

REPORT

Wastebeds 1-8 Integrated IRM Community Air Monitoring Plan

Honeywell

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 **O'BRIEN & GERE**

Wastebeds 1-8 Integrated IRM Community Air Monitoring Plan

Prepared for:

Honeywell



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1 INTRODUCTION

The objective of this Community Air Monitoring Plan (CAMP) is to describe air monitoring during field construction activities for the Wastebeds 1-8 Integrated Interim Remedial Measure (IRM), Mitigation Wetlands, Remediation Area A Hydraulic Control System, and Middle Reach Ditch A IRM (Integrated IRM). Field activities will include the following ground-intrusive activities:

- Eastern Shoreline Groundwater and Seep Collection Systems (see Figure A1; C-3 to C-10)
- Lower Ditch A Remediation (C-3)
- Middle Ditch A Remediation (Middle Reach Ditch A Work Zone Area)
- Upper Reach Ditch A Remediation (C-21A)
- White Cliff Stabilization (C-11 to C-14)
- Remediation Area A Hydraulic Control System (C-14 to C-16)
- Ninemile Creek Groundwater and Seep Collection System (C-17 to C-19)

Non-intrusive activities will include construction of the inland wetlands and vegetative cover. Additional details regarding construction sequencing and schedules are provided in the *Wastebeds 1-8 Integrated IRM – Advanced Construction Work Plan*¹ and *Wastebeds 1-8 Integrated IRM – Construction Work Plan*².

Surface and subsurface soil sampling in the project area has detected the presence of volatile organic compounds (VOCs) including BTEX, and phenols. Further, hydrogen sulfide (H₂S) may be present in the marl layer that is present at various depths across the site. As a result, ground-intrusive excavation associated with installation activities may result in release of volatile air emissions and odors.

Perimeter air monitoring will evaluate potential air quality impacts from remedial activities at the site from VOCs, H₂S, odors, and dust. The air monitoring program described herein has been designed using the New York State Department of Health (NYSDOH) *Generic Community Air Monitoring Plan (gCAMP)* guidance for evaluation of potential airborne contaminant releases as a direct result of investigative and remedial work activities³.

2 COMMUNITY RECEPTORS

The project site is bordered to the north and east by Onondaga Lake, and to the south and west by Interstate 690 (I-690). Based on review of aerial photographs, the nearest residential receptors to the project site consist of homes approximately 1,000 feet west of the northwest end of the site. The New York State Fairgrounds are located approximately 200 feet southwest of middle reach Ditch A work zone, which is the nearest area of ground-intrusive activities. Additional residential receptors are located approximately one mile south and southeast, one mile north and two miles east of the site.

MONITORING LOCATIONS

Air monitoring will be conducted along or within the perimeter boundary line around the work site shown on **Figure A1**. In general, except for the Middle Reach Ditch A Remediation, the perimeter boundary follows the Lake shoreline north and west of the work site. On the southwest side of the site where Ninemile Creek runs between the site and I-690, the air monitoring perimeter boundary is located between I-690 and Ninemile Creek. Southeast of that point, the perimeter boundary follows site access roads to the State Fair parking area on

¹ O'Brien & Gere. 2012. *Wastebeds 1-8 Integrated IRM – Advanced Construction Work Plan*. Prepared for Honeywell, Morristown, New Jersey, July 19, 2012.

² O'Brien & Gere. 2012. *Wastebeds 1-8 Integrated IRM – Construction Work Plan*. Prepared for Honeywell, Morristown, New Jersey, October 2012.

³ *Generic Community Air Monitoring Plan*, New York State Department of Health, Revision 1, June 2000.

the Wastebeds, and then follows along the northeast side of the parking area over to the southeast portion of the site. For the Middle Ditch A Restoration the perimeter boundary will follow in a loop around that work zone.

Air monitors will be located at the beginning of each work day based on the predicted predominant wind direction for the day. Air monitoring locations may be moved through the day if the predominant wind direction shifts into a new quadrant or if the work area changes. Site wind conditions will be monitored each day by either a portable on-site weather station or the Honeywell 10-meter weather station located along the east edge of the Semet Ponds.

VOC MONITORING

VOC monitoring will consist of continuous real-time air monitoring of total VOCs (TVOCs) upwind and downwind of the work site during daily activities. There will be one upwind and at least one downwind monitoring location. In cases where two or more work areas are spatially separated such that one monitor cannot be downwind of both, then one or more additional downwind monitors will be operated, and one upwind TVOC monitor will be used to evaluate ambient background TVOCs for all downwind monitors.

Measurements at each location will be made using real-time TVOC analyzers (RAE Systems MiniRae 3000, or equivalent). The MiniRae 3000 is a UV-light photo-ionizing detector (PID) that continuously measures TVOCs from 0.1 to 15,000 parts per million (ppm), and records the results in time-averaged concentrations.

TVOC work perimeter limits will be based on guidance contained in the NYSDOH gCAMP. Additional lower level criteria have also been incorporated to provide corrective responses prior to reaching the Project CAMP TVOC guidance limits. TVOC results will be expressed as 15-minute time-averaged concentrations. Work perimeter criteria and corrective responses will be as follows:

- **Investigation Level** - If the downwind TVOC level is 2 ppm above the upwind (background) level for a 15-minute period, then the emission sources will be investigated and evaluated.
- **Control Level** - If the downwind TVOC level is 3 ppm above the background level for a 15-minute period, controls or countermeasures will be employed on the operation activity(ies) causing the concentration increase. Controls/countermeasures may include use of spray foams to cover the emission source, or modifications to work activities. Work may continue with controls and countermeasures provided that downwind VOC levels do not exceed 3 ppm above the background level.
- **Work Perimeter Limit** - If the downwind TVOC level exceeds 5 ppm above the background level for the 15-minute period, work activities will be temporarily halted or restricted and monitoring continued. If the TVOC level readily decreases (per instantaneous readings) below 5 ppm (above background), work activities can resume with continued monitoring. If the downwind TVOC level persists in excess of 5 ppm (above background), work activities will continue to be halted, the source of vapors identified, controls/countermeasures taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the TVOC at the downwind perimeter site is below 5 ppm (above background) for the 15-minute average.

Background will be identified by an upwind perimeter sample for each 15-minute period. Each PID will automatically alert the air monitoring technician (either visual or audible alarm, pager, or text message) to indicate high readings that may lead to potential exceedances of action criteria. The air monitoring technician will then alert the site construction manager.

HYDROGEN SULFIDE MONITORING

Hydrogen sulfide monitoring will consist of real-time measurements made using a Jerome 631X real-time H₂S analyzer. Since the Jerome 631X is not designed to operate in a continuous mode, measurements will be made in a survey mode.

The work perimeter limit for H₂S will be 10 parts per billion (ppb) based on the 1-hour average according to

NYSDEC short-term guideline concentration⁴. If a single measurement at the perimeter is at 10 ppb or above, additional measurements will be made to evaluate a 1-hour average, during which the operational activity causing the elevated concentration will be controlled, modified or curtailed until additional perimeter measurements indicate H₂S concentrations are within the work perimeter limit.

Since H₂S is recognizable down to 5 ppb as a rotten-egg type odor⁵, spot checks of H₂S will only be conducted when rotten-egg odors are observed at the downwind site perimeter.

ODOR MONITORING

Perimeter odor monitoring will consist of qualitative on-site odor observations downwind of daily work activities. Observations will be made at or within the site perimeter. There are no applicable Federal, State or local regulations that provide guidance on odor levels. However, if odor levels at the site are observed to increase noticeably due to site activities, then odor levels will be quantified using a real-time Nasal Ranger® portable field olfactometer in terms of “odor units” (OU), and then also checked at a location upwind of site activities. If odors due to project activities are measured at >7 OU over a 15 minute period at the nearest downwind residence, or if community complaints are received that can be attributed to the site activities, then controls and/or countermeasures will be implemented to control odors.

DUST MONITORING

Dust monitoring will consist of continuous real-time air monitoring of particulate matter less than 10 microns (PM₁₀) upwind and downwind of the work site during daily activities. There will be one upwind and at least one downwind monitoring location. In cases where there are two or more work areas that are spatially separated such that one monitor cannot be placed downwind of both, then one or more additional downwind monitors will be operated, and one upwind dust monitor will be used to evaluate ambient background dust for all downwind monitors.

Dust measurements at each location will be made using real-time aerosol monitors (ThermoFisher ADR-1500 or ThermoFisher DataRAM 4000). The ADR-1500 and DataRAM 4000 are photometric light-scattering instruments that continuously measure airborne particulates from 1 microgram per cubic meter (µg/m³) to over 100 milligrams per cubic meter (mg/m³) and record the results in time-averaged concentrations.

Dust monitoring work perimeter limits will be based on guidance contained in the NYSDOH gCAMP. Dust levels will be expressed as 15-minute time-averaged concentrations. Work perimeter limits and corrective responses will be as follows:

- **Control Level** - If the downwind PM₁₀ level is 100 µg/m³ above the upwind level for a 15-minute period or if airborne dust is observed leaving the site perimeter, then additional dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind PM₁₀ levels do not exceed 150 µg/m³ above the upwind level and provided that no visible dust is migrating from the work area.
- **Work Perimeter Limit** - If, after implementation of dust suppression techniques, downwind PM₁₀ levels are greater than 150 µg/m³ above the upwind level, work will 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 PM₁₀ concentration to within 150 µg/m³ of the upwind level and in preventing visible off-site dust migration.

Each dust monitor will automatically alert an air monitoring technician (either visual or audible alarm, pager, or text message) to indicate high readings that may lead to potential exceedances of work perimeter limits. The air monitoring technician will then alert the site construction manager.

⁴ NYSDEC Policy DAR-1: *Guidelines for the Control of Toxic Ambient Air Contaminants*. (October 18, 2010 Memorandum).

⁵ Iowa State University – University Extension, *The Science of Smell Part 1: Odor perception and physiological response*, May 2004.

3 QUALITY CONTROL AND QUALITY ASSURANCE

Zero and span calibration checks, and routine maintenance of real-time analyzers will be conducted at the beginning of each day following applicable manufacturer's calibration guidelines. Field checks of the olfactometer will consist of daily checks of gaskets, valves, and odor filter cartridge performance. Odor filter cartridges will be replaced as-required based on use. Records of daily field activities and instrument field checks will be documented in the project site log. Daily calibrations will be documented on pre-printed field forms.

4 DATA MANAGEMENT AND REPORTING

Data will be manually or automatically saved to a PC computer each day for review and validation to evaluate the collected data for periods of valid and invalid data and review of daily report summaries. Background levels, exceedances of action levels or compliance criteria, and a summary of response actions taken will be recorded in daily summary field forms. NYSDEC and NYSDOH will be notified of exceedances of the action levels pursuant to the requirements in NYSDEC's DER-10 guidance (Section 5.4(a)3), and summarized in weekly CAMP reports. At the conclusion of the air monitoring program, final results will be presented, as part of the project construction completion report that will include:

- air monitoring methodologies
- tabulated summaries of results
- assessment of air quality levels versus action criteria, and assessment of odor impacts on downwind residential receptors.

Figure A1. Perimeter Air Quality Monitoring Boundary
Wastebeds 1-8 Integrated IRM

