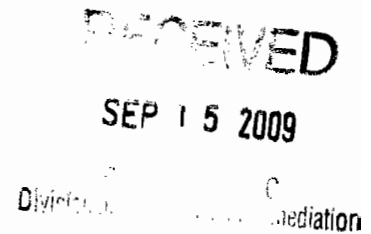




Consolidated Edison Company  
of New York, Inc.  
31-01 20th Avenue  
Long Island City NY 11105-2048  
www.conEd.com

September 10, 2009

William Ottaway, P.E.  
New York State Department of Environmental Conservation  
625 Broadway  
Remedial Bureau C, 11<sup>th</sup> Floor  
Albany, NY 12233-7014



Re: **East 111<sup>th</sup> Street Gas Works Site – Parcel D**  
**Shallow Soil Excavation Work Plan – Response to DEC Comments**  
**Site No. V00539**

Dear Mr. Ottaway:

Consolidated Edison Company of New York, Inc. (Con Edison) is in receipt of your August 18, 2009 correspondence which provided comments on the Shallow Soil Excavation Work Plan. The comments received from the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) are presented below and are immediately followed by the Con Edison's responses in italics.

1. In Section 3.1, indicated that the community air monitoring will meet the requirements of the generic CAMP, and include that document as an attachment.

*This comment has been incorporated in Section 3.1 of the revised work plan. In addition, a copy of the generic community air monitoring plan (CAMP has been included as Attachment B.*

2. Indicate that all trucks will be lined and covered. A decontamination area must be available for the trucks to clean off any dirt from the outside of the truck or the wheels before the vehicle leaves the site.

*This comment has been incorporated in Section 3.2 of the revised work plan.*

3. The following material may be imported, without chemical testing, to be used as backfill:
  - a. Rock or stone, consisting of virgin material from a permitted mine or quarry;
  - b. Recycled concrete, brick or asphalt from a Department-registered C&D processing facility which conforms to Section 304 of the New York State Department of

Transportation Standard Specifications Construction and Materials Volume I (2002). This material must contain less than 10% (by weight) material which would pass through a size 200 sieve. If fill material is granular (less than 5% passing a #200 sieve), and it is virgin material from a DOT approved source, then no additional documentation is necessary.

- c. If soil is used, then the soil must meet the Soil Cleanup Objectives found in Part 375 for the intended use of the property.

*These comments have been incorporated in Section 4.0 of the revised work plan with the exception to the requirement that granular fill material shall have less than 5% passing a #200 sieve in order to forgo conducting chemical testing. Con Edison is proposing that this percentage be increased to 10% passing a #200 sieve which would be consistent with the requirements imposed on other remediation projects.*

4. Provide verification sampling on the floor (every 900 square feet) and sidewalls (every 30 linear feet) of the excavation, as described in DER-10.

*This comment has been incorporated in Section 3.5 of the revised work plan.*

5. If visible evidence of contamination is observed on the floor or sidewalls of the excavation beyond the extent described in this plan (3.5 feet depth, perimeter shown on map), this material should be included in the excavation. Additional verifications samples will be provided in areas where the excavation is expanded. While it is possible that excavation of all additional material may not be practical (if it extends under the building or street, or extends well below the water table), there should be a reasonable attempt to remove all visible contamination.

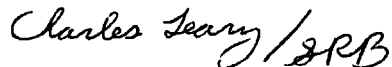
*This comment has been incorporated in Section 3.0 of the revised work plan.*

6. Work will be completed in a way to avoid strong or persistent odors. Odor suppressing foam will be available during the work.

*This comment has been incorporated in Section 3.1 of the revised work plan.*

If you have any questions or require further information, please contact me at 718-204-4347, or via e-mail at [lcaryc@coned.com](mailto:lcaryc@coned.com).

Sincerely Yours,



Charles Leary  
Project Manager  
MGP Remediation  
Environment, Health and Safety

# **Conceptual Plan for Shallow Soil Excavation Consolidated Edison Company of New York, Inc. East 111<sup>th</sup> Street Gas Works Site - Parcel D**

## **1.0 Introduction**

On behalf of Consolidated Edison Company of New York, Inc. (Con Edison), Parsons has conducted a Remedial Investigation (RI) and Supplemental RI of the Former East 111<sup>th</sup> Street Gas Works Site Parcel, including the property referred to as Parcel D, located at 2138 First Avenue in Manhattan, New York. The investigation results have been documented in the *Remedial Investigation Report* (Parsons, January 2006) and the *Draft Supplemental Remedial Investigation Data Summary* (Parsons, June 2007).

Chemical fingerprint analysis performed during the RI indicated that a dense black layer of material encountered at sampling locations SB-4, MW-4, and TP-9 (Figure 1) between approximately 0.5 and 3.5 feet below ground surface (bgs) is likely to have originated from a coal gasification process associated with former manufactured gas plant (MGP) operations. This material was not encountered during the installation of soil borings SB-111, SB-112, SB-114, SB-115, SB-211, and MW-205. Concentrations exceeding 500 parts per million (ppm) for total semi-volatile organic compounds (SVOCs) were detected at TP-9 at a depth of 1 to 3 feet bgs. The elevated SVOC concentrations are likely attributable to the dense black layer of MGP-impacted material encountered at this location. Figure 1 is included as Attachment A.

The 2138 First Avenue property owner is planning to construct a raised-bay parking facility on the eastern portion of Parcel D currently used as a paved parking area. To address the MGP-impacted material that may be encountered during construction of the parking facility, this document presents a Conceptual Excavation Plan for removal of the shallow MGP-impacted material identified during the previous investigation activities.

## **2.0 Groundwater Sampling and Monitoring Well Abandonment**

### **2.1 Groundwater Sampling Methodology**

Prior to excavation activities, a round of groundwater samples will be collected from monitoring wells MW-4 (within the paved parking area in Parcel D) and MW-4A (located immediately east of MW-4 in the sidewalk). Each monitoring well will be purged prior to obtaining a groundwater sample for analysis. Prior to purging, an oil/water interface probe will be used to assess the thickness of LNAPL or DNAPL in each well (if present) and the headspace will be measured with a PID.

Monitoring wells MW-4 and MW-4A will be sampled using low-flow purging and sampling techniques. An oil/water level interface probe will be utilized to measure the depth to the water table and thickness of any free product in the well. The monitoring wells will then be purged by removing a minimum of three times the volume of standing water in the well. Water quality parameters including dissolved oxygen, oxidation-reduction potential, temperature, pH, conductivity, and turbidity will be recorded and when stable, a representative groundwater sample will be obtained. Water quality parameter measurements and observations recorded during purging and sampling will be documented on Groundwater Sampling Records.

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Consolidated Edison Company of New York, Inc.  
East 111<sup>th</sup> Street Gas Works Site - Parcel D**

Groundwater samples will be submitted for laboratory analyses to a New York State Department of Health Environmental Laboratory Analysis Program (ELAP) approved laboratory certified for analyses using the most recent Analytical Services Protocol (ASP). Laboratory analyses will be conducted in accordance with USEPA SW-846 methods and standard deliverable format. The groundwater samples will be submitted for laboratory analysis of target compound list volatile organic compounds (TCL VOCs), semi-volatile organic compounds TCL (SVOCs), cyanide, and Target Analyte List (TAL) metals.

All non-dedicated sampling equipment (e.g., submersible pumps and oil/water interface probe) will be decontaminated between sampling locations. All purge and decontamination water will be placed in NYSDOT-approved fluid drums with closed tops. The drums will be staged in a secure area on site as determined by Con Edison representatives prior to proper characterization and disposal. All drums will be transported and properly disposed of by Clean Earth of South Kearny, New Jersey (a RCRA Part B permitted Transfer, Storage and Disposal Facility (TSDF)).

## **2.2 Monitoring Well Abandonment Methodology**

The footprint of the raised bay parking facility will cover the location of MW-4. It has therefore been proposed that monitoring well MW-4 be properly abandoned. Subsequent to groundwater sampling at MW-4, monitoring well abandonment will be conducted by a New York certified licensed well driller in accordance with New York State Department of Environmental Conservation (NYSDEC) Part 360-2.11 Hydrogeologic Report, Item (a) (8) Monitoring Wells and Piezometers, (vi) Abandonment of Wells. Well abandonment activities will occur prior to the proposed shallow excavation.

Monitoring well MW-4 will be fully sealed utilizing a pressure injection with cement bentonite grout, through tremie pipe to prevent contaminant migration through the borehole/well. Prior to the grout injection, removal of the PVC casing will be conducted to the greatest extent possible. Grout injection will then be conducted so that the entire length of the boring/well will be filled to grade. The screened interval of the borehole will be sealed separately and tested to ensure its adequacy before sealing the remainder of the borehole/well.

## **3.0 Proposed Excavation**

To address the shallow layer of MGP-impacted materials encountered at sampling locations SB-4, TP-9, and MW-4, excavation will be conducted within the area shown on Figure 1 to a depth of 3.5 feet bgs. If visible evidence of contamination is observed on the floor or sidewall of the excavation area beyond the extent described in this plan (3.5 feet depth, perimeter shown on Figure 1), this material will be included in the excavation activities to the extent practical without water handling difficulties.

Following excavation, the area will either backfilled immediately or construction of the parking facilities (including installation of concrete footings to 4 feet bgs) will begin immediately following the excavation.

The following requirements will apply to the shallow excavation activities.

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Consolidated Edison Company of New York, Inc.  
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**3.1 Worker Health and Safety**

Prior to any construction activities, workers will be notified of the site conditions with clear instructions regarding how the work is to proceed. Invasive work performed at the property will be performed in accordance with all applicable local, state, and federal regulations to protect worker health and safety.

A site-specific Health and Safety Plan (HASP) will be prepared prior to excavation activities to provide a safe working environment for construction personnel, to minimize the risk of human and economic losses resulting from unnecessary accidents, to comply with safety and health laws and regulations, and to satisfy the specific needs of Con Edison. The plan will be prepared in accordance with 29 CFR 1910.120 and applicable sections of 29 CFR 1926.

The HASP will also address the requirements of the generic community air monitoring plan (CAMP) including odor control, appropriate training and personal protective equipment for site workers. A copy of the generic CAMP is included as Attachment B. During the implementation of the intrusive remedial activities, the presence of strong and/or persistent odors, particulates, and organic vapors will be avoided using best management practices (i.e., minimizing open excavations, etc.) and by applying odor suppression foam as required. Odor suppression foam will be present during all intrusive work activities.

**3.2 Decontamination**

During the implementation of the remedial construction activities, the Site will be divided into three primary zones: the exclusion zone, the contamination reduction zone, and the support zone. The exact location of each zone will be dependent on the field activity being conducted and may be adjusted accordingly.

The decontamination area will be located within the contamination reduction zone and will include the personnel decontamination area and the equipment decontamination pads. Equipment used for intrusive activities (e.g., excavation) will be decontaminated prior to leaving the project area. Decontamination pads will be constructed to adequately facilitate the anticipated traffic loads throughout the duration of the project. The decontamination pads will either be a pre-fabricated stainless steel pad, a lined depressed area, or an area with a bermed perimeter. The decontamination pad will be lined with crushed stone and underlain by high density polyethylene (HDPE) geomembranes.

Primary decontamination methods will include pressure washing/steam cleaning of transport vehicle tires and excavator buckets. Decontamination water and residual materials will be collected, contained, characterized, and properly disposed of in accordance with applicable laws and regulations. All transport trucks travelling off-site will be fully lined and tarped.

**3.3 Site Access and Control**

A gated, chain-link security fence will be installed around the work area to control site access. A four-foot high, orange high-visibility fence will be installed to establish the exclusion zone

## **Conceptual Plan for Shallow Soil Excavation Consolidated Edison Company of New York, Inc. East 111<sup>th</sup> Street Gas Works Site - Parcel D**

within the work area. All personnel within the exclusion zone will be required to use the level of protection specified in the site-specific HASP.

### **3.4 Management of Soils/Groundwater**

The following guidelines will be used for management of subsurface soils and groundwater during the excavation activities.

- The NYSDEC will be notified and approval will be obtained prior to initiating the excavation activities.
- Excavated soil will be sampled and analyzed for waste characterization purposes prior to off-site transportation and treatment/disposal in accordance with the specific requirements of the receiving facility.
- Off-site transportation, treatment, and disposal of excavated soil will be conducted in accordance with appropriate local, state, and federal regulations.
- Groundwater encountered during excavation (if any) that requires removal will be containerized and characterized for off-site treatment/disposal in accordance with applicable rules and regulations.

### **3.5 Post-Excavation Verification Sampling**

Post-excavation verification sampling will be conducted on the floor (every 900 square feet) and sidewalls (every 30 linear feet) of the excavation area, consistent with the requirements of DER-10. Additional verification samples will be provided in areas where the excavation is expanded.

## **4.0 Backfill**

All backfill materials utilized as part of the excavation activities specified herein will be obtained from a New York State Department of Transportation (NYSDOT) approved source or a NYSDEC registered C&D processing facility. The following material may be imported and used as backfill without chemical testing:

- Rock or stone, consisting of virgin material from a permitted mine or quarry;
- Recycled, brick or asphalt from a Department-registered C&D processing facility which conforms to Section 304 of the NYSDOT Standard Specifications Construction and Materials Volume I (2002) provided that this material contains less than 10% (by weight) material passing through a #200 sieve, or
- Granular fill material (less than 10% passing #200 sieve) that is virgin material from a NYSDOT approved source.

Should the backfill material not meet one of the above requirements, the material will be tested via the collection of one composite sample for every 500 cubic yards for each source area and analyzed by a New York State Department of Health (NYSDOH)-certified Environmental Laboratory Accreditation Program (ELAP)-approved laboratory. The material will be used as backfill only if

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the analytical results do not exceed the Soil Cleanup Objectives found in NYSDEC Environmental Programs Subpart 375.

**5.0 Waste Characterization**

At least 2 to 3 weeks prior to the excavation activities, 3 to 4 shallow soil borings will be installed by hand within the proposed excavation area. The purpose of the soil borings is to allow for the collection of soil samples that are representative of the excavated material for pre-characterization of the waste materials. The samples will be submitted for laboratory analysis for appropriate waste characterization parameters. The analytical results will be used by the remedial contractor to establish approved waste profiles with the intended treatment and/or disposal facilities. Obtaining pre-approval will allow for the excavated materials to be directly loaded onto trucks for off-site transportation and disposal and will avoid the need for on-site staging of soils pending characterization.

**6.0 Anticipated Schedule**

The following table presents the anticipated schedule for the excavation activities.

<b>Task</b>	<b>Anticipated Duration</b>
Shallow Soil Borings for Waste Characterization	1-2 Days
Laboratory Analysis	5 Days
Establish Profiles with Treatment/Disposal Facilities	1 Week
Mobilization	1-2 Days
Excavation	2 Weeks
Backfilling/Restoration (if necessary)	2 Weeks
Demobilization	1-2 Days

## **ATTACHMENT A**

### **CONCEPTUAL EXCAVATION PLAN**





SB-111	7-8'	22-24'
TOTAL VOCs	0.1656	0.0023
DIBENZOFURAN	35	ND
2-METHYLNAPHTHALENE	37	ND
ACENAPHTHYLENE	52	ND
ANTHRACENE	75	ND
BENZO(a)ANTHRACENE	230	ND
BENZO(a)PYRENE	160	ND
BENZO(b)FLUORANTHENE	210	ND
BENZO(k)FLUORANTHENE	92	ND
CHRYSENE	200	ND
DIBENZ(g,h)ANTHRACENE	6.1	ND
INDENO(1,2,3-cd)PYRENE	20	ND
NAPHTHALENE	73	ND
PHENANTHRENE	380	ND
PYRENE	450	ND
TOTAL SVOCs	2625.1	0.239

SB-205	0-2'
TOTAL VOCs	ND
TOTAL SVOCs	0.4

SB-114	1.0-1.5'
TOTAL VOCs	0.0016
BENZO(a)ANTHRACENE	0.26
TOTAL SVOCs	3.091

SB-211	10-12'	24-26'	24-26'
TOTAL VOCs	2.0804	ND	ND
TOTAL SVOCs	NA	ND	ND

SB-4	53-60"	5-9'	23-25'
TOTAL VOCs	ND	0.0636	0.018
BENZO(a)ANTHRACENE	5.6	8.1	ND
BENZO(b)FLUORANTHENE	12	5.7	ND
BENZO(k)FLUORANTHENE	13	8	ND
CHRYSENE	6.9	2.9	ND
DIBENZ(a,h)ANTHRACENE	5.4	6.4	ND
TOTAL SVOCs	0.67	0.24	ND

- LEGEND:
- MW-104 EXISTING MONITORING WELL LOCATION
  - MW-205 APPROXIMATE SUPPLEMENTAL MONITORING WELL LOCATION (INSTALLED MARCH 2007)
  - TP-8 EXISTING TEST PIT LOCATION
  - SB-114 EXISTING SOIL BORING LOCATION
  - SB-211 APPROXIMATE SUPPLEMENTAL RI SOIL BORING LOCATIONS (INSTALLED MARCH 2007)
  - SB-116 EXISTING SOIL GAS SAMPLE LOCATION
  - PROPOSED EXCAVATION AREA (DEPTH = 3.5' BGS)
  - EXISTING SITE STRUCTURE (APPROXIMATE)
  - CONCENTRATION EXCEEDS NYSDEC TAGM 4046 SOIL CLEANUP OBJECTIVE

MW-104	5-7'	15-17'
TOTAL VOCs	0.0021	0.0029
BENZO(a)PYRENE	0.2	ND
TOTAL SVOCs	1.837	ND

SB-206	1.4-3.7'
TOTAL VOCs	0.0049
BENZO(a)ANTHRACENE	0.036
BENZO(a)PYRENE	0.17
TOTAL SVOCs	2.487

SB-116	5-7'	23-25'
TOTAL VOCs	0.0013	0.0051
BENZO(a)ANTHRACENE	0.36	ND
BENZO(a)PYRENE	0.4	ND
TOTAL SVOCs	3.914	0.1

SB-207	1.1-2.9'
TOTAL VOCs	0.077
TOTAL SVOCs	0.852

SB-208	1.3-3.7'
TOTAL VOCs	0.0269
TOTAL SVOCs	0.755

SB-117	5-7'	23-25'
TOTAL VOCs	0.0294	0.0026
TOTAL SVOCs	NA	0.078

SB-210	1.6-2.3'
TOTAL VOCs	0.016
BENZO(a)ANTHRACENE	0.15
BENZO(a)PYRENE	0.024
TOTAL SVOCs	1.785

SB-113	5-7'	21-23'	DUP.	21-23'
TOTAL VOCs	0.007	ND		0.0038
BENZO(a)ANTHRACENE	7.8	ND		ND
BENZO(a)PYRENE	8.9	ND		ND
BENZO(b)FLUORANTHENE	11	ND		ND
BENZO(k)FLUORANTHENE	5.8	ND		ND
CHRYSENE	7.2	ND		ND
DIBENZ(a,h)ANTHRACENE	1.2	ND		ND
TOTAL SVOCs	69.49	ND		ND

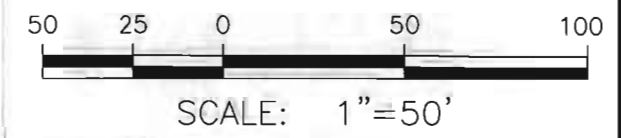
SB-112	3-4'
TOTAL VOCs	0.0113
BENZO(a)ANTHRACENE	0.99
BENZO(a)PYRENE	1.2
BENZO(b)FLUORANTHENE	1.7
CHRYSENE	1.1
DIBENZ(a,h)ANTHRACENE	1.3
TOTAL SVOCs	10.183

SB-115	3-4'	8-9'	22-24'
TOTAL VOCs	0.0011	0.005	ND
BENZO(a)ANTHRACENE	2.8	3.8	0.21
BENZO(a)PYRENE	3.5	6	0.34
BENZO(b)FLUORANTHENE	5	8.4	0.34
BENZO(k)FLUORANTHENE	1.9	3	0.14
CHRYSENE	3.4	3.7	0.19
DIBENZ(a,h)ANTHRACENE	0.16	0.26	ND
FLUORANTHENE	4.4	3.2	0.11
TOTAL SVOCs	30.09	36.28	1.82

MW-4	16-18'
TOTAL VOCs	0.0363
BENZO(a)ANTHRACENE	0.26
BENZO(a)PYRENE	0.15
TOTAL SVOCs	6.06

TP-9	1-3'	3-5'	3-5' DUP	9.5'
ACETONE	0.097	0.14	0.21	0.085
BENZENE	0.093	0.0058	0.0015	0.040
XYLENES	3.5	0.37	0.79	0.153
TOTAL VOCs	4.52	0.6543	1.268	0.34
DIBENZOFURAN	220	0.27	0.20	0.068
2-METHYLPHENOL	4.2	ND	ND	ND
3&4-METHYLPHENOLS	15	ND	ND	ND
PHENOL	7.3	ND	ND	ND
2-METHYLNAPHTHALENE	340	2.7	3.3	0.097
ACENAPHTHYLENE	56	1.2	1.3	0.19
ACENAPHTHYLENE	200	0.21	0.12	0.069
ANTHRACENE	320	0.3	0.16	0.089
BENZO(a)ANTHRACENE	550	0.97	0.19	0.2
BENZO(a)PYRENE	360	0.36	0.12	0.13
BENZO(b)FLUORANTHENE	400	0.36	0.12	0.14
BENZO(g,h,i)PERYLENE	69	0.14	ND	ND
BENZO(k)FLUORANTHENE	230	0.24	ND	ND
CHRYSENE	460	0.5	0.16	0.17
DIBENZ(a,h)ANTHRACENE	18	ND	ND	ND
FLUORANTHENE	1100	1.4	0.42	0.14
FLUORENE	160	0.14	0.10	0.076
INDENO(1,2,3-cd)PYRENE	99	0.16	ND	ND
NAPHTHALENE	160	1.7	2.1	0.67
PHENANTHRENE	1000	1.3	0.61	0.31
PYRENE	890	1.0	0.31	0.31
TOTAL SVOCs	6752.5	27.98	28.203	2.659

MW-205	8-10'	23-25'
TOTAL VOCs	4.24	0.1789
BENZO(a)ANTHRACENE	NA	0.042
BENZO(a)PYRENE	NA	0.21
TOTAL SVOCs	NA	4.649



**FIGURE 1**  
**CON EDISON**  
**EAST 111th STREET GAS WORKS SITE**  
**CONCEPTUAL EXCAVATION PLAN**

**PARSONS**  
 290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

**ATTACHMENT B**

**GENERIC COMMUNITY AIR MONITORING PLAN**

## APPENDIX 1A

### **New York State Department of Health Generic Community Air Monitoring Plan**

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 volatile organic compounds (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 NYSDEC/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. 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.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If 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.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) 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.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ( $\text{mcg}/\text{m}^3$ ) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150  $\text{mcg}/\text{m}^3$  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  $\text{mcg}/\text{m}^3$  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  $\text{mcg}/\text{m}^3$  of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.