WWTP SUBSURFACE INVESTIGATION WORK PLAN

Prepared for:

300-320 Scaj LLC
320 Scajaquada Street
Buffalo, New York

Site Location:

320 Scajaquada Street
Buffalo, New York
Site Number: 915152

March 2024

Prepared by**:**

Lyons Engineering, DPC.
10 Jones Avenue
Rochester, New York 14608

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Section 1

LYONS ENGINEERIN, DPC.

Introduction

1.0 Introduction

This Subsurface Investigation Work Plan (Work Plan) was developed by Lyons Engineering, DPC. on behalf of 300-320 Scaj LLC. to investigate the presence of contamination in subsurface soils as well as to determine the depth of concrete foundations in the area of the existing Wastewater Treatment Plant located at 320 Scajaquada Street in Buffalo, New York. A New York State Department of Environmental Conservation (NYSDEC) number has been assigned to the entire site (915152) since 1992; listed as Buffalo-Saginaw.

This Work Plan, and the activities proposed herein, have been developed in accordance with applicable guidance presented in the NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (DER-10), issued May 3, 2010. All work will be performed in compliance with 29 CFR 1910.120 (Hazardous Waste Operations and Emergency Response) and 29 CFR 1926 Subpart P (Excavations).

Section 2

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Site Description

2.0 Site Description

Based on information presented in previous environmental assessment reports, the site has operated as a parking lot since 1964 and the WWTP operated until approximately 2013.

2.1 Site Location

The WWTP is located on the norther portion of 320 Scajaquada Street in Buffalo, New York. The surrounding area has mainly residential uses with some commercial and industrial properties adjacent to the site. In addition, there is a Brownfield Site (C915196B – 1010 East Delavan Avenue) and a State Superfund Site (915196 – 250 Colorado Avenue) adjacent to the site. Approximate subject property central coordinates are as follows.

Latitude (North): 42°917510"N Longitude (West): -78°817820"W

2.2 Current Site Conditions and Use

The subject property is a developed business area, with asphalt covering the site., currently used for parking.

2.3 Site History

The site was a portion of a former GM-Saginaw facility and was developed into a parking lot by General Motors in 1964. Prior to 1964, the site was utilized by Buffalo Gravel Corporation for the operation of a concrete mixing plant which started in approximately 1947. The overall site consists of approximately seven acres and is referred to as Parking Lot No. 4. The original NYSDEC Registry listing of the site was for a one-acre area contaminated with polychlorinated biphenyls (PCBs) around the Wastewater Treatment Plant (WWTP) which currently exists on the site. Following investigation, the entire site was listed due to elevated lead concentrations in the fill materials identified throughout the seven-acre parking lot.

GM and NYSDEC entered into an Order on Consent (Index #B9-0410-92-09), effective February 2, 1995, pursuant to which GM performed an Interim Remedial Measure (IRM) and conducted a Site Investigation and Engineering Evaluation of Alternatives at the site. Based upon the

Engineering Evaluation of Alternatives Report prepared by Wehran-New York, Inc. (EMCON), NYSDEC prepared a Proposed Remedial Action Plan, which it submitted for public comment in February of 1998.

Following a period of public comment, NYSDEC selected a final remedial alternative for the Site in a Record of Decision (ROD) that was issued in March of 1998. A Remedial Design (RD) Report was prepared by EMCON to implement the ROD-selected remedial alternatives at the site. The remedial activities performed for the site included ad were performed between July 1998 and March 2000 which included the following:

- dewatering the on-site WWTP as well as immediate surrounding area, confirmatory effluent sampling and analysis, and batch discharge to the Buffalo Sewer Authority sanitary sewer system;
- excavating fill/soil containing greater than the site cleanup goal of 10 ppm PCBs in the area around the WWWTP, and confirmatory sampling;
- transporting excavated materials off-site for treatment and disposal;
- backfilling of the excavation with clay soil; and
- paving the excavation area and repaving the remainer of the site.

2.4 Physical Setting

As previously stated, the current land use of the area immediately surrounding the entire site is general urban and surrounding uses are residential with some commercial and industrial properties. The features surrounding the subject site is described below. A Site Location Map is presented as Figure 1. A detailed plan of the Site and the proposed investigation locations is presented as Figure 2.

North	Commercial/Industrial
South	Commercial/Residential
East	Commercial
West	Commercial/Industrial

Section 3

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Scope of Work

3.0 Scope of Work

The investigation approach will include the installation of concrete cores and soil borings in the area of the WWTP to identify the presence of PCB's in the area prior to subsurface construction activities (i.e. utility installation) as well as to determine the depth of concrete foundations at the site. Following concrete coring and soil boring activities, soil samples will be collected for laboratory analysis.

The sections below provide detailed procedures for the investigation activities. Deviations from the Work Plan will require notification and prior approval from the NYSDEC.

3.1 Health and Safety

Health and safety issues associated with the project will be addressed in a Site-specific Health and Safety Plan (HASP) developed for the project (Attachment B).

3.1.1 Community Air Monitoring Program

The New York State Department of Health (NYSDOH) Community Air Monitoring Plan (NYSDEC, 2010 – attached Appendix C) requires real-time monitoring for vapors of volatile organic compounds (VOCs) and respirable particulate matter (PM-10) at the downwind perimeter of the site when certain activities are in progress at contaminated sites.

3.1.1.1 Purpose

The intent of the CAMP is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air. The action levels specified herein require increased monitoring, corrective actions to prevent emissions, and / or work shutdown.

3.1.1.2 Objectives

The community air-monitoring will include real time air quality data, which will be collected throughout the duration of all ground-intrusive activities and will include, at a minimum, upwind and downwind measurements at the site perimeter. The CAMP was established to address the following objectives:

- To ensure concentrations of vapors of volatile organic compounds (VOCs) and PM-10 (particulates having a diameter of less than 10 micrometers) associated with ground-intrusive activities are minimized to protect human health and the environment.
- To provide an early warning system so engineering controls can be enacted to prevent unnecessary exposure of emissions resulting from project activities.
- To measure and document the concentrations of VOCs and PM-10 for determining compliance with the air-monitoring limits established by the NYSDOH.

3.1.1.3 Applicability

Continuous monitoring will be required for activities that disturb soils, such as use of hand tools, advancement of soil borings, etc. The CAMP is not intended for use in establishing action levels for worker respiratory protection. This CAMP is a companion document to the site-specific Health and Safety Plan (HASP), which is the document that is directed primarily toward the protection of workers within the designated work zones.

CAMP monitoring will be required to prevent exposure to or disturbance of the contaminated or potentially-contaminated soils.

3.1.1.4 General Site Conditions

The prevailing wind generally blows from west to east. However, monitoring locations will be adjusted on a daily or more frequent basis based on actual wind direction to provide an

upwind and at least one downwind monitoring station. Wind direction may be determined using a weather station or equivalent device, or lightweight flagging affixed at each station.

The primary chemicals of concern associated with the site as presented in the Operation and Maintenance Manual by Conestoga-Rovers & Associates, dated April 2001 include the following:

- Metals: lead
- Polychlorinated Biphenyls (PCBs)

Continuous monitoring of VOCs will serve as the primary method of screening for potential volatile vapors (VOCs). Since metals are not volatile (gaseous) compounds, continuous monitoring of particulates will serve as the primary method of (indirectly) screening for these compounds.

3.1.1.5 Volatile Organic Compound Monitoring

VOCs will be monitored continuously at the upwind and downwind perimeters of the work area or exclusion zone at temporary VOC monitoring stations. The monitoring of VOCs will be performed using a photo-ionization detector (PID), which will be calibrated daily. The PID will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below:

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

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective

actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level half the distance to the nearest potential receptor or residential / commercial structure (but not less than 20 feet), is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shut down until the source of the emissions is identified and controlled.

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

3.1.1.6 Particulate Monitoring

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the work area or exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using a DUSTTRAKTM Aerosol Monitor Model 8520 (or similar). The device will be capable of measuring particulate matter less than 10 micrometers in size (PM-10), integrating over a period of 15 minutes for comparison to the airborne particulate action level, for comparison to the following action levels:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level, and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work will be stopped, and an evaluation of activities will be initiated. Work will resume if dust suppression measures and other controls are successful in reducing the

downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

In addition, fugitive dust migration will be visually assessed during all work activities by a qualified environmental professional. Water used for wetting will be from a municipal or private source that has been tested and shown to meet New York State drinking water standards for PFOA and PFOS.

3.1.1.7 Recording Data

All readings will be recorded and available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

3.2 Quality Assurance/Quality Control Protocols

A QAPP provides Quality Assurance/Quality Control criteria for work efforts associated with the sampling and analysis of environmental media as part of a given project. In the absence of a formal QAPP, it is understood that the appropriate chain of custody protocols for collection of samples will be complied with and a prequalified NYSDOH Environmental Laboratory Analytical Program (ELAP)-certified laboratory will perform analysis of samples. The project will be conducted in accordance with the QAPP included as part of the site Operation and Maintenance Manual developed by Canestoga-Rovers & Associates, dated April 2001. In addition, all analytical data will be accompanied by a Data Usability Summary Report (DUSR).

3.3 Investigation Activities

The following items are considered the primary components of the Investigation activities:

- Subsurface Utility Clearance
- Geotechnical Boring Installation
- Soil Sampling
- Air Monitoring
- Analytical Data Evaluation

The remainder of this section provides a description of the procedures which will be used to implement the investigation activities.

3.3.1 Subsurface Utility Clearance

Prior to beginning any investigation activities, the Underground Facilities Protection Organization (UFPO, Dig Safely New York) will be contacted to identify any underground utilities in the vicinity of the investigation activities. Note that the UFPO will only identify utilities that are members of the service and within right-of-ways or public areas. The site owner or an authorized representative with knowledge of private subsurface utilities or structures that may be present on the Site will meet with a representative of Lyons Engineering, DPC. prior to conducting any investigation activities.

3.3.2 Coring/Boring Installation and Sampling

As presented on Figure 2, borings will be installed in the area of the WWTP. Soil borings will be advanced using 3 ¼" hollow stem augers. Borings will be advanced to the bottom of the concrete foundations and to the depth of proposed excavation at each location (i.e., approximately 30" for utility excavations and approximately 6' for light pole installations). Continuous soil sampling will be carried out using a 2" split spoon sampler. Each core sample will be screened in the field using a portable photoionization detector (PID) instrument and the split spoon decontaminated between intervals. Samples will be collected from each boring and will be sent for laboratory analysis. It is assumed that one representative sample will be analyzed from each boring collected at a depth determined in the field based on visual analysis (i.e., staining, odors, PID readings) of the recovered soils. The samples will be analyzed for the following NYSDEC Part 375 constituents.

SAMPLE VOLUMES, CONTAINERS, AND PRESERVATIVES

Parameter	Method (USEPA)	Volume and Container
PCB's	8082A	1 x 8 oz. Glass jar; teflon-lined cap

Following completion of the sampling, the borings will be backfilled with material removed and the boring will be sealed with asphalt in accordance with the cover specification presented in Section 2.2 of the site Operations & Maintenance Manual as follows:

- 2" binder layer
- 2" asphalt binder
- 1" asphalt topcoat with seal coat

In the event that elevated PID readings (i.e., greater than 10 parts per million) or gross contamination (i.e., staining, odors, etc.) is observed in any boring locations, the material will be containerized and characterized appropriately with approval and direction from NYSDEC and not placed back in boring location.

3.4 Schedule

Below is an approximate schedule for the project.

- Project Start – Within 5 business days of NYSDEC approval.
- Site Activities – One business day
- Receipt of Analytical – Approximately 10 business days from sample submittal
- Summary Report – 5 business days from receipt of analytical data

3.5 Waste Management

Potential waste that may be generated as part of this project include:

- Contaminated Soil
- Decontamination water
- PPE

At the current time, it is not anticipated that any materials will be generated requiring off-site management as part of this project. Therefore, disposal facilities have not been selected for any waste that may be generated during project activities at this time. However, in the event that materials are generated that require off-site disposal, the NYSDEC will be notified prior to transporting any materials off-site.

All work will be conducted in a manner to ensure compliance with 40 CFR Part 262 for management of materials to be managed off-site. This will include at a minimum:

1. Container Management

    a. All containers used will be marked in accordance with 40 CFR 262.34(a)(2) and 40CFR 262.34(a)(3).

    b. All containers will be inspected in accordance with 40 CFR 265.174

2. Accumulation Time Limit (40 CFR 262.34)

    a. Material generated as part of this project that will not be re-used or recycled will not be accumulated (stored following characterizations) on-site for more than 90 days.

3. Personnel Training 40 CFR 265.16

    a. Personnel associated with this project will successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of 40 CFR 265.

Section 4

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Summary Report

4.0 Summary Report

4.1 Summary Report

Information obtained as part of the implementation of this investigation will be included in a report to be prepared at the completion of the activities. The report will include the following information at a minimum:

- Summary of investigation activities completed;
- Appropriate field forms and documents;
- Figures showing sampling locations;
- Laboratory analytical data;
- Summary and recommendations.

Appendix A

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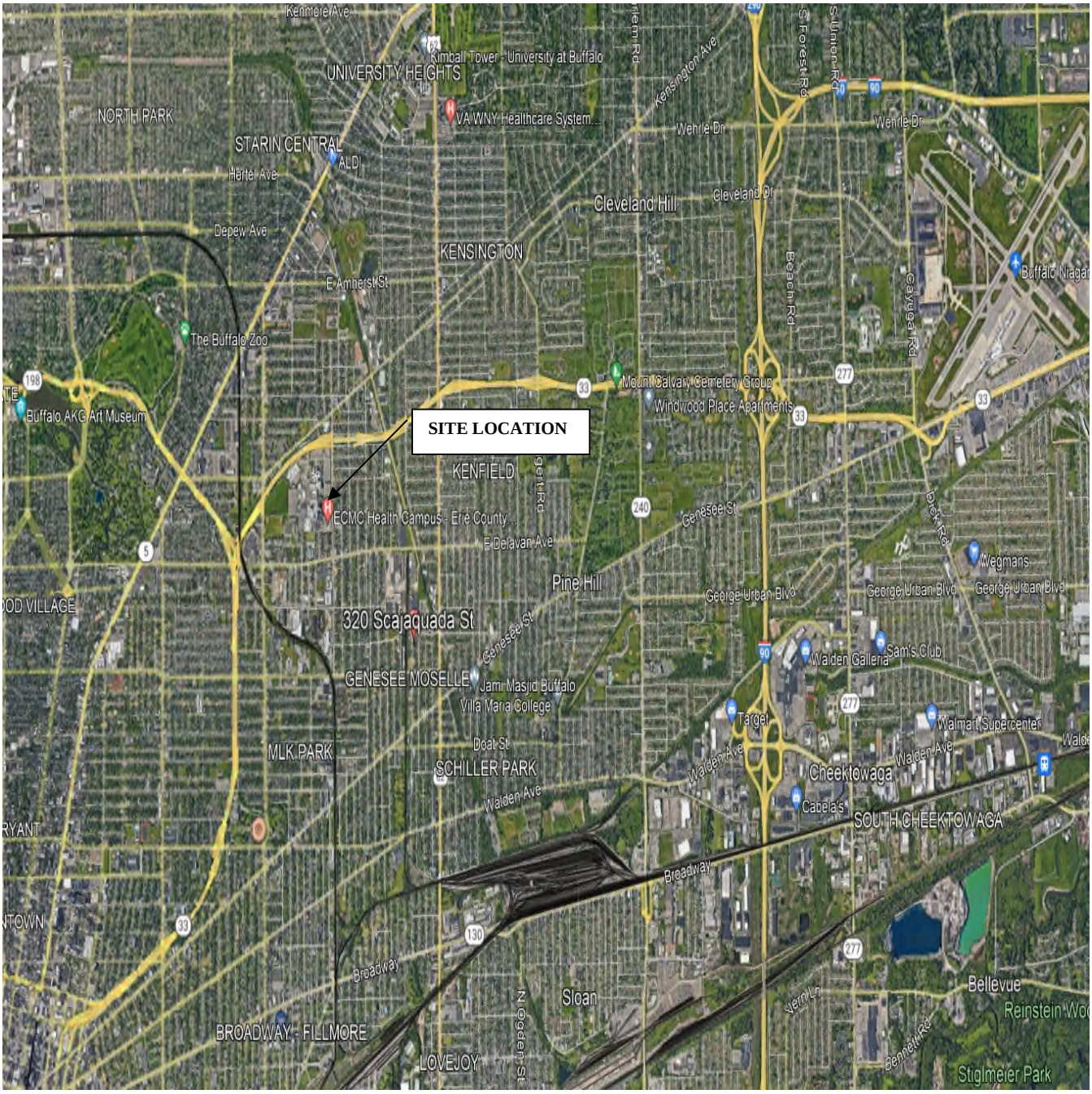
Figures

Figure 1
Site Location Map



Legend: Proposed Boring Locations ▲ Utility Excavations (approx.) —	Lyons Engineering, DPC. 10 Jones Avenue, Rochester, New York 14608	Site Map 320 Scajaquada Street, Buffalo, NY	
		Drawn Date: March 2024	
		Drawn By: AGL	
		Scale: NTS	Figure 2

Appendix B

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Health & Safety Plan

Health & Safety Plan (HASP)
for
300-320 SCAJ LLC

Prepared for:

WWTP Area Subsurface Investigation
320 Scajaquada Street
Remsen, New York

March 2024

Prepared by**:**

Lyons Engineering, DPC.
10 Jones Avenue
Rochester, New York 14608

STATEMENT OF COMMITMENT AND PLAN APROVAL

300-320 SCAJ LLC
320 Scajaquada Street
Buffalo, New York

The personal health and safety of all project personnel and contractors working on the site as part of the subsurface investigation activities to be conducted in the area of the existing WWTP. The control of occupational injuries and illnesses is so important that it is given precedence over operating productivity whenever necessary. To the greatest degree possible, project management will provide all mechanical and physical facilities required for personal safety and health in keeping with the highest standards.

300-320 SCAJ LLC will implement a safety and health plan for this project conforming to government regulations and the best proven practices. To be successful, such a plan must embody the proper attitudes toward injury and illness control on the part of both management and project personnel. It also requires cooperation in all safety and health matters, not only between management and employee, but also between each employee and his fellow workers. Only through such a cooperative effort can a safety record in the best interest of all be established and preserved.

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Health and Safety Plan (HASP) is to establish minimum standards, practices, and procedures related to personnel protection and safety for the proposed subsurface investigation in the area of the existing Wastewater Treatment Plant (WWTP) located at 320 Scajaquada Street in Buffalo, New York. This plan includes:

- Responsibilities for onsite personnel;
- Serves as a minimum health and safety standard for on-site personnel;
- Defines the potential hazards and associated risks that may exist at the site;
- Describes action levels for the use and upgrading of personal protective equipment (PPE);
- Identifies work practices and use of work zones during the conduct of potential hazardous activities at the site.

The provisions of this plan are mandatory for all onsite personnel performing related project operations, monitoring, and maintenance. Visitors to the site will check with the Safety Officer (SO) to learn which sections of this HASP will affect them.

All on-site personnel who engage in project activities must be familiar with this plan and comply with its requirements. All visitors must be accompanied by authorized personnel while onsite. The SO will ensure that all visitors have been briefed on site safety and security, and have been provided with temporary identification.

1.2 Project Description

The project site is located at 320 Scajaquada Street in Buffalo, New York. The project activities include the following scope of work:

- Subsurface drilling
- Subsurface sampling

2.0 SCOPE OF WORK

The general summary of work to be performed during the project will include but not be limited to the following:

- Site control;
- Mobilization;
- Subsurface drilling
- Subsurface sampling
- Air monitoring
- Field documentation; and
- Worker and Public Contamination Prevention.

Section 4.0 of this document will identify the hazards of the site based on the above scope.

3.0 HEALTH & SAFETY ORGANIZATION

RESPONSIBILITIES

All workers and contractor(s) involved with the investigation are responsible for ensuring this HASP is adhered to during all project activities. An experienced environmental, health, & safety professional will be the on-site representative and perform the role of Site Health and Safety Coordinator (HSC) and site Safety Officer (SO) as well as project oversite.

3.1 Health and Safety Coordinator (HSC):

a. Responsibility for the overall development and implementation of the HASP.
b. Responsibility for the initial training of on-project personnel with respect to the contents of the HASP.
c. Availability during normal business hours for consultation by the Safety Office, and
d. Availability to assist the Safety Officer in follow-up training and if changes in site conditions occur,
e. Primarily responsible for conducting air monitoring, maintaining constant contact with both the work zone entrants and SO, and overall safety
f. Responsibility for assuring all site personnel will be trained in hazardous waste operations and emergency response as provided by OSHA 1926.65 and 1910.120.

3.2 Safety Officer (SO):

a. Implement, enforce, and monitor the HASP on a day-to-day basis,
b. Hold pre project safety meeting, daily update meetings regarding site health and safety,
c. Responsibility for alerting other on-site entities prior to starting any particular hazardous work,
d. Responsibility for informing project personnel of the New York State Labor Law Section 876 (Right-to-Know Law)
e. If necessary, the establishment and maintenance of separation of Exclusion Zone (Dirty) from the Support Zone (Clean) areas as described hereafter,
g. Assure all site personnel have training in regard to this safety plan and other safety requirements to be observed during the project, including:

    1. Potential hazards
    2. Personal hygiene principles
    3. Personal protective equipment (PPE)
    4. Respiratory protection equipment usage and fit testing
    5. Emergency procedures dealing with fire and medical situations

3.3 Project Personnel

a. Prior to the start of work on this project, all personnel performing project activities (project personnel) will be properly trained in all hazards described herein.

b. All project personnel are required to correct and/or report any unsafe job conditions and/or any unsafe act to their foreman. Suggestions for improving job safety are welcome. All suggestions and recommendations will be given careful consideration by project management. Superintendents and/or general foremen will cooperate fully in putting into effect all practical suggestions that will reduce job hazards.

c. Each employee must comply with the safety requirements set forth in this plan, along with the safe practices and methods inherent to the craft. Safety will be an integral part of each job and each employee will be responsible for the safety phase of his work just as much as he is for any other phase. Project personnel should exercise good judgment in carrying out the safety plan. Appropriate disciplinary action will be taken for violations.

d. Each employee will ensure that his/her personal protective equipment is in working order. If this equipment is defective in any manner, the employee must inform his/her supervisor to obtain new personal protective equipment.

e. Project personnel will report any injuries to their immediate supervisor without delay.

4.0 SITE HAZARD ASSESSMENT

4.1 Worker Hazards

Hazards associated with the proposed work require the use of personal protective equipment. These hazards range from working around heavy equipment to potential exposure to subsurface contamination (i.e. lead, PCBs). Project management must ensure that project personnel are provided with, and use, protective clothing and equipment. Goggles, face shields, hearing protection devices, gloves and appropriate respirators for dust must be provided, as necessary.

The main hazards to health this project are:

a. Working in or around heavy equipment.
b. Exposure to subsurface contaminates. Project personnel need to wear the appropriate personal protective equipment (PPE) at all times during project activities.

4.2 Heavy Equipment Operation

a. The contractor will inspect equipment daily and keep a weekly documented log. All discrepancies will be corrected before placing equipment in service.
b. Keep blades, buckets, and other heavy equipment fully lowered when not in use. Parking brakes must be engaged. After work hours, bucket may be elevated if the locking pin is in place.
c. Chock or block the wheels of equipment parked on inclines and at end of the day. Set parking brake. Never get off or on moving equipment.
d. Never use equipment on unstable or unsafe inclines.
e. Use hand signals, radios (as appropriate), and line of sight confirmation to communicate effectively with operator. Make sure everyone is in the clear prior to starting up or moving any part of the equipment.
f. Never leave heavy equipment unattended while it is in operation. Stay in a position where you have ready access to control levers. Stay clear of lifting loads. Utilize competent riggers, spotters, and operators.
g. Subsurface work will not be initiated without first clearing underground utility services.
h. Heavy equipment should not be operated within 20 feet of overhead wires. This distance may be increased if windy conditions are anticipated or if lines carry high voltage. The site should also be sufficiently clear to ensure the project staff can move around the heavy machinery safely.
i. Care should be taken to avoid overhead wires when moving heavy-equipment from location to location.
j. Hard hats, safety boots and safety glasses should be worn at all times in the vicinity of heavy equipment. Hearing protection is also recommended.
k. The work site should be kept neat. This will prevent personnel from tripping and will allow for fast emergency exit from the site.
l. Proper lighting must be provided when working at night.
m. Project activities should be discontinued during an electrical storm or severe weather

conditions.

n. The presence of combustible gases should be checked before igniting any open flame.
o. Personnel will stand upwind of any project operation when not immediately involved in sampling/logging/observing activities.

4.3 Subsurface Contaminates

All activities associated with the disturbance of subsurface will be conducted in accordance with all applicable state and federal regulations.

4.4 Fall Protection

Fall protection will be used any time on-site personnel work or walk on surfaces six (6) feet or more above a lower level with an unprotected side or edge. This includes areas around excavations, near the shoreline or when constructing the stone revetment.

Any time fall protection is required it will be applied in conformance with 1926.502 and documented in a fall protection plan. Project personnel required to use fall protection will be trained per 1926.503.

Slip, trip, and fall injuries will be reduced by avoiding slippery surfaces, wearing slip resistant footwear, practicing good housekeeping, and working with a low center of gravity and making slow and deliberate movements.

4.5 Electrical

a. Project personnel should not work close to any unprotected electrical power circuit unless that circuit is de-energized and grounded.
b. All switches must be enclosed and grounded. Panel boards must have provisions for closing and locking the main switch and fuse box compartment.
c. Extension cords used with portable electric tools and appliances must be heavy duty (110 less than 12 gauge conductors) of the three wire groul1ding type, and must conform to OSHA standards. NO FLAT ELECTRICAL CORDS ARE ALLOWED ON SITE.
d. All electrical tools and cords must be protected by a ground fault circuit interrupter.
e. Voltages must be clearly labeled on all electrical equipment and circuits. Circuits must also be clearly marked for the areas of service they provide.
f. Electrical cords should be protected from damage. Any exposed wiring and cords with frayed or deteriorated insulation must be removed from service immediately.
g. Extension cords should "be used as little as possible and all plugs must be the dead front type.
h. Temporary lighting should be used in areas where there is not adequate natural or artificial lighting. Temporary lights must be equipped with guards to prevent accidental contact with bulbs.
i. Working spaces, walkways, and similar locations must be kept clear of cords.
j. Electrical tools and equipment must be appropriately protected when used in wet or damp areas.

4.6 Material Handling & Back Safety

a. Know the approximate size/volume of your load and make certain your equipment is rated appropriately. (All powered equipment and rigging is rated as to safe working load. This rating is posted on the equipment. Never exceed the manufacturer's recommended safe working load).
b. Use all appropriate, approved lifting devices (i.e. special trucks, racks, hoists, and other devices) for lifting very heavy, bulky, large or unyielding objects.
c. All ropes, chains, cables, slings etc., and otl1er hoisting equipment must be inspected each time before use.
d. A load should never be lifted and left unattended.
e. Properly stack and secure all materials prior to lifting or moving to prevent sliding, falling, or collapse.
f. Avoid moving or lifting loads by hand whenever possible.

Tips for manual lifting:

1. Get a good footing.
2. Place feet about shoulder width apart.
3. Bend at the knees to grasp the weight.
4. Keep back as straight as possible.
5. Get a firm hold.
6. Lift gradually by straightening the legs.
7. Don't twist your back to turn. Move your feet.
8. When the weight is too heavy or bulky to comfortably lift - GET HELP.
9. When putting the load down, reverse the above steps.

4.7 Housekeeping

a. Unless otherwise specified, waste material and scrap must be put in proper containers and removed from the job site.
b. Work areas, passageways and stairs, in and around buildings and structures must be kept clear of debris. Project materials should be stored in an orderly manner. Job site storage areas and walkways must be maintained free of dangerous depressions, obstructions, and debris.
c. The entire job site should be cleaned daily, and debris must be disposed of in dumpsters, or off site, in accordance with all NYSDEC and EPA regulations.

4.8 Worker Noise Exposure

In accordance with the OSHA Construction Noise Regulations (29 CFR 1926.52), hearing protection will be provided for voluntary use. If noise generating heavy equipment is operating and its known noise generating levels are above 90 dB, then hearing protection will be mandatory when working in, on, or in proximity to the equipment.

5.0 TRAINING

5.1 Project Personnel

Project personnel shall be trained and competent in project activities they are performing such as:

Heavy Equipment Operations
Personnel Protective Equipment
Fall Protection
Hazard Communication/Awareness

5.2 Site Training

a. Project personnel will have access to a copy of the HASP, and a site-specific briefing prior to the start of work to ensure they are familiar with the HASP and the information and requirements it contains. The site briefing will be provided by the SO prior to initiating field activities.

b. Health and safety briefings will also be conducted by the SO and/or a HSC on a daily basis during the course of the work. Supplemental briefings will be provided as necessary to notify project personnel of any changes to this HASP because of information gathered during ongoing site work activities. Conditions for which the SO may schedule additional briefings include, but are not limited to: a change in site conditions (visually or based on monitoring results); changes in the work schedule/plan; newly discovered hazards; and safety incidents occurring during site work.

6.0 WORK AREAS/ZONES

6.1 Site Control

300-320 SCAJ LLC will always provide and maintain security and personnel identification during the project. Only authorized vehicles will be allowed on-site and then only in designated areas.

Use of on-site designated parking areas will be restricted to vehicles of the Engineer, Engineer's on-site representative, contractors, and authorized visitors.

All approved visitors will be briefed by the SO on safety and security, provided with safety equipment, and escorted throughout the visit.

7.0 STANDARD OPERATING PROCEDURES AND ENGINEERING CONTROLS

The following safe work practices will be observed during all on-site work activities or as specifically prescribed.

General:

1. The HSC and/or SO will ensure that all safety equipment and protective clothing is kept clean and well maintained.
2. The SO will approve all disposable or reusable gloves worn on the site.
3. All PPE used on site will be decontaminated or disposed of at the end of the workday. The SO will be responsible for ensuring decontamination of PPE before reuse.
4. On-site personnel found to be disregarding any provision of this plan will, at the request of the SO, be barred from the project.
5. Protective coveralls that become torn or badly soiled will be replaced immediately.
6. Eating, drinking, chewing gum or tobacco, smoking, etc., will be prohibited in the work areas.
7. All personnel will thoroughly cleanse their hands, face, and forearms and other exposed areas prior to eating, smoking or drinking.
8. All personnel will wash their hands, face, and forearms before using toilet facilities.
9. No alcohol, firearms or drugs (without prescriptions) will be allowed on site at any time.
10. All personnel will be familiar with standard operating safety procedures and additional instructions contained in this HASP.
11. On-site personnel will use the “buddy” system. No one may work alone (i.e., out of earshot or visual contact with other workers).
12. All project personnel have the obligation to immediately report and if possible, correct unsafe work conditions.

8.0 HEAT AND COLD STRESS

Heat stress may occur even in moderate temperatures when personnel protective clothing is in use. Symptoms of heat stress are heat rash, heat cramps, heat exhaustion and stroke.

When work zone temperatures exceed 70 degrees Fahrenheit and Level C PPE is being used, the HSC will monitor project personnel for heat stress by having each worker take a pulse. Heat Stress may be combated through proper training, fluid intake, acclimatization and work/rest regime. It will be the SO's to determine an adequate break/rest routine.

Cold Stress will be monitored by the SO primarily by maintaining constant communication and contact with the workers. Anyone showing signs of fatigue or feeling of pain in extremities will be given the opportunity to warm themselves in the project trailer or other suitable location. Wind chills below 32 degrees Fahrenheit will signal the beginning of cold stress monitoring.

9.0 PERSONAL PROTECTIVE EQUIPMENT

The purpose of personal protective equipment (PPE), including clothing, is to shield or isolate individuals from the physical and chemical hazards encountered on the site. Hardhats, steel toe shoes, protective eyewear, and appropriate work gloves will be necessary on site at all times (Level D).

Specific protection garments are selected based on a variety of criteria. In general, greater hazard levels require greater the levels of PPE. No single combination of protective equipment and clothing is capable of protecting against all hazards, and PPE must be used in conjunction with other protective measures (i.e., engineering and administrative controls). The use of PPE can create significant worker hazards, such as heat stress, physical and psychological stress, and impaired vision, mobility and communication. Use of PPE is required by OSHA regulations in 29 CFR Part 1910/1926 and reinforced by U.S. Environmental Protection Agency (EPA) regulations and American National Standards Institute (ANSI) standards and guidelines.

10.0 PERSONAL HYGIENE AND DECONTAMINATION

Worker exposures to site hazards are expected during project activities.

a. Eating, smoking, chewing gum and drinking will be prohibited within the project site.

c. All personnel will be required to wash their face, hands and any body parts coming in contact with excavated materials.

d. The primary expected means of contamination control at this time is through use of disposable PPE.

d. More formal controls will be evaluated and instituted by the SO if required to control the spread of contaminated materials.

The HSC and SO anticipates the most likely form of decontamination will be a soap and water wash. All decontamination wash water will be collected for proper disposal. If necessary, the decontamination will include the use of;

- A portable “Boot Wash” station;

- Drums/containers/poly bags for handling contaminated clothing;

- If necessary, a formal exclusion zone and contamination reduction zone will be established to delineate contaminated and contaminate reduction areas.

11.0 FUGITIVE DUST CONTROL

This section addresses standard and contingent fugitive dust suppression measures to be implemented as an integral component of the project. The components of fugitive dust control include the following:

- Identification of fugitive dust sources; and
- Baseline dust suppression measures.

11.1 Dust Sources and Control

This section identifies potential fugitive dust sources and control techniques associated with project activities. The potential sources include those associated with this project such as excavation, material staging, handling and transport, and material placement and grading. This section addresses fugitive dust control associated with the project. The following potential dust sources have been identified for this project:

Subsurface Drilling - The primary contributing factors to fugitive dust emissions are at the point of drilling activities are material properties (moisture and PM-10 content), meteorological conditions, including wind speed and precipitation. In addition, material handling can potentially result in fugitive dust emissions.

Vehicular traffic - The primary source of fugitive dust from vehicular traffic is a result of contact between the vehicle wheels and ground surface. Fugitive dust emissions associated with movement of vehicles on-site will be a function of vehicle speed, vehicle weight, number of wheels, silt content of the road material, moisture content of the road material, and frequency of precipitation events. Of these factors, control of moisture content and vehicle speeds for on-site areas will be implemented as the primary fugitive dust control measures.

Material stockpiles - Fugitive dust emissions associated with stockpiles may be generated during the transfer of material onto and from the piles and wind erosion. Significant contributing factors include silt content, moisture content, stockpile dimensions/alignment, wind speed/direction, and the general stockpile activity.

Dust control will be implemented in areas of project activities and material handling activities. Accordingly, dust control will be required on the project site, on major haul roads, access roads, and material staging areas. Dust suppression methods will be employed when visible observations show dust remains suspended for 5 minutes in the air.

Dust control will be achieved primarily through application of water or an approved dust palliative. Water for dust abatement will not be appropriated from surface waters. Application rates for the dust palliative will follow the manufacturer's recommendations. All dust palliatives used will be biodegradable.

Based on this guidance the following techniques may be employed to mitigate the generation and migration of fugitive dust during the project:

- Applying water during demolition activities;
- applying water on the right-of-ways, stockpiles, trenches, and other surfaces which may give rise to airborne dust;
- spraying water on temporary roads at the end of the work shift to form a thin crust;
- misting equipment and excavation faces;
- watering of any visibly dry disturbed soil surface areas of operation;
- covering, when in motion, open-bodied vehicles transporting materials likely to crease air pollution;
- restricting vehicle traffic; and
- reducing the size of any open excavation.

If the dust suppression techniques are ineffective, the specific task generating the fugitive dust may be suspended until appropriate corrective measures are identified and implemented to remedy the situation.

12.0 EMERGENCY RESPONSE & CONTINGENCY PLAN

12.1 Emergency Vehicle Access

All personnel will immediately move operations (equipment, materials, etc.) to allow emergency vehicles access in the event that such vehicles (police, fire, ambulance) need access to a location that is blocked by the working crew operations. Emergency crews will be briefed as to site conditions and hazards by the SO. All vehicles and personnel will be decontaminated prior to leaving the site.

12.2 Personal Injury Response Plan

In cases of personal injuries, the injured person or the crew personnel in charge will notify to SO. The SO will assess the seriousness of the injury, and give first aid treatment if advisable. Consult by telephone with a physician if necessary, and arrange for hospitalization if required.

Wrap the injured person in blankets if soiled clothing cannot be removed for transportation to the hospital.

For contaminant exposure, flush the area having skin contact with chemically contaminated liquids or soils with water after any wet or soiled clothing has been removed. Personnel should be observed by the SO to ascertain whether there are any symptoms resulting from the exposure. If there is any visible manifestation of exposure such as skin irritation, the project personnel will refer to the consulting physician. All episodes of obvious chemical contamination will be reviewed by the SO in order to determine whether changes are needed in work procedures.

All injuries shall be documented as according to OSHA's recording criteria 29 CFR 1904.

12.3 Route to the Hospital

Notify the hospital to determine if they can handle emergencies involving hazardous chemicals. The SO will maintain at site with other site documentation, a map with written directions to the nearest hospital or emergency treatment facility.

ECMC Hospital
462 Grinder Street
Buffalo, New York 14215
716-889-6681

Distance: Approximately 2 miles

12.4 Emergency Equipment/First Aid Requirements

In the event of an emergency or medical emergency, the contact list is as follows.

Name: Gary Yuzbashev
Phone Number: 716-444-2120

Name: Matthew Edwards
Phone Number: 716-725-8178

Communications

Project personnel will utilize mobile communication devices. There will be no land line telephone communication provided at the site.

Safety & Emergency Inventory

Safety glasses
Hearing Protection
Hard hats
Gloves

13.0 HAZARD EVALUATION AND CONTROL

The purpose of this section is to identify standards, practices, and procedures to minimize personnel exposure to project contaminants (i.e., airborne particulates) generated as part of the material handling activities. This section describes procedures that must be followed to minimize exposures to workers, the public, as well as the environment.

13.1 Hazard Evaluation

Based on the activities to be conducted at the site, the principal hazard identified is airborne particulates generated as part of the subsurface investigation activities. Workers have the potential for exposure to airborne particulates and chemical contamination (i.e., lead, PCBs) during the project activities. The principal routes of exposure would be through incidental ingestion or inhalation of dust from the construction activities. These exposures will be negligible if workers use proper personal hygiene, as well as engineering and administrative controls as defined in this section.

Construction activities that involve material handling at the site require that site workers to undertake protective measures. This section identifies potential fugitive dust sources and control techniques associated with the material moving activities. The potential sources include those associated with typical construction activities, such material staging, handling and transport of the material. The following potential dust sources have been identified for this project:

13.1.1 Subsurface Drilling

The primary contributing factors to fugitive dust emissions during subsurface investigation activities, material handling, and staging is based on moisture content of the materials, type of handling equipment meteorological conditions, including wind speed and precipitation. The management of the material handling can potentially result in fugitive dust emissions.

13.1.2 Vehicular Traffic

The primary source of fugitive dust from vehicular traffic is a result of contact between the vehicle wheels and the ground surface. Fugitive dust emissions associated with movement of vehicles on-site will be a function of vehicle speed, vehicle weight, number of wheels, silt content of the road material, moisture content of the road material, and the frequency of precipitation events. Of these factors, control of moisture content and vehicle speeds for on-site areas will be implemented as the primary fugitive dust control measures. In addition, vehicular tires will be periodically inspected for cleanliness and cleaned as necessary, to prevent excessive material (i.e., materials) from being tracked onto paved surfaces.

13.2 Hazard Control Strategies

Hazard control strategies will be implemented in all areas of the material handling activities to insure both worker and public safety. Control measures will be required any time dust stays in the air for 5 minutes or reaches 20 feet in height. In addition, control measures are required when dust plumes exceed 20 percent visual opacity.

Dust control will be achieved primarily through application of water or an approved dust palliative. Water for dust abatement will not be appropriated from surface waters. Application rates for the dust palliative will follow the manufacturer's recommendations, as necessary. All dust palliatives used will be biodegradable. Based on this guidance the following control strategies may be employed to mitigate the generation and migration of fugitive dust during material excavation and handling activities.

13.3 Engineering Controls

Typical engineering controls to be utilized to control airborne hazards during the material handing activities are as follows:

- applying water on the stockpiles and other surfaces which may give rise to airborne dust;
- spraying water on temporary roads at the end of the work shift to form a thin crust;
- misting equipment;
- covering, when in motion, open-bodied vehicles transporting materials likely to release airborne particulates;
- A windsock will be installed and maintained so that wind direction can be determined

If the dust suppression techniques do not lower visual observations, the specific task generating the fugitive dust may be suspended until appropriate corrective measures are identified and implemented to remedy the situation.

13.4 Administrative Controls

All workers must have site-specific training relative to the safe work practices necessary to minimize exposure to dust as part of the material handling activities. The training will include at a minimum:

- the use of proper Personal Protective Equipment (PPE);
- a job site walk-over to show the designated "work zones" at the site;
- areas where eating and drinking are permitted;
- proper worker decontamination procedures;
- proper equipment decontamination procedures; and
- proper use of the windsock

13.5 Personal Hygiene

The following personal hygiene rules will be observed at all times at the site.

- Eating, drinking, chewing gum or tobacco smoking, or any practice that increases the probability of hand-to-mouth contact is strictly prohibited in the work areas.

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth contact of contaminants is permitted only in designated areas after hands and face are thoroughly washed.

- Carrying food, beverage, matches, lighters, Chap-Stick, cosmetics, etc., around the worksite is prohibited.

- Be conscious of any personal habit that could introduce dust into the body (i.e., wiping face or nose with a dirty hand, running a dirty hand through hair, etc.)

- Check that- any regularly worn item is Clean. Examples include dirty watchbands, neck chains and/or a dirty liner on your safety helmet.

13.6 Personal Protective Equipment (PPE)

The purpose of PPE is to minimize contact of the worker or his/her clothing with dust at work site. PPE may include:

- Steel toe work boots
- Safety glasses meeting ANSI 287
- Hardhat meeting ANSI Z89
- Leather/cotton gloves as needed
- Hearing protection

13.7 Air Monitoring

The effectiveness of dust controls will be evaluated through the use of real-time monitoring utilizing a dust meter (i.e., RAM-1 Real Time Aerosol Monitor or equivalent). The use of water spray will be optimized so that fugitive dusts are sufficiently controlled, while preventing generation of surface-water runoff. The ambient air monitoring program will consist of one monitoring station located immediately downwind of subgrade excavation, grading, and material handling activities.

Normal operating conditions for fugitive dust control are dictated by ambient air monitoring results. In accordance with the NYSDEC TAGM No. 4031, "Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites (October 27, 1989), the ambient air monitoring action level for PM-10 is 150 ug/m^3, integrated over a fifteen minute period. If the 150 ug/m^3 action level is exceeded, then an upwind background measurement will be taken. If the downwind levels are less than 100 ug/m^3, then no further action is

required. However, if the number is higher than 100 ug/m^3, additional dust control measures must be taken, or workers must utilize respirator protection.

In addition, real-time ambient air monitoring will be conducted for volatile organics during work activities. Volatile organics will be monitored using a field calibrated Photo Ionization Detector. In the event that sustained readings (5 minutes) of 5 parts per million or greater are detected, work activities will be stopped and additional air monitoring (i.e., draeger tubes, etc.) will be conducted to determine the contaminants in the air. Based on the results of the testing, additional PPE (i.e., respirator protection) may be required based on chemical specific regulatory (i.e.., OSHA, NIOSH, etc.) permissible exposure limits.

An on-site safety professional will evaluate all air monitoring data and determine the appropriate PPE to be utilized to continue project activities.

Appendix A

Lyons Engineering, DPC.

Project Safety Review Acknowledgement

Project Safety Review Acknowledgement

I have attended a site safety review meeting outlining the specific health and safety provisions for the subsurface investigation project located at 320 Scajaquada Street in Buffalo, New York and I have read and will comply with the provisions contained in this project specific Health and Safety Plan.

Employee Name	Signature	Date

Appendix C

NYSDOH Generic Community Air Montitoring Plan

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

Overview

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

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

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

Community Air Monitoring Plan

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

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

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

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

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

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

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

Particulate Monitoring, Response Levels, and Actions

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

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

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

December 2009

Appendix 1B
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. 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.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.