC 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.

C. VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the BSB on a continuous basis while invasive work is ongoing. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions.

Measurements will be collected using a hand-held PID meter, properly calibrated in accordance with instrument requirements. The equipment will be calibrated at least daily using an appropriate surrogate. The equipment will be capable of providing real-time instantaneous readings and 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 BSB exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.
2. If total organic vapor levels at the downwind BSB persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the work areas or half the distance to the nearest potential receptor or 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 downwind BSB, activities will be shut down.
4. All 15-minute readings will be recorded and be available for NYSDEC and NYSDOH personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

D. Particulate Monitoring, Response Levels, and Actions

During invasive work, particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the BSB 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 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 will be equipped with an audible alarm to indicate exceedance of the action level. Additionally, fugitive dust migration will be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m³) greater than background (upwind perimeter) for a 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/m³ 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/m³ above the upwind level OR dust controls fail to prevent visible dust emissions from leaving the site, work will be stopped, the Project Manager will be notified, and a re-evaluation of activities will be 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/m³ of the upwind level and in preventing visible dust migration

As necessary, the following techniques will be utilized for controlling the generation and migration of dust during drilling activities:

- a) Stay on paved surfaces to the extent possible;
- b) Applying water on access roads near the site perimeter that could generate dust (if warranted);
- c) Restricting vehicle speeds to 10 mph; and
- d) Cleaning/removing excess dirt from heavy-equipment tires before leaving the site.

E. Equipment Monitoring and Data Review

In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review. Daily CAMP reports will be submitted to DEC and DOH *via* email. CAMP reports are to include tabulated, time-stamped VOC and particulate readings (labeled upwind and downwind), and a summary of any CAMP exceedances and the actions taken to address them. DEC and DOH will be notified immediately via phone of any work stoppages due to CAMP exceedances, and the notification will be documented in the daily CAMP report.