

Shaw Environmental & Infrastructure
Engineering of NY, P.C.

COMMUNITY AIR MONITORING PLAN

***CONSOLIDATED EDISON FORMER KENT AVENUE GENERATING
STATION***

***500 KENT AVENUE
BROOKLYN, NEW YORK***

Project No. 126649

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Prepared for:

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1.0 INTRODUCTION

1.1 Background

During the upcoming remedial action activities (soil excavation and removal), air and dust emissions will be monitored and controlled to protect the surrounding environment from exposure to potential airborne contaminants. A Community Air Monitoring Plan (CAMP) is intended 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 the remedial work activities.

This CAMP has been developed to address particulates (dust) and potential subsurface organic vapors that may be released to the air during implementation of the remedial action activities. The CAMP was prepared in accordance with New York State Department of Health (NYSDOH) requirements presented in Appendix 1A of the NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (2010). The CAMP requires real-time monitoring for dust and organic vapors at the downwind perimeter of each designated work area for the benefit of downwind adjoining properties that contain sensitive receptors (*e.g.*, Division Avenue, Kent Avenue, the public park east of Kent Avenue, and the high-rise residential building on Kent Avenue north of Clymer Street). The measures included in the CAMP will provide a level of protection for the occupants of the neighborhood schools and residences, as well as the downwind community, from potential airborne releases. The CAMP sets forth specific action levels for determining monitoring frequency and the appropriate corrective actions, including work shutdown.

1.2 Purpose and Objectives

The principal purpose of the CAMP is to monitor air quality at the Site and areas where soil is being disturbed or loaded during the remedial activities. The CAMP for this project describes monitoring of dust and vapors on a real-time, continuous basis. Air monitoring will involve standard monitoring functions for environmental projects including real-time air monitoring for particulate matter less than 10 micrometers in size (PM-10) and volatile organic compounds (VOCs); observations for visible dust emissions and odors; inspection and monitoring of the contractor's work practices; and reporting to the NYSDEC and NYSDOH.

Continuous monitoring will be performed during all ground intrusive activities. Ground intrusive activities include, but are not limited to, soil excavation and handling.

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

Principal objectives of the CAMP are as follows:

- Monitor dust as PM-10 on a real-time, continuous basis such that dust associated with the investigative and remedial actions is maintained below action levels.
- Monitor organic vapors as VOCs on a real-time, continuous basis such that potential vapors associated with the investigative and remedial actions are maintained below action levels.
- Monitor odors and dust emissions (based on olfactory and visible evidence) so that vapors and dust from work areas do not leave the Site.
- In the event that PM-10 or VOC concentrations exceed action levels, Site personnel will be immediately notified so that all necessary corrective actions can be taken.

1.3 Operations to be Monitored

The remedial actions to be performed at the Site consist of:

- Excavation of soils to approximately eight ft bgs using an excavator at the northern and southern portions of the Site, and loading the soil onto trucks for off-site disposal.

2.0 AIR MONITORING PROCEDURES

Air monitoring stations for measuring dust as PM-10 will be established at four stationary locations (two along Kent Avenue, one along Division Avenue and one along the southern property line). Depending on the wind direction, one location will be established as the upwind Site perimeter monitoring location and the other three will be downwind Site perimeter monitoring locations. In addition, a roving air monitor using a hand-held instrument for measuring VOCs will walk the northern and eastern perimeters of the Site, and will also collect organic vapor data at the four stationary dust monitor locations. The upwind monitoring station will be located in the predominantly upwind direction of the Site and its location will vary depending on daily conditions (e.g., wind direction). A windsock will be used to determine and monitor wind direction throughout the work day.

These air-monitoring activities include real-time monitoring for particulates and VOCs based on the New York State CAMP requirements. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. **CAMP-Table 1** summarizes dust and VOC action levels and appropriate actions. A flow chart summarizing action levels/appropriate actions is provided on **CAMP-Figure 1**.

2.1 VOC Direct-Reading Monitoring

Organic vapor monitoring equipment will consist of a real-time photoionization detector (PID) equipped with the appropriate lamp capable of detecting total VOCs that could potentially be released from Site remedial activities. In addition to instantaneous readings, the instrument will be capable of calculating 15-minute running average VOC concentrations, which will be compared to the prescribed total organic vapor action levels. The PID will be equipped with an audible alarm to indicate exceedance of the action level. The instrument will be calibrated in accordance with the manufacturer's operating instructions on a daily basis and documented in a dedicated field logbook.

Upwind 15-minute average background VOC levels will be subtracted from the downwind 15-minute average VOC levels to establish ambient organic vapor concentrations reflective of work activities at a particular point in time. Therefore, the "background" level is the most recent upwind 15-minute average reading.

The 15-minute running average PID concentrations will be compared to the following:

- If the ambient air concentration of total organic vapors at the downwind perimeter of the Site or work area 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 Site or work area 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 Site or half the distance to the nearest potential receptor or residential 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 downwind perimeter of the Site or work area, activities must be shutdown and the engineering controls and site work plan re-evaluated.

As an extra precautionary measure, when the downwind perimeter of the Site is within 20 feet of the nearest potential receptor (Division Avenue), then the perimeter organic vapor level must not exceed VOC background concentrations. This guideline is proposed in order to avoid vapor migration into nearby residential buildings. If VOC background concentrations are exceeded at any time at any perimeter location within 20 feet of the nearest receptor, then activities must be shutdown and the engineering controls and site work plan re-evaluated.

2.2 Particulate (Dust) Direct-Reading Monitoring

Particulate (dust) monitoring equipment set up in the four stationary monitoring locations will consist of real-time aerosol or particulate dust monitors capable of measuring particulate matter less than 10 micrometers in size (PM-10) that could be released from Site remedial activities. The instruments will be capable of providing instantaneous readings as well as integrating measurements over a period of 15 minutes (or less) for comparison to the prescribed airborne particulate action levels. The equipment will be equipped with an audible alarm to indicate exceedance of the action level, and will be calibrated in accordance with the manufacturer's operating instructions and documented in a dedicated logbook.

Dust concentrations will be monitored continuously at the four stationary monitoring locations. In addition, fugitive dust migration will be visually assessed during all work activities. As with VOC levels, upwind 15-minute average background particulate levels will be subtracted from the downwind 15-minute average particulate levels to establish dust concentrations reflective of work activities at a particular point in time. The "background" particulate level, therefore, is the most recent upwind 15-minute average reading.

The 15-minute running average particulate readings will be compared to the following:

- If the downwind PM-10 particulate level is **100 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)** greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust control/suppression measures must be implemented. Work can continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed **150 $\mu\text{g}/\text{m}^3$** above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than **150 $\mu\text{g}/\text{m}^3$** 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 $\mu\text{g}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

3.0 AIR MONITORING RECORDKEEPING AND OBSERVATIONS

The qualified Shaw Safety Officer or Technician on site will ensure that all air monitoring data is logged in a dedicated logbook. Documentation shall be made clear, concise, and provide the monitoring data, time of entry, location, personnel, weather conditions, and background concentrations for each monitoring station. Documentation will also include all observational data that has the potential for impacting results, such as damage to instruments, site equipment problems, off-site interferences, on-site public interferences, or weather-related interferences.

All pages must be numbered, no lines shall be left blank (or if necessary they should be lined through), and all pages must be initialed in ink. The last entry page for the shift or day that has blank space left at the bottom shall have a line drawn diagonally across it and signed at the bottom of the page. All corrections must be made with a single line, initialed, and dated.

A windsock will be temporarily installed at the Site to monitor and determine wind direction throughout the day. Meteorological “wind rose” or graphic data will be available for use at the Site as a reference for assessing how wind speed and direction are typically distributed (*i.e.*, the frequency of possible wind directions) in the general vicinity of the Site. Area weather data such as wind speed and relative humidity shall be obtained on a daily basis while work is progressing and documented in the dedicated field logbook.

Real-time data (*e.g.*, PM-10 and VOCs) will be downloaded from the equipment’s respective dataloggers at the end of each day. Fifteen-minute averages from each station and instantaneous readings, if any, used for decision purposes will be recorded.

The NYSDEC and NYSDOH will be notified promptly via phone and/or electronic mail of any exceedance of an action level and of the corrective actions taken in connection with the exceedance. All recorded dust and organic vapor readings will be available for State (NYSDEC and NYSDOH) personnel review.

3.1 Equipment Operational Requirements

The air monitoring equipment will be operated by trained and qualified personnel. Personnel who perform air monitoring functions described in this CAMP will be experienced in the use of field air monitoring equipment, as well as in the air monitoring procedures described above. There will be appropriate staff (industrial hygienist or environmental scientist) for assessing the results of air monitoring and advising the Shaw Safety Officer, and the Con Edison Project Manager and onsite Construction Management representative, of air quality considerations.

All monitoring equipment will be calibrated on a daily basis in accordance with the manufacturer’s operating instructions. A dedicated logbook for each monitoring unit will be maintained that details the date, time, calibration gas or other standard, and the name of the person performing the calibration.

CAMP - Table 1
Air Monitoring Summary Table for
Remedial Action Activities
Former Kent Avenue Generating Station, Brooklyn, NY

Monitoring Device	Monitoring Location/ Personnel	Monitoring Frequency	Action Level	Action
PM-10 Particulate/ Aerosol Air Monitoring Unit with Audible Alarm and Datalogger	Upwind and Downwind of Site or Work Area	<p>Continuous during all soil excavation or dust-producing activities for 15- minute average readings</p> <p>("Background" is most recent upwind 15-minute average reading)</p>	<p><100 µg/m³ (15-min. TWA) above upwind background level at downwind perimeter of Site or work area</p> <p>>100 µg/m³ (15-min. TWA) above upwind background level at downwind perimeter of Site or work area, or visible dust leaving the Site/work area</p> <p>>150 µg/m³ (15-min. TWA) above upwind background level at downwind perimeter of Site or work area</p>	<p>Continue normal operations</p> <p>Implement dust control/suppression measures</p> <p>Halt all dust disturbance until downwind perimeter of Site or work area is <150 µg/m³ above upwind background level</p>
PID with Audible Alarm and Datalogger	Upwind and Downwind of Site or Work Area	<p>Continuous during all soil excavation or dust-producing activities for 15- minute average readings</p> <p>("Background" is most recent upwind 15-minute average reading)</p>	<p><5 ppm above background</p> <p>>5 ppm above background but <25 ppm (15-min. TWA)</p> <p>>25 ppm above background within 20 feet of nearest receptor</p>	<p>Continue normal operations</p> <p>Suspend operations until readings indicate <5 ppm for 15-min. TWA; Take steps to abate emissions*</p> <p>Shutdown operations and re-evaluate work and controls</p>

TWA – Time-weighted average

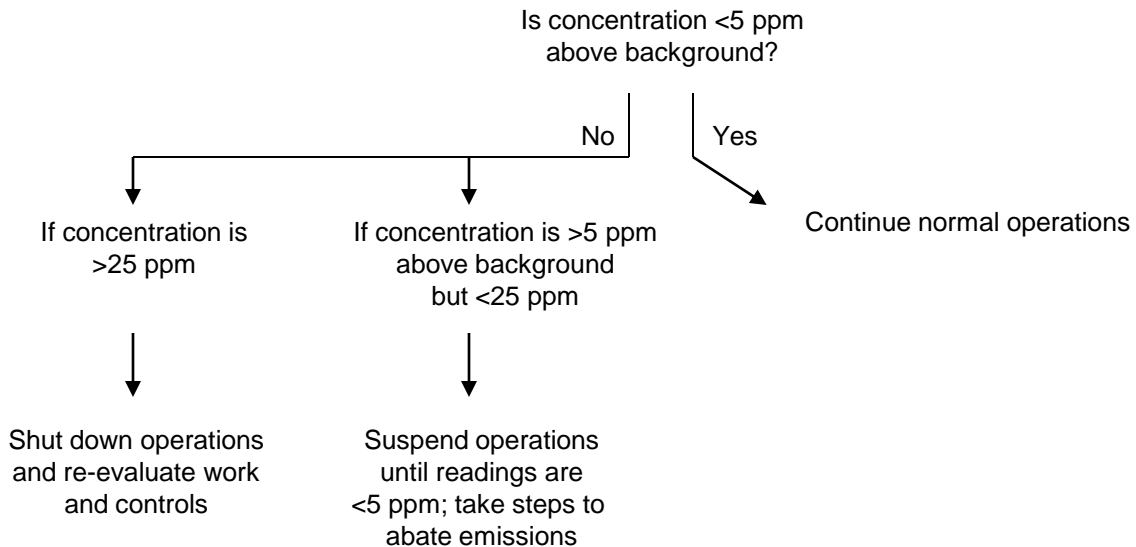
PID – Photoionization detector

µg/m³ – Micrograms per cubic meter

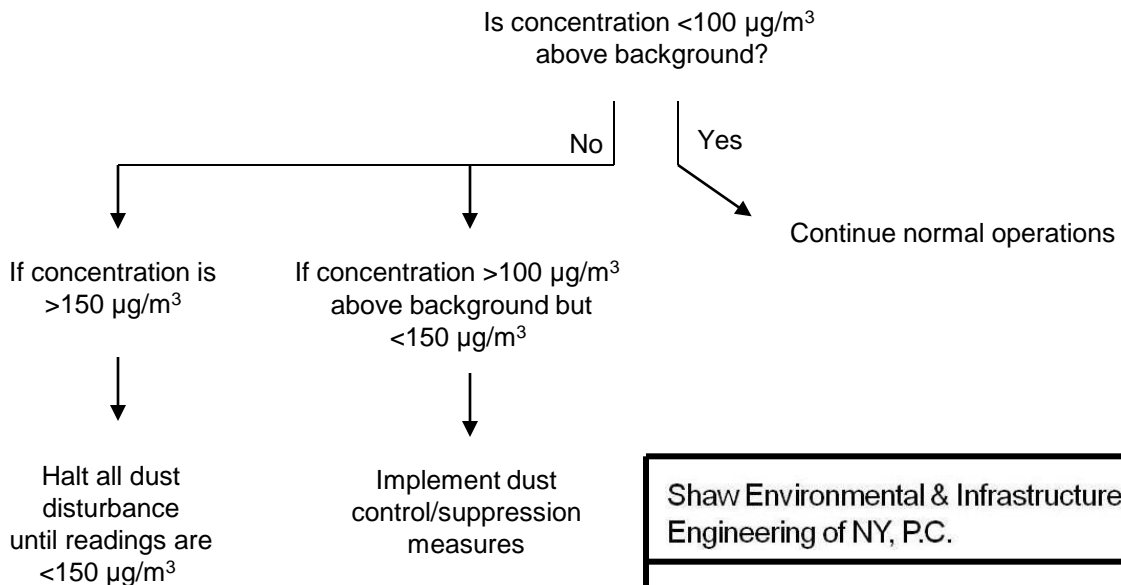
ppm – Parts per million

** Use plastic to cover excavation or stockpiled soil*

Volatile Organic Monitoring Downwind of Work Area



Particulate Monitoring Downwind of Work Area



VOC and particulate readings based on 15-minute time weighted average

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CAMP - FIGURE 1
FLOW CHART FOR VOC AND
PARTICULATE MONITORING
ACTION LEVELS

FORMER KENT AVENUE GENERATING STATION
BROOKLYN, NY