

August 31, 2010

COMMUNITY AIR MONITORING PLAN

**Amtrak Sunnyside Yard
Queens, New York**

Prepared for

**NATIONAL RAILROAD PASSENGER
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1.0 INTRODUCTION

Roux Associates, Inc. (Roux Associates) has developed a project-specific Community Air Monitoring Plan (CAMP) to implement real time monitoring at the Amtrak Sunnyside Yard, Queens, New York (Yard) during the Remedial Action planned for Operable Unit 3 (OU-3), in the Yard. Investigation results indicate that inorganic compounds (metals), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and petroleum hydrocarbons may be present in the Yard. Based on soil borings/sample analysis, the New York State Department of Environmental Conservation (NYSDEC) set forth compounds of concern (COCs) in soil for the Yard (and OU-3) that include PCBs; seven specific polycyclic aromatic hydrocarbons that the NYSDEC considers carcinogenic (cPAHs) including benzo(a)anthracene, benzo(a)pyrene, benzo(a)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene; lead and total SVOCs.

In addition to the CAMP described in this document, Bureau Veritas North America, Inc. (Bureau Veritas) will be performing independent air monitoring activities within, on the roof, and outside in the immediate vicinity of 33-00 Northern Boulevard (located approximately 600 feet northwest of the central portion of OU-3). These air monitoring activities are being performed to provide an additional measure of confirmation that remedial activities to be conducted in OU-3 do not result in unacceptable impacts to occupants within 33-00 Northern Boulevard. As described in greater detail below (Section 1.4), Roux Associates and Bureau Veritas will be in communication with each other, and will freely share monitoring data during the implementation of their respective air monitoring programs. Essentially, the independent monitoring activities to be conducted by Bureau Veritas will complement the activities described in this CAMP.

The Remedial Action for OU-3 includes excavation, off-site disposal of impacted material, and backfill of excavations with uncontaminated soil and/or fill material. The CAMP is an air quality monitoring program that will be implemented in OU-3 during performance of work activities to monitor for the presence of volatile organic compounds (VOCs) and particulate matter along the OU-3 perimeter, both on a continuous and a time-weighted basis. The CAMP is designed to provide a measure of protection for the downwind community and onsite workers not directly involved with the subject work activities from potential airborne contaminant releases as a direct result of remedial work activities. This plan is consistent with the NYSDEC's Technical

Administrative Guidance Memorandum 4031 (Fugitive Dust Suppression and Particulate Monitoring Program) and the New York State Department of Health's (NYSDOH's) generic CAMP guidance document.

Roux Associates will be responsible for the implementation of the CAMP, and will have direct and constant communication with all members of the remediation team, and occasionally with other interested parties (e.g., NYSDEC, NYSDOH), as necessary and appropriate. Internal communications within the remediation team will help to effectively and instantaneously initiate the necessary controls to prevent and/or minimize any work stoppages related to CAMP issues.

The specifics of the CAMP are presented in the following sections:

- 1.1 Establishing Background Conditions
- 1.2 VOC Monitoring, Response Levels, and Actions
- 1.3 Particulate Monitoring, Response Levels, and Actions
- 1.4 Coordination with Offsite Monitoring Activities
- 1.5 Meteorological Monitoring
- 1.6 Available Suppression Techniques
- 1.7 Reporting

1.1 Establishing Background Conditions

Background air quality monitoring will be conducted during a maximum of five work days prior to the start of OU-3 remedial activities. Background air quality monitoring will be conducted for up to 8 hours per day, with the timing generally coinciding with the hours work will typically be occurring in OU-3. Background air quality monitoring will be conducted at each of the four sampling stations shown in Figure 1. Particulate matter (PM-10) will be monitored continuously at each location with a MIE DataRam pDR-1500. The DataRams will be set to take 15-minute running average measurements, and record one average measurement every 15 minutes, including the time and date of the end of the measurement period. The particulate data stored on the

DataRams will be periodically transferred to a laptop computer and analyzed as necessary. All particulate data will be measured in units of micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

VOCs will also be monitored continuously for the background measurement period utilizing RAE Systems MiniRAE 3000 VOC monitors equipped with 10.6 eV lamps. The VOC monitors will be set to take 15-minute running average measurements, and record one average measurement every 15 minutes, including the time and date of the end of the measurement period. All VOC data will be measured in units of parts per million (ppm). Furthermore, during one of the background air quality monitoring days, when no precipitation is observed or forecast, a chemical specific ambient air baseline VOC sample will be obtained using one Summa canister (placed at a height of approximately six feet) at sampling station 1 (See Figure 1). The inlet valve for the canister will be set to collect the ambient air sample over a sampling period of approximately eight hours (similar duration to a typical work shift). The Summa canister will be transported to a NYSDOH ELAP-accredited laboratory and analyzed for the presence of Target Compound List (TCL) VOCs using EPA Method TO-15 (or equivalent).

1.2 VOC Monitoring, Response Levels, and Actions

During all intrusive remedial activities, total VOCs will be monitored continuously. VOC monitoring equipment will be set to take 15-minute running average measurements, and record one average measurement every 15 minutes, including the time and date of the end of the measurement period at the four sampling station locations identified in Figure 1. Instantaneous total VOC measurements will also be collected by a person equipped with a hand-held instrument and roving OU-3. The fixed VOC monitoring stations (and particulate, as described in detail below) are at locations that may serve as either upwind or downwind monitoring locations, depending on variations in the wind direction in OU-3. As noted previously, the monitoring work will be conducted using four MiniRAE 3000 portable VOC (or similar) monitors equipped with 10.6 eV lamps. All VOC monitoring equipment will be calibrated at least once daily using isobutylene as the calibration gas. Each monitoring instrument is equipped with an audible alarm to indicate exceedance of the action levels (as defined below, and summarized in Table 1). The background data generated during the Background Air Monitoring Task (described above in Section 1.1) will be used to establish the typical range of background concentrations.

The VOC measurements (15 minute average concentrations) will be compared to the following levels, as specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of OU-3 or the exclusion zone (defined as any areas where there is active excavation and handling of contaminated materials) exceeds 5 parts per million (ppm) above background (upwind perimeter) 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 OU-3 or the exclusion zone persist at levels in excess of 5 ppm over background (upwind perimeter) but less than 25 ppm, work activities must be halted, the source of vapors identified, suppression techniques employed 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 downwind receptor (i.e., beyond OU-3 perimeter) or residential/commercial structure, whichever is less, is below 5 ppm over background for the 15-minute average.
- If levels are in excess of 25 ppm above background (upwind perimeter), identified contributing ground intrusive activities will be halted, and vapor suppression techniques will be evaluated, implemented (as appropriate) and modified, until monitoring indicates VOC levels are below the action level.

All data that has been logged by the instruments will be made available for NYSDEC and NYSDOH personnel to review. Instantaneous readings, if any, used for decision purposes will be manually recorded in field logs. If an exceedance of the action level occurs, an Action Limit Report (as provided in Appendix A) will be completed, identifying the monitoring device location, the measured VOC level, the activity causing the exceedance, meteorological conditions, and the corrective actions taken. Additionally, the NYSDEC and NYSDOH will be notified within 24 hours of the VOC Action Limit Report generation. Daily roving VOC monitoring equipment locations and meteorological conditions will also be documented in the field log. All documentation will be kept on file in OU-3.

1.3 Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at perimeter areas of OU-3 during work activities. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10). The particulate monitoring equipment will be set to take 15-minute running average measurements, and record

one average measurement every 15 minutes, including the time and date of the end of the measurement period for comparison to the airborne particulate action levels (as defined below and summarized in Table 1). Monitoring equipment will be MIE DataRam pDR-1500 monitors or equivalent. Four fixed monitors (locations as shown in Figure 1) and one roving monitor will be deployed for the duration of the OU-3 remedial action, and each monitor will be equipped with an omni-directional sampling inlet and a PM-10 sample head. Alarm averaging will be set at 90 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) above background per 15-minute period. This setting will allow proactive evaluation of work conditions prior to reaching Action Levels of $100 \mu\text{g}/\text{m}^3$ above background. The background data generated during the Background Air Monitoring Task (described above in Section 1.1) will be used to establish general background concentrations. The equipment is equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. The monitoring will be used to compare values to the following:

- If the downwind PM-10 particulate level is $100 \mu\text{g}/\text{m}^3$ greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the OU-3 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 $150 \mu\text{g}/\text{m}^3$ above the upwind level and provided that no visible dust is migrating from the OU-3 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, a re-evaluation of activities initiated, and dust suppression techniques modified. 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.

All data that has been logged by the instruments will be made available for NYSDEC and NYSDOH personnel to review. If an exceedance of the action level occurs, an Action Limit Report (as provided in Appendix A) will be completed, identifying the monitoring device location, the measured particulate level, the activity causing the exceedance, meteorological conditions, and the corrective actions taken. All documentation will be kept on file in OU-3.

1.4 Coordination with Offsite Monitoring Activities

As mentioned above, Bureau Veritas is completing independent offsite air monitoring within and around 39-00 Northern Boulevard. As described in detail in Bureau Veritas's March 11, 2010

proposal, two air monitoring stations will be situated on the roof of 39-00 Northern Boulevard, two air monitoring stations will be situated outside, along the southern property line of 39-00 Northern Boulevard, and six monitoring stations will be setup at various locations inside the building. Additionally, Bureau Veritas's field staff will have one set of air monitoring equipment to collect roving measurements at any location deemed appropriate.

Bureau Veritas would set alarm levels on each piece of equipment equal to action levels described above. If an alarm is triggered at any of Bureau Veritas's offsite monitors, Bureau Veritas would notify the previously designated Roux CAMP contact (via cell phone) within 15 minutes of observing and confirming alarm conditions. Bureau Veritas would provide the Roux CAMP contact with location(s), pollutants (VOC, PM-10) and alarm values, and record those values in their project field log notes. Bureau Veritas would continue to provide updated reports of monitored values at fifteen minute intervals until alarm levels are no longer occurring at their monitoring sites, and until Roux Associates confirms such reports are no longer requested.

Upon receipt of notification of an offsite alarm condition, Roux's CAMP designee would immediately review the latest onsite data regarding weather and relevant OU-3 conditions and collect additional data at current onsite work areas to determine if an OU-3 upwind source is potentially contributing significantly to the offsite alarm condition. It is expected that this review of onsite conditions would be completed within one half hour of the initial notification. If Roux's CAMP designee concludes that such a contribution is possible, we will take actions equivalent to those described above, as if CAMP alarm values were met or exceeded at one of our monitoring locations (action report, notification, mitigation, temporary work stoppage, as appropriate). We would continue to communicate with Bureau Veritas and obtain relevant information until the alarm event is satisfactorily resolved.

1.5 Meteorological Monitoring

Meteorological data consisting of wind speed, wind direction, temperature, barometric pressure, and relative humidity will be collected at a temporary weather station in the location shown in Figure 1. The weather station will be situated in an unobstructed area of OU-3 that allows for representative measurements of meteorological conditions within OU-3 and immediate vicinity. The measurements will be continuous and 15-minute average values will be digitally recorded by

the instruments. Wind direction readings will be utilized to determine whether VOC and particulate monitoring equipment is located in either an upwind or downwind location. A Davis Corporation wireless instrument station, or equivalent, will be used to collect all meteorological monitoring data.

1.6 Available Suppression Techniques

Water misting, via controlled fire hose and/or dedicated water truck, will be utilized in OU-3 as a daily control measure to mitigate the potential for particulate/dust release in non-contaminated work areas and roadways. Excavation methods and material staging and loading methods will be continually evaluated and modified (as necessary) to alleviate the potential for VOC, and particulate releases. To proactively address the potential for nuisance odors, odor control procedures are being implemented during soil excavation and handling activities, including:

- Excavations will be limited to the water table whenever possible to minimize excavation of odorous soils (i.e., separate-phase petroleum hydrocarbon (SPH)-impacted saturated soil);
- Excavations exposing any odorous soils will be limited to only that which can immediately be backfilled with certified clean material, sprayed with Rusmar AC 645 foam, or covered with tarps at the end of each day;
- Rusmar AC-645 foam will be applied during active excavation and handling of any odorous soils;
- Rusmar AC-645 foam will be applied to seal truck beds or roll-offs prior to transporting odorous soils offsite;
- All truck beds will be covered with tarps during transport of waste; and
- Daily inspection and maintenance of all soil and debris pile tarps.

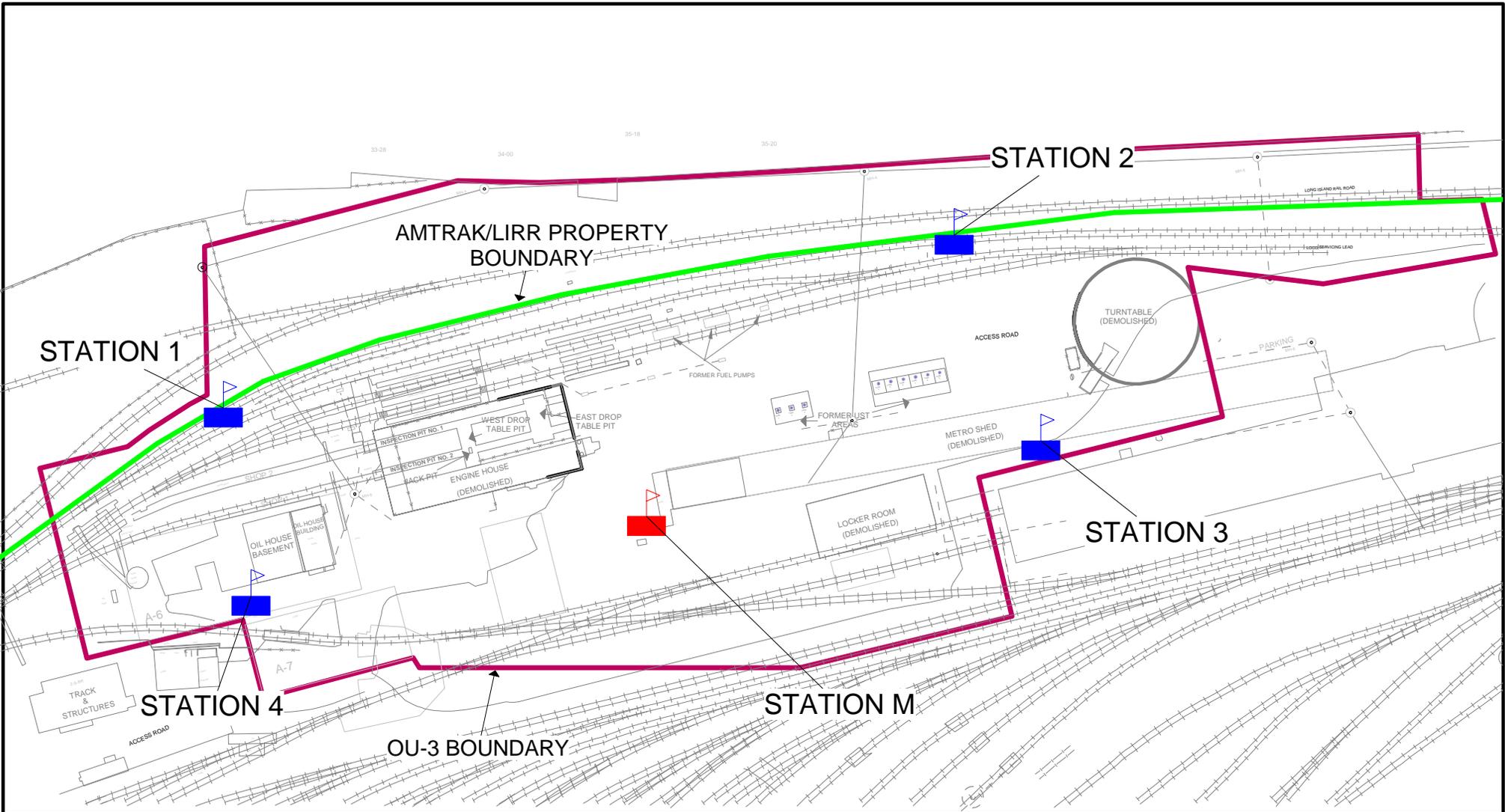
1.7 Reporting

All recorded data will be downloaded and field logged daily, including Action Limit Reports (if any) and daily CAMP monitoring location plans. All records will be maintained in OU-3 for NYSDEC/NYSDOH review. A description of all CAMP-related activities will be included in the Monthly Progress Report submitted to the NYSDEC and NYSDOH. Additionally, all CAMP monitoring records will be included in the overall Remedial Action Completion Report that will be submitted to the NYSDEC and NYSDOH. If an Action Limit Report is generated due to VOC exceedances, then the NYSDEC and NYSDOH must be notified within 24 hours.

Table 1. Action Limit Summary for VOCs and Particulates, Amtrak Sunnyside Yard, Queens, New York

Contaminant	Downwind Action Levels*	Action/Response
Volatile Organic Compounds (VOCs) (Monitoring Via Photoionization Detector and Odor Observation)	$< 5 \text{ ppm}$	1. Resume work with continued monitoring.
	$5 \text{ ppm} < \text{level} < 25 \text{ ppm}$	1. Work activities must be temporarily halted, source vapors must be identified, suppression techniques employed to abate emissions, and monitoring continued. 2. After these steps, if VOC levels (200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or structure, whichever is less) are below 5 ppm over background, resume work.
	$> 25 \text{ ppm}$	1. Identified contributing ground intrusive activities must be halted and vapor suppression techniques must be evaluated and modified until monitoring indicates VOC levels below the action level. 2. After these steps, if VOC levels (200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or structure, whichever is less) are below 5 ppm over background, resume work.
Particulates (Monitoring Via Particulate Meter and Observation)	$< 100 \text{ } \mu\text{g}/\text{m}^3$	1. If dust is observed leaving the work area, then dust control techniques must be implemented or additional controls used.
	$100 \text{ } \mu\text{g}/\text{m}^3 < \text{level} < 150 \text{ } \mu\text{g}/\text{m}^3$	1. Employ dust suppression techniques. 2. Work may continue with dust suppression techniques provided that the downwind PM-10 particulate concentration does not exceed $150 \text{ } \mu\text{g}/\text{m}^3$ above the upwind level and provided that no visible dust is migrating from the work area.
	$> 150 \text{ } \mu\text{g}/\text{m}^3$	1. STOP work. 2. Re-evaluate activities, modify dust suppression techniques. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within $150 \text{ } \mu\text{g}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

* 15-minute running time-weighted average (twa) above background (upwind perimeter). Particulate readings are based on the respirable (PM-10) fraction. Background readings are taken at upwind locations relative to Work Areas or Exclusion Zones.



EXPLANATION

STATION 1 

APPROXIMATE LOCATION OF AIR MONITORING STATION
(PARTICULATE AND VOC MONITORING)

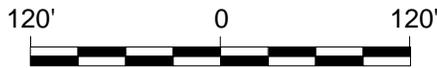
STATION M 

APPROXIMATE LOCATION OF METEOROLOGICAL STATION

NOTES:

CAMP - COMMUNITY AIR MONITORING PLAN

VOC - VOLATILE ORGANIC COMPOUND



Title:

CAMP PARTICULATE AND VOC MONITORING STATION LOCATIONS

Prepared For:



ROUX
ROUX ASSOCIATES INC
Environmental Consulting
& Management

Compiled by: PE	Date: 5MAR10
Prepared by: RSK	Scale: AS SHOWN
Project Mgr: JDD	Office: NEW YORK
File No: AM4525001.WOR	Project: 0055.0045Y014

FIGURE

1

Action Limit Report

ACTION LIMIT REPORT

Project Location: Amtrak Sunnyside Yard, Queens, New York

Date: _____ Time: _____

Name: _____

Contaminant: PM-10: _____ VOC: _____

Wind Speed: _____ Wind Direction: _____

Temperature: _____ Barometric Pressure: _____

DOWNWIND DATA

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

UPWIND DATA

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

BACKGROUND CORRECTED LEVELS

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

ACTIVITY DESCRIPTION

CORRECTIVE ACTION TAKEN

