

Community Air Monitoring Plan

For

Subsurface Investigation in Hunts Point Food Center Drive
Bronx, New York

Prepared for:

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1.0 Introduction

At the request of DiFazio Industries LLC of Staten Island, New York, Applemon Corporation (Applemon) prepared this Community Air Monitoring Plan (CAMP) for conducting real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of the work area for excavation associated with the Verizon project for the Utility Work in Hunts Point Food Center Drive in the Borough of Bronx, New York. The CAMP is prepared consistent with NYSDOH and NYSDEC requirements to be utilized by the contractor in adopting procedures used in monitoring air around the excavation area.

2.0 Background Information

The area of work is immediately adjacent to Parcel E of the Hunts Point Food Distribution Center (HPFDC) that is listed in NYSDEC Voluntary Cleanup Program database as a former location of the Con Edison Hunts Point Manufactured Gas Plant (MGP). While the Site is currently inactive, the Con Edison MGP (coal gasification facility) operated from 1925 through the early 1950s. The Site is located generally upgradient of the main MGP facility, but on-site contamination appears to be associated with the gasification process which is known to have yielded large quantities of contaminants including polycyclic aromatic hydrocarbons (PAHs), light aromatic hydrocarbons, phenolic compounds, miscellaneous organic compounds, and various inorganic compounds such as iron, lead, copper, zinc, sulfides, cyanides and nitrates. The soil stratigraphy varies across the HPFDC as a result of previous filling activities. Typically, a 1- to 2-foot thick layer of sandy topsoil/fill overlays fill material that consistently includes soil, construction and demolition debris, ash, cinders, residual coal, and material that is moderately to significantly impacted by MGP waste (coal tar and purifier waste). The underlying MGP fill layer varies in thickness across the site, but is generally 5 to 7 feet thick. Underlying the MGP fill layer is a native clay layer. Site groundwater was generally encountered on top of the native clay whose depth varies from 7 to 12 feet below ground surface. The primary contaminants of concern at the site include benzene, naphthalene, polyaromatic hydrocarbons (PAHs), arsenic and cyanide. Investigations conducted at the site indicate subsurface soil contamination associated with historic on-site manufactured gas plant operations. The subsurface soils exceeded



soils guidance values for benzene, naphthalene, PAHs, arsenic and cyanide. The underlying groundwater, on the other hand, does not appear to be significantly impacted.

3.0 Project Summary

The project includes excavation of four (4) test pits between Manholes 429-1377-1 and 429-1377-2 located on Food Center Drive, approximately 200 feet to 250 feet apart; checking ducts; and collection of a soil sample from each pit for laboratory analysis based on contaminant indicators (see Figure 1). The excavation depth will not exceed five (5) feet below grade (ftbg).

4.0 Air Monitoring Plan

Due the nature of known contaminants at the site, real-time air monitoring for volatile organic compounds (VOCs) using a PID and particulate levels using a particulate monitor at the perimeter of the exclusion zone or work area is necessary. Continuous monitoring will be performed for all ground intrusive activities. Ground intrusive activities include soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be performed 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. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities.

4.1 VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions.



The monitoring work should be performed using a PID. The specification of the equipment is included as an attachment of this plan. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment 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 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.

4.2 Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring



particulate matter less than 10 micrometers 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. The specification of a particulate monitor is attached to this plan. 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 (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 $150 \text{ mcg}/\text{m}^3$ 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.

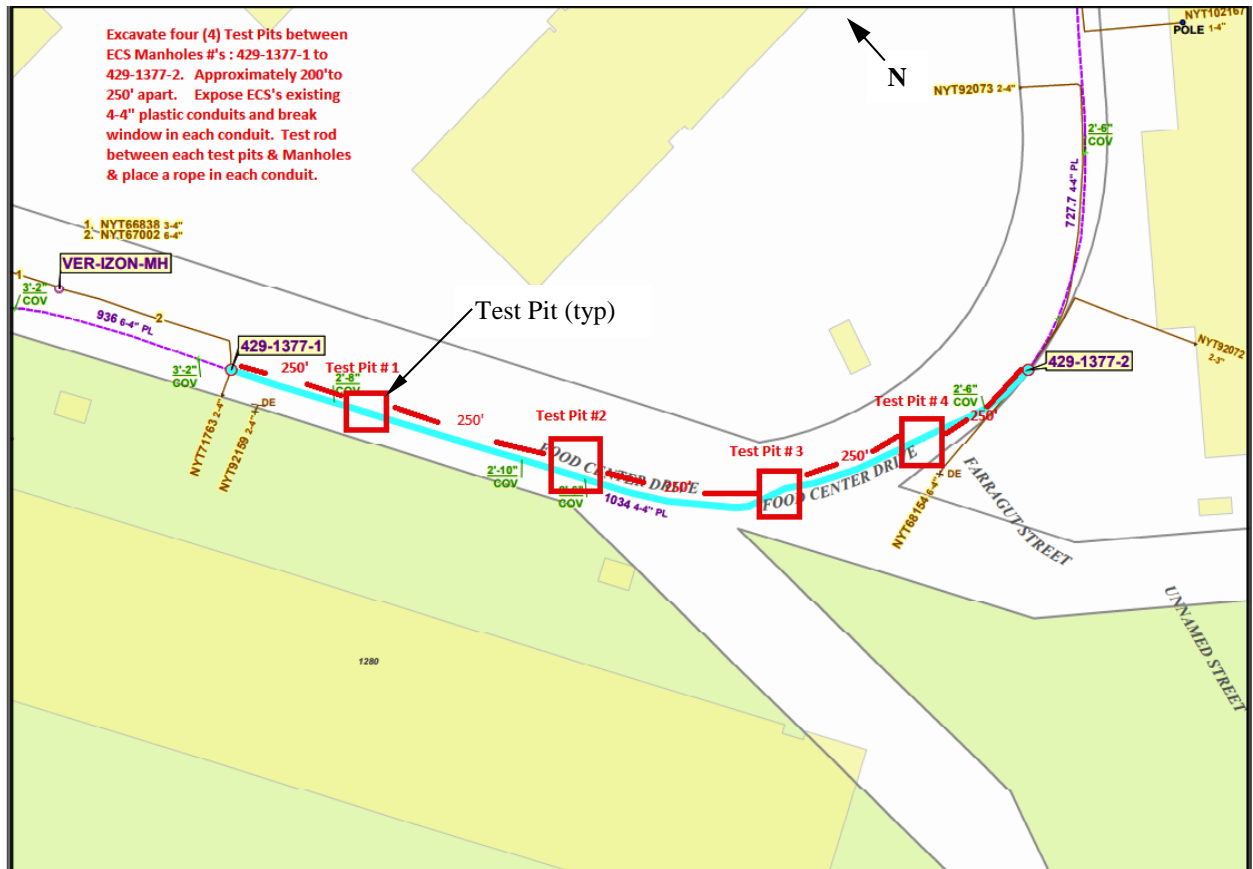


Figure 1. Area of Excavation for Test Pits



ATTACHMENT 1

FIELD ANALYTICAL EQUIPMENT SPECIFICATION

MiniRae 2000 PID Specification



MiniRae 2000

The rugged MiniRae 2000 is the smallest pumped handheld volatile organic compound (VOC) monitor on the market. Its Photo ionization Detector (PID) extended range of 0-10,000 ppm makes it an ideal instrument for applications from environmental site surveying to HazMat/Homeland Security.

Features

- Proven PID technology - The patented 3D sensor provides a 3 second response up to 10,000 ppm and sets a new standard for resistance to moisture and dirt.
- Self cleaning lamp and sensor - Rae's patented self cleaning lamp and sensor minimize the need for maintenance and calibration
- The MiniRae 2000 lamp and sensor can be taken apart in seconds for easy maintenance without any tools!
- Measures more chemicals than with any other PID - With over 100 correction factors built into the MiniRae 2000 memory and the largest printed list of correction factors in the world (300+), Rae Systems offers the ability to accurately measure more ionizable chemicals than any other PID. When a gas is selected from the MiniRae's 2000's library, the alarm points are automatically loaded into the meter.
- User friendly screens make it easy to use for simple applications and flexible enough for sophisticated operations.
- Drop in battery - When work schedules require putting in more than the 10 hours supplied by the standard NiMH battery, the drop in alkaline pack supplied with every MiniRae 2000 lets you finish the job.
- Rugged rubber boot - the standard rubber boot helps assure that the MiniRae 2000 survives the bumps and knocks of tough field use.
- Strong built in sample pump draws up to 100 feet horizontally and vertically.
- Tough flexible inlet probe
- Large keys operable with 3 layers of gloves
- Stores up to 267 hours of data at one minute intervals for downloading to PC (with the data logging option).
- 3 Year 10.6 eV lamp warranty.



Applications

- Initial PPE (personal protective equipment) assessment
- Leak detection
- Perimeter establishment and maintenance
- Spill delineation
- Decontamination
- Remediation
- Homeland Security
- Confined Space Entry
- IAQ
- Worker exposure studies
- Soil and water headspace analysis
- Leaking underground storage tanks
- Fugitive emissions (EPA Method 21)
- Vapor recovery breakthrough
- Landfill monitoring

Specifications

Detector	PID sensor with 10.6 eV lamp standard, 9.8 or 11.7 eV lamp optional
Operating Hours	10 hours continuous
Battery	Rechargeable, external, field replaceable nickel metal hydride battery pack, Alkaline battery holder also supplied
Operating Hours	10 hours continuous
Display	Large, LCD, manual, darkness and alarm activated
Calibration	Two points field calibration of zero and standard reference gas. Calibration memory of 8 calibration gases, alarm limits, span values and calibration time
Keypad	1 operation key, two programming keys
Direct Readout	VOCs as ppm by volume, high and low values, STEL and TWA (in hygiene mode), battery and shut down voltage
Alarms	90 dB buzzer and flashing red LED to indicate exceeded preset limits. High; 3 beeps and flashes per second, Low; 2 beeps and flashes per second, STEL & TWA; 1 beep and flash per second, Alarms automatic reset or latching with manual override, optional plug in pen size vibration alarm, user adjustable alarm limits
Data logging	Standard 267 hours (at 1 minute intervals) with date/time, header information includes monitor serial number, user ID, site ID, date and time
Communication	Download data and up load instrument setup from PC through RS-



	232 link to serial port
Low Flow Alarm	Auto shut off pump at low flow condition
Sampling Pump	Internal integrated flow rate 400 cc/min, sample from 100' horizontally or vertically
Temperature	14 to 104°F
Humidity	0 to 95% rH
EMI/RFI	Highly resistant to EMI/RFI, Compliant with EMC Directive 89/336/EEC
IP Rating	IP-55 protected against dust, protected against low pressure jets of water from all directions
Size	8.2" L x 3" W x 2" H
Weight	20 ounces with battery pack
Approvals	UL and cUL: Class 1, Div 1, Group A, B, C, D
Attachment	Durable bright yellow rubber boot with belt clip and wrist strap
Warranty	Lifetime on non-consumable components, 3 years for 10.6 eV PID lamp, 1 year for pump and battery

Sensor Specifications

Sensor	Range	Resolution	Response Time
VOCs	0-999 ppm	0.1 ppm	<3 seconds
	100-10,000 ppm	1 ppm	<3 seconds

Hand-Held Monitor/Data Logger

Thermo Scientific personalDataRAM™ pDR-1000AN & pDR-1200

The personalDataRAM™ pDR-1000AN passively measures mass concentrations of dust, smoke, mists, and fumes in real time, and sounds an audible alarm whenever the user-defined level is exceeded. The personalDataRAM™ pDR-1200 performs active sampling applications and aerosol sizing. The pDR-1200 requires a vacuum pump module to perform particle size selective measurements under field conditions.

FEATURES

pDR-1000AN

- Highest performance of any real-time personal particulate monitor with a measurement range from 0.001 to 400 mg/m³ (auto-ranging).
- Rugged and extremely compact, the palm sized pDR-1000AN weighs only 18 oz. (0.5 kilogram) and can be attached to a belt or shoulder strap, hand held, operated on a table top, or mounted on a tripod.
- Simple zeroing and calibration – The pDR-1000AN comes gravimetrically calibrated (NIST traceable) in mg/m³ using standard SAE Fine (ISO Fine) test dust. Zeroing with particle-free air is accomplished quickly and effectively under field conditions using the zeroing kit including with the instrument.
- Safety approvals and certifications – The pDR-1000AN complies with US FCC rules (Part 15) and has received CE certification. It also has intrinsic safety approval from the US Mine Safety and Health Administration (MSHA) for use in coal mining environments containing methane gas. The MSHA Type 2G approval closely resembles the standard intrinsic safety rating as defined by Class 1, Division 1, Group D. In addition, it meets US FCC and European CE rules.



pDR-1000AN

pDR-1200

- Designed for active particulate monitoring applications – With optional inlet accessories, the pDR-1200 is excellent for ambient air measurements under variable wind and high humidity conditions.
- Aerodynamic particle sizing – The pDR-1200 incorporates an optimally designed metal cyclone (BGI Model GK 2.05) or the optional low flow cyclone (BGI Model Triplex SCC1.062-CUST) especially selected for PM_{2.5} collection at 1.5 LPM. By operating the pump at specific sampling flow rates, the pDR-1200 cyclone preseparator provides precisely defined particle size cuts.
- Primary calibration and particle samples by filter collection – An integral filter holder directly downstream of the photometric sensing stage accepts 37 mm filters. The calibration constant of the pDR-1200 is simply adjusted to coincide with the filter-determined concentration. Primary gravimetric calibration of the instrument concentration readout is easily accomplished under actual field conditions by means of this integral filter. Use membrane filters for chemical analysis or concurrent gravimetric measurements.
- pDR-PU Attachable Pump Module – This optional accessory is designed for use with the personalDataRAM Model pDR-1200. It incorporates a dual-chamber diaphragm pump, a volumetric flow sensing, and control unit. The pump module operates from either an optional, rechargeable NiMH battery pack or from AC line current using the power supply/charger supplied with the personal DataRAM. The pDR-PU is designed as a modular unit that can be used in various combinations. This separate pump (not included) is required for active sampling and aerosol sizing. With optional inlet accessories, the pDR-1200 is excellent for ambient air measurements under variable wind and high humidity conditions.



**pDR-1200
with optional
rechargeable battery module**

CALL GEOTECH TODAY (800) 833-7958

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Thermo pDR.indd 01/16/09

Hand-Held Monitor/Data Logger

Thermo Scientific personalDataRAM™ pDR-1000AN & pDR-1200

ACCESSORIES & OPTIONS

Standard Accessories

- Universal voltage power supply
- PC communications software
- Zeroing kit
- Belt clip kit
- Instruction manual
- Carrying case
- Signal output cables

Optional Accessories

- Rechargeable battery pack (NiMH)
- Active sampling kit
(converts pDR-1000AN to pDR-1200)
- Portable pump unit
- Shoulder strap
- Remote alarm interface
- Wall mounting bracket



Hard sided carrying case
for your personalDataRAM
and accessories comes
standard

SPECIFICATIONS

Concentration Measurement Range (auto-ranging):
Referred to gravimetric calibration with SAE Fine test dust (mmd = 2 to 3 mm, sg = 2.5, as aerosolized)
0.001 to 400 mg/m³

Scattering Coefficient Range:
1.1 x 10⁻⁶ to 0.6 m⁻¹ (approximately) @ wave length = 880 nm

Precision/Repeatability (2-sigma at constant temperature):
±5 µg/m³ for 1 second averaging
±1.5 µg/m³ for 10 second averaging

Accuracy:
Referred to gravimetric calibration with SAE Fine test dust (mmd = 2 to 2 mm, sg = 2.5, as aerosolized)
±5% of reading ± precision

Resolution:
0.1% of reading or 0.001 mg/m³, whichever is larger

Particle Size Range of Maximum Response:
0.1 to 10 µm

Concentration Display Updating Interval:
1 second

Alarm Level Adjustment Range (user selectable):
Selectable over entire measurement range

Datalogging Averaging Periods (user selectable):
1 second to 4 hours

Total Number of Data Points/Tags in Memory:
13,000 points/99 tags

Concentration Display Averaging Time:
1 to 60 seconds

Readout Display:
LCD 16 characters (4 mm height) x 2 lines

Serial Interface:
RS232, 4800 baud

Analog Signal Output:
0 to 5V and 4 to 20 mA, with selectable full scale ranges between 0.1 and 400mg/m³

Computer Requirements:
IBM compatible PC, 286 or higher; Windows™ 3.1, 3.11, or '95; 2 MB memory or more; hard drive; 3.5" floppy drive; VGA or higher resolution monitor

Power:
Internal battery: 9V alkaline, 20 hour run time (typical)
9V lithium, 40 hour run time (typical)
AC source: Universal voltage adapter (included)
100-250 Volts, 50-60 Hz (CE marked)
Optional battery pack: Rechargeable NiMH, 70 hour run time (typical)

Operating Environment:
14° to 122°F (-10° to 50°C), 10 to 95% RH, non-condensing

Storage Environment:
-4° to 158°F (-20° to 70°C)

Dimensions and Weight:
6" H x 3.6" W x 2.5" D; 18 oz. (0.5 kg)
6.3" H x 8.1" W x 2.4" D; 24 oz. (pDR-1200 including cyclone and filter holder)

Aerodynamic Particle Sizing Range:
1.0 to 10 µm (pDR-1200 only)

Alarm Averaging Time (user selectable):
Real-time (1 to 60 seconds) or STEL 15 (minutes)

Approvals:

- Intrinsic safety approval by US Mine Safety & Health Administration (MSHA)
- Coal-mining environments containing methane gas (the pDR-PU pump is not approved by MSHA)
- US FCC Rules (Part 15)
- CE Certified

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ATTACHMENT 2

AIR MONITORING LOG

