FINAL REPORT

Work Activities Pursuant to Administrative Agreement and Order on Consent for Removal Action (AOC)

Docket No. V-W-'08-C-897
Countywide Recycling and Disposal Facility
East Sparta, Stark County, Ohio

Submitted to:
United States Environmental Protection Agency
Region 5, Response Section 1
25089 Center Ridge Road
Westlake, OH 44145

Submitted by:
Countywide Recycling and Disposal Facility
3619 Gracemont St. SW
East Sparta, Ohio 44626

Prepared by:
AECOM
36133 Schoolcraft Road
Livonia, Michigan 48150

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- 2009 Isolation Break Construction Certification Report, Brown and Caldwell, October 2009 (only covered FML capping portion of Isolation Break)
- 2009 Bowl Area, Road Area, and Plateau Area FML Cap Construction Certification Report, Brown and Caldwell, October 2009
- Operation, Maintenance, and Monitoring Plan, AECOM, August 2009

EXECUTIVE SUMMARY

Countywide Recycling and Disposal Facility (Countywide) is a municipal solid waste (MSW) landfill, owned and operated by Republic Services of Ohio II, LLC (Republic). The facility is regulated by the Ohio Environmental Protection Agency (Ohio EPA) and is located in East Sparta, Pike Township, Stark County, Ohio.

In early 2006, Countywide observed sudden and unusual temperature increases, forceful leachate outbreaks, accelerated settlement, and odors. Hundreds of odor complaints were reported by the surrounding community. Countywide also discovered changes in landfill gas composition, including a decrease in methane and an increase in hydrogen concentrations and carbon monoxide. It was determined that a reaction, defined as a "fire" by the Ohio EPA, was occurring in a portion of the landfill.

Countywide was subjected to a series of orders by the Ohio EPA and undertook many voluntary measures to abate the odors; including placing 32 acres of temporary exposed geomembrane cap, but some odor persisted. On April 11, 2008, Countywide and the U.S. EPA entered into an Administrative Settlement Agreement and Order on Consent for Removal Action (AOC), Docket No. V-W-'08-C-897.

The AOC and subsequent directives required work to contain the reaction and eliminate fugitive emissions and odors. The activities included:

- Capping and stabilization;
- Ambient air monitoring; and
- Construction of an excavated Isolation Break.

This Final Report documents the work performed pursuant to the requirements of the AOC, provides the cost of the work, and describes the effectiveness of the actions.

Countywide began field work on June 6, 2008 and completed it August 19, 2009. The work resulted in 70 acres of temporary flexible membrane liner (FML) cap, and relocation of 373,600 cubic yards of waste to create an Isolation Break. The cost of the work was about $17,200,000. These actions split the facility into a remediation unit (the original 88-acre portion) and an operational unit (the 170 acre expansion area) for future Ohio EPA permitting and Stark County Board of Health licensing purposes.

The completed work met the AOC objectives with major results indicated below:

1. As a result of the Isolation Break, the reaction is now completely isolated and contained to the facility's 88-acre remediation unit. This will limit the reaction's severity and duration, and minimize potential environmental impacts;

2. While the reaction is still occurring, the cap will reduce oxygen and water infiltration causing the reaction to slow, and possibly stop sooner. In the two months since the capping activity was completed, no significant odors have been detected off-site; it is clear that the cap has effectively captured fugitive emissions and eliminated odors; and

3. Ambient air quality monitoring has demonstrated that off-site air quality impacts were virtually undetectable before, during, and after the work activities. None of the monitoring indicated levels of concern for project workers or the community.

After completion of the work, Countywide submitted a 3-volume Operation, Maintenance, and Monitoring (OM&M) Plan for the 88-acre remediation unit. This OM&M Plan is intended to assure that the remedial actions remain effective and are maintained properly. The Ohio EPA will manage compliance with the OM&M Plan, and the U.S. EPA will receive Progress Reports and attend meetings stipulated in the Plan.

1.0 INTRODUCTION

Countywide Recycling and Disposal Facility (Countywide) is a municipal solid waste (MSW) landfill, owned and operated by Republic Services of Ohio II, LLC (Republic). The facility is regulated by the Ohio Environmental Protection Agency (Ohio EPA) and is located in East Sparta, Pike Township, Stark County, Ohio. See **Figure 1** for the site location. The site vicinity is rural and sparsely populated, with a history of heavy coal strip-mining. The nearest town is the village of Bolivar which is located about 1.5 miles southwest and has a population of about 1,000.

Countywide has been in operation since 1991, receiving up to 6,000 tons per day from the northeast (Cleveland/Akron/Canton metro) Ohio area. Countywide was the first fully composite-lined facility in Ohio. In 2003, the Ohio EPA permitted a 170 acre expansion to an original 88 acre permit, increasing the allowable waste disposal area to 258 acres. See **Figure 2** for the 2008 layout of the facility.

In early 2006, Countywide observed a sudden and unusual temperature increase in many gas extraction wells, forceful leachate outbreaks, accelerated settlement, and odors. Hundreds of odor complaints were reported by the surrounding community. Countywide also discovered changes in landfill gas composition, including a decrease in methane and an increase in hydrogen concentrations and carbon monoxide.

Starting in late 2006, Countywide was subjected to a series of orders by the Ohio EPA and undertook many voluntary measures to abate the odors; including placing 32 acres of temporary exposed geomembrane cap, but some odor persisted. In its March 28, 2007 Director's Final Findings and Orders (DFFOs), the Ohio EPA formally defined the situation as a "fire." Countywide has since referred to the situation as a "reaction" due to the complex series of chemical and thermal activities, and owing to the lack of classical landfill fire symptoms (smoke and flame). Nevertheless, settlement, temperature, and gas quality monitoring suggested that the reaction could spread from its current location in the original 88-acre area (Cells 1-6) into the 170-acre expansion area (Cells 7-16).

In late 2007, the Ohio EPA began consultations with the United States Environmental Protection Agency (U.S. EPA), and in a letter dated February 5, 2008, the Director of the Ohio EPA formally requested the U.S. EPA's assistance with the abatement activities. On April 11, 2008, Countywide and the U.S. EPA entered into an Administrative Settlement Agreement and Order on Consent for Removal Action (AOC), Docket No. V-W-'08-C-897. **Appendix A** contains the AOC and **Appendix B** presents a detailed chronology of Ohio EPA and U.S. EPA orders and directives.

The work required by the AOC was aimed at three major objectives:

1. Isolate and contain the reaction,

2. Capture fugitive emissions and eliminate odors, and

3. Assess ambient air impacts.

Countywide began AOC response field work activities on June 6, 2008. The facility layout prior to the AOC-required actions is shown on **Figure 2**, and schematically represented on **Figure 3**. Work activities were not aimed at *directly* halting the reaction (which was earlier determined by Countywide to be impractical, as described in Section 2.2 below).

On August 19, 2009, the U.S. EPA agreed the work under the AOC was complete. This Final Report documents work performed pursuant to the requirements of the AOC and presents the following information:

- Site conditions, background, and history (Section 2.0)
- Response activities description (Sections 3.0 through 8.0)
- Response activities cost (Section 9.0)
- Response activities effectiveness (Section 10.0), and
- Descriptions for the long-term operation and maintenance of the remediation unit, and monitoring of the conditions (Section 11.0)

These AOC-required actions resulted in splitting the facility into a remediation unit (the original 88-acre portion) and an operational unit (the 170 acre expansion area) for future Ohio EPA permitting and Stark County Board of Health licensing purposes as shown on **Figure 4.**

2.0 SITE CONDITIONS AND BACKGROUND

2.1 Cause of Conditions

Between 1993 and 2006, Countywide received 17,000,000 cubic yards of waste; approximately 600,000 tons of which consisted of non-hazardous industrial aluminum process waste. The majority of aluminum-containing waste material was described as "dross" and "salt cake" which are by-products from melting recycled aluminum with a salt flux. Smaller quantities of aluminum-containing baghouse dust materials were also landfilled. All of the dross and salt cake materials were disposed in the facility's original 88-acre portion.

It is believed that the unusual conditions in the remediation unit were initiated by a reaction (hydrolysis) involving the aluminum-containing waste and moisture in the landfill, which results in the generation of heat and hydrogen as follows:

$$2\ Al + 6\ H_2O \Rightarrow 2\ Al(OH)_3 + 3\ H_2 + Heat$$

Figure 5 illustrates a hypothetical model of the reaction's major manifestations and the interaction of the reactions with the solid waste, including:

- Thermal decomposition, pyrolysis, and oxidation of adjacent ordinary MSW;
- Elevated temperatures (up to 280° F) which require special construction materials and which produce conditions unfavorable to methanogenesis resulting in a significant decrease in methane production;
- Production of hydrogen, acetylene, volatile organic, and carbon monoxide gases;
- Generation of unique odor;
- Drying of waste which results in a steam/water vapor front moving out, up, and away from the reaction which then condenses in the leachate collection system, cooling the surrounding waste mass, and gas extraction wells, resulting in extremely high leachate generation;
- Higher-than-normal pressure adjacent to the reacting waste mass; and
- Large settlement under and/or adjacent to reacting waste mass.

Each manifestation results in significant environmental management challenges. It is not known how long the reactions will continue or how long these conditions will exist, but it is believed the elevated temperatures and atypical gas quality will be present for many years. The location of large settlements is believed to be a primary indicator of areas that have been directly impacted by the reaction which is directly apparent in the "Bowl Area" and appears to be migrating to the northwest, west, and southwest as indicated on **Figure 6**.

2.2 Previous Consideration of Remedial Options

In May 2007, Countywide submitted a Fire Suppression Plan (FSP) to the Ohio EPA. The FSP evaluated various reactants and surfactants that could neutralize or cool the reaction, perhaps leading to a means to extinguish the reaction. None of the tested amendments were shown to significantly passivate the aluminum reaction. Furthermore, due to the significant compaction efforts employed by Countywide during waste placement and the additional pore space reduction caused by the overburden pressure at the depth at which the reaction was believed to be occurring, it was determined that effective dispersion of any product would not be feasible.

Therefore, the FSP concluded that chemically extinguishing the reaction was not possible, and that the most effective remediation would be to minimize oxygen intrusion and water infiltration through capping.

2.3 Pre-AOC Remedial Activities

Prior to the AOC-required work activities, some pre-existing remedial actions and features were in place. These were either required per Ohio EPA orders or were voluntary to minimize odors and fugitive air emissions. Some of the main pre-existing remedial features are indicated on **Figure 2** and listed below.

- A 32-acre temporary, exposed flexible membrane liner (FML) cap was installed in 2006 and 2007. The capped area included portions of Cells 3, 4A, 4B, 5A and 5B. Repairs were performed on an as-needed basis to the FML cap and penetration boots to minimize sources of odor and precipitation penetration.
- Blower/flare installations had been increased to a total of 4 stations with three back-up stations. Temperature resistant thermoplastics and metals were used at appropriate locations to reduce the impact of reaction heat.
- Additional gas extraction wells had been installed bringing the density of gas extraction wells to more than double that at a typical landfill.
- Pumps to de-water wells and increase operation efficiency had been installed in almost 100 gas extraction and liquid extraction wells.
- Full-time gas system maintenance crews continuously repaired and replaced sagging and failing (due to settlement and heat stress) headers and laterals. Failing gas wells were abandoned and replaced as necessary to maintain operating efficiency.
- Spare blowers were maintained for each blower/flare station.
- Five thermocouple monitoring probes had been installed north of the reaction area to monitor subsurface temperatures in the Cell 7 area. Temperatures were monitored on a weekly basis to determine if the reaction was migrating towards the Cell 7 area.
- Fixed odor neutralization systems were located on the east, south and west sides of the 88-acre area as well as in the bowl area (a total of nearly 6,000 ft.). These systems delivered a mist comprised of water and odor neutralizers to suppress the odors. In addition, Countywide maintained two portable odor neutralizer trailers which could be delivered to specific odor-causing locations or activities.
- A third-party team was in place to monitor and report odors, respond to complaints and document results using a Nasal Ranger Olfactometer®; and to complete a study of air quality to identify possible odor constituents and verify that no health risks are caused by the odors.
- Multiple temporary leachate storage tanks were used to temporarily store and manage leachate. Leachate from these tanks was transferred into tanker trucks and hauled off-site to treatment facilities.

These features remained in-place and functional during the AOC-required action.

3.0 MANAGEMENT OF RESPONSE ACTIVITIES

3.1 Project Team

Since the site had already been implementing Ohio EPA orders and undertaking significant self-initiated efforts to remediate the situation, a team of experts, consultants, contractors, and regulatory personnel were in place prior to the effective date of the AOC. Therefore, with some limited reorganization, assignments, and augmentation, Countywide assembled a team to implement the AOC-required work.

As required by the AOC, Countywide named a Project Coordinator, Mr. Michael Beaudoin of AECOM (previously referred to as Earth Tech) to perform this function during the work. **Table 1** provides the primary government agencies, companies, and individuals who were involved in completing the AOC activities. An organization chart is presented on **Figure 7**.

3.2 Document and Reporting Procedures

Countywide established a File Transfer Protocol (FTP) site through AECOM, and posted submittals and other documents to the site in addition to formal hard-copy submittals required by the AOC. **Table 2** presents a compilation of the major submittals, Work Plans, and approval dates. (Note: for each document, there may have been drafts, comments, responses to comments, and revisions — Table 2 only lists the document-of-record for each item.)

Monthly Progress reports were posted to the FTP site, and monthly joint Countywide/Ohio EPA/U.S. EPA "Team Countywide" meetings were held at the site to keep all parties informed.

3.3 Initial Submittals

Upon executing the AOC, various administrative requirements were completed as required. These included the following.

- Submitted initial list of contractors chosen to perform work under the AOC with individual contractor qualifications.
- Submitted information identifying the Project Coordinator as Michael R. Beaudoin, P.E. along with qualifications.
- Submitted project Health and Safety Plan (HASP).
- Prepared a Quality Assurance Project Plan (QAPP).
- Established $4,500,000 in financial security.
- Submitted proof of general liability and automobile as well as worker's compensation insurance for Countywide and project team contractors.

During the project, updated Certificates of Insurance, proof of worker's compensation insurance, and names, qualifications and insurance information for contractors added to the project team were submitted to U.S. EPA as required.

3.4 Grouping of Activities Required by the AOC

The seven removal activities, as identified in the AOC, are listed are listed below.

a) Installation and operation of an enhanced temperature monitoring system.

b) Development of a comprehensive landfill cover or long term capping plan for Cells 1-6.

c) On-site disposal of excavated waste;

d) Development of an air monitoring and sampling plan.

e) Stabilization of the reaction area.

f) Obtain monthly thermal imagery data.

These seven activities were combined into four activity groups for Work Plan development and approval, for monthly reporting, or for implementation purposes.

Main AOC Activity Groups

- Capping and Stabilization (see Section 4.0)
- Ambient Air Monitoring (see Section 5.0)
- Enhanced Gas Extraction and Monitoring System (see Section 6.0)
- Isolation Break (see Section 7.0)

At times, some of these activities were performed simultaneously. A schedule showing the overall sequence of AOC work is provided on **Figure 8**. The following sections of this report discuss each of these activities in detail.

4.0 CAPPING AND STABILIZATION

4.1 Summary Facts

Work Performed: (see **Figure 9** for post-work configuration)

- Placed approximately 38 acres new exposed temporary flexible membrane liner (FML) cap (bringing total temporary FML cap to 70 acres).
- Overcapped/replaced approximately 10 acres of pre-existing FML capping.
- Installed over 7,100 feet of subcap gas collection lines.
- Installed over 25,700 feet of subcap leachate collection lines.
- Regraded and improved surface water drainage on 20 acres of pre-existing intermediate cover.

Work Plans Governing Work: (on file at facility)

- Landfill Cover and Long Term Capping Plan, Cornerstone, June 24, 2008
- Capping Plan, Cells 1, 2 & 3, Cornerstone, May 29, 2009
- Health and Safety Plan, SAIC, April 28, 2008

Work Duration:

- June 6, 2008 to August 18, 2009 (See **Figure 8** for schedule breakdown)

Principal Contractors:

- AEG, Limited (FML cap installers)
- Beaver Excavation (grading, trench and pipe)

Record Documentation:

- Construction Quality Assurance Documentation for the 2008 Temporary Capping, Golder Associates, June 2009 (incorporated to this Final Report by reference)
- Construction Quality Assurance Documentation for the Area "D" Deep Trench Leachate Line, Golder Associates, October 13, 2009 (incorporated to this Final Report by reference)
- 2009 Isolation Break Construction Certification Report, Brown and Caldwell, October 2009 (only covered FML capping portion of Isolation Break work) (incorporated to this Final Report by reference)
- 2009 Bowl Area, Road Area, and Plateau Area FML Cap Construction Certification Report, Brown and Caldwell, October 2009 (incorporated to this Final Report by reference)

Cost: $8,438,250

4.2 Description of Activities

The AOC required Countywide to install composite cap and/or temporary exposed geomembrane cap on the 88-acre area. The objectives of capping and stabilizing activities, excerpted and paraphrased from the AOC and subsequent request from U.S. EPA, are:

- Safely and effectively managing gas, leachate, and condensate,
- Effectively control odors,
- Minimize oxygen and water intrusion,
- Safely manage potential positive pressure conditions, and
- Maintain and monitor slope stability.

Initially, it was believed the capping would be comprised partly of temporary flexible membrane liner (FML) cap and partly of final composite cap. However, during the course of the work, it was decided by the U.S. EPA and Ohio EPA, with concurrence from Countywide that--for a large portion of the 88-acre remediation unit--the current situation, including elevated temperatures and large reaction-induced settlement, created unsuitable conditions for installing permanent composite cap. Therefore, all cap placed in performance of the AOC work consisted of exposed temporary FML.

All cap material placed for the work consisted of 60-mil thick, textured, high density polyethylene (HDPE) FML. This material was selected because it has extremely good resistance to ultraviolet degradation (extending its life in the exposed condition) and low vapor diffusivity (thereby providing best capture of fugitive emissions and odors). The area covered by temporary FML cap is shown on **Figure 9**.

On the side slopes, the FML cap is augmented by a system of subcap drains and gas collectors as shown on **Figure 10**. These subcap features allow collection of leachate and gas which tend to be expressed at the outer surface of the landfill due to the conditions caused by the reaction (see Section 2.1 and **Figure 5**). The temporary FML cap is welded to the base liner to affect a seal at the outer edges of the landfill. Work Plans listed in Section 4.1 provide detailed justification and engineering behind the cap design.

The capping program was managed by breaking the work into discrete areas as shown on **Figure 11**. At completion, about 70 acres of the 88-acre remediation unit is under temporary FML cap. Significant regrading work was necessary in some areas, particularly in the “Bowl Area” which received relocated waste materials and soil to achieve positive drainage. Details of the installation, results of extensive quality assurance measures taken during construction, and detailed as-built documentation are included in the Record Documentation Reports listed in Section 4.1

The eastern 20 acres of the remediation unit did not receive temporary FML cap, as this area is less impacted by the reaction and was determined to not be a source of odors or fugitive emissions. In addition, there is no evidence that the reaction is moving to the east, as shown on **Figure 6**. Therefore, this area was regraded and stabilized to remain as a grass-covered, nominal 2-foot thick intermediate soil-covered area.

5.0 AMBIENT AIR MONITORING ACTIVITIES

5.1 Summary of Facts

Work Performed:

- Instrument monitoring and laboratory analyses for fugitive air emissions (VOCs) with manual and/or automated collection

Work Plans Governing Work: (on file at facility)

- Miscellaneous work plans and correspondence
- Comprehensive Ambient Air Monitoring Work Plan, CTEH, October 14, 2008
- Health and Safety Plan, SAIC, April 28, 2008

Work Duration:

- July 8, 2008 to August 10, 2009 (See **Figure 8** for schedule breakdown)

Principal Contractors:

- Lawhon and Associates
- Center for Toxicology and Environmental Health, L.L.C. (CTEH)

Record Documentation:

- Summary Report on Stage A Ambient Air Monitoring, Lawhon, October 22, 2008 (**Appendix C**)
- Stage B Ambient Air Monitoring Report, CTEH, March 6, 2009 (**Appendix D**)
- Stage C Ambient Air Monitoring Report, CTEH, October 15, 2009 (**Appendix E**)

Cost: $1,484,122

5.2 U.S. EPA Screening

Prior to Countywide performing AOC work activities, the U.S. EPA conducted two ambient air monitoring events. The first of these was the Trace Atmospheric Gas Analyzer (TAGA) bus, which was performed on May 28, 2008 and documented in a report "Final Analytical TAGA Report," July 2008 by Lockheed Martin. The second screening survey was performed between June 10 and June 12 using the ultraviolet differential optical absorption spectrometer (UV DOAS); the results were documented in a memo from Carey Secrest of the U.S. EPA dated July 2, 2008.

5.3 Description of (Countywide) Activities

Work for on-site ambient air monitoring was described in several interim documents which received interim and conditional approvals. These were then consolidated into a single work plan, "Comprehensive Ambient Air Monitoring Work Plan" (Work Plan) which was prepared by CTEH, commented upon by U.S. EPA, and then finalized on October 14, 2008. While the ambient air monitoring program monitored for many compounds, special emphasis was placed on benzene due to its high toxicity and high levels in the reaction-impacted landfill gas.

Countywide ambient air monitoring formally began on July 8, 2008 and concluded on August 10, 2009. Monitoring was performed in three stages as described in the following sections.

5.3.1 Stage A Monitoring (July 8, 2008 to September 2, 2008)

Stage A on-site ambient air monitoring consisted of real-time upwind and downwind monitoring performed during working hours of invasive construction activities. Monitoring was conducted for VOCs approximately 8 to 10 hours per day using a Photoionization Detector (PID). Daily analytical air sampling was conducted daily using 6-L Summa® canisters equipped with an eight hour regulator. Samples were analyzed for VOCs in accordance with U.S. EPA method TO-15 plus Tentatively Identified Compounds (TICS) as indicated in the Work Plan.

Field data were stored electronically on-site, and were available to the U.S. EPA field representative. Field data and laboratory analyses (following review and acceptance) were included in the monthly summaries provided to U.S. EPA by the Project Coordinator, and were posted on the AECOM FTP site. A summary report for this monitoring was prepared by Lawhon and Associates, dated October 22, 2008, which concluded no VOCs, including benzene, were detected at levels posing an unacceptable threat to the public or to workers. The summary report is provided as **Appendix C**.

5.3.2 Stage B Monitoring (September 2, 2008 to November 6, 2008)

Stage B ambient air monitoring consisted of four "fixed" monitoring stations around the 88-acre perimeter and one mobile station located on the 88-acre area as shown on **Figure 12**. Each station was equipped with a PID and transmitter which sent 24-hour continuous data to a central computer located on-site. During work activity hours, the PIDs were manually/visually monitored at the central computer. If total VOCs greater than 250 ppb were sustained for five minutes, a technician would respond to the monitoring station to manually collect a 6-L Summa® canister using a 20-minute regulator. Canister samples were analyzed for VOCs in accordance with U.S. EPA Method TO-15 plus TICs.

In addition, weather data was collected during Stage B monitoring using a WeatherPak®-2000 meteorological system located on the top of Cell 4. Weather data included wind speed, wind direction, ambient temperature, solar radiation, humidity, horizontal stability, vertical stability, scalar wind direction and sigma wind speed. The collected meteorological data was reviewed to help locate potential off-site receptors and provide support to the air monitoring and sampling efforts.

Stage B monitoring data was uploaded on a daily basis to the AECOM FTP site. The daily real-time data plus the laboratory test data were also included in the monthly summaries provided to U.S. EPA. The Stage B monitoring system was operated and maintained until the Stage C permanent system was installed and operating consistently in accordance with the Work Plan requirements. A summary report, "Stage B Ambient Air Monitoring Report," dated March 6, 2009 is included in **Appendix D**. The summary report concluded no VOCs, including benzene, were detected at levels that pose a risk to human health.

5.3.3 Stage C Monitoring (October 2, 2008 to August 10, 2009)

The Stage C program consisted of four "fixed" monitoring stations around the 88-acre perimeter and one mobile monitoring station (at the same locations used for Stage B monitoring) as shown on **Figure 12**. Each Stage C station included a RAEGuard PID and a wind sensor (which was located 10 meters from the ground surface). Each station was also equipped with a Summa canister poised on standby to receive an air sample when signaled by the PID. Power was provided using a solar panel which charged a battery. The PID sent 24-hour continuous data to a central computer located on-site.

The PID was electronically linked to a solenoid which opened the canister at a pre-determined trigger level. The trigger event was defined by sustaining a VOC reading equal to or greater than a selected trigger value for two minutes (two consecutive readings). Trigger levels were initially established by the Agency for Toxic Substances and Disease Registry (ATSDR), which performed statistical analysis on each station using the initial several weeks of data. Initial trigger levels were set as follows: Station 1 (0.50 ppm), Station 2 (0.18 ppm), Station 3 (0.13 ppm), Station 4 (0.10 ppm) and Station 5 (0.17 ppm). These established trigger levels continued through January 26, 2009.

After four months of automatic sampling at the initial trigger levels, with no corresponding levels of concern resulting from VOC analyses, the U.S. EPA approved raising the trigger values to reduce unnecessary analyses. On January 27, 2009, trigger levels at all stations changed to 0.50 ppm and continued through the remainder of the monitoring period.

SUMMA® canister samples were analyzed for VOCs in accordance with U.S. EPA Method TO-15 plus TICs. Select personnel, the U.S EPA and the Ohio EPA were provided access to a portal to remotely access real time and analytical sampling data. Real-time and laboratory test data were included in the monthly summaries provided to U.S. EPA. A summary report, "Stage C Ambient Air Monitoring Report," dated October 15, 2009 is included in **Appendix E**. The summary report concluded no VOCs, including benzene, were detected at levels that pose a risk to human health.

5.4 Ambient Air Monitoring Lab Data Validation

Data validation was performed on air monitoring analytical test results. The data validation program was developed in accordance with U.S. EPA Contract Laboratory Programs "National Functional Guidelines for Organic Data Review" (October 1999), and "The National Functional Guidelines for Inorganic Data Review" (February 1994) as well as the "Quality Assurance/Quality Control Guidance for removal Activities Sampling QA/QC Plan and Data Validation Procedures – Interim Final dated April 1990 (EPA/540/G-90-004)."

The data reviews and validation were completed on three levels. Level 1 consisted of a technical data review performed by the laboratory analyst. Level 2 consisted of a technical review performed by a supervisor, data review specialist, or a qualified peer whose function was to provide an independent review of the data package. Level 3 consisted of an administrative data review performed by the laboratory QA officer or program manager.

Final data validation reviews were completed by AECOM. Initially, all data was reviewed, qualified and validated in accordance with the guidelines provided in Section 5 of the Comprehensive Ambient Air Monitoring Work Plan. Once it was determined the project requirements were consistently being met, data validation reviews were reduced to a minimum of 10 percent of the analytical test results. Data validation concluded the collected data were useable.

6.0 ENHANCED GAS EXTRACTION AND MONITORING SYSTEM (subsequently abandoned)

6.1 Summary Facts

Work Performed:

- Installed 18 in situ temperature monitoring probes, referred to as "fire break monitoring points" (FBMPs).
- Installed two new gas wells (completing the well arrays required for the subsequently-abandoned enhanced gas extraction concept).
- Performed monthly aerial infrared imaging of the 88-acre area.

Work Plans Governing Work: (on file at facility)

- Gas Extraction and Monitoring Work Plan, SCS Engineers, May 27, 2008
- Health and Safety Plan, SAIC, April 28, 2008

Work Duration:

- July 8, 2008 to August 6, 2008

Principal Contractors:

- AEG, Limited (gas well installation)
- Frontz Drilling (FBMP installation)

As-Built Documentation:

- As-Built Documentation for Gas Wells PW-332 and PW-358, Letter Report, Golder Associates, January 28, 2009 (**Appendix F**)
- Fire Break Monitoring Point Drilling Program Report, SCS Engineers, August 30, 2008 (**Appendix G**)

Cost: $240,767

6.2 Description of Activities

When the AOC was prepared, it was believed an "enhanced gas extraction and monitoring system" could prevent the reaction from spreading from Cell 5 (in the 88-acre portion) into Cell 7 (in the 170-acre expansion area). The "Gas Extraction and Monitoring Work Plan (Revised)" was submitted on May 27, 2008, and approved by U.S. EPA on June 5, 2008. The principles outlined in the plan envisioned creating three lines of gas extraction wells, each line serving a distinct role in helping prevent the spread of reaction gases from Cell 5 into Cell 7.

All wells identified in the Plan had previously been installed, with the exception of PW-358 and PW-359. These two wells were installed on July 8, 2008, and documentation for their installation is included in **Appendix F**. Eighteen in situ temperature monitoring probes, designated FBMPs, were installed between July 17, 2008 and August 7, 2008 by Frontz Drilling, Inc. Installation documentation is presented in **Appendix G** with the locations of the probes shown on Figure 1 of the appendix. Monthly aerial infrared photographs were obtained for the remediation unit.

However, prior to activating the enhanced gas extraction system, in situ FBMP temperature monitoring (FBMP 9 temperatures had increased from 235º F to 245º F in just two weeks in August 2008) suggested that the reaction may have be spreading toward Cell 7 faster than expected (examination of the aerial infrared images was inconclusive).

At the U.S. EPA's request, an investigation was quickly performed to assess the feasibility to create a physical excavated Isolation Break, in lieu of the enhanced gas extraction system. The investigation showed that an excavated Isolation Break could be safely performed, and the U.S. EPA subsequently ordered its construction. Therefore, the concept of an enhanced gas extraction system was abandoned and the enhanced gas extraction system was never put into operation.

7.0 ISOLATION BREAK

7.1 Summary Facts

Work Performed:

- Excavated approximately 373,600 in-place cubic yards of waste material.
- Placed excavated waste into Cell 7 and 8A, covered and restored Cell 7 and 8A.
- Performed activity-specific worker air monitoring and ambient air monitoring.
- Constructed new gas and leachate management systems in the valley created by the excavation.

Work Plans Governing Work: (on file at facility)

- Isolation Break Investigation, AECOM, October 16, 2008
- Isolation Break Excavation Work Plan, AECOM, November 14, 2008
- Isolation Break Excavation Health and Safety Plan, AECOM and Arcadis, November 20, 2008

Work Duration: (See **Figure 8** for schedule breakdown)

- December 8, 2008 to June 26, 2009

Principal Contractors:

- Beaver Excavation (mass excavation, trench and pipe, road at base)
- AEG, Limited (gas well and pipe, FML cap installation)
- Arcadis (full-time health and safety and worker air monitoring)
- Lawhon and Associates (work activity-specific perimeter air monitoring)

As-Built Documentation:

- Construction Quality Assurance Documentation for the Cell 5/7 Isolation Break Initial Gas Well, Excavation, and Undercap Piping (Partial), Golder Associates, October 13, 2009 (incorporated to this Final Report by reference)
- 2009 Isolation Break Construction Certification Report, Brown and Caldwell, October 2009 (incorporated to this Final Report by reference)
- Summary of Isolation Break Air Monitoring Activities, Arcadis, July 15, 2009 (**Appendix H**)
- Tables of Ambient Air Laboratory Data Obtained During Isolation Break Excavation (**Appendix I**)

Cost: **$5,225,386**

7.2 Description of Activities

7.2.1 Preparation

Upon discovering the rising in situ FBMP temperatures in August 2008, the U.S. EPA requested Countywide investigate the potential for creating an excavated Isolation Break which would result in complete removal of waste between Cell 5 and Cell 7. The investigation included a series of borings and test pits and assessments of odor-generating and fugitive emission-generating potential. Countywide submitted the "Isolation Break Investigation" report on October 16, 2008, which concluded:

- the reaction was not evident in the proposed excavation area;
- the excavation could be accomplished without producing unsafe fugitive emissions; and
- an Isolation Break would result in full containment and isolation of the reaction.

On October 24, 2008, the U.S. EPA issued a letter requesting an Isolation Break Work Plan be submitted. The "Revised Draft Isolation Break Work Plan" dated November 14, 2008 was approved by the U.S. EPA on November 19, 2008. In addition, a work activity-specific health and safety plan was submitted on November 20, 2008 to address the unique hazards associated with the proposed actions (encountering or causing fire, unsafe air quality, etc.).

7.2.2 Mass Excavation

Excavation was performed from the top down, proceeding in approximately 8-foot thick "decks" as illustrated on **Figure 13**. Exposed waste was covered daily. Approximately 373,600 cubic yards (in-place) of waste was removed. Approximately 80 cubic yards of suspected aluminum-containing baghouse dust material was encountered, and was segregated into a dedicated roll-off box (which was subsequently deposited in the "bowl" of the 88-acre area). All other excavated waste was disposed on Cell 7.

During excavation, if evidence had suggested that the reaction or fire had moved through the area into the 170-acre expansion area, the Isolation Break work could have been halted while its effectiveness was re-evaluated. However, careful, full-time third party observation and documentation revealed no such evidence, so the Isolation Break was fully excavated without interruption.

A table summarizing the daily excavation progress, conditions encountered, and monitoring data is provided in **Table 3**. Full documentation of the preparation and excavation activities is provided in the Construction Quality Assurance Documentation for the Cell 5/7 Isolation Break Initial Gas Well, Excavation, and Undercap Piping (Partial), by Golder Associates, October 13, 2009.

7.2.3 Activity-Specific Air Monitoring

It was anticipated that the mass excavation of waste for the Isolation Break could create severe fugitive emissions and odors. Therefore, the Isolation Break Excavation Work Plan established a work activity-specific, ambient air monitoring plan comprised of five tiers as described below.

7.2.3.1 Tier 1 - Worker Monitoring

Using a portable Photo Ionization Detector (PID), 4-gas meter, ammonia meter, and benzene Drager tubes, worker breathing zones were monitored within the excavation work area on a full-time basis. Thresholds for worker exposure were established in the Isolation Break Excavation Work Plan. None of the worker exposure thresholds were exceeded as documented in **Appendix H**.

7.2.3.2 Tier 2 - Construction Zone Monitoring

Ambient Air monitoring at the parts per billion (ppb) level was performed approximately 300 feet outside the construction zone using a tripod-mounted ppbRAE PID downwind of the work-shift excavation area. Each work day, an 8-hour integrated SUMMA canister was collected and analyzed for VOCs using U.S. EPA Method TO-15. Summary of the PID readings are provided on **Table 3**. Thresholds for detection levels had been established in the Isolation Break Excavation Work Plan; none of the thresholds were exceeded as documented in **Appendix I**.

7.2.3.3 Tier 3 - "Stage C" On-Site Continuous Monitoring

This monitoring continued uninterrupted throughout the Isolation Break work activity as described in Section 5.3.3 in this Final Report, and results are provided in **Appendix E**. During Stage C monitoring, analytical results showed air quality consistent with background air quality.

7.2.3.4 Tier 4 - Community Monitoring

Countywide operates a community ambient air monitoring program for the March 28, 2007 Ohio EPA DFFOs. The program includes three off-site stations and one on-site station. Every six days, a 24-hour integrated SUMMA canister is collected at each of these locations and analyzed for (among other parameters) VOCs using U.S. EPA Method TO-15. Reports are generated monthly; compiling the monitoring results from the prior four to six weeks.

This program and sampling frequency were maintained throughout the excavation, supplemented with occasional additional sampling events in between each regularly-scheduled community monitoring event. **Appendix I** summarizes the analyses performed on community monitoring samples during the Isolation Break excavation. The monthly reports, submitted to the Ohio EPA, covering the time period of the excavation continued to conclude that constituents in the air were due to regional and local sources, could not be attributed to Countywide, and were below levels considered to be harmful to health.

7.2.3.5 Tier 5 – Odor Monitoring

Throughout excavation of the Isolation Break, Countywide continued its long-standing practice of surveying surrounding public roads for odor, and documenting detected odors with an objective monitoring device known as a Nasal Ranger Olfactometer®. The circuit frequency was increased during excavation.

Certain triggers (odor frequency over a certain Nasal Ranger reading) were established prior to the project. If the trigger was exceeded, it might suggest the community impact was excessive and cause a re-evaluation of the excavation methodology. Odor detection frequency did increase significantly during excavation, as seen on **Figure 14**. However, the trigger level was never exceeded during excavation. **Table 3** presents daily results of odor monitoring during excavation.

7.2.4 Restoration and Completion of Ancillaries

Following mass excavation, much detailing work was required to complete the Isolation Break. The final "deck" had to be removed slowly and carefully to prevent excessive damage to the berm separating Cell 5 from Cell 7. Any damage was repaired to restore the berm and liner to its original condition. Special cap/liner tie-in details **(see Figure 13)** were used to eliminate the possibility that gas or leachate could pass from Cell 5 into Cell 7.

The Cell 5 face created by the excavation was covered with temporary FML cover equipped with subcap gas and leachate collection features as described in Section 4.2. A road was constructed over the top of the Cell 5/7 berm (at the base of the valley formed by the Isolation Break) to provide maintenance access, assure a positive seal between Cell 5 and Cell 7, and to facilitate surface water control.

Detailed documentation of this work is provided in the 2009 Isolation Break Construction Certification Report by Brown and Caldwell, dated October 2009 (incorporated in this Final Report by reference).

8.0 WASTE MANAGEMENT

All solid waste generated during performance of the work was properly disposed at the facility. The only waste which was shipped off site was leachate generated during construction. A waste disposal summary is presented on **Table 4**.

8.1 Ordinary MSW Management

During gas well drilling, trenching for subcap features, and construction of the Isolation Break, significant quantities of ordinary MSW were encountered. All such material was loaded into off-road dump trucks and hauled to permitted MSW disposal areas on site.

8.1.1 Isolation Break Mass Excavation Material

Virtually all of the 373,600 cubic yards of material that was removed to form the Isolation Break was disposed in the Cell7/8A portion of the 170-acre operational area as shown on **Figure 4**. Some suspected aluminum-containing baghouse waste was encountered (80 cubic yards) and handled separately as described in Section 8.2.

8.1.2 MSW Generated in 2008

In 2008, all of the excavated MSW was disposed at the active facility working face in Cell 8B/8B in the 170-acre operational area.

8.1.3 MSW Generated in 2009

In 2009, excavated MSW was disposed in the Bowl Area or the Plateau Area portions of the 88-acre remediation unit.

8.2 Aluminum-Containing Waste Management

Suspected aluminum-containing waste (dross or baghouse dust) was segregated from adjacent MSW and temporarily stored in roll-off boxes. Contents of the roll-off boxes were disposed in the bowl area portion of the 88-acre remediation unit. The material was placed in a thin lift (+/- 1-ft thick), compacted and covered with clean cover material. The area within the bowl where the aluminum-containing waste was placed is depicted on **Figure 9**.

8.3 Leachate Management

Leachate which was pumped from trenches or excavations during performance of the AOC work was collected and temporarily stored in a designated temporary storage tank. The stored leachate was shipped via tanker truck to the City of Akron Water Pollution Control Station for treatment and discharge. Copies of the trucking manifests are included in **Appendix J** along with the U.S. EPA CERCLA Certification letter, and the City of Akron acceptance letter.

9.0 COST OF AOC WORK

During the AOC work activities, other significant work was being performed to comply with Ohio EPA DFFOs and to make major self-initiated improvements and upgrades to the site gas and leachate management systems. However, Countywide was able to track the *specific* expenditures attributable to performing the AOC work, excluding costs for the Ohio EPA and self-initiated work efforts.

Total AOC Work Activity Cost..... $17,193,716

A breakdown summary for the costs is provided below. Overlapping activities, and shared personnel and contractors within the different activities prevent an exact cost breakdown, but the total cost is accurate.

9.1 Capping and Stabilization

These costs include: Work Plan development, placing new temporary FML, installing subcap gas and leachate collection drains, installing manholes and pump stations specific to collecting subcap drainage, placing fill in bowl area, overcapping/replacing damaged FML, "deep trench" installation, quality assurance and quality control, surveying, and record documentation.

Capping and Stabilization Cost $8,438,250

9.2 Ambient Air Monitoring

These costs include: Work Plan development, temporary/portable monitoring, installing and fabricating fixed continuous monitors, lab analyses, data analyses, data interpretation and reporting, and record documentation.

Ambient Air Monitoring Cost..... $1,484,122

9.3 Enhanced Gas Extraction and Monitoring System (subsequently abandoned)

These costs include: Work Plan development, installing 18 FBMPs, monthly aerial infrared imaging, installing two new gas wells, quality assurance and quality control, surveying, and record documentation.

Enhanced Gas Extraction and Monitoring Cost $240,767

9.4 Isolation Break (replacement activity for Enhanced Gas Extraction and Monitoring System)

These costs include: Work Plan development, placing new temporary FML, preparation activities, full-time health and safety monitoring, mass waste excavation, on-site relocation and covering of excavated waste, activity-specific air monitoring, restoring, capping and reconfiguring the affected gas and leachate management systems, installing manholes and pump stations specific to collecting subcap drainage, quality assurance and quality control, surveying, and record documentation.

Isolation Break Cost $5,225,386

9.5 Management and Legal

These costs include: developing overall AOC activity health and safety plan, third-party Project Coordinator and support, monthly reports, managing FTP, developing Quality Assurance Project Plan, development of the OM&M Plan, quality assurance for project and laboratory analyses, external legal services, and internal (Countywide/Republic) management costs.

Management and Legal Cost $1,186,985

9.6 U.S. EPA Testing and Oversight

These costs include: TAGA bus and UV-DOAS ambient air testing, oversight contractor (Weston), U.S. EPA personnel involved in the project. The costs referenced below are current through April 2009. As of this writing, an additional invoice was expected to cover costs through completion (August 2009).

U.S. EPA Testing and Oversight Cost..... $618,206

10.0 EFFECTIVENESS OF AOC WORK

There were three major objectives for the AOC work activities (as interpreted by Countywide based on the AOC contents and interaction with the U.S. EPA during development of the Work Plans). Each is discussed below.

10.1 Isolate and Contain the Reaction

The reaction is still occurring as of this writing. Additional capping performed for the AOC will reduce oxygen and water infiltration, causing the reaction to slow and possibly stop sooner than had the work not been performed. However, as a result of the Isolation Break, the reaction is now completely isolated and contained to the facility's 88-acre portion. This will limit the reaction's severity and duration, and minimize potential environmental impacts.

The U.S. EPA has agreed the Isolation Break has effected a full and complete separation of waste, leachate, and gas between the 88-acre unit and the 170-acre unit (see **Appendix K**).

10.2 Capture Fugitive Emissions and Eliminate Odors

In the two months since the capping activity was completed, no significant odors have been detected off-site as illustrated on **Figure 14**. In the future, short-duration odors may be caused when remedial action components fail and need to be maintained or replaced; but it is clear the remedial activities have effectively captured fugitive emissions and eliminated odors.

10.3 Assess Ambient Air Impacts

Ambient air quality monitoring has demonstrated that off-site air quality impacts were virtually undetectable before, during, and after the work activities. Therefore, the odor monitoring system did not effectively indicate the remedial activities' performance. However, odor monitoring appears to be the best indicator of the AOC actions effectiveness, and, as discussed in Section 10.2, this metric suggests the work has been very effective.

11.0 POST-REMOVAL ACTIVITY OPERATION, MAINTENANCE AND MONITORING

As part of its July 2, 2008 approval of the Landfill Cover and Long Term Capping Plan, the U.S. EPA requested that an operations and maintenance plan be developed for the cap system. Subsequently, and in concert with the Ohio EPA, it was determined an expanded plan which covered operation, maintenance, and monitoring for all components of the 88-acre remediation unit should be prepared. In August 2009, Countywide submitted the 3-volume Operation, Maintenance, and Monitoring (OM&M) Plan, which the U.S. EPA approved on September 14, 2009.

The OM&M Plan was developed specifically for the 88-acre remediation area and the remedial features installed per the AOC. The main objectives of the OM&M Plan are as follows.

1. Create a document which could be implemented by in-house Countywide personnel or by a third party to maintain effective, safe, environmental management.

2. Provide a monitoring program to assess: the reaction condition; issues which warrant agency notification and/or contingency measures; and conditions which may require further remedial measures.

3. Develop plans to ensure worker and public safety.

4. Describe the path toward achieving final closure and post closure care.

5. Present means for communicating, reporting, and propose procedures for revising for the Plan.

The OM&M Plan is available at the facility, and is incorporated into this Final Report by reference. It was structured as a living document to allow revisions, updates and addendums as appropriate over time. Per the September 12, 2009 approval, the U.S. EPA will receive Progress Reports and attend meetings stipulated in Section 12.0 of the Plan.

CERTIFICATION

Under penalty of law, I certify to the best of my knowledge, after appropriate inquiries of all relevant persons involved in preparing the report (Final Report, Work Activities Pursuant to Administrative Order on Consent for Removal Action, dated October 2009), the information submitted is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

Michael Darnell
Division Manager, Countywide Recycling and Disposal Facility
October 20, 2009

TABLES

TABLE 1

Primary AOC Parties

Final Report on Countywide AOC Work Activities
October 2009

Agency or Company	Principal Parties/Contacts	Description of Activities
Republic Services of Ohio II, LLC Countywide Recycling & Disposal Facility 3619 Gracemont Road S.W. East Sparta, OH 44626	James Teter Craig Almanza Michael Darnell Tim Vandersall Clarke Lundell. P.E. Todd K. Hamilton, P.E. Larry Elliott Paul Finton Jim Steigerwald Jeff Kraus	Site management and operations, AOC construction management, contractor management, health & safety point of contact, cost control management, community relations.
U.S. EPA – Region 5 (U.S. EPA) Cleveland Office 25089 Center Ridge Road Westlake, OH 44145	James Augustyn Mark Durno	Federal OSC responsible for overall oversight, plan approvals and field oversight.
U.S. EPA – Region 5 Chicago Office 77 West Jackson Blvd. (LM-7J) Chicago, IL 60604	Paul Ruesch	Federal technical assistance, on-site oversight, plan reviews, community relations support.
Agency for Toxic Substances & Disease Registry (ATSDR) – NCEH/CDC Region 5 77 W. Jackson Blvd., Room 413 Chicago, IL 60604	Michelle Colledge, MPH, PhD	Federal technical assistance for air monitoring, sample evaluation and reporting.
Weston Solutions Building 3, Suite C 6777 Engle Road Middleburg Heights, OH 44130	Ryan R. Green Frank L. Beodray	On-site oversight contractor for U.S. EPA.
Ohio EPA (OEPA) – Columbus Office 50 West Town Street, Suite 700 Columbus, OH 43216	Chris Korleski Pam Allen Ed Gortner Scott Heidenreich	State technical and compliance support.
OEPA NEDO 2110 E. Aurora Road Twinsburg, OH 44087	Kurt Princic Josh Adams Karen Naples Lynn Sowers Kurt Kollar	State technical and compliance support.
Earth Tech-AECOM 36133 Schoolcraft Road Livonia, MI 48150 (AOC Project Management and Administration)	Michael R. Beaudoin, P.E. Bill Eberts, P.E. Norm Kent Mark Kromis	Project coordination, Work Plan oversight, prepared Isolation Break Excavation Work Plan, project safety management, project quality assurance and quality control, air monitoring and sampling coordination, ambient air monitoring data validation, leachate management, document control, and monthly and final report preparation.
AECOM Technical Services, Inc. (formerly Earth Tech, Inc.) 2373 Progress Drive Hebron, KY 41048 (Field Construction Group)	Jason Guenther James McCulley	Undercap pipe installations, anchor trench excavation and backfill, general construction support.

TABLE 1

Primary AOC Parties

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Agency or Company	Principal Parties/Contacts	Description of Activities
Arcadis 1100 Superior Avenue, Suite 1250 Cleveland, OH 44114	Mark W. Kittinger Brian Howman Kurt Merkle	HASP development support, Certified Industrial Hygienist support, field Health & Safety personnel and Incident Management System Plan preparation.
American Environmental Group Limited (AEG) 3600 Brecksville Road Richfield, OH 44286	Pete Augustin Bob Caron Randy Everett John Beeman Trevor Simmons	Landfill gas extraction system construction, operation and maintenance and data collection and reporting for extraction wells, monitoring wells, conveyance systems and flares. For FBMPs, operation and maintenance and data collection and reporting only.
The Beaver Excavating Company (Beaver) 2000 Beaver Place Ave., S.W. P.O. Box 6059 Canton, OH 44706	Steve Roberts Norm Hostetler Russell Hannahs Mike Ferguson	Temporary and composite cap earthworks, undercap gas and leachate pipe installations, isolation break excavation, and composite cap earthworks.
Brown and Caldwell (BC) 9156 Lakewood Drive Whitmore Lake, MI 48189	Elena Goodhall Jeff DeLaet	CQA and final construction certification report for 2009 gas wells and conveyance system, bowl area liner system, Isolation Break liner system and 2009 temporary capping.
Center for Toxicology and Environmental Health, LLC (CTEH) 5120 North Shore Drive North Little Rock, AR 72118	Joe Cameron Brett Tarkington Paul Nony Alex Reich	Ambient air monitoring plan development, field support, data review and report preparation.
Cornerstone Environmental Group, LLC (Cornerstone) 39395 W. Twelve Mile Rd., Suite 103 Farmington Hills, MI 48331	Bruce Schmucker James Walker Tom Bilgri Mike Michels Mike Contestabile	Capping Work Plan development, gas system design, gas system operations oversight.
Diversified Engineering Inc. (DEI) 225 Fair Avenue NE New Philadelphia, OH 44663	Chris Bower Chad VanSickle Curt Hanstine Matt Owen Josh McDonald	Design support, stakeout and as-built surveying, as-built drawing preparation.
Frontz Drilling, Inc. 2031 Millersburg Rd. Wooster, Ohio 44691 330-262-5301	Jim Nidzgorski	Installed in situ FBMP temperature monitoring probes

TABLE 1

Primary AOC Parties

Final Report on Countywide AOC Work Activities
October 2009

Agency or Company	Principal Parties/Contacts	Description of Activities
Golder and Associates (Golder) 15851 South US 27 Suite 50 Lansing, MI 48906	Tiffany Johnson Ben Hale	Construction management support, Construction Quality Assurance (CQA) and final construction certification report preparation for 2008 temporary cap, composite cap, 2008 gas system, existing temporary cap area deep trench construction and Isolation Break excavation and undercap pipe installation.
Hilscher-Clarke (H-C) 519 Fourth Street N.W. Canton, OH 44703	Matt McElfresh	Electrical installations, repairs and maintenance.
Hull & Associates (Hull) 6397 Emerald Parkway, Suite 200 Dublin, OH 43016	Thom Moore Nate Hull Wayne Stephens	2008 temporary cap CQA (geosynthetics) and final construction certification report support.
JMW Welding & Manufacturing, Inc. (JMW) 512 45th St. SW Canton, OH 44706	Mike Slutz Todd Ladrach	Pipe installation support, surface preparation, liner anchor trench construction, odor and litter control.
Lawhon & Associates, Inc. (Lawhon) 975 Eastwind Drive, Suite 190 Westerville, OH 43081	Deborah Gray, Ph.D. Joe Towarnicky, Ph.D. Shawn Ansbro Tony Noxon Jay Abbey (subcontractor)	Ambient air monitoring plan development, field air monitoring support, data review and report preparation.
NXC Technologies (NXC) 2866 Woodhaven Drive Medina, OH 44256	Nicholangelo Corvo	Odor control.
Peter Carey & Associates (PJC) 5878 Valine Way Sugar Hill, GA 30518	Peter Carey, P.E.	Design support, slope stability analyses, undercap drainage system design.
Predictive Services, Inc. (PSI) 23825 Commerce Park, Suite 200 Cleveland, OH 44122	Al Uronis	Thermal imagery.
SAIC 8866 Commons Blvd., Suite 201 Twinsburg, OH 44087	Martha Clough	AOC HASP.
SCS Engineers (SCS) 2060 Reading Road, Suite 200 Cincinnati, OH 45202	James Walsh Alex Tassos Randy Mills	Gas and temperature monitoring system design and installation. Temperature monitoring system installation oversight final and construction certification report.

TABLE 2
Major AOC Submittals and Work Plans by Countywide

Final Report on Countywide AOC Work Activities

October 2009

Plan or Document Title	Principal Author	Submittal Date	Approval Date	Work Scope
Health and Safety Plan	SAIC	April 29, 2008	NA	Overriding Health and Safety Plan for work performed pursuant to AOC
Financial Assurance Submittal	Countywide	May 12, 2008	NA	Established $4,500,000 bond for performance of AOC work.
Gas Extraction and Monitoring Work Plan	SCS Engineers	May 27, 2008	June 5, 2008	Installation of several additional gas extraction wells, creation of a gas barrier to prevent gas migration into Cell 7, installation of temperature monitoring probes (FBMPs), and procedures for monthly aerial infrared imaging.
Landfill Cover and Long Term Capping Plan	Cornerstone	June 24, 2008	July 2, 2008	Temporary FML capping of the uncapped southwest, west, west, and north-central portions of the 88-acre area.
On-Site Continuous Monitoring of Air Contaminants	Lawhon	August 22, 2008	August 27, 2008	Established preliminary procedures and implementation plan for continuous and automated sampling on-site monitoring at five fixed stations.
Comprehensive Ambient Air Monitoring Work Plan	CTEH	October 14, 2008	NA	Established final procedures and implementation plan for continuous and automated sampling on-site monitoring at five fixed stations.
Isolation Break Investigation	AECOM	October 16, 2008	NA	Results of test pits and borings done to determine the feasibility of installing an excavated isolation break in place of the enhanced system installed oer the Gas Extraction and Monitoring Work Plan.
Isolation Break Excavation Work Plan	AECOM	November 14, 2008	November 19, 2009	Excavation of over 400,000 cubic yards of waste material between Cells 5 and 7 to prevent reaction from leaving the 88-acre area.
Operations and Maintenance Plan for Temporary Cap System	Cornerstone	January 19, 2009	NA	Set procedures to be used to maintain temporary cap as requested by U.S. EPA in their July 2, 2008 approval of the Landfill Cover and Long Term Capping Plan.
Isolation Break Health and Safety Plan	Arcadis	November 20, 2008	NA	Detailed activity-specific health and safety and worker monitoring procedures for the isolation break activity.
Capping Plan - Cells 1, 2 & 3	Cornerstone	May 28, 2009	June 2, 2009	Temporary FML capping of the "plateau" area and regrading and aumentation of existing soil cover over portions of Cells 1-3. After approval, the the limits of temporary FML capping was voluntarily extended to incorporate a portion of Cell 3 east of the main access road.
Operations, Maintenance, and Monitoring Plan	AECOM	September 9, 2009	September 14, 2009	Established long-term operation, maintenance, and monitoring to assure safe, effective operation of the installed remedial measures.

Note: Interim draft submittals, comments letters, and other less significant documents are not listed above.

TABLE 3
Isolation Break Excavation Summary
Final Report on Countywide AOC Work Activities
October 2009

Date	Day	Deck #	High Waste Temp (ºF)	Aluminum Waste Encountered	Reaction Impacted Waste Encountered	Breathing/Work Zone (Tier 1) VOC Data (ppb) High/Avg.	300' Downwind (Tier 2) VOC Data (ppb) High (1 min. avg.)/Avg.	Nasal Ranger Daily Readings >4
12/08/08	Monday	1	80	No	No	600/200	58/2.5	0
12/09/08	Tuesday	1	107	No	No	500/100	128/1	1
12/10/08	Wednesday	1	109	No	No	900/500	35/0.5	3
12/11/08	Thursday	1	123	No	No	2,800/1,600	2/0	4
12/12/08	Friday	1	108	No	No	1,400/850	166/9	3
12/13/08	Saturday							
12/14/08	Sunday							
12/15/08	Monday	1	110	No	No	800/200	191/9	2
12/16/08	Tuesday	1	113	No	No	800/100	177/9	6
12/17/08	Wednesday	1/2	120	No	No	500/82	2/0	3
12/18/08	Thursday	2	128	No	No	900/141	65/0	2
12/19/200	Friday	2	118	No	No	0/0	361/50	4
12/20/08	Saturday	2	125	No	No	900/361	372/60	0
12/21/08	Sunday							
12/22/08	Monday							
12/23/08	Tuesday							
12/24/08	Wednesday							
12/25/08	Thursday							
12/26/08	Friday							
12/27/08	Saturday							
12/28/08	Sunday							
12/29/08	Monday							
12/30/08	Tuesday							
12/31/08	Wednesday							
01/01/09	Thursday							
01/02/09	Friday							
01/03/09	Saturday							

TABLE 3
Isolation Break Excavation Summary
Final Report on Countywide AOC Work Activities
October 2009

Date	Day	Deck #	High Waste Temp (ºF)	Aluminum Waste Encountered	Reaction Impacted Waste Encountered	Breathing/Work Zone (Tier 1) VOC Data (ppb) High/Avg.	300' Downwind (Tier 2) VOC Data (ppb) High (1 min. avg.)/Avg.	Nasal Ranger Daily Readings >4
01/04/09	Sunday							
01/05/09	Monday	2	128	No	No	1,600/317	74/2	0
01/06/09	Tuesday	2	106	No	No	300/100	554/128	3
01/07/09	Wednesday							
01/08/09	Thursday	2	109	No	No	5,600/615	306/19	4
01/09/09	Friday	2	102	No	No	800/395	216/5	3
01/10/09	Saturday							
01/11/09	Sunday							
01/12/09	Monday	3	100	No	No	600/65	17/0	1
01/13/09	Tuesday	3	115	No	No	5,000/835	162/15	4
01/14/09	Wednesday	3	120	No	No	300/50	122/4	2
01/15/09	Thursday	3	115	No	No	5,100/755	43/0	3
01/16/09	Friday	3	106	No	No	900/400	103/16	4
01/17/09	Saturday							
01/18/09	Sunday							
01/19/09	Monday	3	118	No	No	5,800/1,061	322/27	3
01/20/09	Tuesday	3	117	No	No	900/435	472/48	0
01/21/09	Wednesday	3/4	113	No	No	800/235	189/57	3
01/22/09	Thursday	4	136	No	No	600/350	100/2	5
01/23/09	Friday	4	135	No	No	5,600/880	714/84	3
01/24/09	Saturday							
01/25/09	Sunday							
01/26/09	Monday	4	128	No	No	800/369	649/122	5
01/27/09	Tuesday	4	132	No	No	800/447	728/119	3
01/28/09	Wednesday							
01/29/09	Thursday	4	124	No	No	800/281	11/0	3
01/30/09	Friday	4	120	No	No	800/424	362/81	3
01/31/09	Saturday							

TABLE 3
Isolation Break Excavation Summary
Final Report on Countywide AOC Work Activities
October 2009

Date	Day	Deck #	High Waste Temp (ºF)	Aluminum Waste Encountered	Reaction Impacted Waste Encountered	Breathing/Work Zone (Tier 1) VOC Data (ppb) High/Avg.	300' Downwind (Tier 2) VOC Data (ppb) High (1 min. avg.)/Avg.	Nasal Ranger Daily Readings >4
02/01/09	Sunday							
02/02/09	Monday	4/5	122	No	No	800/370	415/22	2
02/03/09	Tuesday	5	128	No	No	3,600/665	62/1	2
02/04/09	Wednesday	5	110	No	No	900/460	223/45	5
02/05/09	Thursday	5	116	No	No	500/170	150/2	5
02/06/09	Friday	5	128	Yes	No	1,800/520	403/76	2
02/07/09	Saturday							
02/08/09	Sunday							
02/09/09	Monday	5	122	No	No	100/5	83/7	4
02/10/09	Tuesday							
02/11/09	Wednesday							
02/12/09	Thursday							
02/13/09	Friday							
02/14/09	Saturday							
02/15/09	Sunday							
02/16/09	Monday	5/6	114	No	No	5,600/660	196/5	2
02/17/09	Tuesday	5/6	115	Yes	No	200/25	731/76	3
02/18/09	Wednesday							
02/19/09	Thursday							
02/20/09	Friday	5/6	114	Yes	No	700/230	215/43	0
02/21/09	Saturday							
02/22/09	Sunday							
02/23/09	Monday	6	110	No	No	900/406	225/60	3
02/24/09	Tuesday	6/7	129	Yes	No	300/35	105/8	1
02/25/09	Wednesday	6/7	114	No	No	700/83	534/81	4
02/26/09	Thursday							
02/27/09	Friday							
02/28/09	Saturday							

TABLE 3
Isolation Break Excavation Summary
Final Report on Countywide AOC Work Activities
October 2009

Date	Day	Deck #	High Waste Temp (ºF)	Aluminum Waste Encountered	Reaction Impacted Waste Encountered	Breathing/Work Zone (Tier 1) VOC Data (ppb) High/Avg.	300' Downwind (Tier 2) VOC Data (ppb) High (1 min. avg.)/Avg.	Nasal Ranger Daily Readings >4
03/01/09	Sunday							
03/02/09	Monday	7	105	No	No	300/47	27/1	2
03/03/09	Tuesday	7	89	No	No	400/80	11/0	0
03/04/09	Wednesday	Note: 3/4/2009 through 3/29/2009 - Installed leachate and gas collection piping system on south slope of Isolation Break						
03/05/09	Thursday							
03/06/09	Friday							
03/07/09	Saturday							
03/08/09	Sunday							
03/09/09	Monday							
03/10/09	Tuesday							
03/11/09	Wednesday							
03/12/09	Thursday							
03/13/09	Friday							
03/14/09	Saturday							
03/15/09	Sunday							
03/16/09	Monday							
03/17/09	Tuesday							
03/18/09	Wednesday							
03/19/09	Thursday							
03/20/09	Friday							
03/21/09	Saturday							
03/22/09	Sunday							
03/23/09	Monday							
03/24/09	Tuesday							
03/25/09	Wednesday							
03/26/09	Thursday							
03/27/09	Friday							
03/28/09	Saturday							

TABLE 3
Isolation Break Excavation Summary
Final Report on Countywide AOC Work Activities
October 2009

Date	Day	Deck #	High Waste Temp (ºF)	Aluminum Waste Encountered	Reaction Impacted Waste Encountered	Breathing/Work Zone (Tier 1) VOC Data (ppb) High/Avg.	300' Downwind (Tier 2) VOC Data (ppb) High (1 min. avg.)/Avg.	Nasal Ranger Daily Readings >4
03/29/09	Sunday							
03/30/09	Monday	8	97	No	No	0/0	9/0	0
03/31/09	Tuesday	8	104	No	No	0/0	95/9	6
04/01/09	Wednesday							
04/02/09	Thursday	8	102	No	No	0/0	169/79	3
04/03/09	Friday							
04/04/09	Saturday							
04/05/09	Sunday							
04/06/09	Monday							
04/07/09	Tuesday	9 (Base)	45	No	No	200/19	3/0	0
04/08/09	Wednesday	9 (Base)	48	No	No	400/61	14/1	0
04/09/09	Thursday	9 (Base)	49	No	No	400/147	41/5	0
04/10/09	Friday							
04/11/09	Saturday							
04/12/09	Sunday							
04/13/09	Monday	9 (Base)	50	No	No	3,600/1,507	20/1	2
04/14/09	Tuesday	9 (Base)	50	No	No	900/444	7/1	0
04/15/09	Wednesday							
04/16/09	Thursday	9 (Base)	50	No	No	900/494	204/19	0
04/17/09	Friday	9 (Base)	48	No	No	400/133	978/62	0

TABLE 4

Waste Disposal Summary

Final Report on Countywide AOC Work Activities
October 2009

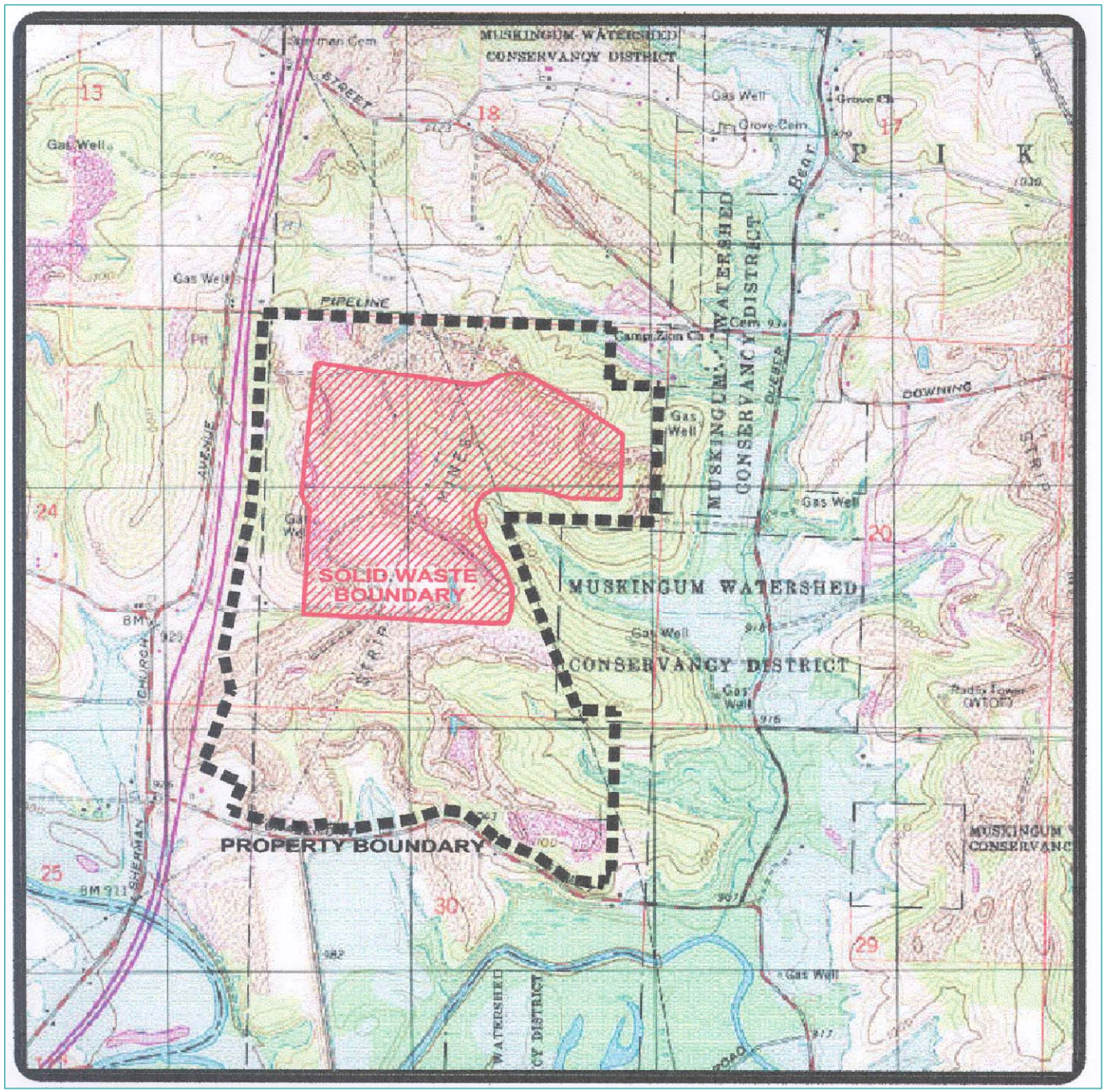
On-Site Disposal

AOC Activity	Description	Approx. Quantity (cubic Yards	Final Disposal Area
Gas Well Drilling and Subcap Drain Trench Excavation	Ordinary MSW	21,100	170-Acre Operational Unit (Cell 8B/8C working face)
Isolation Break Excavation (including trenches)	Ordinary MSW	374,900	170-Acre Operational Area (Cell 7/8A disposal area)
Gas Well Drilling and Subcap Drain Trench Excavation	Ordinary MSW	6,100	88-Acre Remediation Unit ("bowl" area and/or "plateau" area)
Gas Well Drilling and Trench Activity	Suspected aluminum-containing waste	9	88-Acre Remediation Unit ("bowl" area)
Isolation Break Excavation (including trenches)	Suspected aluminum-containing waste	80	88-Acre Remediation Unit ("bowl" area)

Off-Site Disposal

AOC Activity	Description	Approx. Quantity (gals)	Final Disposal Location
Subcap Drain Trench Activity	Leachate	33,700	City of Akron WWTP

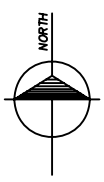
FIGURES



U.S.G.S. 7.5 SERIES TOPOGRAPHIC QUADRANGLE 1994, NIMA 4765 III NW – SERIES V852

APPROXIMATE SCALE IN FEET

0 1000 2000 3000



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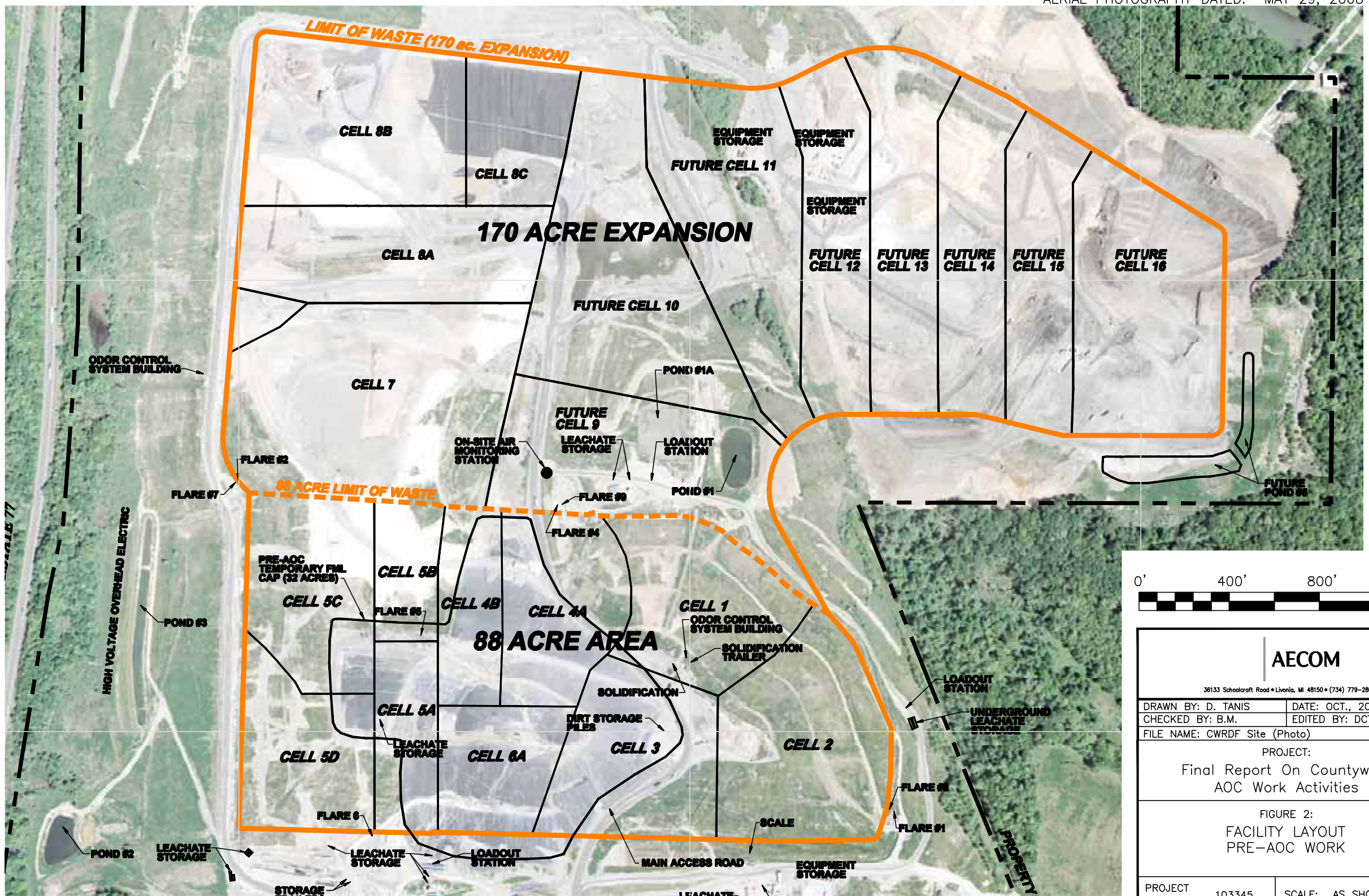
DRAWN BY: D. TANIS	DATE: OCT., 2009
CHECKED BY: M.B.	EDITED BY: DCT101609
FILE NAME: 103345-SLM	

PROJECT:
Final Report On Countywide AOC Work Activities

FIGURE 1:
SITE LOCATION MAP

PROJECT NUMBER 103345	SCALE: AS SHOWN

AERIAL PHOTOGRAPHY DATED: MAY 29, 2008



0' 400' 800' 1200'

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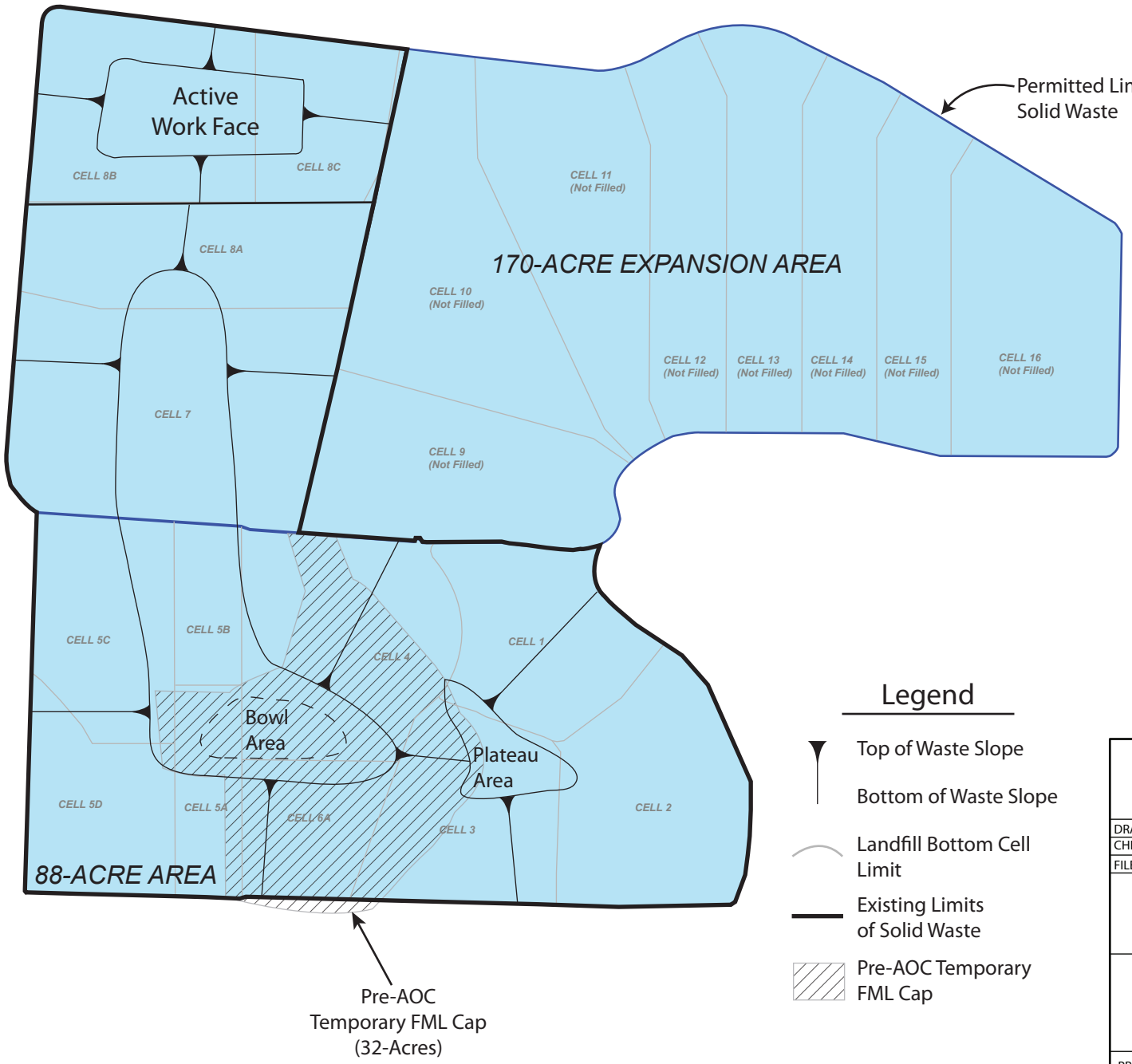
CHECKED BY: B.M.	EDITED BY: DCT101609
FILE NAME: CWRDF Site (Photo)	

PROJECT:
Final Report On Countywide AOC Work Activities

FIGURE 2:
FACILITY LAYOUT
PRE-AOC WORK

PROJECT NUMBER	103345	SCALE:	AS SHOWN



Legend

- Top of Waste Slope
- Bottom of Waste Slope
- Landfill Bottom Cell Limit
- Existing Limits of Solid Waste
- Pre-AOC Temporary FML Cap

N

0' 200' 400' 600'

AECOM

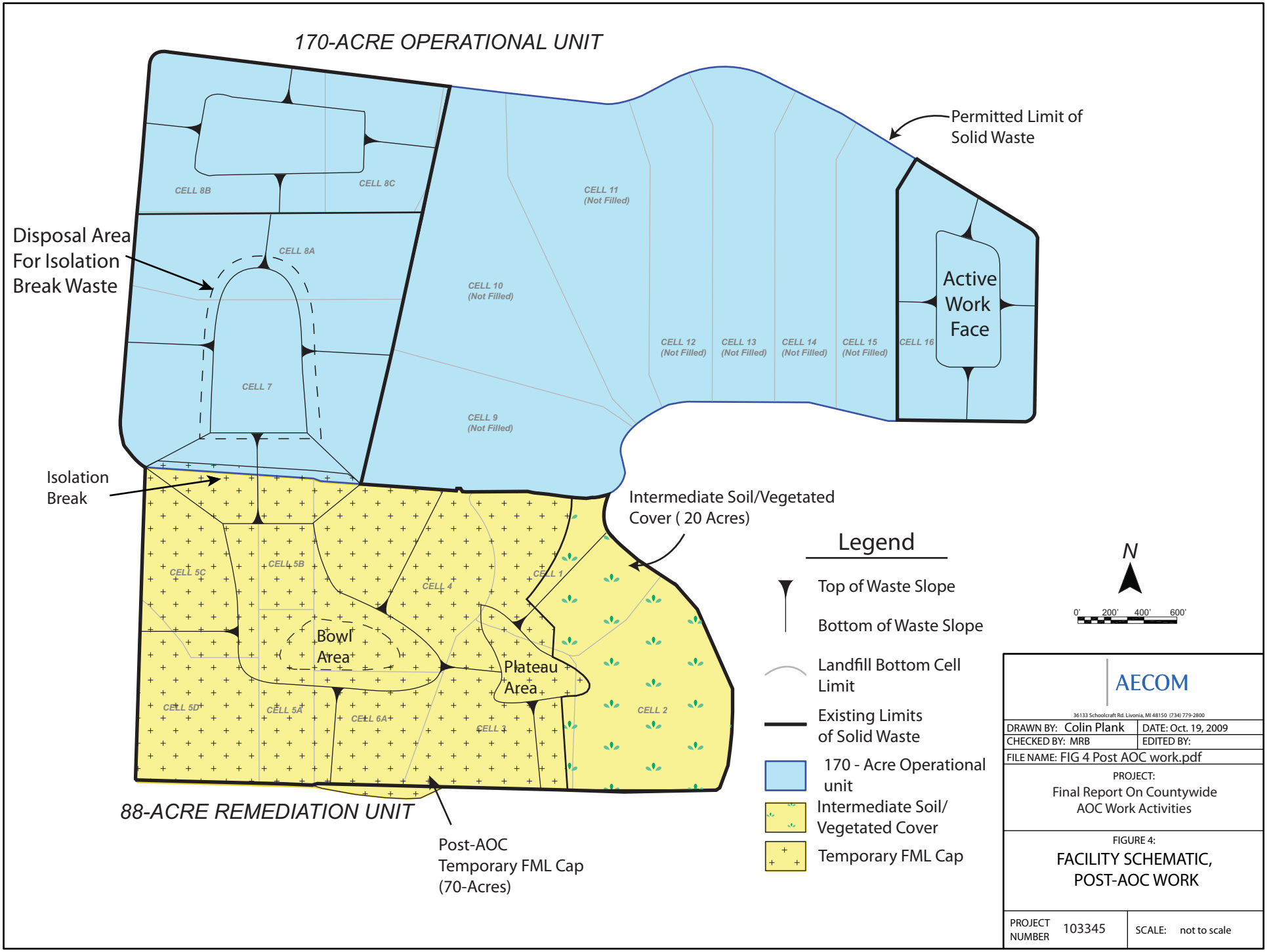
36133 Schoolcraft Rd. Livonia, MI 48150 (734) 779-2800

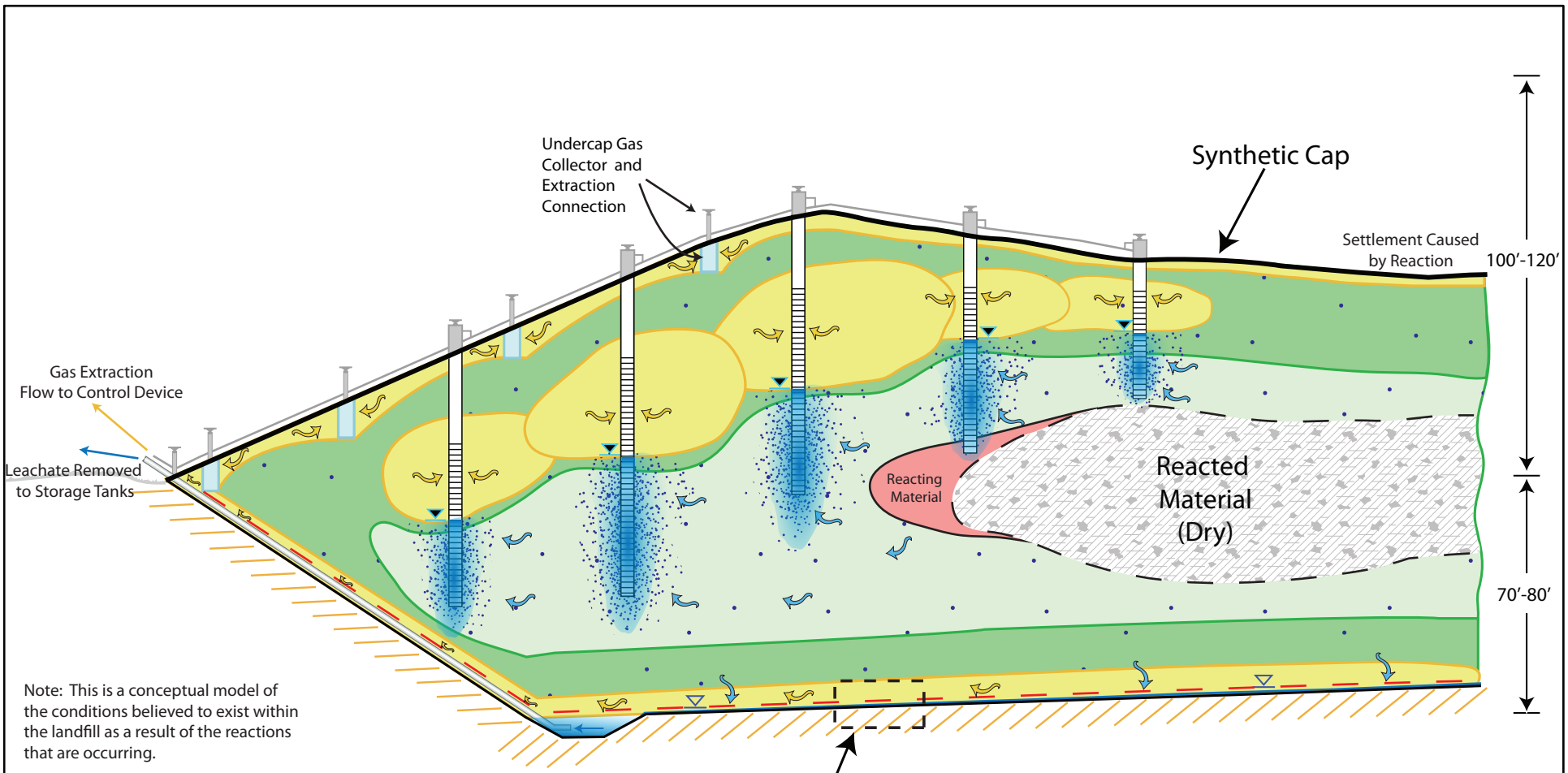
DRAWN BY: Colin Plank	DATE: Oct. 19, 2009
CHECKED BY: MRB	EDITED BY:
FILE NAME: FIG 3 facility*.pdf	

PROJECT:
Final Report On Countywide
AOC Work Activities

FIGURE 3:
FACILITY SCHEMATIC,
PRE-AOC WORK

PROJECT NUMBER 103345	SCALE: not to scale


170-ACRE OPERATIONAL UNIT
Permitted Limit of Solid Waste
Disposal Area For Isolation Break Waste
Active Work Face
CELL 8B
CELL 8C
CELL 11 (Not Filled)
CELL 8A
CELL 10 (Not Filled)
CELL 12 (Not Filled)
CELL 13 (Not Filled)
CELL 14 (Not Filled)
CELL 15 (Not Filled)
CELL 16
CELL 7
CELL 9 (Not Filled)
Isolation Break
Intermediate Soil/Vegetated Cover (20 Acres)
CELL 5C
CELL 5B
CELL 4
CELL 1
Bowl Area
Plateau Area
CELL 5D
CELL 5A
CELL 6A
CELL 3
CELL 2
88-ACRE REMEDIATION UNIT
Post-AOC Temporary FML Cap (70-Acres)
Legend
Top of Waste Slope
Bottom of Waste Slope
Landfill Bottom Cell Limit
Existing Limits of Solid Waste
170 - Acre Operational unit
Intermediate Soil/ Vegetated Cover
Temporary FML Cap
N
0' 200' 400' 600'
AECOM
36133 Schoolcraft Rd. Livonia, MI 48150 (734) 779-2800
DRAWN BY: Colin Plank
DATE: Oct. 19, 2009
CHECKED BY: MRB
EDITED BY:
FILE NAME: FIG 4 Post AOC work.pdf
PROJECT:
Final Report On Countywide AOC Work Activities
FIGURE 4:
FACILITY SCHEMATIC, POST-AOC WORK
PROJECT NUMBER 103345
SCALE: not to scale



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36133 Schoolcraft Rd. Livonia, MI 48150 (734) 779-2800

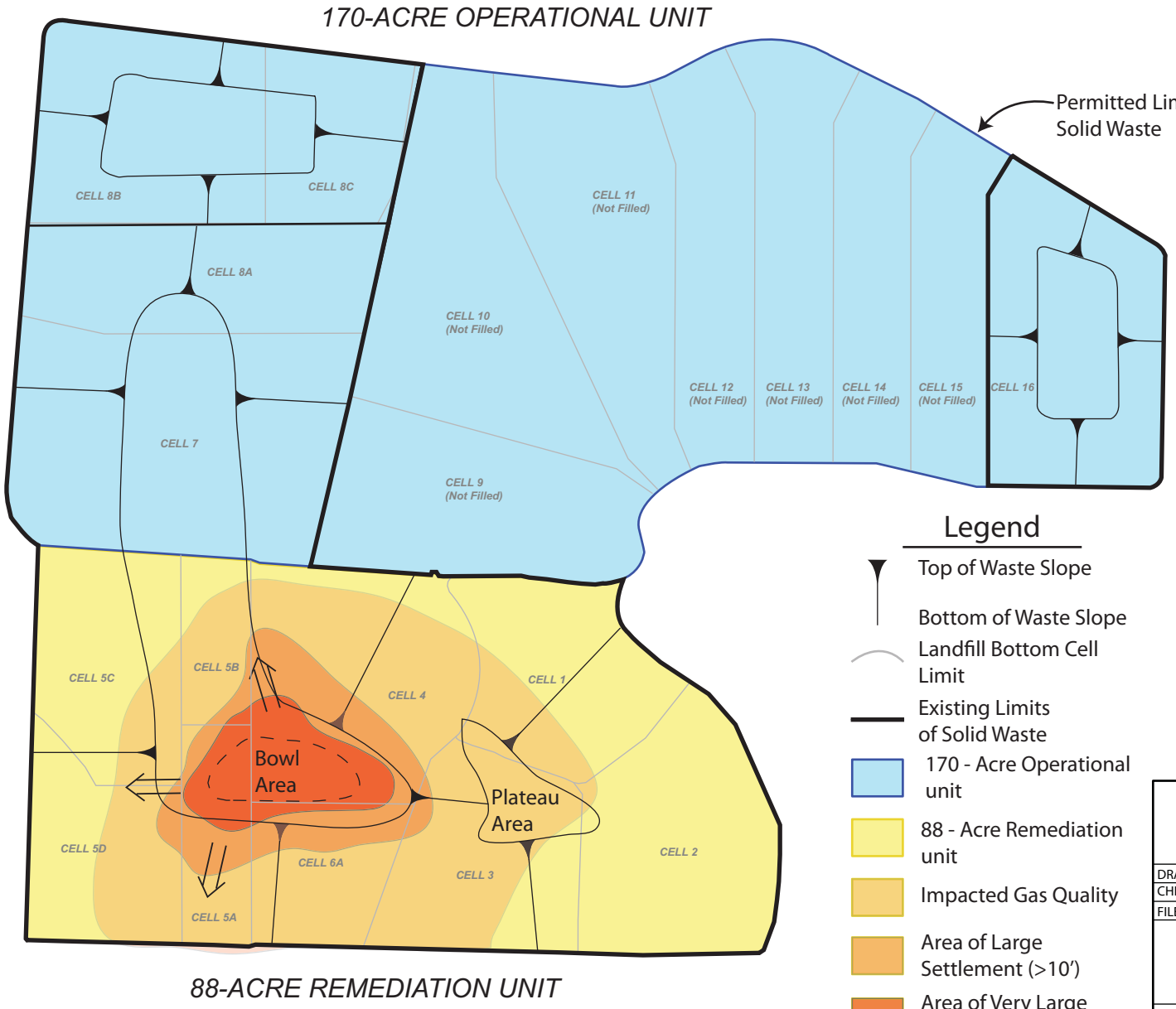
DRAWN BY: CPP	DATE: June 3, 2009
CHECKED BY: MRB	EDITED BY:
FILE NAME: reaction_schem.pdf	

PROJECT:
Final Report On Countywide AOC Work Activities

FIGURE 5:

REACTION SCHEMATIC

PROJECT NUMBER 103345	SCALE: Not to Scale



Note: The locus of actively reacting area is best indicated by large settlement. Gas quality is impacted over a larger area in material that has not been directly subjected to the reaction.

Legend

- Top of Waste Slope
- Bottom of Waste Slope
- Landfill Bottom Cell Limit
- Existing Limits of Solid Waste
- 170 - Acre Operational unit
- 88 - Acre Remediation unit
- Impacted Gas Quality
- Area of Large Settlement (>10')
- Area of Very Large Settlement (>20')
- Movement of Large Settlement (inferred Direction of Movement of Reaction)

N

0' 200' 400' 600'

AECOM
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FILE NAME: areaimpacted.pdf	

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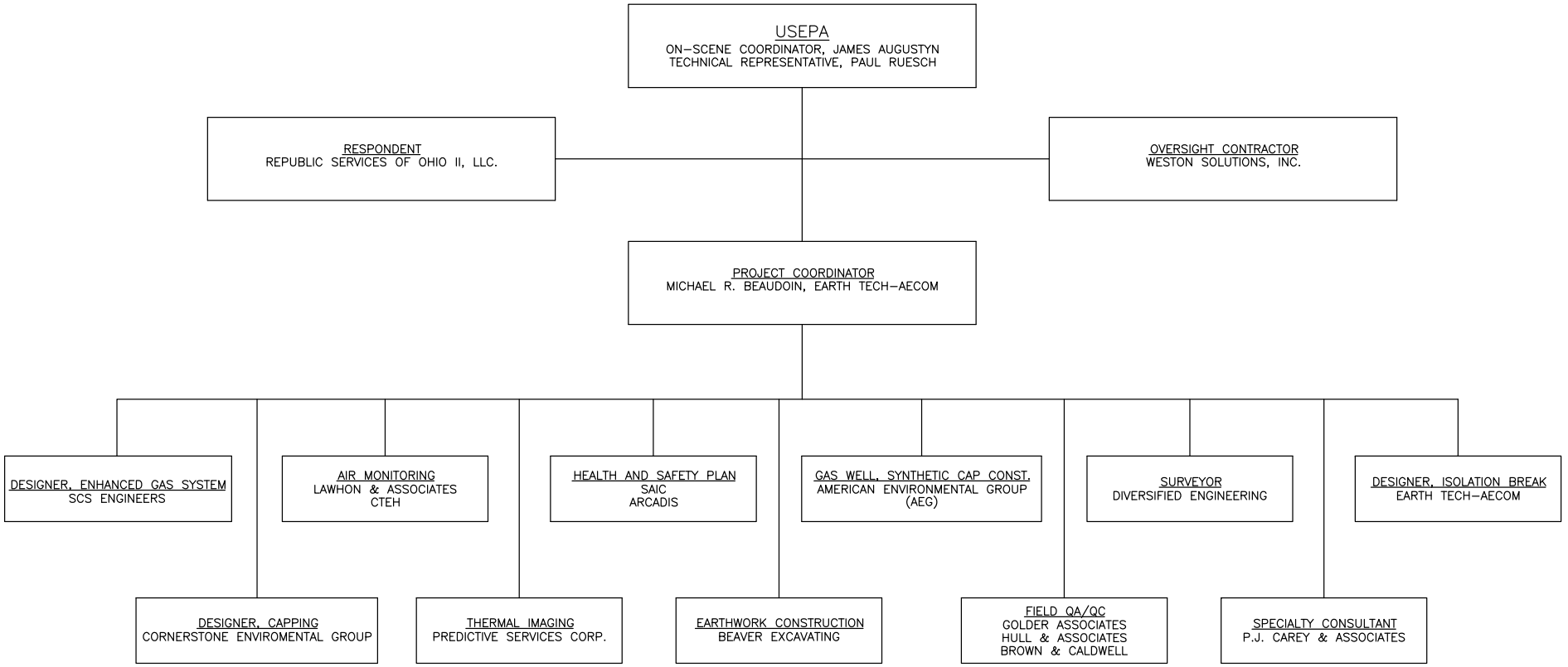
FIGURE 6:
AREA IMPACTED BY THE REACTION

PROJECT NUMBER 103345	SCALE: not to scale



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CHECKED BY: B.M.	EDITED BY: AMC102209
FILE NAME: 103345-FIG9	

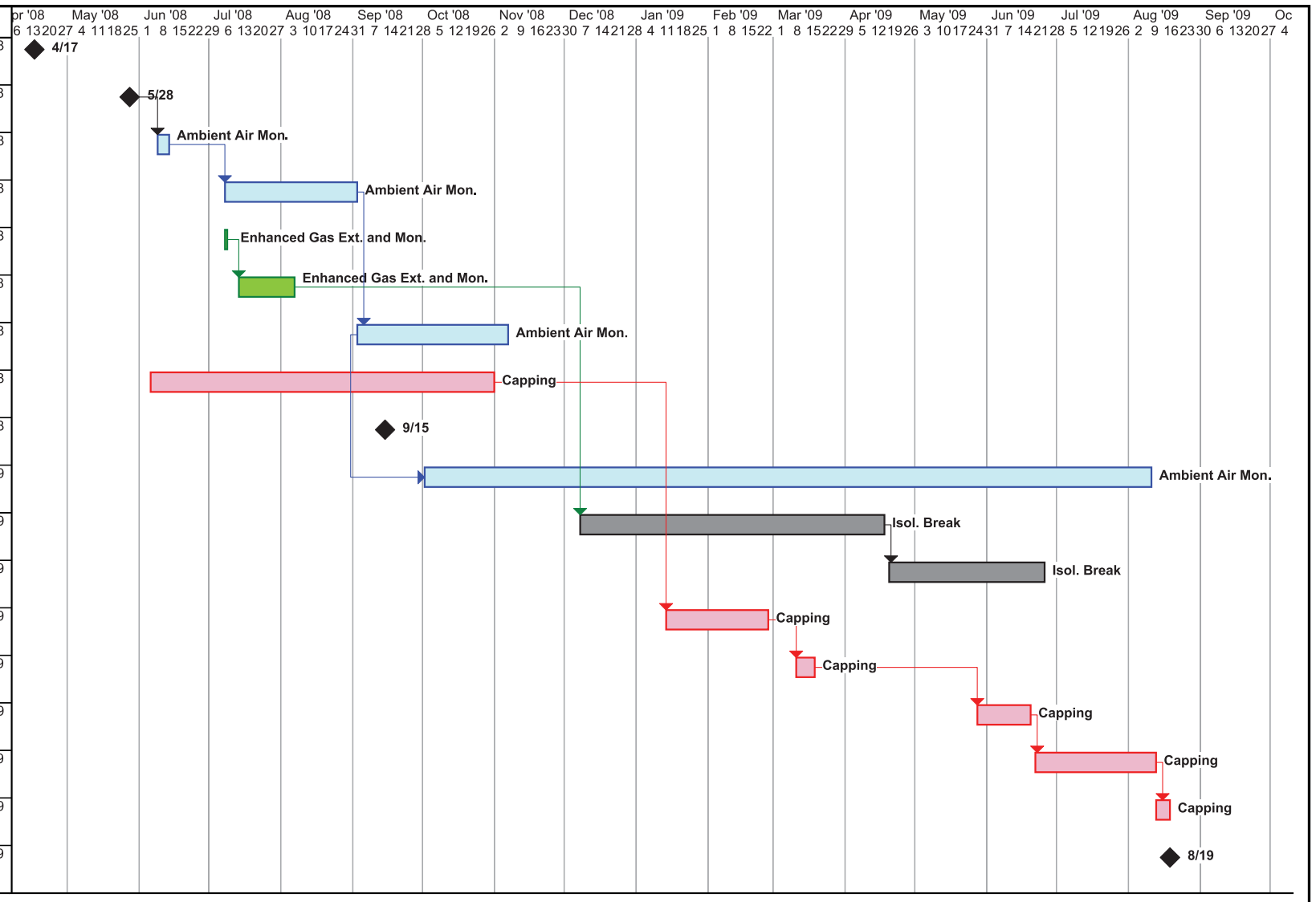
PROJECT:
Final Report On Countywide AOC Work Activities

FIGURE 7:
RESPONSE ORGANIZATION CHART

PROJECT NUMBER 103345	SCALE: NONE

L:\work\103345\CAD\103345-FIG9.dwg, 10/22/2009 10:08:42 AM, Adobe PDF, Tabloid, 1:1

Task Name	Start	Finish
AOC Effective	Thu 4/17/08	Thu 4/17/08
U.S. EPA TAGA Bus Survey	Wed 5/28/08	Wed 5/28/08
U.S. EPA UV/DOAS Survey	Mon 6/9/08	Fri 6/13/08
Stage A Ambient Air Monitoring	Tue 7/8/08	Tue 9/2/08
Enhanced Gas Extraction System Wells	Tue 7/8/08	Tue 7/8/08
Enhanced Gas Extraction Temperature Mon. Probes	Mon 7/14/08	Wed 8/6/08
Stage B Ambient Air Monitoring	Wed 9/3/08	Thu 11/6/08
Temp. FML Cap per June 24, 2008 Plan (Areas D, N, W, and E)	Fri 6/6/08	Fri 10/31/08
Hurricane/Wind Storm Damage to FML Cap	Mon 9/15/08	Mon 9/15/08
Stage C Ambient Air Monitoring	Thu 10/2/08	Mon 8/10/09
Excavation of Isolation Break Waste Material	Mon 12/8/08	Fri 4/17/09
Temp. FML Capping, Gas Wells, and Bottom Road Detail for Isolation Break	Mon 4/20/09	Thu 6/25/09
Fill in Bowl Area	Wed 1/14/09	Thu 2/26/09
Temp. FML Cap per June 24, 2008 Work Plan ("Deep Trench" Area)	Wed 3/11/09	Wed 3/18/09
Temp. FML Cap per June 24, 2008 Work Plan (Bowl Area)	Thu 5/28/09	Fri 6/19/09
Temp FML Cap per May 28, 2009 Work Plan (Road Area and Plateau Area)	Mon 6/22/09	Wed 8/12/09
Regrading of Cells 1-3 Area per May 28, 2009 Work Plan	Thu 8/13/09	Tue 8/18/09
Final U.S. EPA Inspection/Acceptance of AOC Work	Wed 8/19/09	Wed 8/19/09



Legend

- Project Summary
- Capping
- Ambient Air Monitoring
- Enhanced Gas Extraction and Monitoring
- Isolation Break

AECOM

30133 Schoolcraft Rd. Livonia, MI 48150 (734) 779-2800

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FILE NAME: timeline.pdf	

PROJECT:
Final Report On Countywide
AOC Work Activities

FIGURE 8:
TIMELINE
OF
WORK ACTIVITIES

PROJECT NUMBER 103345	SCALE: As shown

170 - ACRE OPERATIONAL UNIT

CELL 9

ISOLATION BREAK

LIMIT OF TEMPORARY FML CAP

GRASSED IMPROVED INTERMEDIATE COVER

SEE NOTE 2

CELL #5C

CELL #5B

CELL #4B

CELL #4A

CELL #1

CELL #5D

CELL #5A

CELL #6A

CELL #3

LEGEND:

- LIMIT OF TEMPORARY FML CAP
- LIMIT OF ISOLATION BREAK

NOTE:

1.) SEE RECORD DOCUMENTATION REPORTS FOR AS-BUILT DETAILS AND LOCATIONS OF SUBCAP FEATURES.

2.) APPROXIMATE AREA USED FOR DISPOSAL OF 89 TONS OF SUSPECTED ALUMINUM CONTAINING WASTE ENCOUNTERED DURING AOC WORK.

LABELING ABBREVIATIONS:

FM - FORCEMAIN
LLC - LOWER LEACHATE COLLECTOR
LTL - LEACHATE TRANSFER LINE
TD - TOE DRAIN
UCC - UNDERCAP COLLECTOR

0' 200' 400' 600'

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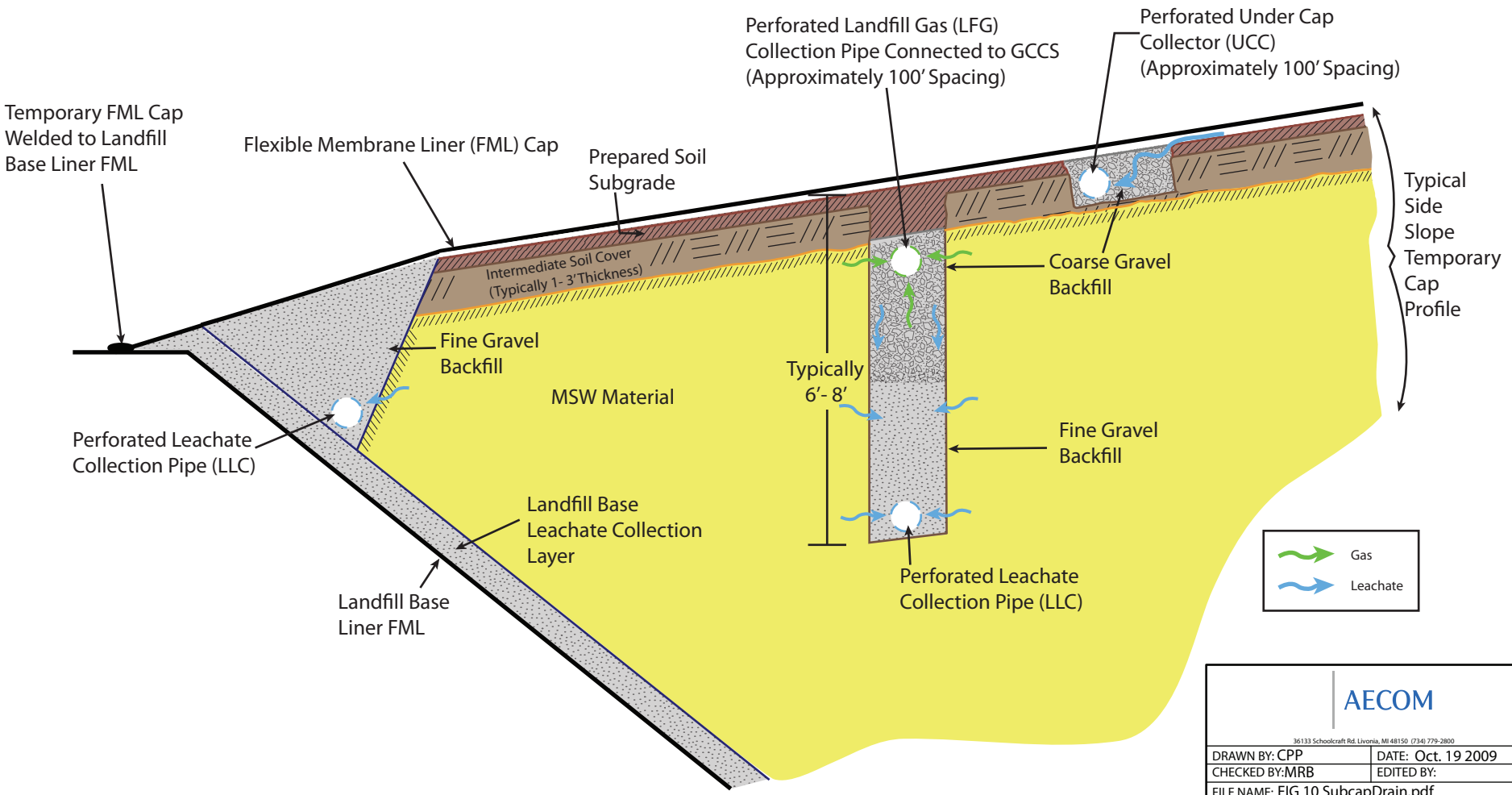
CHECKED BY: B.M.	EDITED BY: AMC102209
FILE NAME: POST-AOC WORK ACTIVITIES	

PROJECT:
Final Report On Countywide AOC Work Activities

FIGURE 9:
TEMPORARY FML CAP AND ISOLATION BREAK

PROJECT NUMBER	103345	SCALE:	AS SHOWN



Note: See record documentation for as-built details and locations of these features.

AECOM

36133 Schoolcraft Rd. Livonia, MI 48150 (734) 779-2800

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CHECKED BY:MRB	EDITED BY:
FILE NAME: FIG 10 SubcapDrain.pdf	

PROJECT:
Final Report On Countywide
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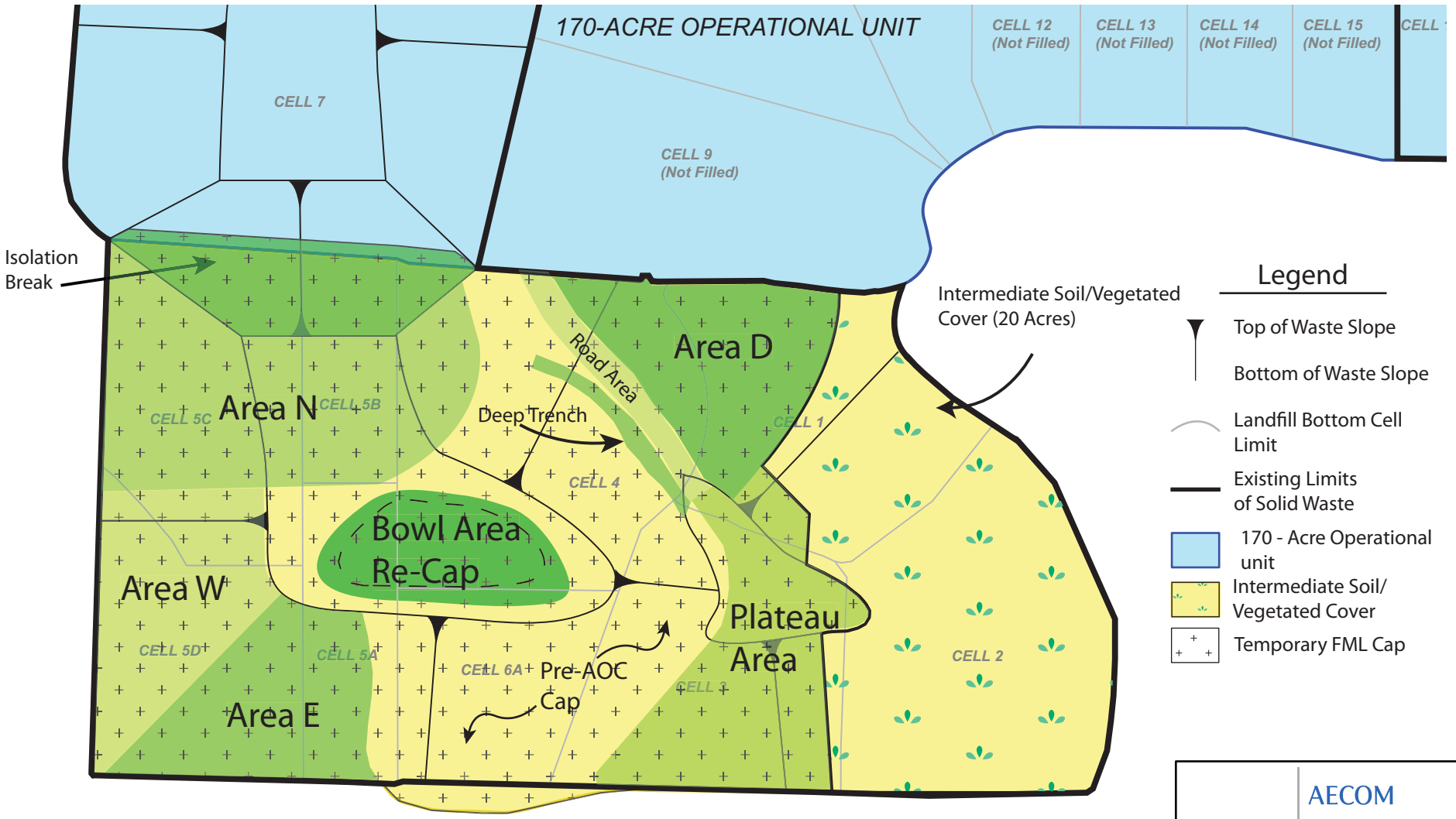
FIGURE 10 :

Schematic of Temporary FML Capping

PROJECT NUMBER 103345	SCALE: Not to Scale



Note: See record documentation for as-built details and locations of subcap features.

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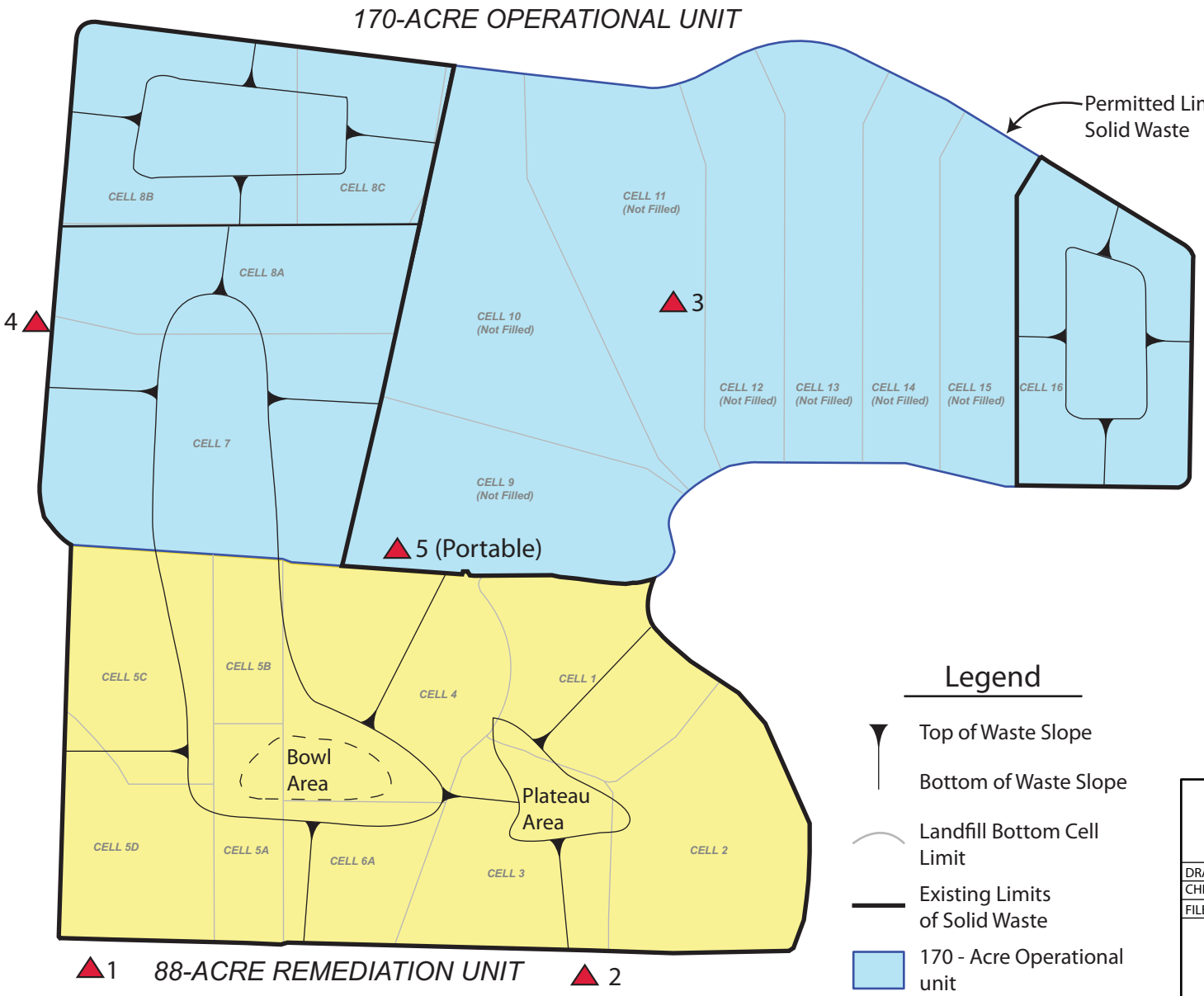
FILE NAME: Figure11.pdf	

PROJECT:
Final Report On Countywide AOC Work Activities

FIGURE 11:
TEMPORARY FML CAP WORK AREAS

PROJECT NUMBER 103345	SCALE: not to scale



Legend

- Top of Waste Slope
- Bottom of Waste Slope
- Landfill Bottom Cell Limit
- Existing Limits of Solid Waste
- 170 - Acre Operational unit
- 88 - Acre Remediation unit
- 2 Stage B and C Ambient Air Monitoring Station

N

0' 200' 400' 600'

AECOM

36133 Schoolcraft Rd. Livonia, MI 48150 (734) 779-2800

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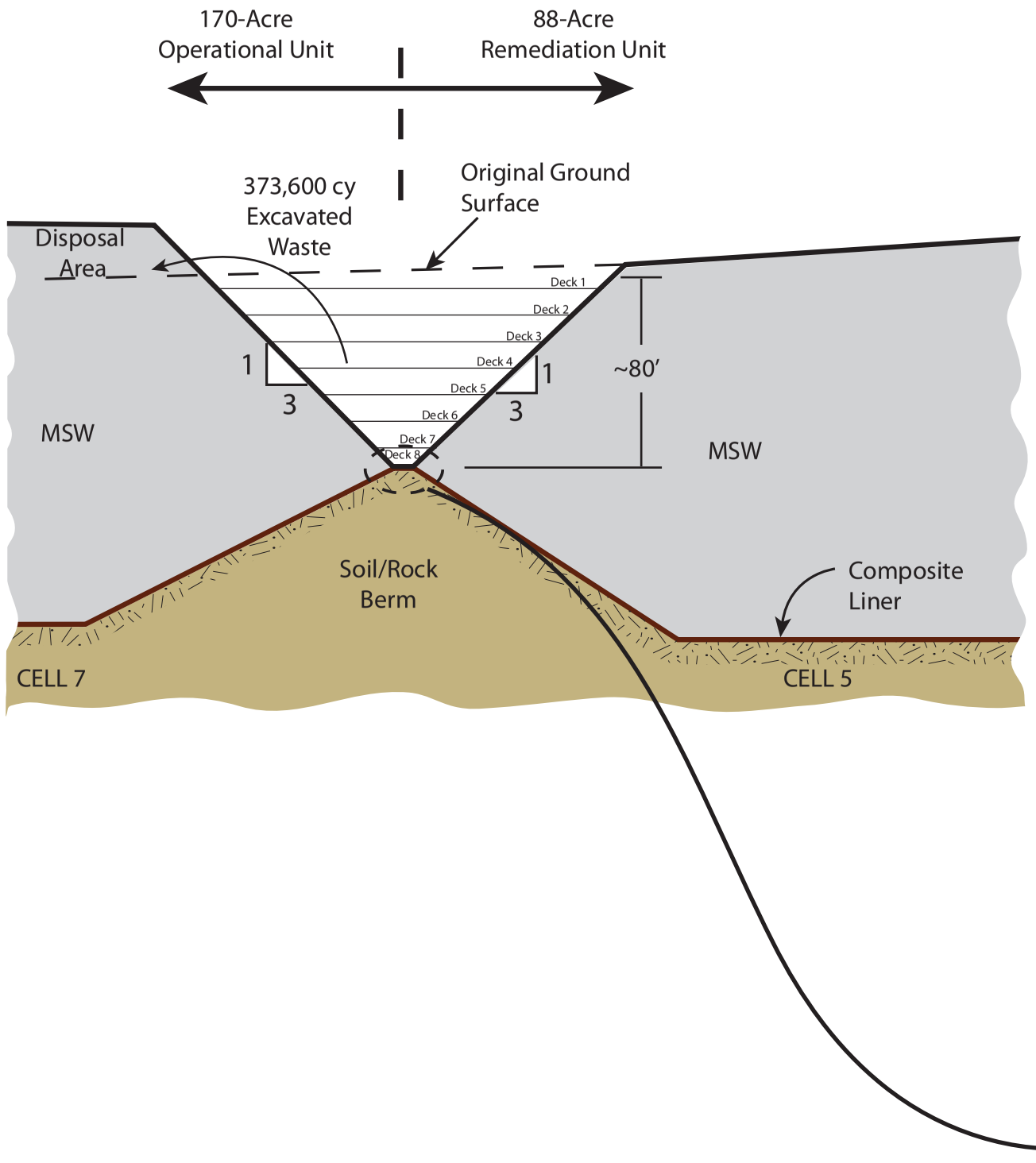
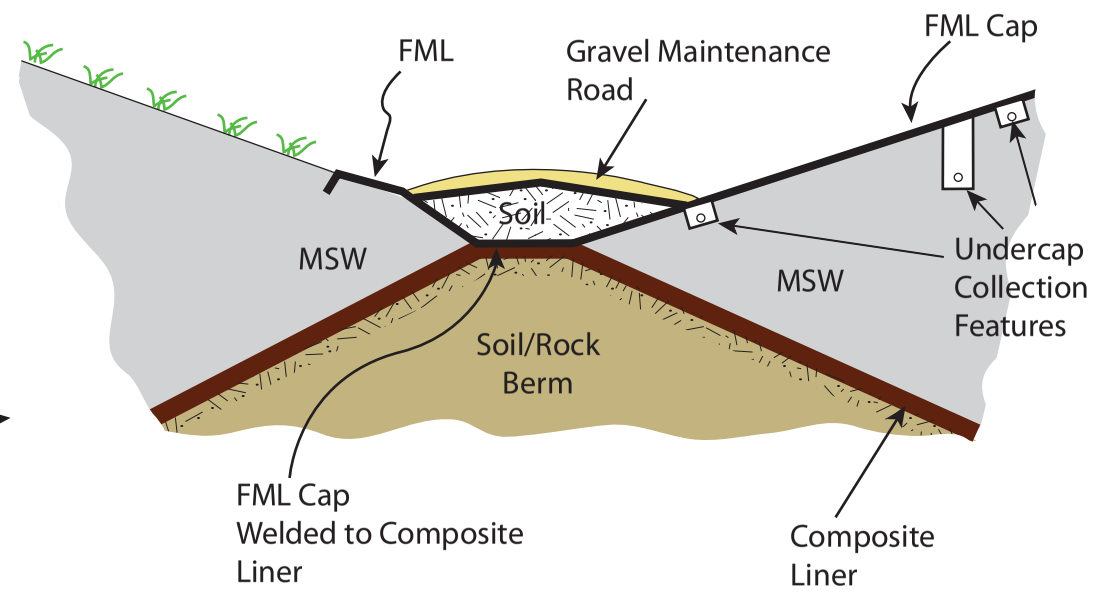
FILE NAME: air_monitor.pdf	

PROJECT:
Final Report On Countywide AOC Work Activities

FIGURE 12 :
LOCATION OF STAGE B AND C AMBIENT AIR MONITORING STATIONS

PROJECT NUMBER 103345	SCALE: not to scale





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FILE NAME: ISOBREAK.pdf	

PROJECT:
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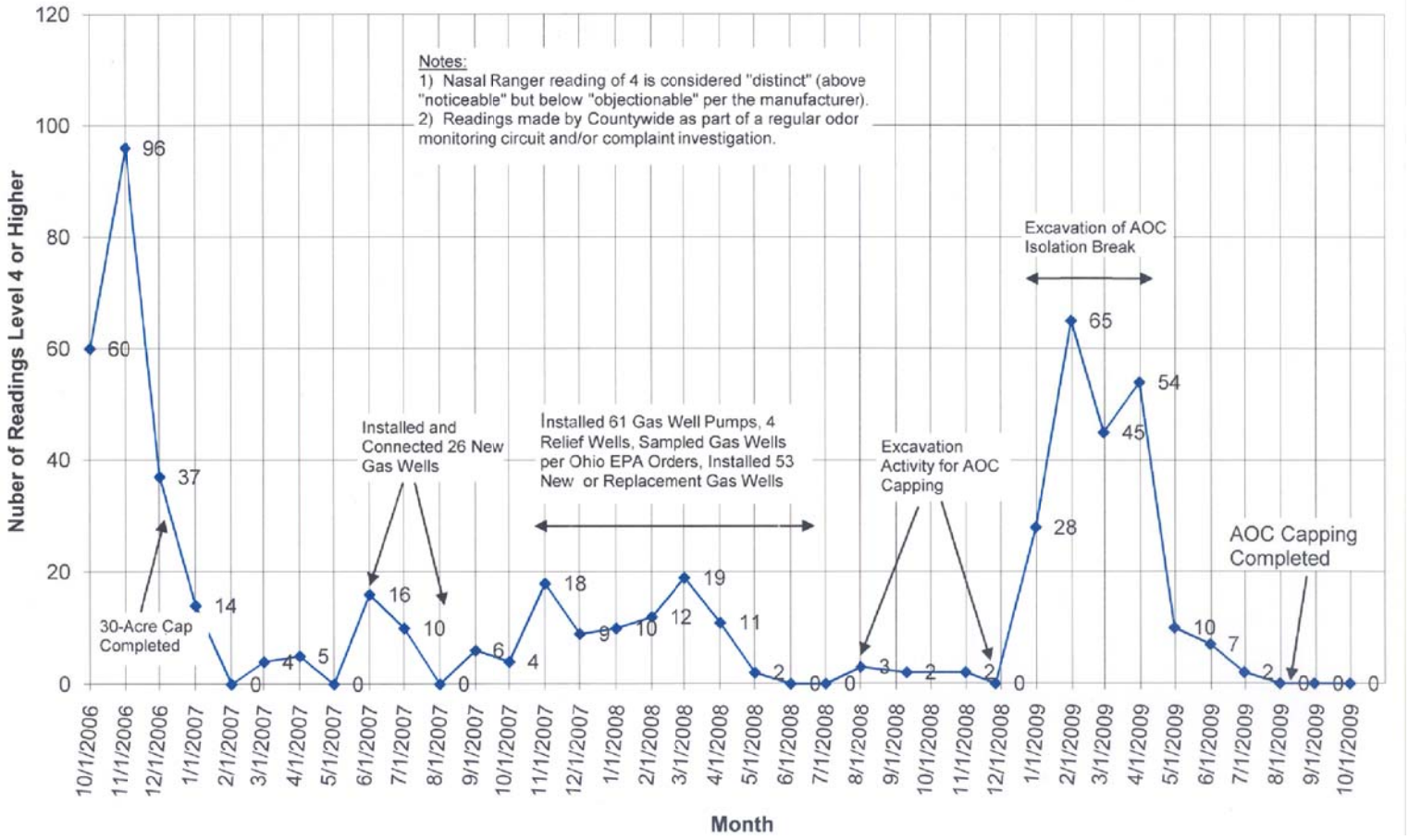
AOC Work Activities

FIGURE 13:
SCHEMATIC OF ISOLATION
BREAK

PROJECT NUMBER 103345	SCALE: NOT TO SCALE



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CHECKED BY: B.M.	EDITED BY: DCT101509
FILE NAME: ODOR MONITORING	

PROJECT:
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FIGURE 14:
ODOR MONITORING RESULTS

PROJECT NUMBER 103345	SCALE: NONE

L:\work\103345\CAD\odor monitoring.dwg, 10/22/2009 10:01:03 AM, Adobe PDF, Tabloid, 1:1

SURVEYOR'S RECORD DRAWING

CELL #5C

CELL #5B

CELL #4B

CELL #4A

CELL #1

CELL #5D

CELL #5A

CELL #6A

CELL #3

CELL #2

ISOLATION BREAK

LIMIT OF TEMPORARY FML CAP

LABELING ABBREVIATIONS:

- FM - FORCEMAIN
- LFG - LANDFILL GAS
- LLC - LOWER LEACHATE COLLECTOR
- LTL - LEACHATE TRANSFER LINE
- TD - TOE DRAIN
- UCC - UNDERCAP COLLECTOR

N

W E

S

Scale: 1 in . = 100 ft.

0' 100' 200' 300'

Graphic Scale

COUNTYWIDE RDF

SCALE: 1" = 100', CTR=2'	REVISIONS	
SURVEYED:		
DRAWN: BWS	10/19/09	
CHECKED: CCV	10/19/09	
REVISED DATE:		

PROJECT:

FINAL REPORT ON COUNTYWIDE RDF AOC WORK ACTIVITIES

SHEET TITLE:

RECORD DRAWING, AOC CAPPING & ISOLATION BREAK ACTIVITIES

DIVERSIFIED ENGINEERING INC.
225 Fair Avenue, NE
New Philadelphia, Ohio 44663
Phone:(330) 364-1631
Fax:(330) 364-4831
e-mail: dei@dei-eng.com

FILE ID:

Remediation Area - Post-AOC Work Activities 10-16-09

SHEET 1 OF 1

PHOTOS

Note: These photos are a small sample of those included in the documentation reports that have either been appended to this Final Report or included by reference.

CAPPING AND STABILIZATION, 2008

AREAS D, E, N, W, and “DEEP TRENCH”

Photograph 36 – Facing southeast. 6-inch LLC pipe transition from solid to slotted CPVC piping bedded on No. 9 aggregate.

Photograph 37 – Facing north. Placement of 6-inch LFG collector over the placed LLC pipe. Temporary end cap used to protect pipe.

Photograph 96 - Area E facing northeast, overview.

Photograph 97 – Facing north. Area E FML progress complete.

Photograph 48 – Facing west. UCC and LLC and LFG collector piping tying into the 6-inch liquid header, by access the access road at the SE corner of Area N.

Photograph 49 – Facing west. West slope LLC and LFG collection pipes and temporary cap progress.

Photo #14 – Looking east, Placing #57 stone on top of the UGC pipe at the Area D deep trench.

Photo #15 – Looking southeast, installed dual LLC clean-outs.

Photo #18 – Looking south, liner crew installing the temporary FML over trench.

Photo #19 – Performing trial weld testing.

CAPPING AND STABILIZATION, 2009

BOWL AREA, ROAD AREA, AND PLATEAU AREA

PHOTO 7: Extrusion welding and grinding FML to existing liner in the Bowl Area.

PHOTO 8: FML placement in the Bowl Area looking southeast.

PHOTO 11: Road Area FML layout with new access road looking southeast.

PHOTO 12: Road Area FML layout with new access road looking northwest.

PHOTO 15: Fusion welding FML in the Plateau Area.

PHOTO 16: FML placement in the Plateau Area looking east.

ENHANCED GAS EXTRACTION AND MONITORING

FBMP READING

150.1

ENHANCED GAS EXTRACTION AND MONITORING

TYPICAL AERIAL INFRARED PHOTOS
09/14/09

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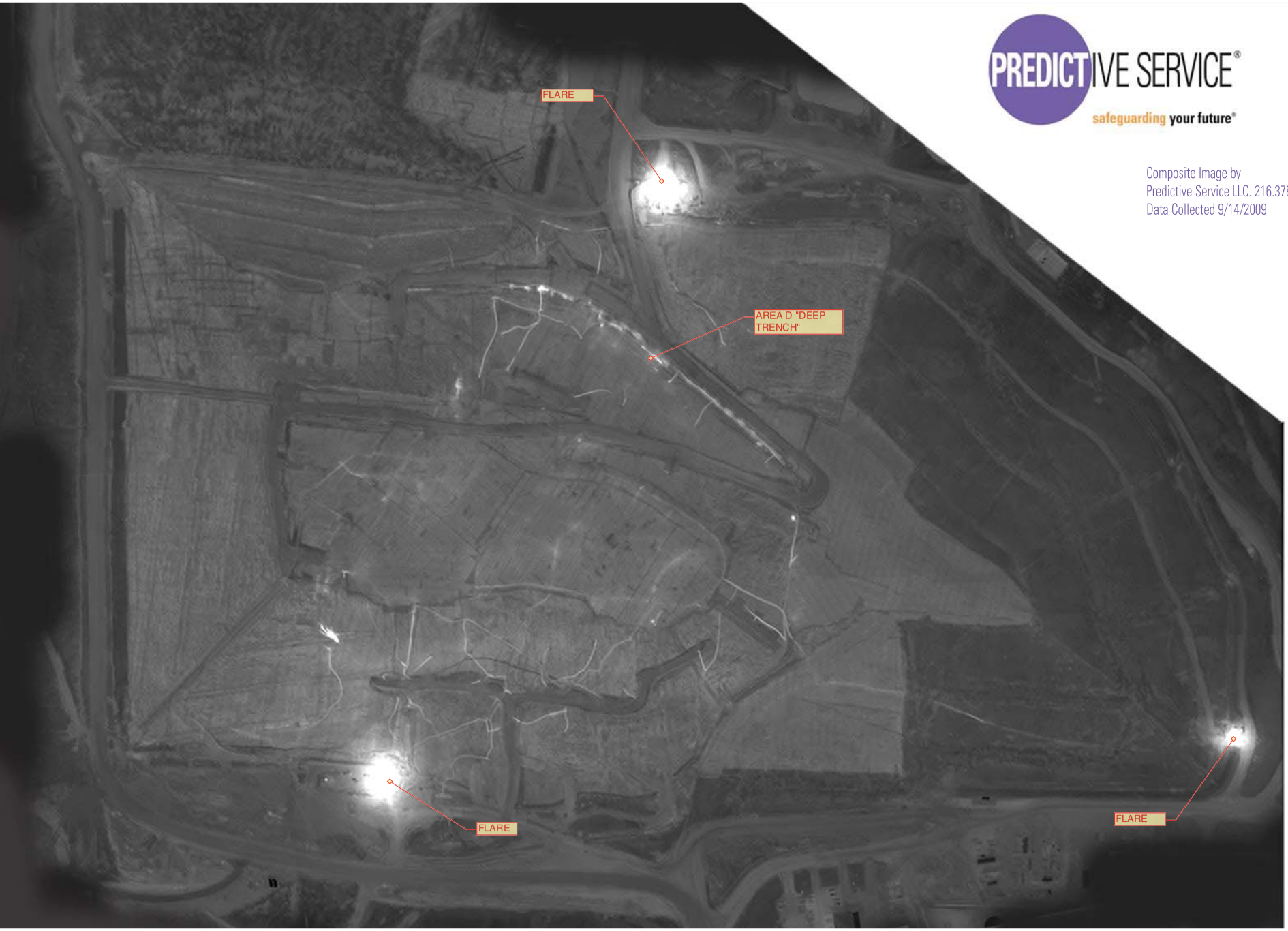
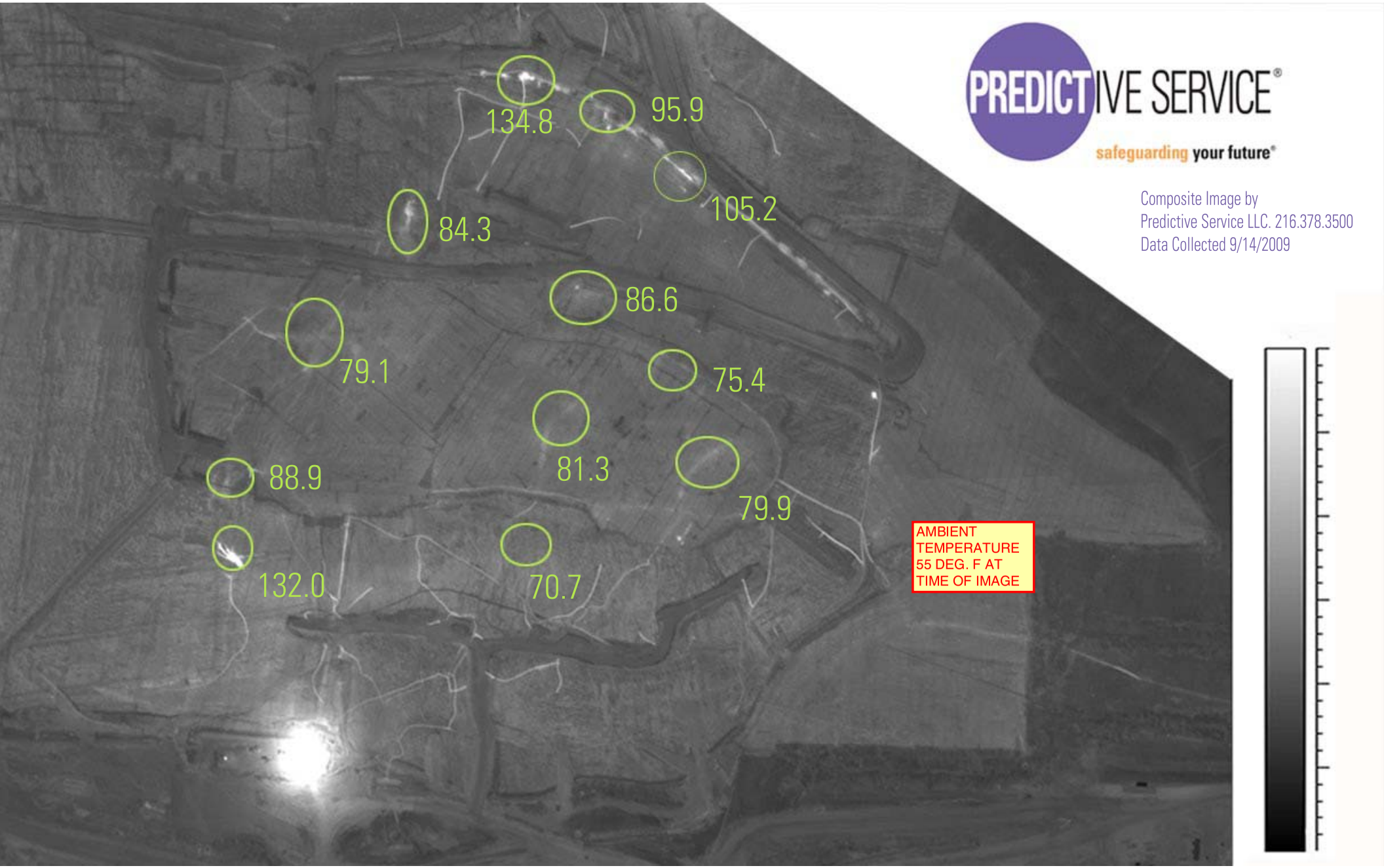
Data Collected 9/14/2009





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Data Collected 9/14/2009

AMBIENT AIR MONITORING, STAGE A

07/29/2008

AMBIENT AIR MONITORING, STAGE B

MODE

AMBIENT AIR MONITORING, STAGE C

Location: Countywide Recycling

Description: Sampling Station

Location: Countywide Recycling

Description: Sampling Station with MET Station View

ISOLATION BREAK

MASS EXCAVATION

Photo #30 – Looking northwest, isolation break overview.

Photo #31– Looking north, overview of the remainder of deck 6, facing east.

Photo #41– Looking east, excavation of Deck 8.

Photo #42 – Looking west, installed branch at the 3rd/4th UCC line.

Photo #45– 4/7/2009, looking west, installed TDC piping.

Photo #46 – 4/9/2009, looking west, placing ODOT #9 stone for TDC.

ISOLATION BREAK

RESTORATION AND ANCILLERIES

PHOTO 5: Extrusion welding FML to the top of the berm to create separation in the Isolation Break.

PHOTO 6: Extrusion weld along the top of the berm.

PHOTO 15: Pushing soil for the haul road from the east end of the Isolation Break.

PHOTO 16: Compacting and pushing soil at the east end of the Isolation Break.

PHOTO 17: Haul road looking towards the east end of the Isolation Break.

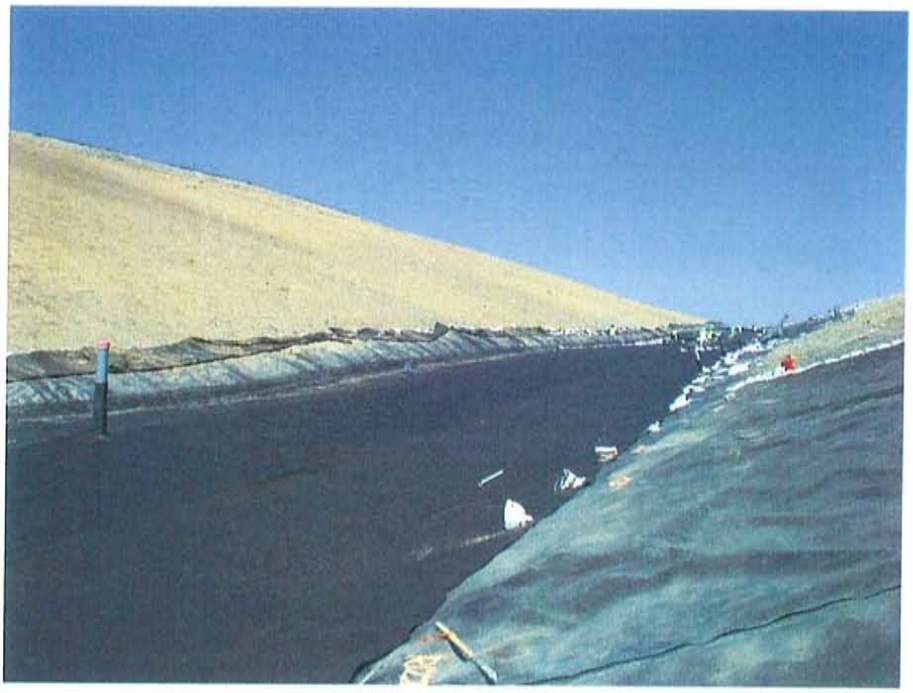

PHOTO 18: FML placement over soil haul road looking towards the east.

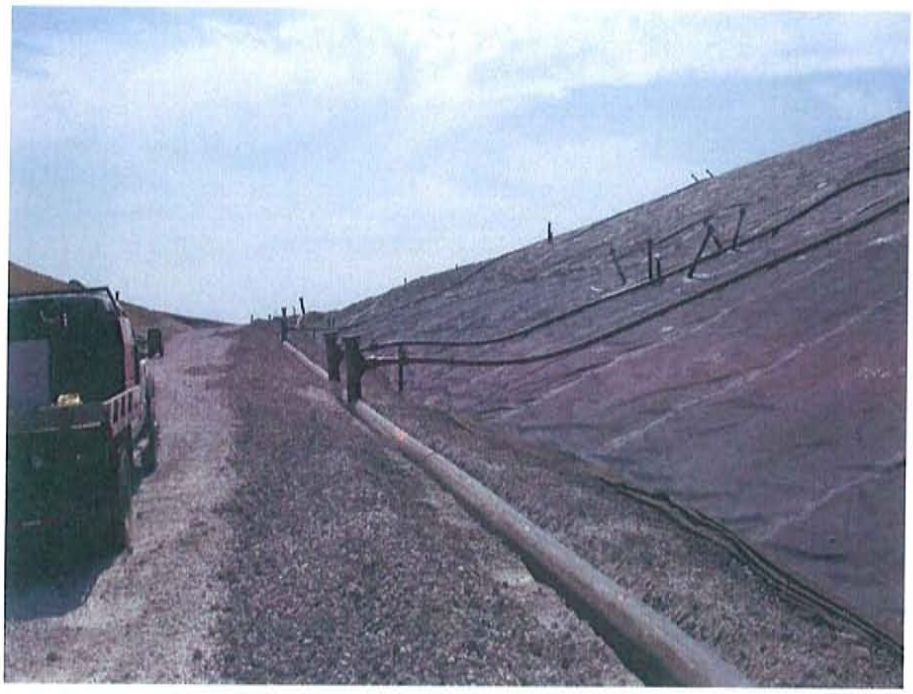

PHOTO 25: Installed 18" header and laterals in the Isolation Break.

PHOTO 26: Wells connected to laterals off the 18" header in the Isolation Break.

Completed Isolation Break

Photo Taken 09/30/09

AERIAL PHOTOS AT COMPLETION OF AOC WORK

SEPTEMBER 16, 2009

Photo Taken 09/16/09

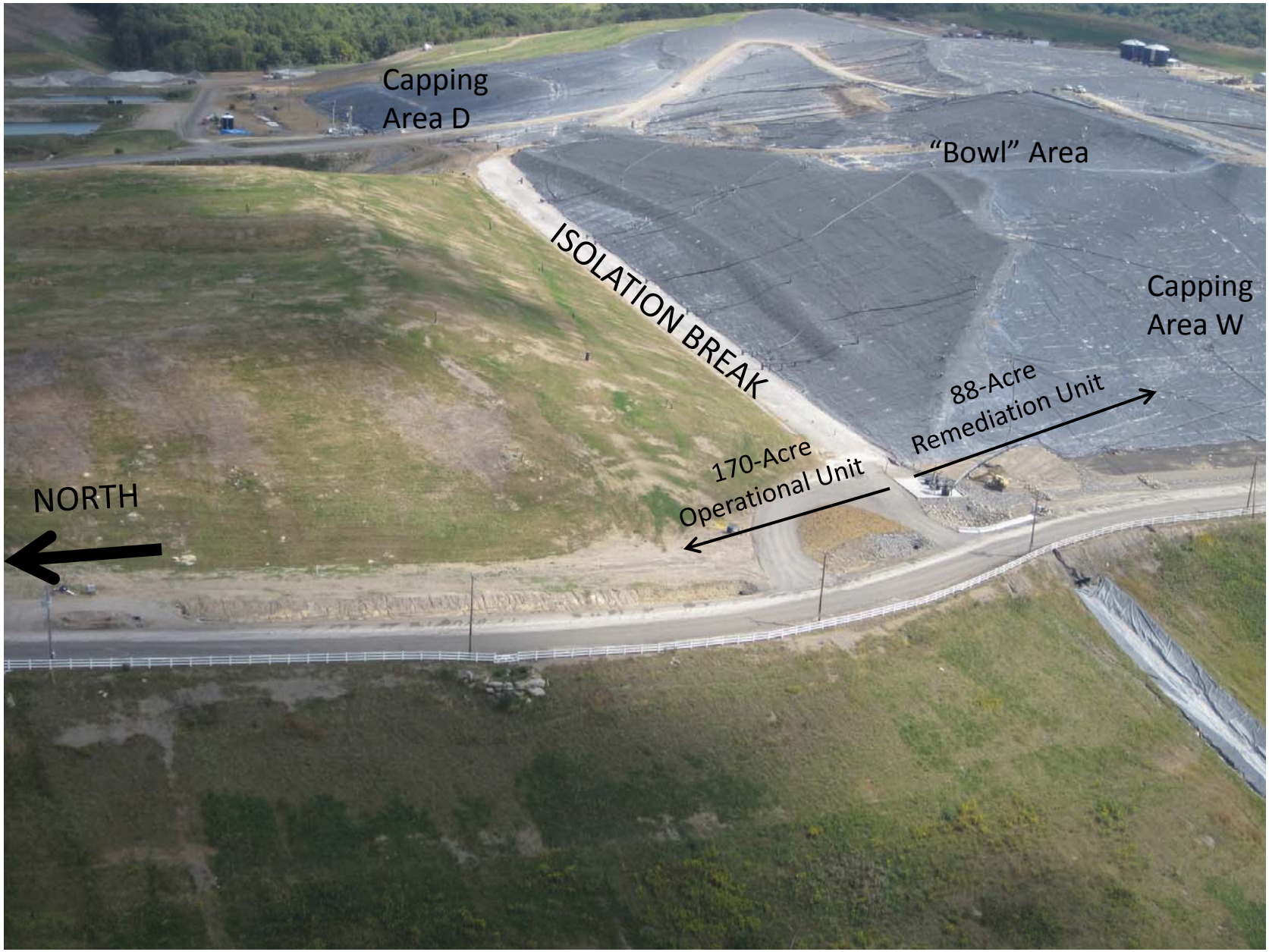

Photo Taken 09/16/09

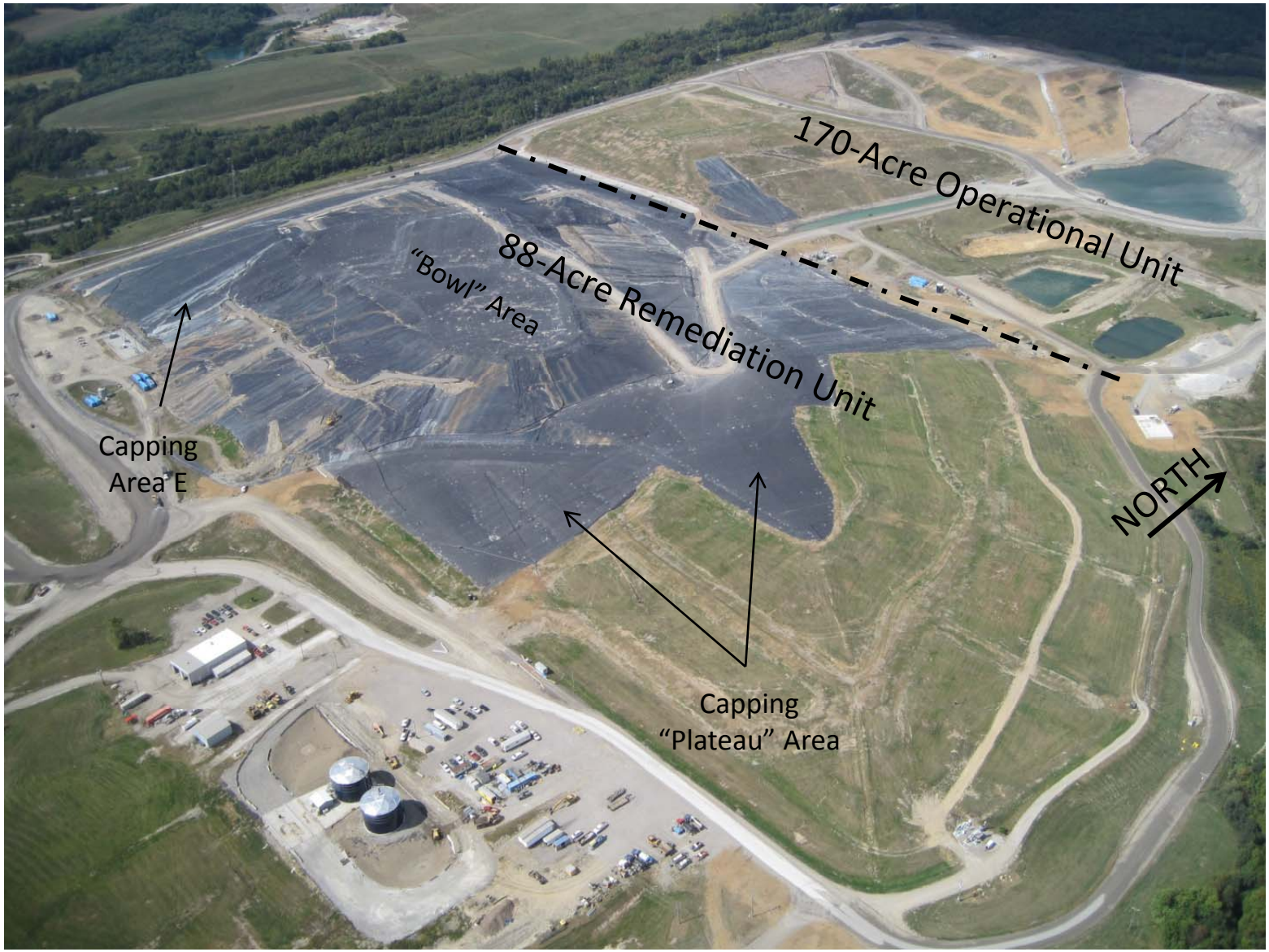

Photo Taken 09/16/09

APPENDIX A

AOC dated April 11, 2008

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:

COUNTYWIDE RECYCLING AND
DISPOSAL FACILITY
EAST SPARTA, STARK COUNTY, OHIO

Respondent:

REPUBLIC SERVICES OF OHIO II, LLC

ADMINISTRATIVE SETTLEMENT
AGREEMENT AND ORDER ON
CONSENT FOR REMOVAL ACTION

Docket No. V-W-'08-C-897

Proceeding Under Sections 104, 106(a), 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9606(a), 9607 and 9622

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I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") is entered into voluntarily by the United States Environmental Protection Agency ("U.S. EPA") and Respondent. This Settlement Agreement provides for the performance of removal actions by Respondent and the reimbursement of certain response costs incurred by the United States at or in connection with the property located at 3619 Gracemont Street S.W. in East Sparta, Stark County, Ohio, the "Countywide Recycling and Disposal Facility" or "Countywide".

2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 106(a), 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C.§§ 9604, 9606(a), 9607 and 9622, as amended ("CERCLA"). This authority has been delegated to the Administrator of the U.S. EPA by Executive Order No. 12580, January 23, 1987, 52 Federal Register 2923, and further delegated to the Regional Administrators by U.S. EPA Delegation Nos. 14-14-A, 14-14-C and 14-14-D, and to the Director, Superfund Division, Region 5, by Regional Delegation Nos. 14-14-A, 14-14-C and 14-14-D.

3. U.S. EPA has notified the State of Ohio (the "State") of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. §9606(a).

4. U.S. EPA and Respondent recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondent in accordance with this Settlement Agreement do not constitute an admission of any liability. Respondent does not admit, and retains the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement Agreement, the validity of the findings of facts, conclusions of law, and determinations in Sections IV (Findings Of Fact) and V (Conclusions Of Law And Determinations) of this Settlement Agreement. Respondent agrees to comply with and be bound by the terms of this Settlement Agreement and further agrees that it will not contest the basis or validity of this Settlement Agreement or its terms.

II. PARTIES BOUND

5. This Settlement Agreement applies to and is binding upon U.S. EPA and upon Respondent and its successors and assigns. Any change in ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter such Respondent's responsibilities under this Settlement Agreement.

6. Respondent shall ensure that its contractors, subcontractors, and representatives comply with this Settlement Agreement. Respondent shall be responsible for any noncompliance with this Settlement Agreement.

III. DEFINITIONS

7. Unless otherwise expressly provided herein, terms used in this Settlement Agreement which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Settlement Agreement or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

a. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C.§§ 9601, *et seq.*

b. "Effective Date" shall be the effective date of this Settlement Agreement as provided in Section XXX (Effective Date).

c. "Future Response Costs" shall mean all costs, including direct and indirect costs, that the United States incurs in reviewing or developing plans, reports and other items pursuant to this Settlement Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement on or after the Effective Date. Future Response Costs shall also include all costs, including direct and indirect costs, incurred prior to the Effective Date, but paid after that date.

d. "Interest" shall mean interest at the rate specified for interest on investments of the U.S. EPA Hazardous Substance Superfund established by 26 U.S.C. §9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. §9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.

e. "National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C.§ 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

f. "Settlement Agreement" shall mean this Administrative Settlement Agreement and Order on Consent and all appendices attached hereto (listed in Section XXIX (Severability/Integration/Attachments)). In the event of conflict between this Settlement Agreement and any appendix, this Settlement Agreement shall control.

g. "Parties" shall mean U.S. EPA and Respondent.

h. "RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§6901, *et seq.* (also known as the Resource Conservation and Recovery Act).

i. "Respondent" shall mean Republic Services of Ohio II, LLC.

j. "Site" shall mean that portion of the Countywide Recycling and Disposal Facility, consisting of the original 88 acres comprising Cells 1-6, located at 3619 Gracemont Street S.W. in East Sparta, Ohio, and other property owned by Respondent and located within or adjacent to the Countywide Recycling and Disposal Facility where ancillary activities that are necessary to accomplish the work contemplated hereunder may take place.

k. "State" shall mean the State of Ohio.

l. "U.S. EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

m. "Waste Material" shall mean for purposes of this Settlement Agreement, 1) any hazardous substance under Section 101(14) of CERCLA, 42 U.S.C. §9601(14); 2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C.§ 9601(33); 3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C.§ 6903(27); and 4) any "hazardous waste" under §3734.01(J) of the Ohio Revised Code. Waste Material does not include leachate, except to the extent that leachate is collected as a direct result of the Work contemplated hereunder.

n. "Work" shall mean all activities Respondent is required to perform under this Settlement Agreement.

IV. FINDINGS OF FACT

8. Based on available information, including the Administrative Record in this matter, U.S. EPA hereby finds that:

a. The Countywide Recycling and Disposal Facility (Countywide) is located at 3619 Gracemont Street S.W., East Sparta, Stark County, Ohio 44626. Countywide is a municipal solid waste (MSW) landfill regulated by Subtitle D of the Resource Conservation and Recovery Act (RCRA). Countywide is permitted and licensed by the Ohio Environmental Protection Agency (Ohio EPA or OEPA) to accept solid waste as defined in the Ohio Revised Code. The facility has been in operation since 1991. Countywide was designed and constructed with engineered systems to protect the environment, including a composite liner system, a leachate collection system, and a landfill gas collection and control system (GCCS).

b. Countywide is owned and operated by Republic Services of Ohio II, LLC ("Republic"). Republic has owned and operated the facility since March 1999.

c. Republic estimated that Countywide accepted approximately 600,000 tons of aluminum process waste between 1993 and 2006. The majority of this material was described as "dross" or "salt cake", both of which are by-products of the melting of aluminum with a salt flux. Other related aluminum-containing wastes accepted by Countywide (at much smaller quantities)

included cyclone and bag house dusts from various processes from both pre-processing and the melting of recycled aluminum. Certain types of aluminum waste can react with water-based liquids to form, among other potential gasses, ammonia, hydrogen, methane, and acetylene gasses. In addition, heat is generated due to the reaction.

d. In January 1998, Countywide's prior owner and operator submitted to the Ohio Environmental Protection Agency ("Ohio EPA" or "OEPA") an alteration request for authority to recirculate leachate at the facility. On March 3, 1998, Ohio EPA granted approval for the request. In July 2001, Republic was aware of elevated temperatures in landfill gas wells located in cells 3 and 4 and requested from the Canton Health Department higher operating temperature values for the facility. In July 2001, Republic made a similar request for cells 2 and 4A. In 2003, a third request was submitted for Cell 6A.

e. In 2004, the City of Canton Health Department received from citizens 30 odor complaints in connection with the facility. In November 2004, Republic began the installation of landfill gas collection and control systems in the western part of the landfill to assist in the elimination of potential odors from the landfill.

f. In December 2004, the Stark County Health Department issued Republic its 2005 operating license stipulating that Republic identify and install a fully operational odor suppression system. The system was required to be operational in conjunction with best management practices at the facility. In May 2005, Republic started operation of the odor suppression system. Additionally, in June 2005, Republic completed construction and started operating the GCCS.

g. From June 2005 through the middle of December 2005, only four odor complaints were received by the Canton Health Department. Beginning in December 2005, Republic identified landfill gas (LFG) wells with higher than expected temperatures while increased odors were being attributed to the landfill. From January through August 2006, the Canton Health Department received over 660 odor complaints. As many as 25 complaints were received in a single day.

h. In 2006, Countywide observed an unusual increase in well temperatures, leachate outbreaks, accelerated settlement, and an increase in odors. Republic initiated numerous activities to reduce odor generation from the landfill. Actions included, but were not limited to, discontinued leachate recirculation, discontinued acceptance of all aluminum waste, installation of 38 additional LFG wells, upgrading and repairing various components to its gas collection system, more frequent temperature and well monitoring, and installing additional gas flares. In addition, Republic conducted an evaluation of the potential causes for the temperatures, leachate outbreaks, settlement and odors and informed the Canton City Health Department and Ohio EPA of the issues and steps Republic was taking in response.

i. From May 2006 through December 2006, an area within cells 1 through 6 of the landfill experienced settlement of approximately thirty feet. A localized section along the south

toe of this area was observed to have moved laterally. Republic constructed a stabilizing berm to arrest the lateral movement and an approximately 30-acre temporary flexible membrane liner (FML) cap over the area believed to comprise the reacting area. Countywide also discovered changes in the landfill gas composition, including a decrease in methane, an increase in carbon monoxide, and an increase in hydrogen concentrations.

j. The Ohio EPA issued Director's Final Findings and Orders (DFF&Os) on September 6, 2006. The Orders required Republic to conduct the following activities: weekly monitoring and tuning of all gas wells and fields as required by 40 CFR, Part 60, Subpart WWW; monthly survey of intermediate cover condition, and, as needed, scarify and recompact the intermediate cover; conduct a vacuum survey of the headers and lateral piping system; identifying and sealing locations that were allowing either the venting of landfill gas or the intrusion of air; weekly monitoring of the strength, location, and time of any odor identified by facility personnel at the facility boundary and identification of the possible causes of that odor; investigation of all odor complaints to identify possible causes; evaluation of the current slope stability conditions in the affected areas; monitoring of landfill gas extraction wells for flow, temperature, methane content, and oxygen content; and sampling of leachate and analysis for OEPA required parameters on an annual basis.

k. Between December 16, 2006 and February 16, 2007, over 150 odor complaints were registered against the facility.

l. The Ohio EPA concluded that a fire was occurring in the landfill involving both the aluminum waste and the MSW. The Ohio EPA issued Countywide a second set of DFF&Os which became effective on March 28, 2007. The DFF&Os prohibited all leachate recirculation in the impacted 88 acre portion of the landfill which Republic had already implemented throughout the entire facility effective February 2006. In addition, Republic was required to prepare and submit a Fire Suppression Plan (FSP) which was submitted on May 25, 2007. The DFF&Os specified that Republic should evaluate a minimum of four remedial alternatives in the FSP. These alternatives included application of a magnesium chloride solution, application of specialty foams, excavation of the aluminum wastes, and placement of additional capping materials, and any other alternatives that Republic chose to consider. The DFF&Os required Republic to conduct a comprehensive evaluation of subsurface conditions at the facility to evaluate the extent and magnitude of the reaction. Republic's FSP evaluated the required elements along with some additional elements and recommended implementation of enhanced best management practices (i.e. installation of dewatering pumps in gas wells, installation of additional gas wells, enhance gas collection headers, and repair and/or replacement of compromised gas wells) and additional capping (i.e. the placement of final or temporary cap designed to collect gas and reduce oxygen and liquid infiltration into the landfill).

m. In a letter dated October 1, 2007, the Director of the Ohio EPA selected an interim remedial action for the Site and directed Republic to install an Isolation Barrier between Cells 8A and 8B. The Isolation Barrier would provide a physical separation which would eliminate the potential migration of the reaction into a permitted expansion area of the landfill.

n. On November 7, 2007, the Ohio EPA issued a third set of DFF&Os to Republic. The Orders directed Republic to aggressively reduce liquid in the explosive gas extraction system (EGES) and in the waste mass that was contributing to the reaction of the aluminum production waste and releasing significant amounts of heat. Data collected from the facility revealed the gas extraction wells contained liquid which prevented the gas collection system from functioning at peak efficiency.

o. On January 22, 2008, U.S. EPA Region 5 issued a General Notice of Potential Liability letter to Republic. In a response dated February 4, 2008, Republic agreed to cooperate with U.S. EPA.

p. In a letter dated February 5, 2008, the Director of the Ohio EPA requested U.S. EPA's assistance in requiring Republic to perform a time-critical removal action to address imminent threats posed by the Site. The Director's letter specifically requested that U.S. EPA require Republic to install a "fire break" at the Countywide Facility in the vicinity of cells 5 and 7.

q. On February 7, 2008, the Ohio EPA issued an additional set of DFF&Os to Republic. The Orders directed Republic to conduct additional air testing in the community and expanded the list of parameters to be analyzed.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

9. Based on the Findings of Fact set forth above, and the Administrative Record supporting this removal action, U.S. EPA has determined that:

a. The Countywide Landfill Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. §9601(9).

b. The conditions found at the Site, as identified in the Findings of Fact above, include the presence and threatened release of "hazardous substance(s)" as defined by Section 101(14) of CERCLA, 42 U.S.C.§ 9601(14).

c. Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. §9601(21).

d. Respondent is a responsible party under Section 107(a) of CERCLA, 42 U.S.C.§ 9607(a), and is jointly and severally liable for performance of response action and for response costs incurred and to be incurred at the Site.

i. Respondent Republic Services of Ohio II, LLC is the "owner" and/or "operator" of

the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. §9601(20), and within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. §9607(a)(1).

ii. The conditions described in the Findings of Fact above constitute an actual or threatened "release" of a hazardous substance from the facility into the environment as defined by Sections 101(22) and 101(8) of CERCLA, 42 U.S.C. §§ 9601(22) and 9601(8).

e. The conditions present at the Site may constitute a threat to public health, welfare, or the environment based upon the factors set forth in Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan, as amended ("NCP"), 40 CFR §300.415(b)(2). These factors include, but are not limited to, the following:

i. Actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances or pollutants or contaminants.

Starting in 2004 and continuing to the present, hundreds of odor compláints have been registered with the Stark County Health Department. Over this time period, numerous air sampling events conducted by the Health Department, OEPA, and Republic have confirmed the presence of volatile organic compounds (VOCs) such as Benzene, Methylene Chloride, 1,2,4-Trimethylbenzene, and Trichloroethylene, all of which are hazardous substances as defined by Section 101(14) of CERCLA, 42 U.S.C. §9601(14), at the sampling devices required by the March 2007 DFF&Os. While these substances are commonly present in gas at municipal solid waste landfills, action is needed to determine if the reaction creates conditions that may inhibit effective collection and control of landfill gas and might lead to an actual or threatened release of landfill gases that may contain hazardous substance. Several landfill experts from Ohio EPA, U.S. EPA, and retained by Republic's contractors have confirmed that a subsurface reaction continues in the landfill.

ii. Threat of fire or explosion.

A reaction involving aluminum waste and producing elevated temperatures has been and still is occurring at the Countywide Facility. Surface manifestations of the reaction became evident during 2006. U.S. EPA believes that liquids in the landfill interacted with the aluminum process waste as follows:

$$2\ Al + 6\ H_2O \Rightarrow 2\ Al(OH)_3 + 3\ H_2 + Heat$$

The heat generated by the reaction may have caused pyrolysis to occur in the adjacent MSW. Pyrolysis is a chemical process brought about by heat which accelerates the decomposition of the waste. In areas where the temperature or moisture content is not adequate for pyrolysis to occur, incomplete combustion of the waste may have occurred. In addition, the reaction is generating high levels of hydrogen and carbon monoxide as well as the presence of acetylene. These gases, in conjunction with the methane gas that is naturally generated at MSW landfills, create a

mixture of gasses that may create an explosive atmosphere (i.e. flash-fire or surface fire) around the surface of the landfill.

From May 2006 to December 2006, part of the 88 acre reaction area experienced settlement of approximately 30 feet (landfill depth 200 ft.). Carbon monoxide levels in the gas collection system of the Countywide Facility have been measured at levels up to 7,000 ppmv. This suggests rapid decomposition of the waste mass in the landfill and is evidence of accelerated biological decomposition, drying, pyrolysis, and possibly a subsurface fire.

According to 40 CFR 60.753(c) and Part 111, A.11.6 of the Title V operating permit, the facility is required to operate each interior wellhead in the gas collection system with a landfill gas temperature less than 55° C (131° F). Numerous gas collection wells in the affected area of the landfill have landfill gas temperatures in excess of 160° F. Some downhole well temperatures reached up to 230° F. In addition, OEPA staff has reported to have observed what they described as fire-charred waste from drill cuttings in the affected area of the landfill. Solid waste temperatures up to 257° F were recorded in one thermocouple in one boring. Gas monitoring probes installed pursuant to the November 7th DFF&Os (the SGP series wells), adjacent to the south toe of the 88-acre area and within the facility boundary, exhibited methane concentrations up to 15.7%.

iii. The availability of other appropriate federal or state response mechanisms to respond to the release.

In a letter dated February 5, 2008, the Director of the Ohio EPA requested U.S. EPA's assistance in requiring Republic to perform a time-critical removal action to address potential threats posed by the reaction within Cells 1 – 6 at the Site. The Director's letter specifically requested that U.S. EPA require Republic to install a fire break at the Countywide Facility in the vicinity of cells 5 and 7 to prevent the reaction from migrating into Cell 7.

f. The removal action required by this Settlement Agreement is necessary to protect the public health, welfare, or the environment and, if carried out in compliance with the terms of this Settlement Agreement, will be considered consistent with the NCP, as provided in Section 300.700(c)(3)(ii) of the NCP.

VI. SETTLEMENT AGREEMENT AND ORDER

10. Based upon the foregoing Findings of Fact, Conclusions of Law, Determinations, and the Administrative Record for this Site, it is hereby Ordered and Agreed that Respondent shall comply with all provisions of this Settlement Agreement, including, but not limited to, all provisions in attachments to this Settlement Agreement and all provisions in all documents incorporated by reference into this Settlement Agreement.

VII. DESIGNATION OF CONTRACTOR, PROJECT COORDINATOR, AND ON-SCENE COORDINATOR

11. Respondent shall retain one or more contractors to perform the Work and shall notify U.S. EPA of the name(s) and qualifications of such contractor(s) within 5 business days of the Effective Date. Respondent shall also notify U.S. EPA of the name(s) and qualification(s) of any other contractor(s) or subcontractor(s) retained to perform the Work at least 5 business days prior to commencement of such Work. U.S. EPA retains the right to disapprove of any or all of the contractors and/or subcontractors retained by Respondent. If U.S. EPA disapproves of a selected contractor, Respondent shall retain a different contractor and shall notify U.S. EPA of that contractor's name and qualifications within 3 business days of U.S. EPA's disapproval. The contractor must demonstrate compliance with ANSI/ASQC E-4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), by submitting a copy of the proposed contractor's Quality Management Plan ("QMP"). The QMP should be prepared consistent with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B0-1/002), or equivalent documentation as required by U.S. EPA.

12. Within 5 business days after the Effective Date, Respondent shall designate a Project Coordinator who shall be responsible for administration of all actions by Respondent required by this Settlement Agreement and shall submit to U.S. EPA the designated Project Coordinator's name, address, telephone number, and qualifications. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during Site work. U.S. EPA retains the right to disapprove of the designated Project Coordinator. If U.S. EPA disapproves of the designated Project Coordinator, Respondent shall retain a different Project Coordinator and shall notify U.S. EPA of that person's name, address, telephone number, and qualifications within 4 business days following U.S. EPA's disapproval. Receipt by Respondent's Project Coordinator of any notice or communication from U.S. EPA relating to this Settlement Agreement shall constitute receipt by Respondent.

13. U.S. EPA has designated James Augustyn of the Emergency Response Branch #1, Region 5, as its On-Scene Coordinator ("OSC"). Except as otherwise provided in this Settlement Agreement, Respondent shall direct all submissions required by this Settlement Agreement to the OSC at 25089 Center Ridge Road, Westlake, Ohio, 44145. Respondent is encouraged to make its submissions to U.S. EPA on recycled paper (which includes significant post consumer waste paper content where possible) and to use two-sided copies.

14. U.S. EPA and Respondent shall have the right, subject to Paragraphs 12 and 13, to change their respective designated OSC or Project Coordinator. U.S. EPA shall notify the Respondent, and Respondent shall notify U.S. EPA, as early as possible before such a change is made, but in no case less than 24 hours before such a change. The initial notification may be made orally but it shall be promptly followed by a written notice.

VIII. WORK TO BE PERFORMED

15. Respondent shall perform, at a minimum, the following removal activities:

a. Installation and operation of an enhanced active gas extraction system. This system will have the capacity to effectively redirect gasses from projecting toward cell 7;

b. Installation of an enhanced temperature monitoring system to accurately track the progression of temperatures toward Cell 7 and the western slope of Cells 1 through 6 of the landfill;

c. Development of a comprehensive landfill cover and or long term capping plan for Cells 1-6 that would include:

i. For areas that are deemed to be stable and not likely subject to untypical differential settlement, Republic shall install a "composite cap." The composite cap shall, at a minimum, meet the performance objectives of OAC Rule 3745-27-08(C)(4) and, further, be able to minimize, to the extent practical, fugitive emissions and oxygen infiltration; a composite cap is also expected to increase gas collection efficiency; and/or,

ii. Placement of an exposed geomembrane or other equivalent sealant over selected portions of the landfill where necessary and in areas that U.S. EPA considers unsuitable for composite cap. The cover would more effectively capture landfill gases, the source of the offensive odors, and reduce precipitation infiltration into the impacted cells.

The landfill cover shall be designed considering gas collection system and leachate collection requirements. All systems shall be designed to support Ohio EPA's efforts to dewater the landfill and effectively capture landfill gases;

d. On-site disposal of any excavated MSW that may be specified in the Removal Work Plan into existing cells at the landfill as determined by the Ohio EPA;

e. Development of an Air Monitoring and Sampling Plan for selected volatile organic compounds (VOCs) that will expand air monitoring and sampling efforts in order to yield data which can be used to assess potential exposures in the community and demonstrate the effectiveness of implemented control technologies. A record of sample locations and results must be maintained and submitted to the Ohio EPA and U.S. EPA;

f. Stabilization of the area within which the removal action Work is conducted, which may include backfilling/grading, storm water control, and erosion control; and

g. Conduct monthly thermal imagery flights for the purpose of providing visual images of thermal activity in Cells 1 through 6, and provide a monthly report that includes an interpretation of the observations.

16. Work Plan and Implementation.

a. Within 10 business days after the Effective Date, Respondent shall submit to U.S. EPA for approval a draft Work Plan for performing the removal action generally described in subparagraphs 15. a, b, d, and g above. Within 15 business days after the Effective Date, Respondent shall submit to U.S. EPA for approval a draft Work Plan for performing the removal action generally described in subparagraphs 15.c and f above. Within 25 business days after the Effective Date, Respondent shall submit to U.S. EPA for approval a draft Work Plan for performing the removal action generally described in subparagraph 15.e above. Each draft Work Plan shall provide a description of, and an expeditious schedule for, the actions required by this Settlement Agreement.

b. U.S. EPA may approve, disapprove, require revisions to, or modify the draft Work Plan in whole or in part. If U.S. EPA requires revisions, Respondent shall submit a revised draft Work Plan within 7 business days of receipt of U.S. EPA's notification of the required revisions. Respondent shall implement the Work Plan as approved in writing by U.S. EPA in accordance with the schedule approved by U.S. EPA. Once approved, or approved with modifications, the Work Plan, the schedule, and any subsequent modifications shall be incorporated into and become fully enforceable under this Settlement Agreement.

c. Respondent shall not commence any Work except in conformance with the terms of this Settlement Agreement. Respondent shall not commence implementation of the Work Plan developed hereunder until receiving written U.S. EPA approval pursuant to Paragraph 16(b).

17. Health and Safety Plan. Within 10 business days after the Effective Date, Respondent shall submit for U.S. EPA review and comment a plan that ensures the protection of the public health and safety during performance of on-Site work under this Settlement Agreement. This plan shall be prepared consistent with U.S. EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992). In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 C.F.R. Part 1910. If U.S. EPA determines that it is appropriate, the plan shall also include contingency planning. Respondent shall incorporate all changes to the plan recommended by U.S. EPA and shall implement the plan during the pendency of the removal action.

18. Quality Assurance and Sampling.

a. All sampling and analyses performed pursuant to this Settlement Agreement shall conform to U.S. EPA direction, approval, and guidance regarding sampling, quality assurance/quality control ("QA/QC"), data validation, and chain of custody procedures.

Respondent shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with the appropriate U.S. EPA guidance. Respondent shall follow, as appropriate, "Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedures" (OSWER Directive No. 9360.4-01, April 1, 1990), as guidance for QA/QC and sampling. Respondent shall only use laboratories that have a documented Quality System that complies with ANSI/ASQC E-4 1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), and "EPA Requirements for Quality Management Plans (QA/R-2) (EPA/240/B-01/002, March 2001)," or equivalent documentation as determined by U.S. EPA. U.S. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program ("NELAP") as meeting the Quality System requirements.

b. Upon request by U.S. EPA, Respondent shall have such a laboratory analyze samples submitted by U.S. EPA for QA monitoring. Upon Request by U.S. EPA, Respondent shall provide to U.S. EPA the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis.

c. Upon request by U.S. EPA, Respondent shall allow U.S. EPA or its authorized representatives to take split and/or duplicate samples. Respondent shall notify U.S. EPA not less than 3 business days in advance of any sample collection activity, unless shorter notice is agreed to by U.S. EPA. U.S. EPA shall have the right to take any additional samples that U.S. EPA deems necessary. Upon request, U.S. EPA shall allow Respondent to take, split or duplicate samples of any samples it takes as part of its oversight of Respondent's implementation of the Work.

19. Post-Removal Site Control. In accordance with the Work Plan schedule, or as otherwise directed by U.S. EPA, Respondent shall submit a proposal for post-removal site control consistent with Section 300.415(*l*) of the NCP and OSWER Directive No. 9360.2-02. Upon U.S. EPA approval, Respondent shall implement such controls and shall provide U.S. EPA with documentation of all post-removal site control arrangements.

20. Reporting.

a. Respondent shall submit a written progress report to U.S. EPA concerning actions undertaken pursuant to this Settlement Agreement on the last business day of every month after the date of receipt of U.S. EPA's approval of the Work Plan until termination of this Settlement Agreement, unless otherwise directed in writing by the OSC. These reports shall describe all significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period, including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems.

b. Respondent shall submit 3 copies of all plans, reports or other submissions required by

this Settlement Agreement, or any approved work plan. Upon request by U.S. EPA, Respondent shall submit such documents in electronic form.

c. Respondent shall, at least 30 days prior to the conveyance of any interest in real property at the Site, give written notice to the transferee that the property is subject to this Settlement Agreement and written notice to U.S. EPA and the State of the proposed conveyance, including the name and address of the transferee. Respondent agrees to require that its successors comply with the immediately proceeding sentence and Sections IX (Site Access) and X (Access to Information).

21. Final Report. Within 60 calendar days after completion of all Work required by Section VIII (Work To Be Performed) of this Settlement Agreement, Respondent shall submit for U.S. EPA review a final report summarizing the actions taken to comply with this Settlement Agreement. The final report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports" and with the guidance set forth in "Superfund Removal Procedures: Removal Response Reporting - POLREPS and OSC Reports" (OSWER Directive No. 9360.3-03, June 1, 1994). The final report shall include a good faith estimate of total costs or a statement of actual costs incurred in complying with the Settlement Agreement, a listing of quantities and types of materials removed off-Site or handled on-Site, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal action (*e.g.*, manifests, invoices, bills, contracts, and permits). The final report shall also include the following certification signed by a person who supervised or directed the preparation of that report:

> "Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

22. Off-Site Shipments.

a. Respondent shall, prior to any off-Site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state and to the On-Scene Coordinator. However, this notification requirement shall not apply to any off-Site shipments when the total volume of all such shipments will not exceed 10 cubic yards.

i. Respondent shall include in the written notification the following information: 1) the name and location of the facility to which the Waste Material is to be shipped; 2) the type and quantity of the Waste Material to be shipped; 3) the expected schedule for

the shipment of the Waste Material; and 4) the method of transportation. Respondent shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

ii. The identity of the receiving facility and state will be determined by Respondent following the award of the contract for the removal action. Respondent shall provide the information required by Paragraph 22(a) and 22(b) as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

b. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an off-site location, Respondent shall obtain U.S. EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. §9621(d)(3), and 40 C.F.R. §300.440. Respondent shall only send hazardous substances, pollutants, or contaminants from the Site to an off-site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

IX. SITE ACCESS

23. Respondent shall, commencing on the Effective Date, provide U.S. EPA, the State, and their representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Settlement Agreement.

24. Where any action under this Settlement Agreement is to be performed in areas owned by or in possession of someone other than Respondent, Respondent shall use its best efforts to obtain all necessary access agreements within 10 business days after the Effective Date, or as otherwise specified in writing by the OSC. Respondent shall immediately notify U.S. EPA if after using their best efforts they are unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access. Respondent shall describe in writing its efforts to obtain access. U.S. EPA may then assist Respondent in gaining access, to the extent necessary to effectuate the response actions described herein, using such means as U.S. EPA deems appropriate. Respondent shall reimburse U.S. EPA for all costs and attorney's fees incurred by the United States in obtaining such access, in accordance with the procedures in Section XV (Payment of Response Costs).

25. Notwithstanding any provision of this Settlement Agreement, U.S. EPA and the State retain all of their access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

X. ACCESS TO INFORMATION

26. Respondent shall provide to U.S. EPA, upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Settlement Agreement, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondent shall also make available to U.S. EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

27. Respondent may assert business confidentiality claims covering part or all of the documents or information submitted to U.S. EPA under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C.§ 9604(e)(7), and 40 C.F.R.§ 2.203(b). Documents or information determined to be confidential by U.S. EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to U.S. EPA, or if U.S. EPA has notified Respondent that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondent.

28. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Respondent asserts such a privilege in lieu of providing documents, they shall provide U.S. EPA with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the contents of the document, record, or information; and 6) the privilege asserted by Respondent. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

29. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

XI. RECORD RETENTION

30. Until 6 years after Respondent's receipt of U.S. EPA's notification pursuant to Section XXVI (Notice of Completion of Work), each Respondent shall preserve and retain all non-identical copies of records and documents (including records or documents in electronic

form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or the liability of any person under CERCLA with respect to the Site, regardless of any corporate retention policy to the contrary. Until 6 years after Respondent's receipt of U.S. EPA's notification pursuant to Section XXVI (Notice of Completion of Work), Respondent shall also instruct its contractors and agents to preserve all documents, records, and information of whatever kind, nature or description relating to performance of the Work.

31. At the conclusion of this document retention period, Respondent shall notify U.S. EPA at least 60 days prior to the destruction of any such records or documents, and, upon request by U.S. EPA, Respondent shall deliver any such records or documents to U.S. EPA. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege, it shall provide U.S. EPA with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the subject of the document, record, or information; and 6) the privilege asserted by Respondent. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

32. Respondent hereby certifies that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by U.S. EPA or the State or the filing of suit against it regarding the Site and that it has fully complied and will fully comply with any and all U.S. EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. §6927.

XII. COMPLIANCE WITH OTHER LAWS

33. Respondent shall perform all actions required pursuant to this Settlement Agreement in accordance with all applicable local, state, and federal laws and regulations except as provided in Section 121(e) of CERCLA, 42 U.S.C. §6921(e), and 40 C.F.R. §§300.400(e) and 300.415(j).

In accordance with 40 C.F.R. §300.415(j), all on-Site actions required pursuant to this Settlement Agreement shall, to the extent practicable, as determined by U.S. EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements ("ARARs") under federal environmental or state environmental or facility siting laws. Respondent shall identify ARARs in the Work Plan subject to U.S. EPA approval.

XIII. EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES

34. In the event of any action or occurrence during performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action. Respondent shall take these actions in accordance with all applicable provisions of this Settlement Agreement, including, but not limited to, the Health and Safety Plan, in order to prevent, abate or minimize such release or endangerment caused or threatened by the release. Respondent shall also immediately notify the OSC or, in the event of his/her unavailability, the Regional Duty Officer, Emergency Response Branch #1, Region 5 at (312) 353-2318, of the incident or Site conditions. In the event that Respondent fails to take appropriate response action as required by this Paragraph, and U.S. EPA takes such action instead, Respondent shall reimburse U.S. EPA all costs of the response action consistent with the NCP pursuant to Section XV (Payment of Response Costs).

35. In addition, in the event of any release of a hazardous substance from the Site that exceeds a reportable quantity, Respondent shall immediately notify the OSC at (312) 353-2318 and the National Response Center at (800) 424-8802. Respondent shall submit a written report to U.S. EPA within 7 business days after acquiring knowledge that a reportable release from the Site occurred, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. §9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. §11004, *et seq.*

XIV. AUTHORITY OF ON-SCENE COORDINATOR

36. The OSC shall be responsible for overseeing Respondent's implementation of this Settlement Agreement. The OSC shall have the authority vested in an OSC by the NCP, including the authority to halt, conduct, or direct any Work required by this Settlement Agreement, or to direct any other removal action undertaken at the Site. Absence of the OSC from the Site shall not be cause for stoppage of work unless specifically directed by the OSC.

XV. PAYMENT OF RESPONSE COSTS

37. Payments for Future Response Costs.

a. Respondent shall pay U.S. EPA all Future Response Costs consistent with the NCP. On a periodic basis, U.S. EPA will send Respondent a bill requiring payment that consists of an Itemized Cost Summary. Respondent shall make all payments within 30 calendar days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 39 of this Settlement Agreement according to the following procedures:

i. If the payment amount demanded in the bill is for $10,000 or greater, payment shall be made to U.S. EPA by EFT in accordance with current Electronic Funds Transfer ("EFT") procedures to be provided to Respondent by U.S. EPA Region 5. Payment shall be accompanied by a statement identifying the name and address of the party(ies) making payment, the Site name, U.S. EPA Region 5, the Site/Spill ID Number B5FC, and, if any, the U.S. EPA docket number for this action. Respondent shall: 1) complete Respondent's required bank form; 2) include Federal Reserve Bank of New York, ABA #021030004 on the bank form; 3) include the U.S. EPA Account #68010727on the form; 4) include 'D 68010727 Environmental Protection Agency' in Field Tag 4200 of the Fedwire message; and 5) include the statement identifying the name and address of the party(ies) making payment, the Site name, the U.S. EPA Region and Site/Spill ID Number.

ii. If the amount demanded in the bill is $10,000 or less, the Settling Respondent may, in lieu of the procedures in subparagraph 37(a)(i), make all payments required by this Paragraph by a certified or cashiers check or checks made payable to "EPA Hazardous Substance Superfund", referencing the name and address of the party making the payment, the Site name, U.S. EPA Region 5, the Site/Spill ID Number B5FC, and, if any, the U.S. EPA docket number for this action, and shall be sent to:

U.S. Environmental Protection Agency
Superfund Payments
Cincinnati Finance Center
PO Box 979076
St. Louis, MO 63197-9000

b. At the time of payment, Respondent shall send notice that payment has been made to the Director, Superfund Division, U.S. EPA Region 5, 77 West Jackson Blvd., Chicago, Illinois, 60604-3590 and to Steven Kaiser, Associate Regional Counsel, 77 West Jackson Boulevard, C-14J, Chicago, Illinois, 60604-3590.

c. The total amount to be paid by Respondent pursuant to Paragraph 37(a) shall be deposited in the Countywide Landfill Special Account within the U.S. EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by U.S. EPA to the U.S. EPA Hazardous Substance Superfund.

38. In the event that the payments for Future Response Costs are not made within 30 days of Respondent's receipt of a bill, Respondents shall pay Interest on the unpaid balance. The Interest on Future Response Costs shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondent's failure to make timely payments under this Section, including but not limited to, payment of stipulated penalties pursuant to Section XVIII (Stipulated Penalties).

39. Respondent may dispute all or part of a bill for Future Response Costs submitted under this Settlement Agreement, only if Respondent alleges that U.S. EPA has made an accounting error, or if Respondent alleges that a cost item is inconsistent with the NCP. If any dispute over costs is resolved before payment is due, the amount due will be adjusted as necessary. If the dispute is not resolved before payment is due, Respondent shall pay the full amount of the uncontested costs to U.S. EPA as specified in Paragraph 37 on or before the due date. Within the same time period, Respondent shall pay the full amount of the contested costs into an interest-bearing escrow account. Respondent shall simultaneously transmit a copy of both checks to the persons listed in Paragraph 37(b) above. Respondent shall ensure that the prevailing party or parties in the dispute shall receive the amount upon which they prevailed from the escrow funds plus interest within 20 calendar days after the dispute is resolved.

XVI. DISPUTE RESOLUTION

40. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally.

41. If Respondent objects to any U.S. EPA action taken pursuant to this Settlement Agreement, including billings for Future Response Costs, they shall notify U.S. EPA in writing of their objection(s) within 10 calendar days of such action, unless the objection(s) has/have been resolved informally. This written notice shall include a statement of the issues in dispute, the relevant facts upon which the dispute is based, all factual data, analysis or opinion supporting Respondent's position, and all supporting documentation on which such party relies. U.S. EPA shall provide its Statement of Position, including supporting documentation, no later than 10 calendar days after receipt of the written notice of dispute. In the event that these 10-day time periods for exchange of written documents may cause a delay in the work, they shall be shortened upon, and in accordance with, notice by U.S. EPA. The time periods for exchange of written documents relating to disputes over billings for response costs may be extended at the sole discretion of U.S. EPA. An administrative record of any dispute under this Section shall be maintained by U.S. EPA. The record shall include the written notification of such dispute, and the Statement of Position served pursuant to the preceding Paragraph. Upon review of the administrative record, the Director of the Superfund Division, U.S. EPA Region 5, shall resolve the dispute consistent with the NCP and the terms of this Settlement Agreement.

42. Respondent's obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with U.S. EPA's decision, whichever occurs.

XVII. FORCE MAJEURE

43. Respondent agrees to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a *force majeure*. For purposes of this Settlement Agreement, a *force majeure* is defined as any event arising from causes beyond the control of Respondent or of any entity controlled by Respondent, including but not limited to their contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Respondent's best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work or increased cost of performance.

44. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a *force majeure* event, Respondent shall notify U.S. EPA orally within 24 hours of when Respondent first knew that the event might cause a delay. Within 7 calendar days thereafter, Respondent shall provide to U.S. EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondent's rationale for attributing such delay to a *force majeure* event if they intend to assert such a claim; and a statement as to whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall be grounds for U.S. EPA to deny Respondent an extension of time for performance. Respondent shall have the burden of demonstrating by a preponderance of the evidence that the event is a force majeure, that the delay is warranted under the circumstances, and that best efforts were exercised to avoid and mitigate the effects of the delay.

45. If U.S. EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Settlement Agreement that are affected by the *force majeure* event will be extended by U.S. EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. If U.S. EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure* event, U.S. EPA will notify Respondents in writing of its decision. If U.S. EPA agrees that the delay is attributable to a *force majeure* event, U.S. EPA will notify Respondent in writing of the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

XVIII. STIPULATED PENALTIES

46. Respondent shall be liable to U.S. EPA for stipulated penalties in the amounts set forth in Paragraphs 47 and 48 for failure to comply with the requirements of this Settlement Agreement specified below, unless excused under Section XVII (Force Majeure). "Compliance" by Respondent shall include completion of the activities under this Settlement Agreement or any

work plan or other plan approved under this Settlement Agreement identified below in accordance with all applicable requirements of this Settlement Agreement within the specified time schedules established by and approved under this Settlement Agreement.

47. Stipulated Penalty Amounts - Work.

a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Paragraph 47(b):

Penalty Per Violation Per Day	Period of Noncompliance
$1,000	1st through 14th day
$2,000	15th through 30th day
$5,000	31st day and beyond

b. Compliance Milestones

Submission of draft Work Plan

Submission of revised Work Plan

Commencement of Work according to schedule in approved Work Plan

Submission of Health and Safety Plan

Submission of Post-Removal Site Control Plan

48. Stipulated Penalty Amounts - Reports. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports pursuant to Paragraphs 20, 21 and 22:

Penalty Per Violation Per Day	Period of Noncompliance
$500	1st through 14th day
$750	15th through 30th day
$1,000	31st day and beyond

49. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: 1) with respect to a deficient submission under Section VIII (Work to be Performed), during the period, if any, beginning on the 31st day after U.S. EPA's receipt of such submission until the date that U.S. EPA notifies Respondent of any deficiency; and 2) with respect to a decision by the Director of the Superfund Division, Region 5, under Paragraph 41 of Section XVI (Dispute Resolution), during the period, if any, beginning on the 21st day after U.S. EPA submits its written statement of position until the date that the Director of the Superfund Division issues a final

decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.

50. Following U.S. EPA's determination that Respondent has failed to comply with a requirement of this Settlement Agreement, U.S. EPA may give Respondent written notification of the failure and describe the noncompliance. U.S. EPA may send Respondent a written demand for payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether U.S. EPA has notified Respondent of a violation.

51. All penalties accruing under this Section shall be due and payable to U.S. EPA within 30 days of Respondent's receipt from U.S. EPA of a demand for payment of the penalties, unless Respondent invokes the dispute resolution procedures under Section XVI (Dispute Resolution). All payments to U.S. EPA under this Section shall be paid by certified or cashier's check(s) made payable to "U.S. EPA Hazardous Substances Superfund," shall be mailed to U.S. Environmental Protection Agency, Region 5, P.O. Box 371531, Pittsburgh, Pennsylvania 15251-7531, shall indicate that the payment is for stipulated penalties, and shall reference the U.S. EPA Site/Spill ID Number B5FC, the U.S. EPA Docket Number, and the name and address of the party(ies) making payment. Copies of check(s) paid pursuant to this Section, and any accompanying transmittal letter(s), shall be sent to U.S. EPA as provided in Paragraph 37(b).

52. The payment of penalties shall not alter in any way Respondent's obligation to complete performance of the Work required under this Settlement Agreement.

53. Penalties shall continue to accrue during any dispute resolution period, but need not be paid until 20 days after the dispute is resolved by agreement or by receipt of U.S. EPA's decision.

54. If Respondent fails to pay stipulated penalties when due, U.S. EPA may institute proceedings to collect the penalties, as well as Interest. Respondent shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 51. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of U.S. EPA to seek any other remedies or sanctions available by virtue of Respondent's violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Sections 106(b) and 122(*l*) of CERCLA, 42 U.S.C. §§9606(b) and 9622(*l*), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. §9607(c)(3). Provided, however, that U.S. EPA shall not seek civil penalties pursuant to Section 106(b) or 122(*l*) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of a willful violation of this Settlement Agreement. Should Respondent violate this Settlement Agreement or any portion hereof, U.S. EPA may carry out the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. §9604, and/or may seek judicial enforcement of this Settlement Agreement pursuant to Section 106 of CERCLA, 42 U.S.C. §9606. Notwithstanding any other provision of this Section, U.S. EPA may, in its unreviewable discretion, waive in writing any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

XIX. COVENANT NOT TO SUE BY U.S. EPA

55. In consideration of the actions that will be performed and the payments that will be made by Respondent under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, U.S. EPA covenants not to sue or to take administrative action against Respondent pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§9606 and 9607(a), for the Work and Future Response Costs. This covenant not to sue shall take effect upon the Effective Date and is conditioned upon the complete and satisfactory performance by Respondent of all obligations under this Settlement Agreement, including, but not limited to, payment of Future Response Costs pursuant to Section XV (Payment of Response Costs). This covenant not to sue extends only to Respondent and does not extend to any other person.

XX. RESERVATIONS OF RIGHTS BY U.S. EPA

56. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of U.S. EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent U.S. EPA from seeking legal or equitable relief to enforce the terms of this Settlement Agreement. U.S. EPA also reserves the right to take any other legal or equitable action as it deems appropriate and necessary, or to require the Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.

57. The covenant not to sue set forth in Section XXI (Covenant Not to Sue by U.S. EPA) above does not pertain to any matters other than those expressly identified therein. U.S. EPA reserves, and this Settlement Agreement is without prejudice to, all rights against Respondent with respect to all other matters, including, but not limited to:

a. claims based on a failure by Respondent to meet a requirement of this Settlement Agreement;

b. liability for costs not included within the definition of Future Response Costs;

c. liability for performance of response action other than the Work;

d. criminal liability;

e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

f. liability arising from the past, present, or future disposal, release or threat of release of

Waste Materials outside of the Site; and

g. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site.

XXI. COVENANT NOT TO SUE BY RESPONDENT

58. Respondent covenants not to sue and agrees not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Future Response Costs, or this Settlement Agreement, including, but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. §9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;

b. any claim arising out of response actions at or in connection with the Site, including any claim under the United States Constitution, the Ohio Constitution, the Tucker Act, 28 U.S.C. § 491, the Equal Access to Justice Act, 28 U.S.C. §2412, as amended, or at common law; or

c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§9607 and 9613, relating to the Site.

These covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 57 (b), (c), and (e) - (g), but only to the extent that Respondent's claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

59. Nothing in this Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. §9611, or 40 C.F.R. §300.700(d).

XXII. OTHER CLAIMS

60. By issuance of this Settlement Agreement, the United States and U.S. EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent. The United States or U.S. EPA shall not be deemed a party to any contract entered into by Respondent or directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Settlement Agreement.

61. Except as expressly provided in Section XXI (Covenant Not to Sue by Respondents), Paragraph 58 and Section XIX (Covenant Not to Sue by U.S. EPA), nothing in this Settlement Agreement constitutes a satisfaction of or release from any claim or cause of action against

Respondents or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§9606 and 9607.

62. No action or decision by U.S. EPA pursuant to this Settlement Agreement shall give rise to any right to judicial review, except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXIII. CONTRIBUTION PROTECTION

63. a. The Party agrees that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and that Respondent is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), for "matters addressed" in this Settlement Agreement. The "matters addressed" in this Settlement Agreement are the Work and Future Response Costs.

b. The Party agrees that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42. U.S.C. §9613(f)(3)(B), pursuant to which the Respondent has, as of the Effective Date, resolved its liability to the United States for the Work, and Future Response Costs.

c. "Except as provided in Section XXI (Covenant Not To Sue By Respondent), Paragraph 58, of this Settlement Agreement", nothing in this Settlement Agreement precludes the United States or Respondent from asserting any claims, causes of action, or demands for indemnification, contribution, or cost recovery against any persons not parties to this Settlement Agreement. Nothing herein diminishes the right of the United States, pursuant to Section 113(f)(2)and (3), 42 U.S.C. §9613(f)(2) and (3), to pursue any such persons to obtain additional response costs or response action, and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2).

XXIV. INDEMNIFICATION

64. Respondent shall indemnify, save and hold harmless the United States, its officials, agents, contractors, subcontractors, employees and representatives from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, Respondent agrees to pay the United States all costs incurred by the United States, including but not limited to attorneys fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Respondent, its officers, directors,

employees, agents, contractors, subcontractors and any persons acting on its behalf or under its control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondent in carrying out activities pursuant to this Settlement Agreement. Neither Respondent nor any such contractor shall be considered an agent of the United States. The Federal Tort Claims Act (28 U.S.C. §§2671, 2680) provides coverage for injury or loss of property, or injury or death caused by the negligent or wrongful act or omission of an employee of U.S. EPA while acting within the scope of his or her employment, under circumstances where U.S. EPA, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred.

65. The United States shall give Respondent notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondent prior to settling such claim.

66. Respondent waives all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Respondent shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

XXV. MODIFICATIONS

67. The OSC may make modifications to any plan or schedule in writing or by oral direction. Any oral modification will be memorialized in writing by U.S. EPA promptly, but shall have as its effective date the date of the OSC's oral direction. Any other requirements of this Settlement Agreement may be modified in writing by mutual agreement of the parties.

68. If Respondent seeks permission to deviate from any approved work plan or schedule, Respondent's Project Coordinator shall submit a written request to U.S. EPA for approval outlining the proposed modification and its basis. Respondent may not proceed with the requested deviation until receiving oral or written approval from the OSC pursuant to Paragraph 67.

69. No informal advice, guidance, suggestion, or comment by the OSC or other U.S. EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified.

XXVI. NOTICE OF COMPLETION OF WORK

70. When U.S. EPA determines, after U.S. EPA's review of the Final Report, that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, including, *e.g.*, post-removal site controls, payment of Future Response Costs, and record retention, U.S. EPA will provide written notice to Respondent. If U.S. EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, U.S. EPA will notify Respondent, provide a list of the deficiencies, and require that Respondent modifies the Work Plan if appropriate in order to correct such deficiencies. Respondent shall implement the modified and approved Work Plan and shall submit a modified Final Report in accordance with the U.S. EPA notice. Failure by Respondent to implement the approved modified Work Plan shall be a violation of this Settlement Agreement.

XXVII. FINANCIAL ASSURANCE

71. Within 30 days of the Effective Date, Respondent shall establish and maintain financial security in the amount of $4,500,000 in one or more of the following forms:

a. A surety bond guaranteeing performance of the Work;

b. One or more irrevocable letters of credit equaling the total estimated cost of the Work;

c. A trust fund;

d. A guarantee to perform the Work by one or more parent corporations or subsidiaries, or by one or more unrelated corporations that have a substantial business relationship with at least one of Respondents; or

e. A demonstration that Respondent satisfies the requirements of 40 C.F.R. Part 264.143(f). {NOTE: For these purposes, references in 40 C.F.R. §264.143(f) to the "sum of current closure and post-closure costs estimates and the current plugging and abandonment costs estimates" shall mean the amount of financial security specified above. If Respondent seeks to provide a demonstration under 40 C.F.R. §264.143(f) has provided a similar demonstration at other RCRA or CERCLA sites, the amount for which it is providing financial assurance at those other sites should generally be added to the estimated costs of the Work for this Paragraph.}

72. If Respondent seeks to demonstrate the ability to complete the Work through a guarantee by a third party pursuant to Paragraph 71(a) of this Section, Respondent shall demonstrate that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f). If

Respondent seeks to demonstrate their ability to complete the Work by means of the financial test or the corporate guarantee pursuant to Paragraph 71(d) or (e) of this Section, it shall resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the

anniversary of the Effective Date. In the event that U.S. EPA determines at any time that the financial assurances provided pursuant to this Section are inadequate, Respondent shall, within 30 days of receipt of notice of U.S. EPA's determination, obtain and present to U.S. EPA for approval one of the other forms of financial assurance listed in Paragraph 71 of this Section. Respondent's inability to demonstrate financial ability to complete the Work shall not excuse performance of any activities required under this Settlement Agreement.

73. If, after the Effective Date, Respondent can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 71 of this Section, Respondent may, on any anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondent shall submit a proposal for such reduction to U.S. EPA, in accordance with the requirements of this Section, and may reduce the amount of the security upon approval by U.S. EPA. In the event of a dispute, Respondent may reduce the amount of the security in accordance with the written decision resolving the dispute.

74. Respondent may change the form of financial assurance provided under this Section at any time, upon notice to and approval by U.S. EPA, provided that the new form of assurance meets the requirements of this Section. In the event of a dispute, Respondent may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

XXVIII. INSURANCE

75. At least 7 days prior to commencing any on-Site work under this Settlement Agreement, Respondent shall secure, and shall maintain for the duration of this Settlement Agreement, comprehensive general liability insurance and automobile insurance with limits of $2 million dollars, combined single limit. Within the same time period, Respondent shall provide U.S EPA with certificates of such insurance and a copy of each insurance policy. In addition, for the duration of the Settlement Agreement, Respondent shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondent in furtherance of this Settlement Agreement. If Respondent demonstrates by evidence satisfactory to U.S. EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondent needs provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXIX. SEVERABILITY/INTEGRATION/ATTACHMENTS

76. If a court issues an order that invalidates any provision of this Settlement Agreement or finds that Respondent has sufficient cause not to comply with one or more provisions of this Settlement Agreement, Respondent shall remain bound to comply with all provisions of this Settlement Agreement not invalidated or determined to be subject to a sufficient cause defense by the court's order.

77. This Settlement Agreement and its attachments constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Settlement Agreement.

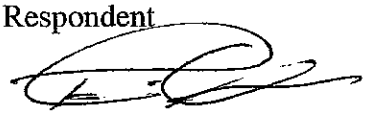
XXX. EFFECTIVE DATE

78. This Settlement Agreement shall be effective upon receipt by Respondent of a copy of this Settlement Agreement signed by the Director, Superfund Division, U.S. EPA Region 5.

The undersigned representatives of Respondent certifies that they are fully authorized to enter into the terms and conditions of this Settlement Agreement and to bind the party they represent to this document.

Agreed this 10th day of April, 2008.

For Respondent

By 

Title General Manager

IN THE MATTER OF:

COUNTYWIDE RECYCLING AND DISPOSAL FACILITY
EAST SPARTA, OHIO

It is so ORDERED and Agreed this 11th day of April, 2008.

BY: _____

Richard C. Karl, Director
Superfund Division
United States Environmental Protection Agency

APPENDIX B

Chronology of Orders and Directives

A compiled list and chronology of major orders and actions of the regulatory agencies is provided below.

September 6, 2006 Ohio EPA Directors Final Finding and Orders (DFFOs) –The Director of the Ohio EPA (Director) determined the site was an air pollution nuisance, and required certain actions to control, monitor and characterize odors.

March 28, 2007 Ohio EPA DFFOs – The Director defined a "fire" as "rapid thermal decomposition of solid waste producing carbon monoxide in excess of 1,000 ppmv" and thus declared that the facility violates OAC Rule 3745-27-19(E)(3)(a), and also concluded that the facility continued to be an air pollution nuisance. The Orders required significant sampling and analyses to characterize the reaction and its byproducts and side-effects, ordered implementation of a community ambient air monitoring system, and requested a number of study reports including a Fire Suppression Plan. It also established penalties and control mechanisms for future enforcement. These DFFOs superseded the September 6, 2006 DFFOs.

October 1, 2007 Ohio EPA– Required creating a "firebreak" between Cell 8A and 8B, and ceasing filling in Cell 7 and 8A.

November 7, 2007 Ohio EPA DFFOs – Required dewatering by adding pumps to gas extraction wells to improve gas collection efficiency. Also required additional scientific studies.

December 6, 2007 Modification to November 07, 2007 DFFOs – Suspended some of the time frames and requirements in the November 7, 2007 DFFOs.

December 31, 2007 Ohio EPA DFFOs – Superseded portions of the November 7, 2007 DFFOs, and requested revised, increased dewatering including installing deeper remediation wells (RWs).

January 22, 2008 U.S. EPA Letter - Region 5 issued a General Notice of Potential Liability letter to Republic. In a response dated February 4, 2008, Republic agreed to cooperate with U.S. EPA.

February 5, 2008 Ohio EPA Letter to U.S. EPA - The Director of OEPA requested U.S. EPA's assistance in requiring Republic to perform a time-critical removal action to address imminent threats posed by the site specifically requesting that U.S. EPA require Republic to install a "fire break" at the Countywide Facility in the vicinity of Cells 5 and 7.

February 7, 2008 Ohio EPA DFFOs – Required changes to the community ambient air monitoring program including sampling for dioxins and furans.

April 11, 2008 U.S. EPA Administrative Settlement Agreement and Order on Consent for Removal Action AOC) – Required isolating and containing the reaction through capping and redirection of reaction gases away from Cell 7. The AOC also required on-site, real-time continuous ambient air monitoring and sampling.

June 5, 2008 Countywide Report **–** At the request of the Ohio EPA, Countywide performed an investigation and then submitted a report regarding the 2006 waste slope movement. The report concluded that a limited portion of the south slope had moved up to 20' outside the permitted waste disposal limits.

October 24, 2008 U.S. EPA Letter – Requested Countywide to submit a Work Plan for the construction of a physical separation (Isolation Break) to "achieve complete separation, full containment and isolation of the ongoing reaction affecting Cells 1-6."

December 30, 2008 Letter – A letter from the Ohio EPA Enforcement Coordinator approved a requested reduction in certain sampling and analytical requirements per the March 28, 2007 DFFOs.

January 13, 2009 U.S. EPA Letter – Requested Countywide submit a Work Plan for placement of composite cap over Cells 1-3.

May 29, 2009 Ohio EPA DFFOs – Requires submitting a PTI modification application by June 1, 2010.

August 19, 2009 U.S. EPA Verbal Communication – Declared that the AOC field work was complete.

September 30, 2009 Ohio EPA DFFOs – Supersedes all previous Ohio EPA DFFO's, memorializes the bifurcation of the site into a remediation unit and an operational unit, and requires that the remediation unit be subject to an approved Operation, Maintenance, and Monitoring (OM&M) Plan.

APPENDIX C

Summary Report on Stage A Ambient Air Monitoring, Lawhon, October 22, 2008

Summary Report on Stage A Ambient Air Monitoring

at the

Countywide Recycling & Disposal Facility (Countywide)

Pursuant to:
ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR REMOVAL ACTION (AOC), April 11, 2008
Docket No. V-W-08-C-897

Republic Services of Ohio II, LLC
Countywide Recycling & Disposal Facility
3619 Gracemont Street SW
East Sparta, Ohio 44262

Prepared by:

Lawhon & Associates, Inc.
975 Eastwind Drive, Suite 190
Westerville, OH 43081
614/818-5200

Summary Report on Stage A Ambient Air Monitoring
at the
Countywide Recycling & Disposal Facility (Countywide)
Pursuant to:
ADMINISTRATIVE SETTLEMENT
AGREEMENT AND ORDER ON CONSENT FOR REMOVAL ACTION (AOC), April 11, 2008
Docket No. V-W-08-C-897

October 22, 2008

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Summary Report on Stage A Ambient Air Monitoring
at the
Countywide Recycling & Disposal Facility (Countywide)
Pursuant to:
ADMINISTRATIVE SETTLEMENT
AGREEMENT AND ORDER ON CONSENT FOR REMOVAL ACTION (AOC), April 11, 2008
Docket No. V-W-08-C-897

October 10, 2008

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Summary Report on Stage A Ambient Air Monitoring (Report)
at the
Countywide Recycling & Disposal Facility (Countywide)
Pursuant to:
ADMINISTRATIVE SETTLEMENT
AGREEMENT AND ORDER ON CONSENT FOR REMOVAL ACTION (AOC), April 11, 2008
Docket No. V-W-08-C-897

October 22, 2008

EXECUTIVE SUMMARY

Republic Services of Ohio II, LLC (Republic) has been performing a phased program of ambient air monitoring designed to comply with the provisions of the AOC. This Report summarizes the results of the Stage A monitoring that includes the results of walkover surveys with hand-held instruments, SUMMA® sampling/TO-15 analyses, and upwind/downwind monitoring of on-site intrusive activities.

The walkover surveys:

- did not identify any persistent, significantly-above-background concentrations of Volatile Organic Compounds (VOCs) at the perimeter of the landfill;
- did not identify any persistent, significantly-above-background concentrations of VOCs in areas immediately downwind of the Flexible Membrane Liner (FML) covered areas;
- identified a few areas (Cell 5A, 4A, etc.) where landfill gases were still percolating through the clay cap at detectable levels. This finding is consistent with these areas being priority targets for additional capping;
- identified interferences in the photoionization detector (PID) readings associated with the deodorizing spray, mists, fog, and humidity that caused instrument drift due, in part, to lamp and/or detector fouling; and
- indicate that odors may be detected at times when there is no above-background detection of VOCs with the PID.

Subsequently, Republic set up monitoring stations located upwind and downwind of intrusive site activities. These stations included a PID suspended from a tripod at an elevation of ~18' above grade and a SUMMA® canister equipped with a regulator designed to collect a sample integrated over 8 hours from nominally the same elevation and the same location as the PID.

The PID results collected over 614 instrument-hours of monitoring are summarized below. For the monitoring conducted after 7/23/2008 (10am), the ppbRAE results averaged 26 ppb at upwind locations and 22 ppb** at downwind locations (25 ppb, weighted average overall).

Summary of Ambient Air Monitoring Results for August 8, 2008 - September 2, 2008

Time Period	# hours of monitoring	Average ppbRAE value (ppb)	Average Total VOCs from SUMMA (ppb)	Avg. Benzene Conc. (ppb)
7/8	15	93	33	1.8
7/17-8/1	222	28*	23*	2
8/2-8/9	113	26	14.5	0.3
8/11-8/15	93	39	18	0.44
8/18-8/23	116	15	30**	0.42
8/25-9/2	70	16		
Total: 7/8-9/2	629	***25* ppb***	***Time-Weighted Simple Average***	

* ppbRAE results averaged after 7/23/2008, 10am only (approximate time that we identified interference by deodorizer)
** 8/18/2008 and 8/19/2008 only

The results were also re-sorted into upwind and downwind locations as summarized below.

Summary of Ambient Air Monitoring Results Sorted by Sample Location

Date Range	Upwind			Downwind			Comments
	Avg. ppb RAE (ppb)	Avg. Total VOCs SUMMA (ppb)	Avg. Benzene SUMMA (ppb)	Avg. ppb RAE (ppb)	Avg. Total VOCs SUMMA (ppb)	Avg. Benzene SUMMA (ppb)	
07/08	98	38	2.3	87	27	1.3	Well 358 and Well 359 install
07/17 to 07/23	835	18	1	316	29	3	Prior to avoid neutralizer spray
07/24 to 08/04	19	18	1	37	23	2	After avoid neutralizer spray
08/05 to 08/15	60	16	0.34	15	22-44**	0.43	
08/18-08/23	15	37*	0.39*	15	21*	0.46*	
08/25 to 09/2	10			22			
Since 7/23	26			22			

** Eight of nine results averaged 22ppb. Nine results (including a 223 ppb consisting mostly of methylene chloride (no benzene) increases the average to 44 ppb.
* 8/18 and 8/19 only

The TO-15 results from SUMMA® samples collected at the same time and location as the ppbRAE data showed results that are consistent with the ppbRAE data, as follows:

<u>Upwind Sample Results:</u>

- Thirty-three constituents plus four Tentatively Identified Compounds (TICs) were detected at least once in the 28 samples;
- The average total VOC concentration was 20 ppb;
- The maximum total VOC concentration was 76 ppb;
- The average benzene concentration was 0.7 ppb;
- The maximum benzene concentration was 4.1 ppb.

Downwind Sample Results:

- Thirty-six constituents plus six Tentatively Identified Compounds (TICs) were detected at least once in the 27 samples;
- The average total VOC concentration was 31 ppb;
- The two highest total VOC concentrations were 223 ppb and 50 ppb;
- The average benzene concentration was 1.57 ppb;
- The two highest benzene concentrations were 12 and 4 ppb.

The results from the 55 TO-15 upwind and downwind analyses were compared to potentially applicable benchmarks. None of the detected VOCs exceeded any potentially applicable benchmark, except for benzene. Benzene exceeded the Agency for Toxic Substances and Disease Registry (ATSDR) Acute Minimal Risk Level (MRL) of 9 ppb for ***one*** 8-hour day (at an average concentration of 12 ppb). The acute MRL provides a benchmark that indicates minimal risk ***to the general public*** for exposures lasting up to 14 days. The average concentration of benzene throughout this period was less than 2 ppb – a value that is below both the Acute MRL and the chronic MRL.

The walkover surveys were supplemented with the collection of SUMMA® canister samples that were submitted to the laboratory for TO-15 analyses. These were biased samples, collected when odors were detected, during above-background PID readings, or of leachate headspace.

The results of these biased, grab samples are consistent with the 8-hour integrated samples and their relationship to the odors and the PID readings.

Republic has monitored ambient air at the Countywide landfill site and has determined that the concentrations of VOCs found in the air on the landfill are occasionally above background levels under current site conditions and during intrusive work; however, none of the VOCs is persistently present on site at levels that exceed benchmarks considered acceptable for exposures by the general public; and therefore, none of these is present at levels that approach the Occupational Safety & Health Administration (OSHA) limits for workers.

Republic continues to perform remedial activities designed to further reduce the levels of emissions of landfill gases.

1.0 PURPOSE

Republic Services of Ohio II, LLC (Republic) has been performing a phased program of ambient air monitoring designed to comply with the provisions of the AOC. This Report summarizes the results of the first phases of this monitoring.

In the AOC, USEPA has identified two major goals for the additional ambient air monitoring, as follows:

- *To yield data which can be used to assess potential exposures in the community; and*
- *Demonstrate the effectiveness of the implemented control technologies.*

Republic developed and submitted a work plan on May 22, 2008, designed to systematically evaluate airborne constituents associated with the landfill and the potential for exposures in the community. The work plan was prepared to be consistent with the USEPA *Guidance for Evaluating Landfill Gas Emissions from Closed or Abandoned Facilities (2005).*

Although never formally approved, Republic has been implementing the work plan to conduct monitoring at the site to meet the AOC goals. The work has been conducted in accordance with the Task-Specific Quality Work Plan for Air Monitoring Activities, as amended.

2.0 BACKGROUND

Republic has been monitoring landfill gases and ambient air in the vicinity of the landfill as required by the Ohio EPA's DFFOs (Director's Final Findings and Orders) to evaluate the potential for unacceptable exposures in the community to Volatile Organic Compounds (VOCs) emanating from the landfill. USEPA is concerned that the current, every-six-day, 24-hour sampling may be diluting or missing short-term high concentrations of VOCs and other constituents that could be associated with acute health effects. Thus, USEPA directed Republic to implement a plan that would ensure that short-term air concentrations would be monitored.

In addition, several remedial measures are required of Republic at the landfill with the purpose of reducing / eliminating fugitive landfill gas emissions. The proposed monitoring has as an additional goal to establish current levels of VOCs in ambient air and, if such levels are contributed by the landfill, document decreases as the remedial efforts are implemented.

3.0 PROJECT APPROACH

The phased approach to the project was established in the work plan, as follows:

- monitor ambient air using real-time monitors to identify excursions in ambient air concentrations;
- confirm the nature of the constituents causing these excursions through the use of SUMMA® sampling and TO-15 analysis;

- evaluate the found constituent concentrations against potentially-applicable health-based criteria;
- correlate the results of the real-time monitoring (including any supplemented evaluations [e.g., TAGA bus and/or open-path UV-DOAS monitoring]} with the TO-15 results to measure the nature and extent of landfill gases and determine if these results provide a basis for an effective continuous monitoring program;
- set up real-time or supplemented real-time monitoring at points of maximum impact and also in the vicinity of the to-be-performed remedial measures; and
- design and implement a system to monitor the ambient air on a more-continuous basis before, during, and after remedy implementation.

The results of monitoring of the first five bulleted items constitute the Stage A activities that are the subject of this report.

3.1 Project Implementation

As part of the Stage A work, Republic:

- **Conducted a serpentine walkover** survey using real-time instruments to identify the locations of greatest airborne concentrations and the source(s) of those emissions.
- **Manually monitored potential sources or affected areas** based upon the results of the serpentine walkover, odor complaints, or suspected sources. Republic used a photoionization detector (PID) supplemented by SUMMA® sampling and TO-15 analysis.
- **Supported TAGA bus and UV-DOAS** monitoring. The USEPA deployed the Trace Atmospheric Gas Analyzer (TAGA) bus to the site to conduct a perimeter and on-site survey. In addition, the USEPA deployed the Ultraviolet (UV) Differential Optical Absorption Spectroscopy (DOAS) at the location suspected to have the highest concentrations of volatile organic compounds (VOCs) in air (the reaction area bowl). Republic conducted contemporaneous monitoring using hand-held instruments supplemented by the collection of SUMMA® canister samples subsequently submitted for analysis using the TO-15 method.
- **Monitored up-wind and down-wind of intrusive work** using a photoionization detector (PID) supplemented by collection of SUMMA® samples.

In addition, the monitoring conducted on the site has supported the design and implementation of the continuous real-time monitoring systems deployed on an interim basis on 9/2/2008 (Stage B monitoring) to be supplanted by permanent stations to be installed by September 30, 2008 (Stage C monitoring).

3.2 Serpentine Walkover, TAGA/UV-DOAS Shadowing, Biased Monitoring/Sampling

Over several days on-site, spaced over several months, Republic conducted walkover surveys, shadowed the TAGA bus and the UV-DOAS monitoring, and conducted biased monitoring with a ppbRAE Plus PID in an attempt to identify the largest remaining sources of landfill gas and the durations of any excursions above background. The PID monitoring was supplemented with grab and short-term (~15 minute) SUMMA® sampling and TO-15 analysis to identify the VOCs of potential concern because the PID does not speciate constituents.

3.2.1 TAGA Bus Shadowing

On May 28, 2008, Republic shadowed the TAGA Bus as it monitored ambient air at the perimeter of the site, on-site, and in the town of Bolivar. The monitoring began at approximately 4:24 am on Sherman Church Road at the corner of Haut Road (northwest of the site) and continued in a counterclockwise fashion around the off-site perimeter of the landfill. Republic followed the TAGA bus in a truck and monitored ambient air using a PID, a Flame Ionization Detector (FID), and a 4-gas meter.

Subsequently, the TAGA bus traveled onto the landfill and proceeded to loop the landfill on-site prior to any trucks delivering waste. The TAGA Bus then repeated the off-site perimeter loop. The TAGA bus drove to and around the town of Bolivar and its use was demonstrated in an availability session at the Lawrence Township hall. Later in the day, the TAGA bus returned to the site and repeated the on-site loop and also traveled to a location on Gracemont Street where an odor had been reported. Although no report on the TAGA bus activities has been received, the operators reported:

- no above-background detections of VOCs at any location at the off-site perimeter of the landfill on either loop;
- no persistent above-background detections of VOCs attributable to the landfill;
- a transient report of a maximum of 10 ppb benzene in the "Y" area in the afternoon loop;
- an elevated reading of benzene when a hose was connected to the bus and the hose was placed near a leaking wellhead. At least five other wellheads did not leak. A hose clamp on the wellhead was subsequently tightened;
- a report of above background detections of VOCs attributed to a lawn mowing activity in Bolivar;
- an above-background transient reading and odor detection near the southwest corner of the site (downwind on that day).

3.2.2 UV/DOAS Shadowing

On June 10-12, Republic shadowed the UV-DOAS equipment as it monitored ambient air in the vicinity of the reaction bowl. Although no report has been received, the operator reported:

- no above-background detections of VOCs during non-operating hours;
- an increase in ambient concentrations of toluene above background levels that coincided with trucks lining up at the entrance before the landfill opening;
- no landfill-associated above-background concentrations of VOCs even though the wind direction changed several times through the 2+ days of monitoring such that if significant emissions were present emanating from any direction relative to the monitors, they should have been detected;
- above-background levels of VOCs identified using a hand-held PID in Areas 4A and 5A.

To evaluate the above-background levels, Republic collected SUMMA® samples for approximately fifteen minutes at three different locations (two in Area 5A and one in Area 4A) where Republic had confirmed above-background PID readings.

3.3 Upwind/Downwind Monitoring

Republic conducted monitoring of ambient air at locations upwind and downwind of intrusive site activities during workdays between July 8, 2008, and September 2, 2008. This monitoring employed a PID (ppbRAE Plus) deployed at ~18 inches above grade. The monitoring program also included a SUMMA® canister collection of an 8-hour integrated sample from nominally the same location. The samples were sent to an off-site laboratory for TO-15 analysis.

4.0 RESULTS

4.1 Serpentine Walkover, TAGA/UV-DOAS Shadowing, Biased Monitoring/Sampling

The serpentine walkover survey obtained similar results to those anecdotally reported for the TAGA bus and the UV-DOAS instrument, e.g., no persistent above-background levels attributable to landfill gas emissions were noted. A walkover survey of Area 5A and Area 4A did confirm above-background VOC concentrations, especially when the PID nozzle was placed into cracks in the clay.

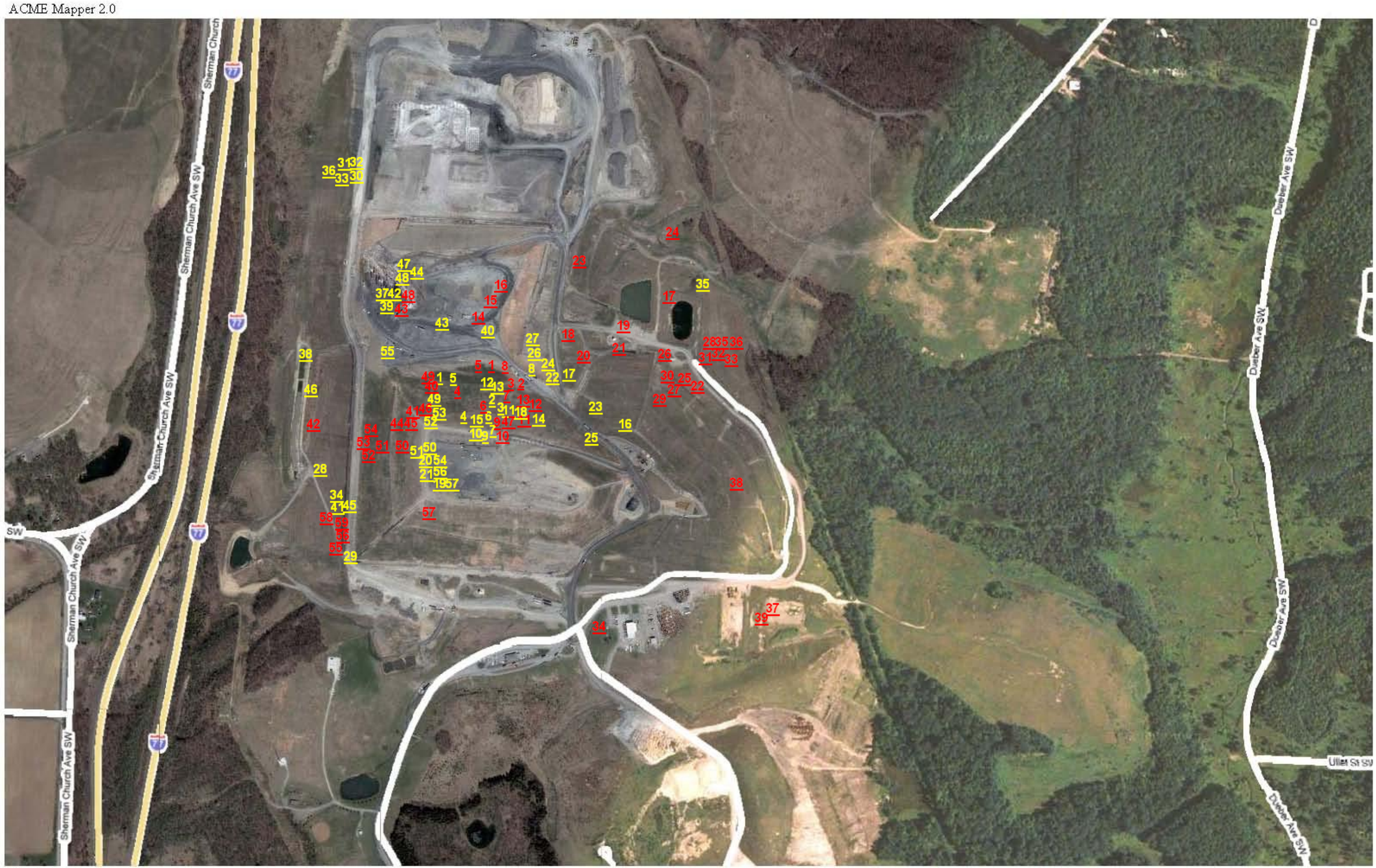
The serpentine walkover also identified interferences in the photoionization detector (PID) readings later associated with the deodorizing spray, mists, fog, and humidity that caused instrument drift and lamp and detector fouling. Republic addressed these findings by developing a protocol for using the ppbRAE, as follows:

- zero-calibrate and span-calibrate the units on a daily basis and again throughout the day as necessary to verify the accuracy of an excursion;
- once an excursion is noted, double-check the reading with the ppbRAE 3000. On most of those occasions, the ppbRAE 3000 did not confirm the excursion value; thus, we would attempt to recalibrate the ppbRAE Plus unit.
- If the unit would not re-calibrate, the lamp and/or the detector would be cleaned or replaced. Additional service steps were conducted until the unit would properly calibrate.

4.2 Upwind/Downwind Monitoring

Republic deployed upwind and downwind monitors at locations shown on Figure 1. As can be seen from the figure, the monitors were located across the portion of the site where maximum impacts to the ambient air conditions were expected based on the proximity to the reaction area, the performance of intrusive activities, and historical monitoring. The minute-by-minute results of the ppbRAE monitoring are summarized in Appendix A, sorted by date, including locations of monitors and daily meteorological reports. The TO-15 analyses for the upwind and downwind samples are summarized in the attached tables. Summary reports for TO-15 upwind and downwind analyses are presented in Appendix B.

Figure 1. Locations of Upwind (Yellow) and Downwind (Red) Monitoring Stations



4.2.1 Upwind TO-15 Results

Table 1 summarizes the TO-15 results for the 28 samples collected upwind of intrusive field activities from 7/8/2008 through 8/19/2008. This table shows:

- Thirty-three constituents plus four Tentatively Identified Compounds (TICs) were detected at least once in the 28 samples;
- Twenty constituents were detected in more than 50% of the samples;
- The average total VOC concentration was 20 ppb;
- The maximum total VOC concentration was 76 ppb;
- The average benzene concentration was 0.7 ppb;
- The maximum benzene concentration was 4.1 ppb; and
- Benzene concentrations comprised ~3.4% of the total VOCs detected in the sample.

4.2.2 Downwind TO-15 Results

Table 2 summarizes the TO-15 results for the 27 samples collected downwind of intrusive field activities. This table shows:

- Thirty-six constituents plus six Tentatively Identified Compounds (TICs) were detected at least once in the 27 samples;
- Twenty-one constituents were detected in more than 50% of the samples;
- The average total VOC concentration was 31 ppb;
- The two highest total VOC concentrations were 223 and 50;
- The average benzene concentration was 1.56 ppb;
- The two highest benzene concentrations were 12 ppb and 4 ppb; and
- Benzene concentrations comprised ~5% of the total VOCs detected in the sample.

Table 1. Results of TO-15 Analyses of 8-Hour SUMMA Samples Collected Upwind of Intrusive Activities

Analyte	8/19/08	8/18/08 (2)	8/18/08 (1)	8/15/08	8/14/08	8/13/08	8/12/08	8/11/08 (2)	8/11/08 (1)	8/9/08	8/8/08	8/7/08	8/6/08	8/5/08	8/4/08	8/1/08	7/30/08	7/29/08	7/26/08	7/25/08	7/24/08	7/23/08	7/22/08	7/21/08	7/18/08	7/17/08	7/08/08 (1)	7/8/2008 (2)	# detects	% detected	max ppb	Avg ppb
1,1,2-Trichloro-1,2,2-trifluoroethane	0.12	0.12	0.11	0.11	0.093	0.11	0.099	0.092	0.11	0.082	0.071	0.1	0.11	0.11	0.077	0.076	0.076	0.076	0.072	0.07	0.075	0.077	0.083	0.09	0.072	0.067	0.075	0.077	27	96.4%	0.12	0.09
1,2,4-Trimethylbenzene	0.61	0.19	0.14	ND	0.1	0.15	0.14	ND	ND	ND	ND	ND	ND	0.095	ND	0.34	0.18	ND	0.97	0.14	ND	ND	0.075	0.14	ND	ND	0.27	ND	13	46.4%	0.97	0.13
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ND	ND	ND	ND	0.039	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	3.6%	0.039	0.00
1,3,5-Trimethylbenzene	0.2	ND	ND	ND	ND	0.08	0.086	ND	ND	ND	ND	ND	ND	ND	ND	0.13	0.07	ND	0.25	ND	ND	ND	ND	ND	ND	ND	0.11	ND	6	21.4%	0.25	0.03
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.093	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	3.6%	0.093	0.00
2,2,4-Trimethylpentane	0.13	0.13	0.05	0.041	0.084	0.13	0.16	0.039	ND	0.048	ND	ND	ND	ND	ND	0.066	0.073	0.048	0.07	ND	0.076	ND	ND	0.08	0.06	0.11	0.059	0.05	18	64.3%	0.16	0.05
2-Butanone (MEK)	1.3	3.3	0.77	1.1	0.73	1.4	0.81	0.46	0.71	3.4	0.84	0.9	1.1	2.2	1.7	1.5	2	3.1	1.6	0.75	0.6	1.1	3	0.85	3	1.3	14	1.4	27	96.4%	14	1.96
4-Ethyltoluene	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	3.6%	0.21	0.01
4-Methyl-2-pentanone (MIBK)	0.43	ND	0.096	ND	ND	0.13	ND	0.15	0.27	0.061	ND	ND	ND	0.08	ND	0.12	0.13	0.15	0.11	ND	ND	ND	0.099	0.047	ND	ND	0.29	0.057	14	50.0%	0.29	0.08
Acetone	6	7.2	5	9.9	3.7	7.8	5.4	5.6	8.5	12	7.9	6.6	7.7	7.6	9.5	9.5	12	16	9.3	6.9	6.4	7.3	17	7.6	15	6.8	30	10	27	96.4%	30	9.44
Benzene	0.41	0.57	0.2	0.22	0.52	1.1	0.39	0.23	0.18	0.17	0.081	0.2	0.24	0.17	0.085	2.2	2.3	0.25	1.5	0.51	0.15	0.14	1.7	0.26	0.2	0.95	4.1	0.45	27	96.4%	4.1	0.70
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	3.6%	0.075	0.00
Carbon disulfide	0.4	0.096	0.07	0.066	0.039	0.12	0.087	0.043	0.063	ND	ND	0.15	0.26	0.66	0.23	ND	0.092	ND	ND	ND	ND	0.059	0.13	0.059	0.15	0.042	0.12	0.064	20	71.4%	0.66	0.11
Carbon tetrachloride	0.13	0.22	0.14	0.12	0.1	0.11	0.12	0.094	0.11	0.18	0.08	0.095	0.093	0.14	0.068	0.088	0.18	0.093	0.13	0.13	0.07	0.078	0.061	0.038	0.096	0.068	0.11	0.083	27	96.4%	0.22	0.11
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.068	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.036	ND	ND	ND	0.1	0.072	4	14.3%	0.1	0.01
Chloroform	0.041	ND	0.072	ND	ND	ND	ND	ND	ND	0.22	ND	ND	ND	0.066	0.062	ND	0.21	0.041	0.097	0.072	ND	ND	ND	ND	0.052	0.096	0.063	0.05	12	42.9%	0.22	0.04
Chloromethane	ND	ND	0.64	0.55	0.5	0.6	0.67	0.44	0.53	0.73	0.53	0.87	0.94	0.88	0.66	0.5	0.78	0.77	0.53	0.55	0.59	0.81	0.53	0.58	0.62	0.63	0.99	0.95	26	92.9%	0.99	0.62
Cyclohexane	0.33	ND	0.17	ND	ND	ND	0.26	ND	ND	0.21	ND	ND	ND	ND	ND	0.067	0.15	0.071	ND	ND	0.11	ND	0.059	0.075	ND	0.078	ND	0.088	11	39.3%	0.26	0.06
Dichlorodifluoromethane	0.79	0.88	0.73	0.72	0.62	0.84	0.85	0.57	0.71	0.79	0.46	0.62	0.66	0.63	0.48	0.54	0.53	0.46	0.47	0.43	0.48	0.5	0.52	0.56	0.52	0.51	0.48	0.53	27	96.4%	0.88	0.60
Ethylbenzene	0.49	0.21	0.14	0.069	0.31	0.44	0.59	0.096	ND	0.15	ND	ND	ND	0.35	ND	0.61	0.26	ND	0.38	0.13	0.096	0.08	0.21	0.083	ND	ND	0.44	0.1	19	67.9%	0.61	0.19
Methylene chloride	5.2	3.4	0.53	0.62	0.44	3.9	2.7	1.6	0.35	3	0.32	0.34	0.4	0.31	0.23	0.26	0.37	1.3	1.3	0.52	0.75	0.82	0.42	0.66	0.48	1.2	0.26	1.3	27	96.4%	3.9	1.18
m-Xylene & p-Xylene	1.5	0.53	0.29	0.13	0.55	0.94	1.5	0.22	0.14	0.23	ND	ND	ND	0.8	ND	1.3	0.57	0.14	0.9	0.31	0.22	0.18	0.45	0.18	ND	ND	0.79	0.21	21	75.0%	1.5	0.43
n-Heptane	0.42	0.32	0.23	0.18	0.24	0.46	0.56	0.13	0.24	0.17	0.076	ND	ND	ND	0.062	0.33	0.27	0.29	0.17	0.12	0.31	0.17	0.44	0.29	ND	0.21	0.3	0.22	23	82.1%	0.56	0.22
n-Hexane	0.91	0.45	0.3	0.16	0.19	0.62	0.42	0.32	0.068	0.5	0.11	0.1	ND	0.12	0.2	0.2	0.3	0.29	0.28	0.16	0.15	0.14	0.21	0.19	0.14	0.3	0.25	0.3	26	92.9%	0.62	0.26
o-Xylene	0.53	ND	0.16	ND	0.15	0.27	0.37	0.073	ND	0.11	0.07	ND	ND	0.69	ND	0.33	0.17	ND	0.31	0.098	0.063	ND	0.13	0.12	ND	ND	0.28	0.07	17	60.7%	0.69	0.14
Styrene	0.24	ND	0.067	ND	ND	0.085	0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	10.7%	0.17	0.02
tert-Butyl alcohol	ND	ND	0.2	0.11	0.052	0.26	0.17	0.19	0.85	0.12	0.14	0.13	0.21	0.22	0.08	0.13	0.14	0.21	0.14	0.045	0.096	0.048	0.18	0.055	0.096	0.11	0.1	0.35	26	92.9%	0.85	0.16
Tetrachloroethene	45	4.1	0.045	0.32	0.055	0.041	0.069	ND	0.047	4.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.066	0.07	ND	10	35.7%	4.3	1.93
Tetrahydrofuran	ND	ND	ND	ND	0.3	1.2	0.83	0.12	ND	0.069	ND	ND	ND	ND	ND	0.92	1.3	0.08	0.87	0.37	ND	ND	0.89	0.24	0.35	1.3	2.7	0.31	16	57.1%	2.7	0.42
Toluene	10	1.3	0.76	0.36	0.8	2.3	2.4	0.46	0.68	0.77	0.17	0.23	0.21	0.2	0.062	1.5	0.98	0.31	0.78	0.36	0.55	0.41	0.71	0.42	0.11	0.54	1.3	0.68	27	96.4%	2.4	1.05
Trichloroethene	ND	ND	ND	ND	ND	ND	0.062	ND	0.075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	7.1%	0.075	0.00
Trichlorofluoromethane	0.53	0.43	0.4	0.35	0.31	0.61	0.44	0.36	0.33	0.29	0.21	0.28	0.3	0.3	0.24	0.26	0.28	0.28	0.52	0.2	0.17	0.21	0.25	0.25	0.2	0.26	0.24	0.51	27	96.4%	0.61	0.32
Vinyl chloride	ND	ND	ND	ND	ND	ND	0.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1	ND	0.094	ND	ND	3	10.7%	0.12	0.01
*Total VOC Conc. (ppb)	75.91	23.45	11.31	15.13	9.88	23.74	19.47	11.29	13.96	27.67	11.06	10.69	12.22	15.62	13.74	20.97	23.41	23.96	21.05	11.87	10.96	12.12	27.18	12.97	21.15	14.73	57.50	17.92	20.39	***Avg. tot VOCs***		***20.39***
Benzene Concentration	0.41	0.57	0.2	0.22	0.52	1.1	0.39	0.23	0.18	0.17	0.081	0.2	0.24	0.17	0.085	2.2	2.3	0.25	1.5	0.51	0.15	0.14	1.7	0.26	0.2	0.95	4.1	0.45	0.70	***Avg benzene***		***0.70***
Benzene Percent of total*	0.54%	2.43%	1.77%	1.45%	5.26%	4.63%	2.00%	2.04%	1.29%	0.61%	0.73%	1.87%	1.96%	1.09%	0.62%	10.49%	9.82%	1.04%	7.13%	4.30%	1.37%	1.15%	6.25%	2.01%	0.95%	6.45%	7.13%	2.51%	3.41%	***Avg % of total***		***3.41%***

***(excluding compounds listed below)**

Tentatively Identified Compounds

Ethyl alcohol (8-12-08)	3.1
Acetaldehyde (8-8-08)	2.7
Propane (7-29-08)	3.5
Acetaldehyde (7-29-08)	4
Propene (7-22-08)	2.7
Propanal, 2-methyl- (7-8-08(1))	5.8
Acetaldehyde (7-8-08 (2))	7.8

Table 2. Summary of Results of TO-15 Analysis of 8-Hr SUMMA Samples Collected Downwind of Intrusive Activities

Analyte	8/19/08	8/18/08	8/15/08	8/14/08	8/13/08	8/12/08	8/9/08	8/8/08	8/7/08	8/6/08	8/5/08	8/4/08	8/2/08	8/1/08	7/30/08	7/29/08	7/26/08	7/25/08	7/24/08	7/23/08	7/22/08	7/21/08	7/18/08	7/17/08 (2)	7-17-08 (1)	7/8/2008 (1)	7/8/2008 (2)	# detects	% detected	max value	avg value
1,1,1-Trichloroethane	0.036	ND	ND	ND	ND	0.032	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	7.4%	0.036	0.00
1,1,2-Trichloro-1,2,2-trifluoroethane	0.1	0.11	0.1	0.092	0.098	0.12	0.076	0.075	ND	0.098	0.1	0.082	0.071	0.087	0.074	0.076	0.077	0.067	0.089	0.077	0.098	0.088	0.07	0.079	0.093	0.085	0.068	26	96.3%	0.12	0.08
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	3.7%	0.2	0.01
1,2,4-Trimethylbenzene	ND	0.13	0.083	0.12	0.19	ND	0.12	ND	ND	ND	0.18	0.12	ND	0.24	0.25	0.084	0.089	ND	0.76	0.67	0.11	ND	ND	0.095	0.51	0.17	0.12	18	66.7%	0.76	0.15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.036	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.044	ND	0.069	3	11.1%	0.069	0.01
1,3,5-Trimethylbenzene	ND	0.078	ND	ND	0.095	ND	ND	ND	ND	ND	0.068	ND	ND	0.072	0.075	ND	ND	ND	0.38	0.26	ND	ND	ND	ND	0.22	ND	ND	8	29.6%	0.38	0.05
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.093	ND	ND	ND	ND	ND	ND	ND	1	3.7%	0.093	0.00
2,2,4-Trimethylpentane	0.17	0.27	0.13	0.071	0.086	0.073	ND	ND	ND	0.11	0.039	0.058	0.057	0.094	0.15	0.053	0.083	0.091	ND	0.098	ND	0.067	0.055	0.11	0.18	0.059	0.32	22	81.5%	0.32	0.09
2-Butanone (MEK)	1.2	2.4	0.75	1.2	1.4	1.2	2.8	0.82	ND	3.5	1.4	1.4	1.4	5	2.2	1.3	4.3	1.7	1.5	5.3	1.4	2.3	1.8	1.1	3.8	2	4.2	26	96.3%	5.3	2.12
4-Ethyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.45	0.29	ND	ND	ND	ND	ND	0.069	ND	3	11.1%	0.45	0.03
4-Methyl-2-pentanone (MIBK)	0.14	0.22	ND	ND	0.13	0.21	0.15	0.063	ND	0.27	0.12	0.066	0.07	0.37	0.2	0.074	0.31	0.09	0.13	0.26	0.08	0.12	0.11	0.11	0.47	0.15	0.2	24	88.9%	0.47	0.15
Acetone	5.6	10	5.4	28	6.1	6.1	19	6.6	ND	22	6.7	6.3	11	9.6	14	6.8	9.8	5.2	4.6	17	9.1	15	12	8.1	11	8.8	15	26	96.3%	28	10.33
Benzene	0.34	0.57	0.47	0.55	0.49	0.2	0.42	0.22	ND	0.45	1.1	0.49	0.33	4.6	1.1	1.1	4.3	0.65	2.8	3.6	0.78	0.31	0.7	0.35	12	1.7	0.94	26	96.3%	12	1.50
Carbon disulfide	0.11	0.078	0.057	0.057	0.043	0.042	0.047	0.043	ND	0.083	0.48	ND	0.031	0.43	0.081	0.044	0.074	0.035	ND	0.038	0.068	0.056	0.11	0.12	0.1	0.62	0.048	24	88.9%	0.62	0.11
Carbon tetrachloride	0.12	0.18	0.097	0.1	0.12	0.11	0.2	0.072	ND	0.1	0.11	0.12	0.075	0.087	0.13	0.088	0.13	0.11	0.074	0.076	0.077	0.068	0.094	0.27	0.16	0.091	0.095	26	96.3%	0.27	0.11
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.037	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1	2	7.4%	0.1	0.01
Chloroform	ND	0.054	ND	ND	ND	ND	0.18	ND	ND	ND	ND	0.073	ND	ND	0.14	0.038	0.12	0.059	ND	ND	ND	ND	ND	0.31	0.14	0.092	0.047	11	40.7%	0.31	0.05
Chloromethane	0.57	0.77	0.61	ND	0.49	0.56	0.66	0.65	ND	0.5	0.85	0.76	0.67	0.72	0.71	0.67	0.62	0.68	0.63	0.5	0.95	0.72	0.8	0.69	0.63	0.61	0.85	25	92.6%	0.95	0.62
cis-1,2-Dichloroethene	0.095	0.15	ND	ND	ND	ND	0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17	4	14.8%	0.17	0.02
Cyclohexane	0.26	0.31	ND	ND	ND	ND	0.051	0.063	ND	ND	ND	ND	ND	0.09	0.48	0.062	ND	0.17	ND	ND	ND	0.081	ND	0.19	0.3	0.05	0.61	13	48.1%	0.61	0.10
Dichlorodifluoromethane	1	0.96	0.7	0.68	0.64	0.69	0.5	0.63	ND	0.63	0.64	0.5	0.48	0.54	0.78	0.48	0.5	0.49	0.5	0.51	0.6	0.57	0.54	0.54	1.1	0.52	0.78	26	96.3%	1.1	0.61
Ethylbenzene	0.23	0.6	0.2	0.19	0.37	ND	0.097	0.21	ND	ND	0.21	0.31	0.073	0.49	0.42	0.16	0.62	0.29	1.8	0.92	0.19	0.15	0.36	0.38	1.7	0.41	0.38	24	88.9%	1.8	0.40
Hexachlorobutadiene	ND	ND	0.086	ND	ND	ND	ND	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	7.4%	0.13	0.01
Methylene chloride	0.77	0.48	6.1	1.2	0.77	1.1	0.23	0.43	220	0.47	0.4	0.4	0.25	0.23	0.41	0.74	0.78	0.67	0.8	0.8	0.89	0.87	0.42	0.49	0.59	0.57	0.39	27	100.0%	220	8.94
m-Xylene & p-Xylene	0.43	1.1	0.45	0.41	0.85	ND	0.18	0.42	ND	ND	0.46	0.67	0.16	1.1	0.9	0.33	1	0.36	4.8	2.1	0.45	0.33	0.53	0.7	3.3	0.9	0.82	24	88.9%	4.8	0.84
n-Heptane	0.95	1.7	0.42	0.27	0.38	1	0.17	0.14	ND	ND	0.2	0.15	0.13	0.24	0.35	0.16	0.26	0.64	0.2	0.51	0.26	0.44	0.34	0.67	1.2	0.25	1.3	25	92.6%	1.7	0.46
n-Hexane	0.36	0.45	0.51	0.24	0.37	0.66	0.2	0.15	0.92	0.27	0.18	0.25	0.19	0.36	0.4	0.27	0.43	0.25	0.14	0.17	0.2	0.24	0.17	0.4	0.38	0.22	0.63	27	100.0%	0.92	0.33
o-Xylene	0.11	0.32	0.15	0.14	0.25	ND	0.11	0.27	ND	ND	0.17	0.33	ND	0.28	0.3	0.11	0.22	0.073	1.2	0.61	0.13	0.099	0.11	0.18	0.79	0.24	0.24	23	85.2%	1.2	0.24
Styrene	ND	0.077	ND	0.066	0.082	ND	ND	0.077	ND	ND	ND	ND	ND	ND	0.28	ND	ND	ND	0.12	0.11	ND	ND	ND	ND	0.066	ND	0.098	9	33.3%	0.28	0.04
tert-Butyl alcohol	0.13	0.25	0.11	0.11	0.16	0.14	0.91	0.099	ND	0.44	0.18	0.081	0.13	0.12	0.21	0.076	0.22	0.1	0.091	0.21	0.097	0.24	0.19	0.1	0.3	0.068	0.51	26	96.3%	0.91	0.20
Tetrachloroethene	0.76	0.25	0.043	0.042	ND	0.87	ND	ND	ND	0.074	ND	ND	ND	ND	0.3	ND	ND	0.054	ND	ND	ND	0.056	ND	ND	0.072	ND	0.19	11	40.7%	0.87	0.10
Tetrahydrofuran	0.64	0.43	0.33	1.4	0.37	ND	0.31	0.11	ND	0.38	1	0.88	0.2	8.9	1.1	1	5	0.63	1.3	5.6	0.88	0.3	0.14	0.3	4.9	1.5	0.82	25	92.6%	8.9	1.42
Toluene	1.9	4	1.3	0.86	1.2	0.95	0.33	0.41	1.7	1.2	0.66	0.42	0.47	2.1	4.7	0.56	2	2.2	2.4	2.1	0.63	0.63	2	2	5.7	1.5	4	27	100.0%	5.7	1.77
Trichloroethene	0.064	0.11	ND	ND	ND	2.6	0.11	ND	ND	ND	ND	ND	ND	ND	0.063	ND	0.071	0.048	ND	ND	ND	ND	ND	ND	ND	ND	0.15	8	29.6%	2.6	0.12
Trichlorofluoromethane	0.32	0.39	0.68	0.15	0.41	0.33	0.24	0.53	0.48	0.35	0.35	0.32	0.25	0.26	0.28	0.23	0.25	0.21	0.23	0.19	0.29	0.27	0.23	0.26	0.29	0.28	0.21	27	100.0%	0.68	0.31
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1	ND	ND	ND	ND	ND	0.11	0.18	ND	0.13	4	14.8%	0.18	0.02
*Total ppb	16.44	26.44	18.78	35.95	15.09	16.99	27.26	12.41	223.10	30.93	15.60	13.78	16.04	36.05	30.08	14.51	31.25	14.97	24.99	42.09	17.28	23.01	20.77	17.65	50.22	20.95	33.49	31.34	*Avg. total VOCs*		*31.34*
Benzene concentration (ppb)	0.34	0.57	0.47	0.55	0.49	0.2	0.42	0.22	ND	0.45	1.1	0.49	0.33	4.6	1.1	1.1	4.3	0.65	2.8	3.6	0.78	0.31	0.7	0.35	12	1.7	0.94	1.56	*Benzene conc.(ppb)*		*1.56*
Benzene percent of total*	2.07%	2.16%	2.50%	1.53%	3.25%	1.18%	1.54%	1.77%	nd	1.46%	7.05%	3.56%	2.06%	12.76%	3.66%	7.58%	13.76%	4.34%	11.20%	8.55%	4.51%	1.35%	3.37%	1.98%	23.90%	8.11%	2.81%	4.98%	*Avg. % of total*		*4.98%*

***(excluding compounds listed below)**

Tentatively Identified Compounds

Acetaldehyde (8-9-08)	5.5
Butane, 2-methyl- (7-30-08)	12
Ethyl alcohol (7-30-08)	12
Propane (7-29-08)	2.8
Ethyl alcohol (7-23-08)	3.2
Isopropyl Alcohol (7-23-08)	2.8
Acetaldehyde (7-18-08)	3.8
Propene (7-17-08)	4.9
Ethyl alcohol (7-08-08 (2))	5.7
Ethyl alcohol (7-08-08 (1))	2.6

4.2.3 Comparison of Upwind and Downwind ppbRAE Results to TO-15 Results

Tables 3 and 4 compare the TO-15 results to the average ppbRAE results obtained at the same locations at the same time.

Table 3. Summary of Ambient Air Monitoring Results for August 8 - September 2, 2008

Time Period	# hours of monitoring	Average ppbRAE value (ppb)	Average Total VOCs from SUMMA (ppb)	Avg. Benzene Conc. (ppb)
7/8	15	93	33	1.8
7/17-8/1	222	28*	23*	2
8/2-8/9	113	26	14.5	0.3
8/11-8/15	93	39	18	0.44
8/18-8/23	116	15	30**	0.42
8/25-9/2	70	16		
Total: 7/8-9/2	629	***25* ppb***	***Time-Weighted Simple Average***	

* ppbRAE results averaged after 7/23/2008, 10am only (identified interference by deodorizer)
** Samples collected on 8/18/2008 and 8/19/2008 only

Table 4. Summary of Ambient Air Monitoring Results Sorted by Sample Location

Date Range	Upwind			Downwind			Comments
	Avg. ppb RAE (ppb)	Avg. Total VOCs SUMMA (ppb)	Avg. Benzene SUMMA (ppb)	Avg. ppb RAE (ppb)	Avg. Total VOCs SUMMA (ppb)	Avg. Benzene SUMMA (ppb)	
07/08	98	38	2.3	87	27	1.3	Well 358 and Well 359 install
07/17 to 07/23	835	18	1	316	29	3	Prior to avoid neutralizer spray
07/24 to 08/04	19	18	1	37	23	2	After avoid neutralizer spray
08/05 to 08/15	60	16	0.34	15	22-44**	0.43	
08/18-08/23	15	37*	0.39*	15	21*	0.46*	
08/25 to 09/2	10			22			
Since 7/23	26			22			

** Eight of nine results averaged 22ppb. Nine results (including a 223 ppb consisting mostly of methylene chloride (no benzene) increases the average to 44 ppb.
* Samples collected on 8/18 and 8/19 only

The results taken in total demonstrate that samples were collected in areas of expected maximum impact on ambient air conditions during times when the maximum impacts were expected (i.e., downwind of drilling activities, etc.). Thus, the overall results should be considered a worst-case baseline for on-the-landfill ambient air. As noted in Table 3, the average TO-15 concentration of total VOCs over the time period 7/8 – 9/2 was 25 ppb with an average benzene concentration of 1 ppb.

Tables 1, 2, and 4 indicate that the methodology can reliably identify impacts to ambient air of intrusive activities because downwind VOC concentrations were typically greater than the upwind concentrations on the same dates; however, some upwind TO-15 concentrations were higher than the downwind locations, indicating the apparent proximity of the upwind location to a continuing source (on those dates).

4.3 Short-Term Biased Sampling Results

Table 5 summarizes the TO-15 analyses conducted on biased samples collected for a short time (~15 minutes or grab) to measure specific conditions, for example:

- Leachate tank headspace;
- Downwind of the "bowl" during a period when the FML was leaking (since repaired);
- In the vicinity of the leaking wellhead identified during the TAGA bus visit;
- Just above the surface of Areas 5A and 4A when an above-background PID reading was obtained in the vicinity of cracks in the cover.
- When odors were noted.

Analytical summaries of these results are provided in Appendix C. The results are consistent with the other Stage A monitoring data that show that landfill gases and condensate/leachate have significant concentrations of VOCs; however, samples collected even a short distance from major leaks have ambient concentrations that are not significantly above background, as follows:

- Significant VOC concentrations (1,315 ppb) and benzene concentrations (193 ppb) were measured in a grab sample associated with condensate/leachate sump headspace. Republic continues to identify and manage odors and VOC emissions associated with leachate/condensate headspace.
- Up to 400 ppb total VOCs (up to 10 ppb benzene) were measured in grab samples collected at locations immediately downwind of a leaking portion of the FML liner (since repaired). These grab samples were collected during peaks in PID readings that lasted only a few seconds.
- A grab sample collected from the TAGA bus inlet during the monitoring of the leaking wellhead had a total VOC concentration of 193 ppb (benzene concentration of 20 ppb).
- Three ambient air samples collected when odors were noted (at locations downwind of Leachate Tank 1, downwind of the West Leachate Tank, and downwind of Area 5A at a time when wellheads on Area 5A were intentionally opened) exhibited total VOC concentrations of 6-37 ppb and benzene concentrations of 0.2-3.8 ppb. These results indicate that even when odors are present, ambient VOC concentrations at even a short distance from apparent sources are detectable above background but moderate.
- Samples collected from Area 5A and 4A at locations near cracks in the cover that have above-background PID readings have total VOC concentrations up to 175 ppb and benzene concentrations up to 36 ppb. These findings indicate some continuing landfill gas emissions and are consistent with the targeting of these areas for additional capping (since completed).
- Ambient air samples collected when odors were noted (including four collected by the nasal ranger) show near-background levels of total VOCs (7-40 ppb) and benzene (0-1.3 ppb).

Table 5. Results of TO-15 Analysis of Biased Grab and Short-Term Samples

Date:	5/21/2008	5/21/2008	5/21/2008	5/28/2008	5/28/2008	5/28/2008	5/28/2008	6/11/2008	6/10/2008	6/11/2008	6/16/2008	7/28/2008	8/20/2008	8/22/2008	8/26/2008	8/27/2008
Name:	P052108	SU-D052108	SU-R052108	SU528GB1	SU528GBB2	SU528GB3	SU528GB4	SU 6-11-001	SU 6-10-002	SU 6-11-003	SU 6-16-004	GB 7-28-08	ODR-1	ODR-3	ODR-2	ODR-4
Type:	Grab	Grab	Grab	Grab	Grab	Grab	Grab	15 minute								
LAB:	IAL	IAL	IAL	TA	TA	IAL	IAL	IAL	IAL	IAL	IAL	IAL	IAL	IAL	IAL	IAL
Analyte	S. Leachate Tank Sump Headspace	Downwind of FML leak in bowl	Downwind of FML leak in bowl	Grab from TAGA hose, PW123 leak	Downwind of Leachate Tank #1	Downwind (DW) of S/W. Leachate Tank	DW of Area 5A w/wells open, odor	Area 5A, near surface cracks	Area 5A, near surface cracks	Area 4A, at barren circle	West of 5D at bottom of hill, odor	Outside CW trailer, odor	West Slope Area 5 Road, odor	CP-140, odor	Sherman Church Riverdale, odor	West Side I-77, Even w/Flag
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ND	ND	0.085	0.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	14	2.8	38	11	ND	0.59	ND	1.7	32	6.6	ND	ND	ND	ND	0.73	0.52
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	0.72	17	3	ND	ND	ND	0.91	8.3	5.4	ND	ND	ND	ND	ND	ND
1,3-Butadiene	ND	4.9	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	1	ND	ND	ND	ND	3.7	1.2	ND	ND	ND	ND	ND	ND
2,2,4-Trimethylpentane	ND	ND	0.49	0.078	ND	ND	ND	0.56	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	347	22	27	38	0.53	2.3	5.1	18	15	16	ND	1.4	1.2	4.5	3	1.4
4-Ethyltoluene	ND	0.76	4.1	2.4	ND	ND	ND	1.3	7.6	4	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	15	0.91	2.6	1.3	ND	ND	ND	1.1	1.2	1	ND	ND	ND	ND	1	ND
Acetone	613	115	104	56	3.1	4.8	14	34	19	18	4.1	ND	14	ND	ND	ND
Benzene	193	10	8.8	20	0.2	2.1	3.8	36	18	32	ND	ND	1.3	1.1	0.92	0.93
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	0.58	0.58	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	0.07	0.083	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	0.59	0.5	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	3.4	2.1	1.1	0.55	1.1	1.2	1	1	ND	1.1	1.3	1.2	2.7	1.3	1.8
Cyclohexane	ND	ND	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.74	ND
Dichlorodifluoromethane	ND	1.2	0.82	0.55	0.53	1	3.3	1.3	0.88	0.68	1.2	2	0.82	1.2	2.6	0.9
Ethylbenzene	19	2.3	11	4.3	ND	ND	0.82	4.8	8.4	5.6	ND	ND	ND	ND	0.65	ND
Methylene chloride	ND	ND	3.2	0.41	0.32	ND	1.6	0.85	0.52	ND	ND	ND	2.3	0.78	15	2.2
m-Xylene & p-Xylene	51	12	88	10	ND	1.6	3.2	21	40	26	0.89	ND	1.4	ND	3.6	2.4
n-Heptane	ND	2.3	5.9	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	0.79	ND
n-Hexane	ND	3.7	2.8	0.45	0.048	ND	ND	0.63	ND	ND	ND	1.3	ND	0.52	1	ND
o-Xylene	11	2.7	34	3.5	ND	ND	0.74	4.2	7.6	7.6	ND	ND	ND	ND	1.2	0.9
Styrene	ND	ND	ND	0.54	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND
tert-Butyl alcohol	17	58	31	1.1	0.073	ND	ND	1.2	ND	1.4	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	32	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	35	6.7	14	5.7	0.15	0.68	3.1	ND	10	9.9	0.65	0.52	0.76	0.54	4.8	0.66
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	0.31	0.25	0.24	ND	ND	0.59	ND	ND	ND	0.69	0.55	0.7	0.89	0.9
Vinyl chloride	ND	1.9	0.78	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*Total VOC Conc. (ppb)	1315.00	252.46	399.98	193.02	6.00	14.17	36.86	130.24	174.50	135.38	7.94	7.21	23.53	12.04	38.22	12.61
Benzene Concentration	193	10	8.8	20	0.2	2.1	3.8	36	18	32	0	0	1.3	1.1	0.92	0.93
Benzene Percent of total*	14.68%	3.96%	2.20%	10.36%	3.33%	14.82%	10.31%	27.64%	10.32%	23.64%	0.00%	0.00%	5.52%	9.14%	2.41%	7.38%

5.0 DISCUSSION

The ambient air monitoring program conducted on the landfill has demonstrated that only those samples collected in the immediate vicinity of sources of landfill gas have total VOC or benzene concentrations that are significantly above background levels. Most ambient air samples, even those collected downwind of intrusive site activities, have concentrations of total VOCs and benzene that are at or only slightly above background levels.

To evaluate the results of the on-site air samples, Republic compared them to potentially applicable benchmark concentrations.

5.1 Potentially Applicable Benchmark Concentrations

Republic identified several potentially applicable benchmark concentrations and the range of their applicability, as follows:

- Occupational Safety and Health Administration (OSHA) 8-hour time-weighted-average (TWA) Permissible Exposure Limit (PEL) concentrations, a benchmark that is applicable to on-site workers and provides an upper limit for exposures during a workday;
- OSHA Short-Term Exposure Limit (STEL) concentrations, a benchmark that is applicable to on-site workers for 15 minutes of exposure. STELs are always greater than their comparable 8-hour PELs;
- Maximum Acceptable Ground Level Concentrations (MAGLCs), a screening concentration derived under the Ohio EPA's air toxics policy that is considered acceptable for continuous exposure by the general public;
- Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels (MRLs) for Acute exposure, a benchmark that describes concentrations that ATSDR has determined pose minimal risk for up to 14 days of exposure by the general public;
- ATSDR MRLs for Chronic exposure, a benchmark that describes concentrations that ATSDR has determined pose minimal risk for exposures of one year and longer.

5.2 Comparison of Found Results to Benchmark Concentrations

Table 6 shows that at no time did any of the 8-hour integrated sample constituent concentrations approach either the OSHA PELs or the NIOSH/ACGIH Threshold Limit Values (TLVs) – recommended levels for occupational exposure.

Only one constituent (benzene) ever exceeded any of the potentially applicable benchmarks. Benzene exceeded the Acute MRL for one 8-hour day; however, the Acute MRL is considered to be a level that will result in minimal risk to the general population for exposures at that level for up to 14 days. The average concentration for the entire time period was less than 2 ppb benzene, a level considered to pose minimal risk to the general public, even with a chronic exposure.

Table 6. Comparison of Maximum Values Measured by TO-15 Analyses to Benchmarks

TLVs, MAGLCs, Acute MRLs and Chronic MRLs

Analyte	upwind max (ppb)	Analyte	downwind max (ppb)	TLV (ppb)	MAGLC (ppb)	acute MRL(ppb)	chronic MRL(ppb)
		1,1,1-Trichloroethane	0.036	350000	8333	2000	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.12	1,1,2-Trichloro-1,2,2-trifluoroethane	0.12	1000000	23810		
1,2,4-Trimethylbenzene	*0.97*	*1,2,4-Trichlorobenzene*	*0.2*	*25000*	595		
		1,2,4-Trimethylbenzene	0.76	25000	595		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.039	1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.069	1000000	23810		
1,3,5-Trimethylbenzene	0.25	1,3,5-Trimethylbenzene	0.38	25000	595		
1,4-Dichlorobenzene	0.093	1,4-Dichlorobenzene	0.093	75000	1786	2000	10
2,2,4-Trimethylpentane	0.16	2,2,4-Trimethylpentane	0.32	*NE			
2-Butanone (MEK)	14	2-Butanone (MEK)	5.3	200000	4762		
4-Ethyltoluene	0.21	4-Ethyltoluene	0.45	NE			
4-Methyl-2-pentanone (MIBK)	0.29	4-Methyl-2-pentanone (MIBK)	0.47	100000	2381		
Acetone	30	Acetone	28	*250000*	*5952*	26000	13000
Benzene	4.1	Benzene (OSHA)	***12***	1000	24	***9***	***3***
Benzene	*4.1*	*Benzene (NIOSH)**	***12***	*100*	***2***	***9***	***3***
Bromomethane	0.075			20000	476		
Carbon disulfide	0.66	Carbon disulfide	0.62	1000	24	NE	300
Carbon tetrachloride	0.22	Carbon tetrachloride	0.27	10000	238		
Chloroethane	0.1	Chloroethane	0.1	1000000	23810	15000	NE
Chloroform	0.22	Chloroform	0.31	2000	48	100	20
Chloromethane	0.99	Chloromethane	0.95	100000	2381	500	50
		cis-1,2-Dichloroethene	0.17	200000	4762	NE	NE
Cyclohexane	0.26	Cyclohexane	0.61	300000	7143		
Dichlorodifluoromethane	0.88	Dichlorodifluoromethane	1.1	1000000	23810		
Ethylbenzene	0.61	Ethylbenzene	1.8	100000	2381	10000	300
		Hexachlorobutadiene	*0.13*	*20*	*0.48*		
Methylene chloride	3.9	Methylene chloride	220	25000	595	600	300
m-Xylene & p-Xylene	1.5	m-Xylene & p-Xylene	4.8	100000	2381	2000	50
n-Heptane	0.56	n-Heptane	1.7	85000	2024		
n-Hexane	0.62	n-Hexane	0.92	50000	1190	NE	600
o-Xylene	0.69	o-Xylene	1.2	100000	2381	2000	50
Styrene	0.17	Styrene	0.28	50000	1190	2000	200
tert-Butyl alcohol	0.85	tert-Butyl alcohol	0.91	100000	2381		
Tetrachloroethene	4.3	Tetrachloroethene	0.87	100000	2381	200	40
Tetrahydrofuran	2.7	Tetrahydrofuran	8.9	200000	4762		
Toluene	2.4	Toluene	5.7	100000	2381	1000	80
Trichloroethene	0.075	Trichloroethene	2.6	100000	2381	2000	100
Trichlorofluoromethane	0.61	Trichlorofluoromethane	0.68	1000000	23810		
Vinyl chloride	0.12	Vinyl chloride	0.18	1000	24	500	NE
Acetaldehyde (8-8-08)	2.7	Acetaldehyde (8-9-08)	5.5	200000	4762		
Acetaldehyde (7-29-08)	4	Acetaldehyde (7-18-08)	3.8	200000	4762		
Acetaldehyde (7-8-08 (2))	7.8			200000	4762		
		Butane, 2-methyl- (7-30-08)	12	1000000	23810		
Ethyl alcohol (8-12-08)	3.1	Ethyl alcohol (7-30-08)	12	1000000	23810		
		Ethyl alcohol (7-23-08)	3.2	1000000	23810		
		Ethyl alcohol (7-8-08 (2))	5.7	1000000	23810		
		Ethyl alcohol (7-8-08 (1)	2.6	1000000	23810		
2-methyl propanal (7-8-08 (1))	5.8			NE			
Propane (7-29-08)	3.5	Propane (7-29-08)	2.8	2500000	59524		
		Isopropyl Alcohol (7-23-08)	2.8	400000	9524		
Propene (7-22-08)	2.7	Propene (7-17-08)	4.9	*500000*	*11905*		

*NE = none established

The benzene concentration also intermittently exceeded the MAGLC for benzene calculated using National Institute of Occupational Safety and Health (NIOSH) TLV values for benzene – a concentration that is an order of magnitude less than the OSHA value; however the average concentration of benzene during this time was still less than the 2 ppb MAGLC – a screening value used by OhioEPA to evaluate the potential for adverse impacts over a lifetime of exposure.

5.3 Correlation of PID Readings to Total VOC Concentrations

A PID equipped with a 10.6 eV lamp (like the ppbRAE Plus) will detect many VOCs; however, each VOC has a somewhat different response. The PID is more sensitive to some VOCs (those with Response Factors less than one) and less sensitive to others (those with response factors greater than 1). Nine of the VOCs detected at the Site induce no response on the PID.

Tables 7 and 8 describe a calculation of the average PID response expected if the average upwind (and downwind) concentrations determined by TO-15 analysis were present, based on known response factors. The average upwind total VOC concentration of 20 ppb is close to the average expected PID response of 18 ppb, indicating that for the ambient air encountered in upwind locations, the response to the more-sensitive compounds balanced the responses to those compounds to which the PID is less-responsive (or not responsive). The average downwind concentration of 31 ppb was somewhat greater than the expected PID response of 23 ppb.

In general, the PID appears to provide a reasonable estimate of the total VOC concentrations that can be used to monitor site conditions on a continuous basis.

5.4 Correlation of PID Readings to Benzene Concentrations

An average total VOC concentration of 25 ppb over the upwind/downwind monitoring period was accompanied by an average benzene concentration over the upwind/downwind monitoring period of 1 ppb. Tables 1, 2, 7, and 8 indicate that the benzene concentrations typically averaged around 4% of the total VOC concentration; however, significant excursions away from this ratio were noted.

Table 7. Calculation of Expected PID Response

Based Upon Average Upwind VOC Concentrations

Analyte	# detects	% detected	max ppb	Avg ppb	Response Factor	Avg ppb
1,1,2-Trichloro-1,2,2-trifluoroethane	27	96.43%	0.12	0.09	**NR**	0.00
1,2,4-Trimethylbenzene	13	46.43%	0.97	0.13	**0.35**	0.04
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1	3.57%	0.04	0.00	**NR**	0.00
1,3,5-Trimethylbenzene	6	21.43%	0.25	0.03	**0.35**	0.01
1,4-Dichlorobenzene	1	3.57%	0.09	0.00	**0.47**	0.00
2,2,4-Trimethylpentane	18	64.29%	0.16	0.05	**1.2**	0.06
2-Butanone (MEK)	27	96.43%	14.00	1.96	**0.9**	1.77
4-Ethyltoluene	1	3.57%	0.21	0.01	**0.5**	0.01
4-Methyl-2-pentanone (MIBK)	14	50.00%	0.29	0.08	**0.8**	0.06
Acetone	27	96.43%	30.00	9.44	**1.1**	10.38
Benzene	27	96.43%	4.10	0.70	**0.53**	0.37
Bromomethane	1	3.57%	0.08	0.00	**1.7**	0.00
Carbon disulfide	20	71.43%	0.66	0.11	**1.2**	0.13
Carbon tetrachloride	27	96.43%	0.22	0.11	**NR**	0.00
Chloroethane	4	14.29%	0.10	0.01	**NR**	0.00
Chloroform	12	42.86%	0.22	0.04	**NR**	0.00
Chloromethane	26	92.86%	0.99	0.62	**NR**	0.00
Cyclohexane	11	39.29%	0.26	0.06	**1.4**	0.08
Dichlorodifluoromethane	27	96.43%	0.88	0.60	**0.8**	0.48
Ethylbenzene	19	67.86%	0.61	0.19	**0.52**	0.10
Methylene chloride	27	96.43%	3.90	1.18	**NR**	0.00
m-Xylene & p-Xylene	21	75.00%	1.50	0.43	**0.52**	0.22
n-Heptane	23	82.14%	0.56	0.22	**2.8**	0.62
n-Hexane	26	92.86%	0.62	0.26	**4.3**	1.13
o-Xylene	17	60.71%	0.69	0.14	**0.59**	0.08
Styrene	3	10.71%	0.17	0.02	**0.4**	0.01
tert-Butyl alcohol	26	92.86%	0.85	0.16	**2.9**	0.46
Tetrachloroethene	10	35.71%	4.30	1.93	**0.57**	1.10
Tetrahydrofuran	16	57.14%	2.70	0.42	**1.7**	0.72
Toluene	27	96.43%	2.40	1.05	**0.5**	0.52
Trichloroethene	2	7.14%	0.08	0.00	**0.54**	0.00
Trichlorofluoromethane	27	96.43%	0.61	0.32	**NR**	0.00
Vinyl chloride	3	10.71%	0.12	0.01	**2**	0.02
	20.39	Avg. tot VOCs			**Avg. PID**	
NR= No PID Response (10.6 ev Lamp)	0.70	Avg benzene			**Response Expected**	**18.40**
	3.41%	Avg % of total				

Table 8. Calculation of Expected PID Response

Based Upon Average Downwind VOC Concentrations

Analyte	# detects	% detected	max value (in ppb)	avg value (in ppb)	Response Factor	avg response
1,1,1-Trichloroethane	2	7.41%	0.036	0.00	**NR**	0
1,1,2-Trichloro-1,2,2-trifluoroethane	26	96.30%	0.12	0.08	**NR**	0.00
1,2,4-Trichlorobenzene	1	3.70%	0.2	0.01	**0.46**	0.00
1,2,4-Trimethylbenzene	18	66.67%	0.76	0.15	**0.35**	0.05
1,2-Dichloro-1,1,2,2-tetrafluoroethane	3	11.11%	0.069	0.01	**NR**	0.00
1,3,5-Trimethylbenzene	8	29.63%	0.38	0.05	**0.35**	0.02
1,4-Dichlorobenzene	1	3.70%	0.093	0.00	**0.47**	0.00
2,2,4-Trimethylpentane	22	81.48%	0.32	0.09	**1.2**	0.11
2-Butanone (MEK)	26	96.30%	5.3	2.12	**0.9**	1.91
4-Ethyltoluene	3	11.11%	0.45	0.03	**0.5**	0.01
4-Methyl-2-pentanone (MIBK)	24	88.89%	0.47	0.15	**0.8**	0.12
Acetone	26	96.30%	28	10.33	**1.1**	11.36
Benzene	26	96.30%	12	1.50	**0.53**	0.80
Carbon disulfide	24	88.89%	0.62	0.11	**1.2**	0.13
Carbon tetrachloride	26	96.30%	0.27	0.11	**NR**	0.00
Chloroethane	2	7.41%	0.1	0.01	**NR**	0.00
Chloroform	11	40.74%	0.31	0.05	**NR**	0.00
Chloromethane	25	92.59%	0.95	0.62	**NR**	0.00
cis-1,2-Dichloroethene	4	14.81%	0.17	0.02	**0.8**	0.02
Cyclohexane	13	48.15%	0.61	0.10	**1.4**	0.14
Dichlorodifluoromethane	26	96.30%	1.1	0.61	**0.8**	0.49
Ethylbenzene	24	88.89%	1.8	0.40	**0.52**	0.21
Hexachlorobutadiene	2	7.41%	0.13	0.01		0.00
Methylene chloride	27	100.00%	220	8.94	**NR**	0.00
m-Xylene & p-Xylene	24	88.89%	4.8	0.84	**0.52**	0.44
n-Heptane	25	92.59%	1.7	0.46	**2.8**	1.28
n-Hexane	27	100.00%	0.92	0.33	**4.3**	1.43
o-Xylene	23	85.19%	1.2	0.24	**0.59**	0.14
Styrene	9	33.33%	0.28	0.04	**0.4**	0.01
tert-Butyl alcohol	26	96.30%	0.91	0.20	**2.9**	0.57
Tetrachloroethene	11	40.74%	0.87	0.10	**0.57**	0.06
Tetrahydrofuran	25	92.59%	8.9	1.42	**1.7**	2.42
Toluene	27	100.00%	5.7	1.77	**0.5**	0.89
Trichloroethene	8	29.63%	2.6	0.12	**0.54**	0.06
Trichlorofluoromethane	27	100.00%	0.68	0.31	**NR**	0.00
Vinyl chloride	4	14.81%	0.18	0.02	**2**	0.04
	31.3	Avg. total VOCs in ppb			**Avg. PID**	22.71
NR= No PID Response (10.6 ev Lamp)	1.56	Benzene conc.(ppb)			**Response Expected**	
	4.98%	Avg. % of total				

6.0 CONCLUSIONS

Republic has conducted an air monitoring program for VOCs on the Countywide landfill Site and compared the results of this monitoring to potentially applicable benchmarks. The monitoring has demonstrated the suitability of a PID in identifying and monitoring excursions of total VOC concentrations in ambient air and the SUMMA® samples/TO-15 analyses in speciating the VOCs.

The monitoring program also indicated that ambient air concentrations of VOCs are typically near background levels except in those areas where landfill gases continue to escape or in the vicinity of leachate/condensate. These findings support the working hypothesis that ambient concentrations of VOCs on the landfill should be effectively controlled once landfill gas emissions and leachate headspace emissions are effectively controlled. These data also demonstrate the effectiveness of the use of the FML liner in controlling landfill gas emissions.

Even though monitoring was conducted downwind of intrusive activities known to allow some venting of landfill gas emissions, none of the VOCs detected on the Countywide Site exceeded any potentially applicable benchmark concentration, except for benzene. Benzene exceeded the ATSDR Acute MRL of 9 ppb for one 8-hour day (value of 12 ppb). The acute MRL provides a benchmark that indicates minimal risk to the general public for exposures lasting up to 14 days. The average concentration of benzene throughout this period was less than 2 ppb – a value that is below the Acute MRL, the ATSDR Chronic MRL, and the lowest potentially-applicable OhioEPA MAGLC (calculated using the NIOSH TLV).

Republic has determined that the concentrations of VOCs found in the air on the landfill are occasionally above background levels near the sources of emissions; however, none of the VOCs is persistently present at concentrations on-the-site at concentrations that would pose an unacceptable threat to the general public; and similarly, none of these is present at levels that approach the Occupational Safety & Health Administration (OSHA) limits for workers.

Republic continues to perform remedial activities that will further reduce the levels of emissions of landfill gases and the resultant ambient air concentrations at on-site locations.

APPENDIX D

Stage B Ambient Air Monitoring Report," CTEH, March 6, 2009

CTEH
Center for Toxicology and Environmental Health, L.L.C.
5120 North Shore Drive North Little Rock, AR 72118 Phone: 501.801.8500 Fax: 501.801.8501 www.cteh.com

Countywide Recycling

Stage B Ambient Air Monitoring Report

Prepared for
Republic Services of Ohio II, LLC
3619 Gracemont Street, SW
East Sparta, OH. 44626
(330) 874-3855

Prepared by
Center for Toxicology and Environmental Health, L.L.C.
5120 North Shore Drive
North Little Rock, AR 72118

March 06, 2009

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1.0 Introduction

Center for Toxicology and Environmental Health, L.L.C. (CTEH®) was requested by Republic Services to provide air monitoring and consulting support at the Countywide Recycling & Disposal Facility in East Sparta, Ohio. The facility is located at 3619 Gracemont St. S.W. in East Sparta, Ohio.

On July 3, 2008, prior to implementation of the Stage B monitoring system Republic Services utilized Lawhon and Associates to perform air monitoring during construction activities. The initial construction monitoring later known as Stage A monitoring, allowed field work activities to proceed, while working towards the ultimate goal of approval and implementation of a system of fixed continuous monitors. Stage A monitoring was used on July 8, 2008, to monitor installation of two gas extraction wells, and then was resumed on a consistent basis on July 17, 2008, with the beginning of intrusive capping preparation activities, and was concluded on September 2, 2008. CTEH was requested by Republic Services to provide an interim 24 hour continuous Volatile Organic Compounds (VOC) monitoring system until the Stage C fully automated system was in place. Stage B ambient air monitoring began on September 9, 2008 and continued through November 6, 2008. The interim system consisted of four fixed stations and one mobile station located at United States Environmental Protection Agency (USEPA) approved monitoring locations as indicated in Appendix A.

2.0 Description of Activities

Real-time air monitoring was performed by using tripod-mounted ultra sensitive Photoionization Detectors (PIDs) equipped with RAELink transmitters. The transmitters allowed real-time PID concentrations from each station to be transmitted to a central monitoring console where the data were continuously logged. This monitoring console also allowed the air monitoring personnel to view and respond to trigger levels exceeding 250 ppb.

Trigger events were events that required additional monitoring due to the possibility of elevated VOC concentrations. A trigger event is initiated by the occurrence of a visual and audible alarm on the monitoring console system indicating VOC levels of 250 ppb or greater. Monitoring personnel would then respond to the station alarm with a secondary PID and confirm the readings as an actual event or discount the alarm as drift. “Drift” is a term referring to the movement of a reading away from baseline or zero. This type of phenomenon is common with PIDs and can happen for many reasons including temperature, and humidity. If the secondary PID confirmed the station alarm, the monitoring personnel would collect a 15 minute time-integrated Summa Canister. Summa samples were sent to TestAmerica Laboratories Inc. in Knoxville, TN, under

Chain of Custody (COC) where they were subsequently analyzed by USEPA Method TO-15 plus Tentatively Identified Compounds (TICs).

3.0 Real time Air Monitoring and Sampling Methods

The stage B monitoring system continued for a total of 59 days and involved continuous collection of real-time VOC concentrations. Some of the challenges faced during the Stage B interim monitoring system included instrument drift due to variances in humidity, filter and pump replacements due to dusty conditions, and telemetry challenges due to variances in elevation. These challenges were primarily due to the extended use and ultra sensitivity of the ppbRAE instrument. These challenges were met by having monitoring personnel continuously diagnose and maintain the stage B monitoring system. Monitoring personnel monitored the telemetry console and responded to triggers during normal operational hours from approximately 07:00 through 18:00 EST. Subsequently, the five air monitoring stations continued to collect data during non-operational hours without supervision of monitoring personnel. The ppbRAE PID was equipped with a 10.6 eV lamp and was capable of detecting VOC at levels as low as 1 part per billion (ppb). This instrument was calibrated at least daily or as needed utilizing 10 ppm Isobutylene calibration gas. The WeatherPak®-2000 Meteorological System was used in conjunction with the real-time and analytical air sampling methods to provide further information that could be used to determine potential sources of VOC. The WeatherPak®-2000 system is capable of measuring wind speed and direction, air temperature, relative humidity, barometric pressure and solar radiation. In addition to real-time air monitoring for VOC, 6-L Summa canisters fitted with 15 minute regulators were used to collect analytical air samples of confirmed 250 ppb trigger levels. The 250 ppb level was utilized as an initial response value to help the monitoring personnel distinguish actual VOC release events from background contributions (vehicle exhaust, instrument drift). A detailed description of the instrumentation can be viewed in Appendix B.

4.0 Real-Time Air Monitoring Results

Approximately 1,152,152 real time VOC readings were recorded during the Stage B monitoring period. Of these readings, the VOC concentrations were verified by the monitoring personnel to be above the 250 ppb trigger level during operational hours on two separate occasions. The two triggering events occurred on September 11 and September 12, 2008. The Stage B graphical data indicates other instances where VOC concentrations exceeded the 250 ppb trigger level and SUMMA canister samples were not collected. No sample was collected in these instances because the monitoring personnel were unable to verify the readings with a secondary PID instrument, the monitoring personnel identified a problem with the instrumentation, or the monitoring personnel were not onsite at the time of the trigger. The average VOC concentrations

collected from each of the Stage B stations ranged from 17.82 – 36.46 ppb. Table 4.0 summarizes the Stage B real-time data. A graphical representation of the Stage B data can be viewed in Appendix C.

Table 4.0 Summary Table of VOC Detections

Station	Analyte	Total VOC Readings Recorded	Trigger Level (ppb)	Triggering events	Average Concentration (ppb)
1	VOC	169,966	250.0	2	17.82
2	VOC	244,606	250.0	0	19.79
3	VOC	254,661	250.0	0	19.71
4	VOC	247,358	250.0	0	18.98
5	VOC	235,561	250.0	0	36.46

5.0 Analytical Air Sampling Results

Analytical sampling during Stage B procedures resulted in the collection of two SUMMA canisters. The canisters were sent to TestAmerica Laboratories Inc. under chain of custody for the analysis of VOCs in accordance with USEPA Method TO-15 plus TICs. The following laboratory results were compared to Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) and American Conference of Governmental Industrial Hygienist (ACGIH) Threshold Limit Values (TLV-TWA). PEL and TLV standards and guidelines represent an 8 hour time weighted average occupational exposures values to which a worker can be exposed for five days per week, 50 weeks per year, for a working lifetime. These guidelines and standards represent very conservative values when directly comparing to a 15 minute SUMMA canister sample. Laboratory results of detections for the stage B SUMMA samples are summarized in the following tables.

Grab Sample # 1

At approximately 09:00 on September 11th, 2008 the monitoring console indicated VOC concentrations at levels above 250 ppb. Monitoring personnel responded to Station 1 and confirmed the readings with a secondary PID. The VOC concentrations reached a peak of approximately 450 ppb. A 15 minute Summa canister sample was then collected. The laboratory results indicate that no concentrations of analyzed VOCs exceeded the OSHA PEL or the ACGIH TLV.

Table 5.1 Results Summary for Grab Sample 1

Chemical	Laboratory Results (ppbv)	Reporting Limit (ppbv)	OSHA PEL-TWA (ppb)	ACGIH TLV-TWA (ppb)
Acetone	3.6 J	5.0	1,000,000	500,000
Trichlorofluoromethane	0.34	0.20	NE	NE
n-Heptane	0.11 J	0.50	500,000	400,000
n-Hexane	0.31 J	0.50	500,000	50,000
2,2,4-Trimethylpentane	0.044 J	0.50	NE	NE
tert-Butyl alcohol	0.063 J	2.0	100,000	100,000
Methylene chloride	0.75 B	0.50	25,000	10,000
Benzene	0.29	0.20	1,000	500
Tetrahydrofuran	0.066 J	1.0	200,000	50,000
Toluene	0.49	0.20	200,000	20,000
1,1,2-Trichloro-1,2,2-trifluoroethane	0.085 J	0.20	1,000,000	1,000,000
2-Butanone (MEK)	0.49 J	1.0	200,000	200,000
Carbon tetrachloride	0.093 J	0.20	10,000	5,000
Chloromethane	0.50	0.50	100,000	50,000
Cyclohexane	0.099 J	0.50	300,000	100,000
Dichlorodifluoromethane	0.55	0.20	1,000,000	1,000,000
Propane	4.7*		1,000,000	1,000,000

* TIC = Tentatively Identified Compounds are estimated values not on the target analyte list
B = Method Blank Contamination. The associated method blank contains the target analyte at a reportable level
J = Estimated Result. Result is less than the Reporting Limit
N/E = Not Established

Grab Sample # 2

At approximately 07:30 On September 12, 2009 the monitoring console indicated VOC concentrations above the 250 ppb trigger at Station 1. Monitoring personnel responded to the station, confirmed the readings, and collected a 15 minute Summa canister sample. The VOC concentrations reached a peak of approximately 310 ppb.

Table 5.2 Results Summary for Grab Sample 2

Chemical	Laboratory Results (ppbv)	Reporting Limit (ppbv)	OSHA PEL-TWA (ppb)	ACGIH TLV-TWA (ppb)
Acetone	23	5.0	1,000,000	500,000
Trichlorofloromethane	0.26	0.20	NE	NE
n-Heptane	0.24 J	0.50	500,000	400,000
n-Hexane	0.30 J	0.50	500,000	50,000
2,2,4-Trimethylpentane	0.041 J	0.50	NE	NE
tert-Butyl alcohol	0.64 J	0.20	100,000	100,000
Methylene chloride	0.62 B	0.50	25,000	10,000
Benzene	0.21 B	0.20	1,000	500
Toluene	0.39 B	0.20	200,000	20,000
Trichloroethene	0.064 J	0.20	10,000	10,000
1,1,2-Trichloro-1,2,2-trifluorotheane	0.089 J	0.20	1,000,000	1,000,000
1,2,4-Trimethylbenzene	0.21	0.20	NE	NE
o-Xylene	0.074 J	0.20	100,000	100,000
m-Xylene & p-Xylene	0.14 J	0.20	100,000	100,000
2-Butanone (MEK)	2.1	1.0	200,000	200,000
4-Methyl-2-pentanone (MIBK)	0.11 J	0.50	100,000	50,000
Carbon Disulfide	0.14 J B	0.50	20,000	100
Carbon tetrachloride	0.099 J	0.20	10,000	5,000
Chloromethane	0.52	0.50	100,000	50,000
Cyclohexane	0.18	0.50	300,000	100,000
Dichlorodifluoromethane	0.49	0.20	1,000,000	1,000,000
Cis-1,2-Dichloroethane	0.15	0.20	1,000,000	1,000,000
Unknown TIC	3.2*			
Unknown TIC	5.9*			

* TIC = Tentatively Identified Compounds are estimated values not on the target analyte list

B = Method Blank Contamination. The associated method blank contains the target analyte at a reportable level

J = Estimated Result. Result is less than the Reporting Limit

N/E = Not Established

6.0 Conclusions

Stage B monitoring and sampling results indicate that concentrations of VOC at the landfill are consistent with background levels of VOCs in suburban environments or that are typical of air in analytical laboratories. Of the two 15 minute SUMMA samples collected during Stage B, no VOCs, including benzene, were detected at levels that exceeded the conservative 8 hour exposure occupational standards or guidelines. These data indicate that average landfill emissions from the site under the Stage B monitoring conditions did not pose a risk to human health.

Appendix A

Stage B Monitoring Station Locations

Legend

Station Locations

0 0.02 0.04 0.08 Miles

CTEH

Project No. 3389

Republic Services
Countywide Facility
East Sparta, Ohio
Stark County

Appendix B

Real Time sampling methods

RAE Systems, Inc. ppbRAE Plus PID was used to measure for airborne VOC concentrations. Photo ionization is a nondestructive technique that is somewhat specific through selection of ultra-violet (UV) lamps of varying energies. PIDs use high energy UV light from a lamp housed within the detector to provide energy needed for ionizing VOCs. Ions are collected in an ionization chamber with accelerating and collecting the electrodes designed to measure current. Current produced during VOC ionization is proportional to VOC concentrations.

RAE Systems, Inc. RAELink2 was used as a wireless modem to transmit real-time data to a central computer from numerous sampling stations. The RAELink2 modem can communicate with up to 32 different monitors and display their data simultaneously at a command center a safe distance away from the site.

Real-time meteorological data was collected on site with the WeatherPak®-2000. The WeatherPak-2000 collects wind speed, wind direction, ambient temperature, solar radiation, humidity, U component, V component, sigma theta, horizontal stability, vertical stability, scalar wind speed, scalar wind direction, and sigma wind speed. The meteorological data assisted in locating potential offsite receptors and supported the air monitoring and sampling efforts.

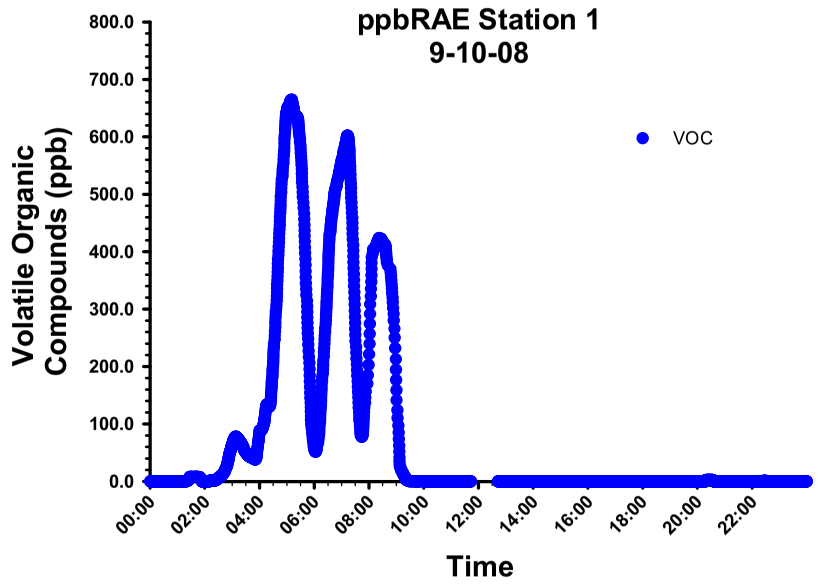
Analytical Sampling Methods

Air Toxics LTD. Summa Canister was used to collect “whole air” air samples that may then be analyzed in a lab setting. This type of analysis allows for a complete view and identification of air contaminants. The summa canister was fitted with a twenty minute regulator that when deployed allows the canister to fill its chamber in a twenty minute time span.

USEPA TO-15 analyzes for Volatile Organic Compounds (VOCs) in air by the use of Gas Chromatography/Mass Spectrometry (GC/MS).

Appendix C

a.)



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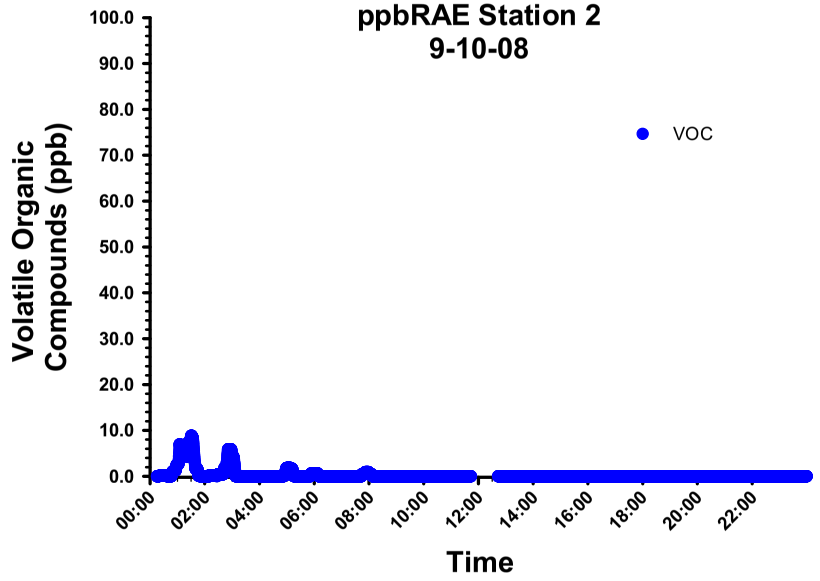

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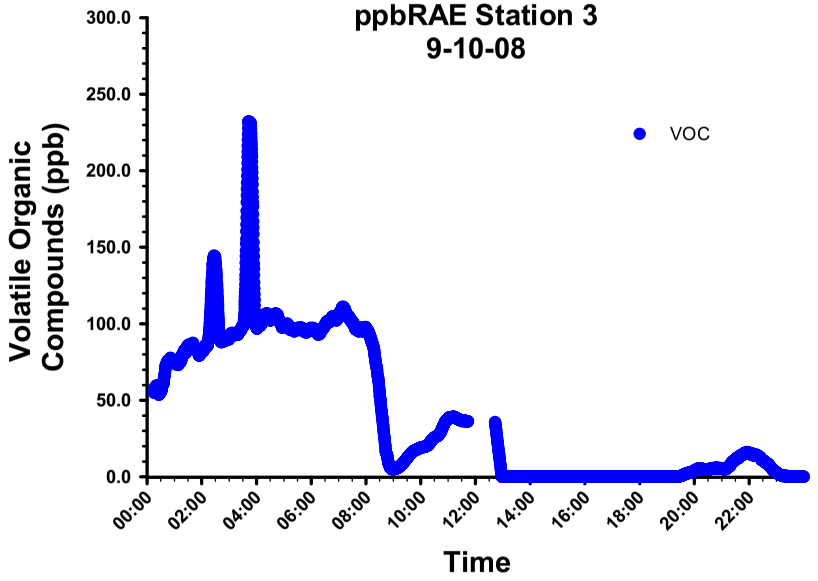

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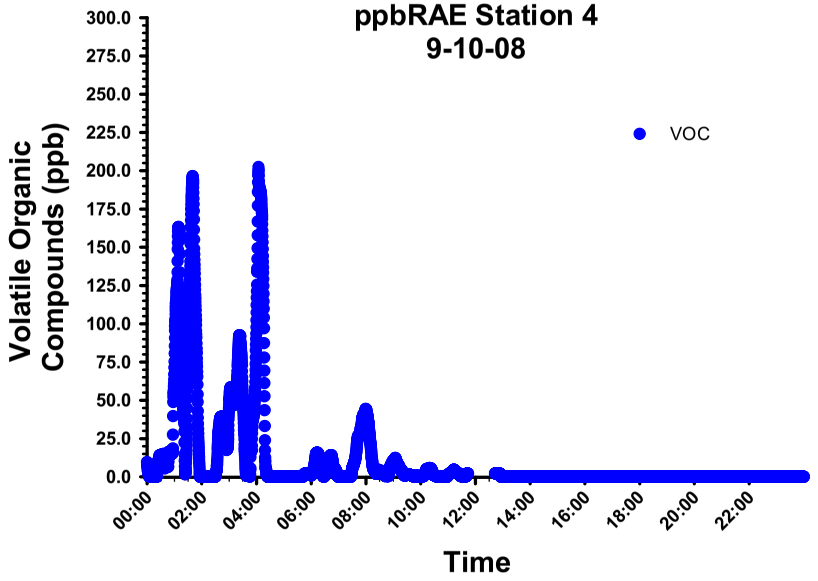
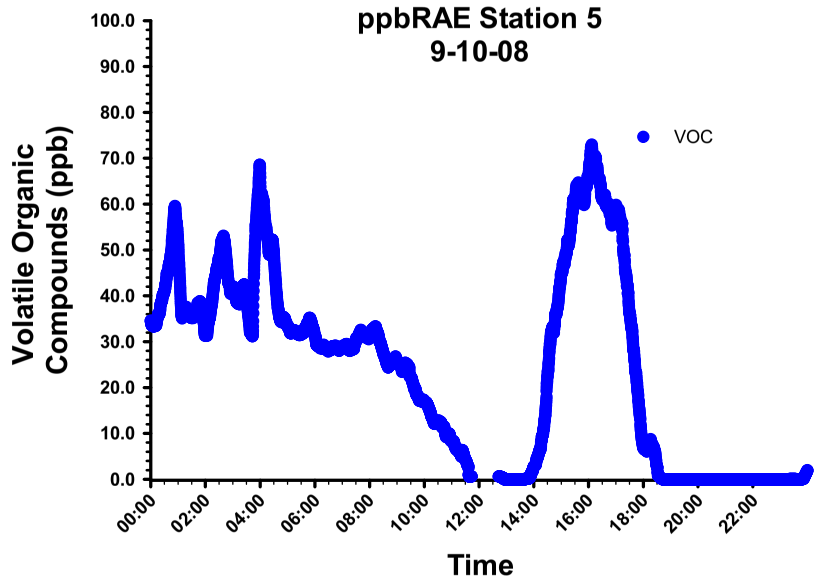


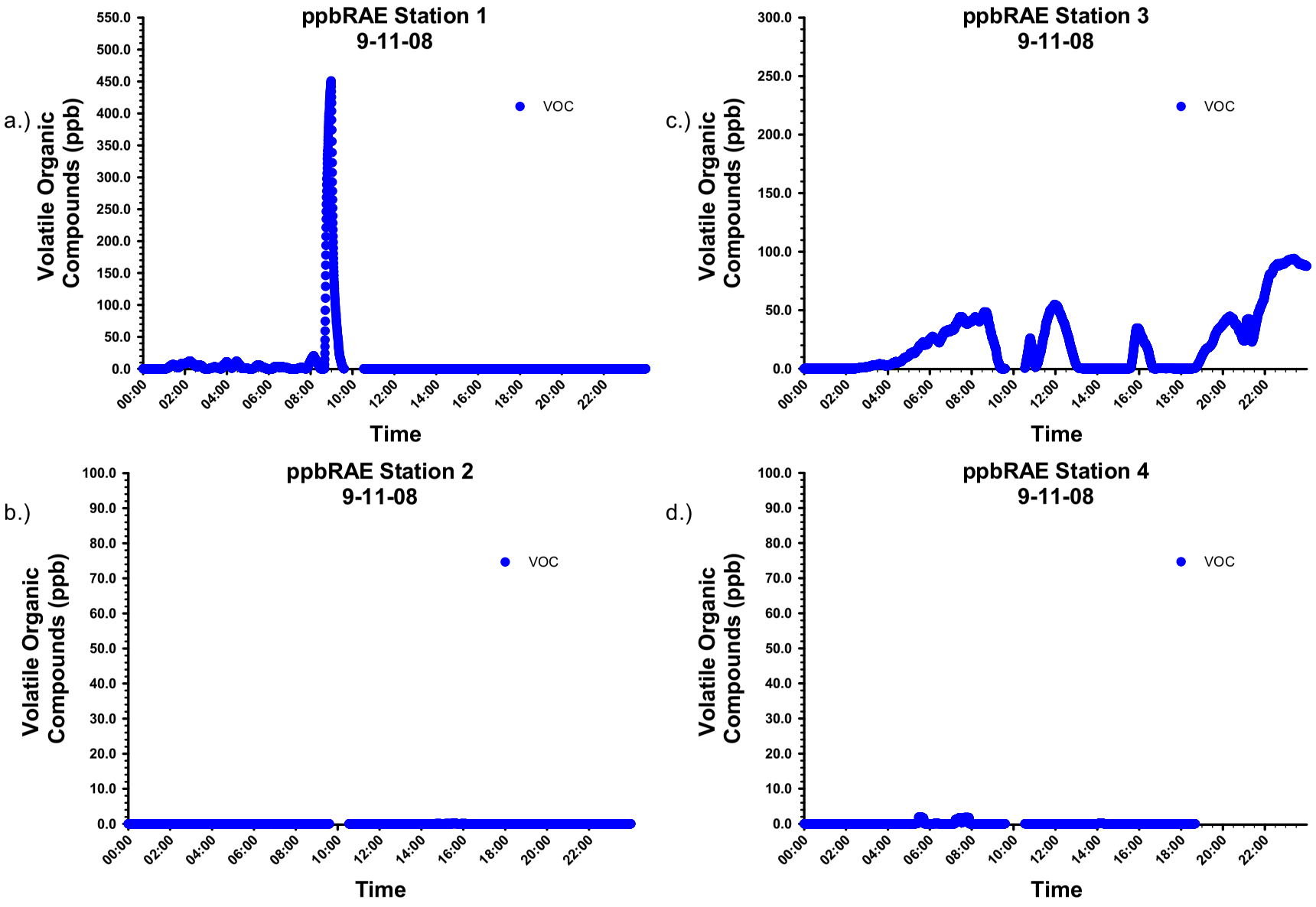
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 10, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



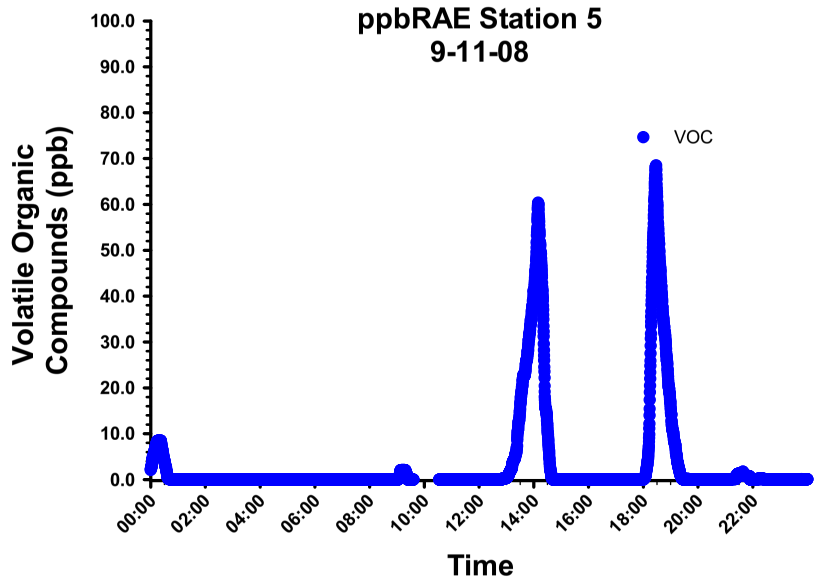
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 10, 2008, at

a) ppbRAE Station 5.



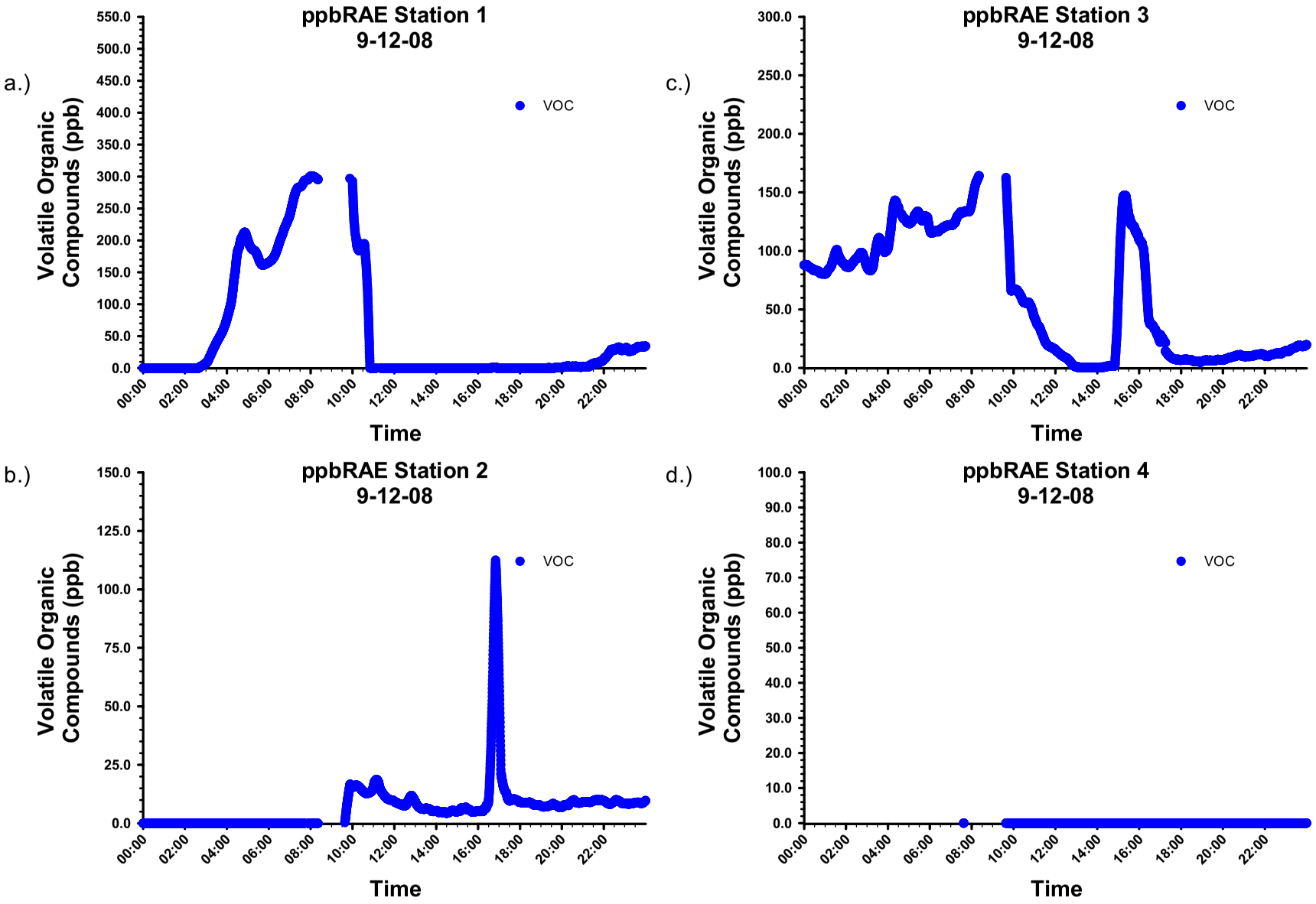
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 11, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



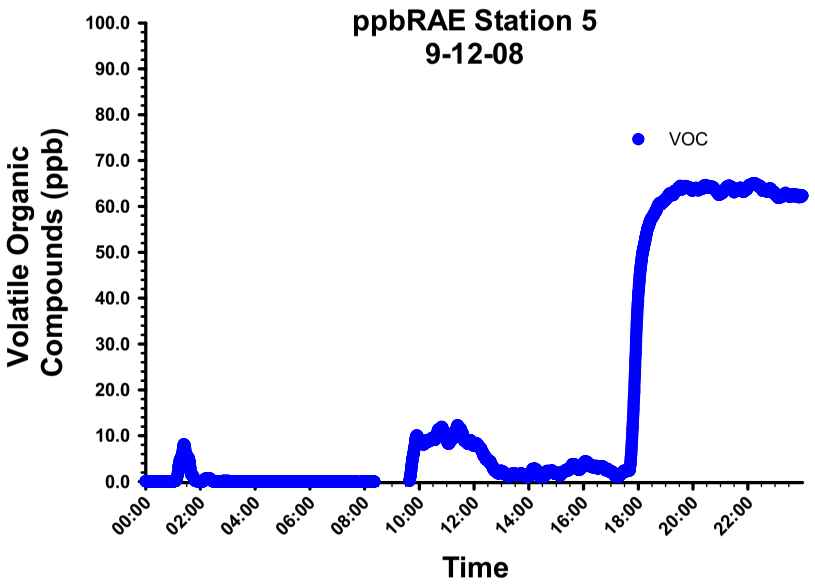
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 11, 2008, at

a) ppbRAE Station 5.



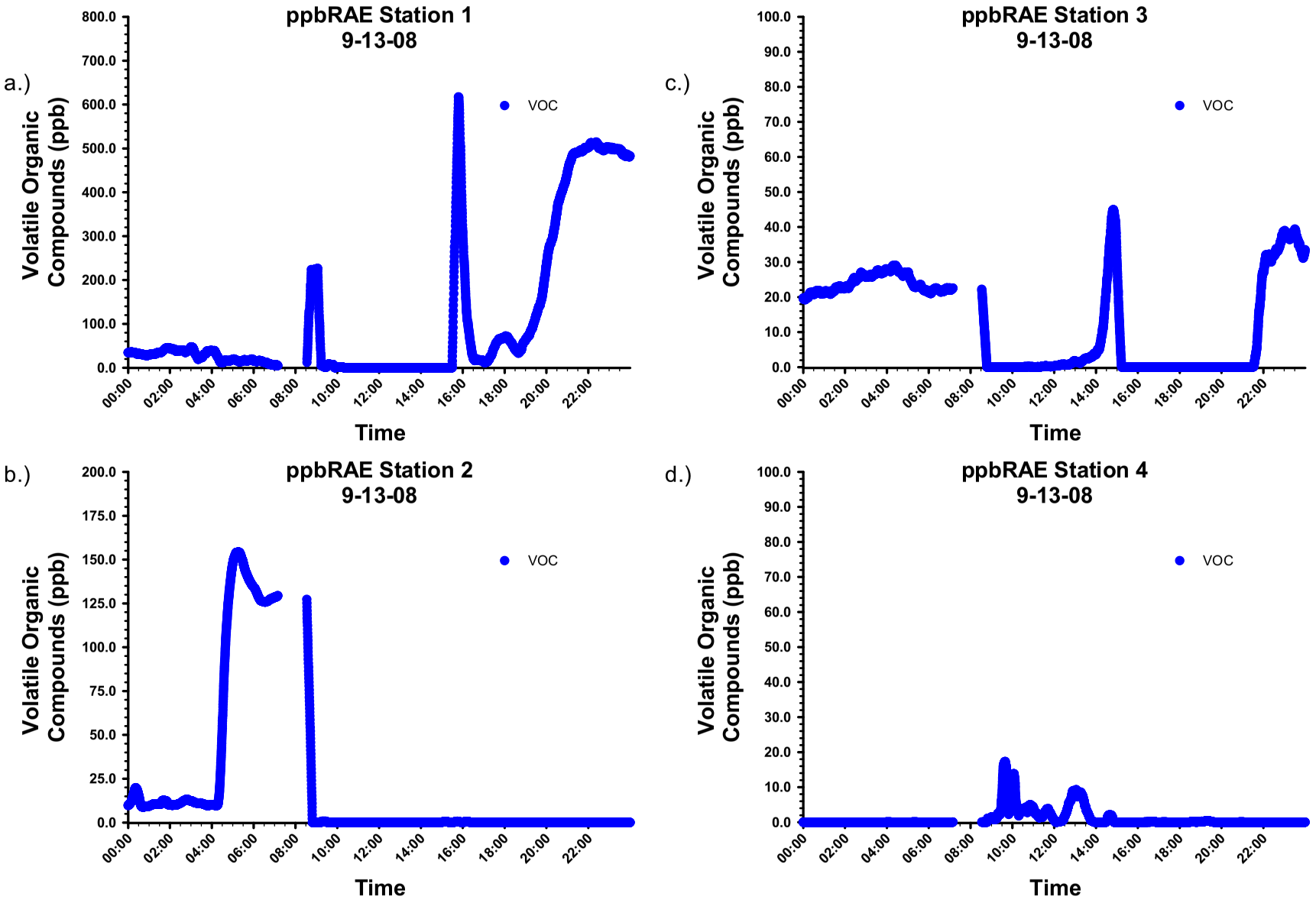
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 12, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



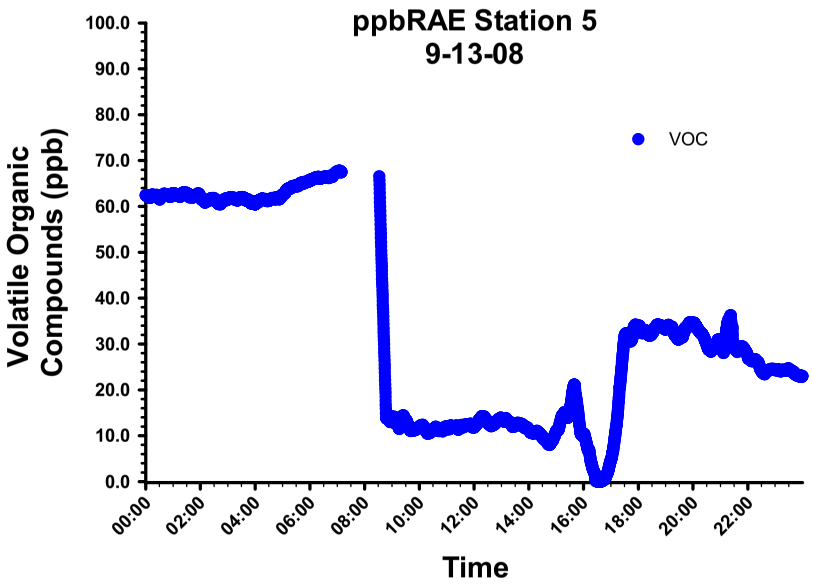
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 12, 2008, at

a) ppbRAE Station 5.



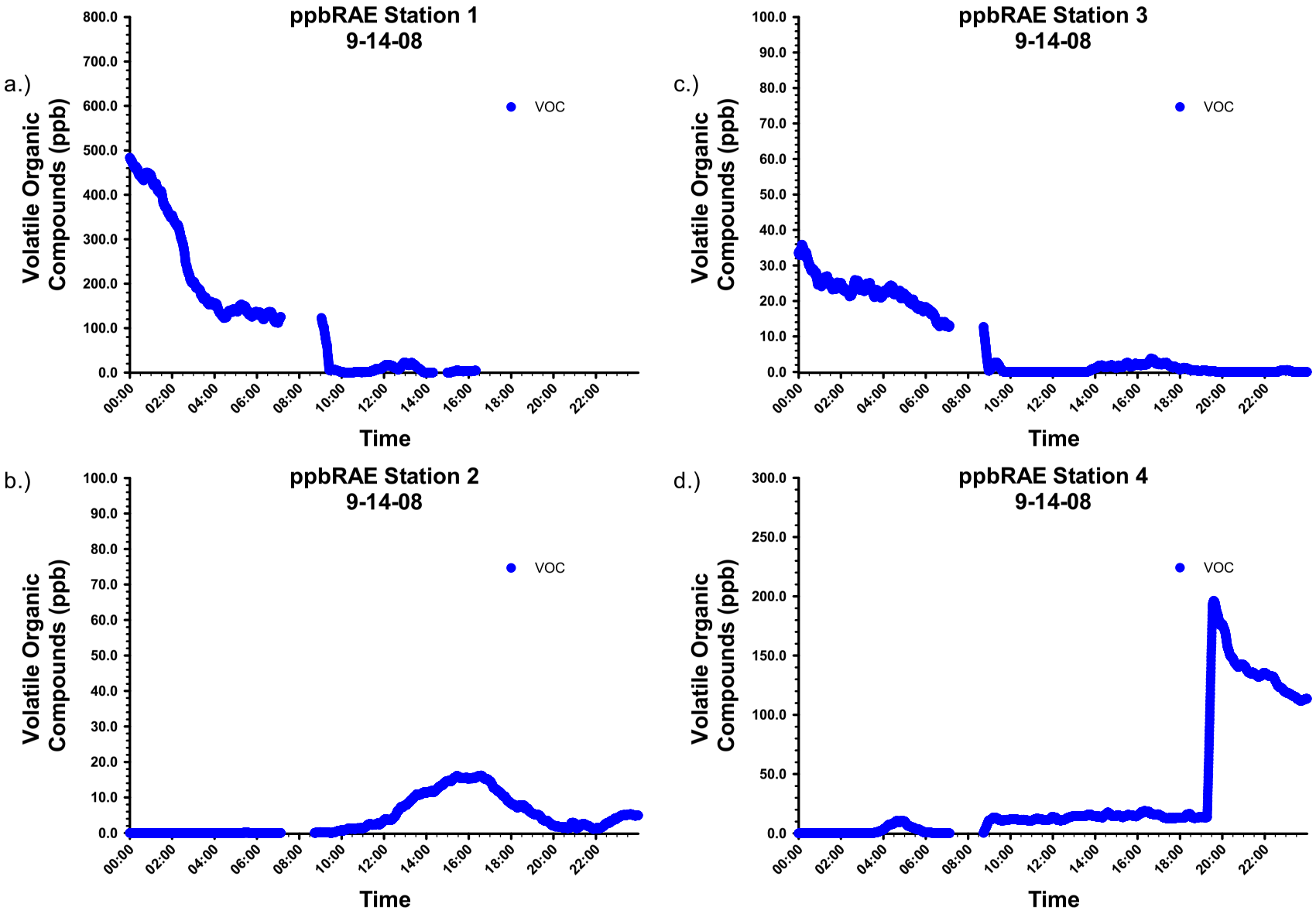
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 13, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



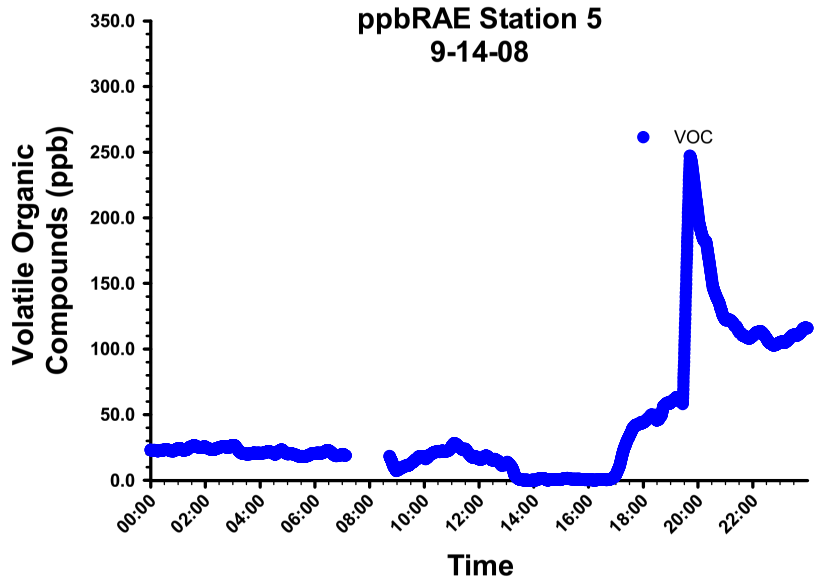
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 13, 2008, at

a) ppbRAE Station 5.



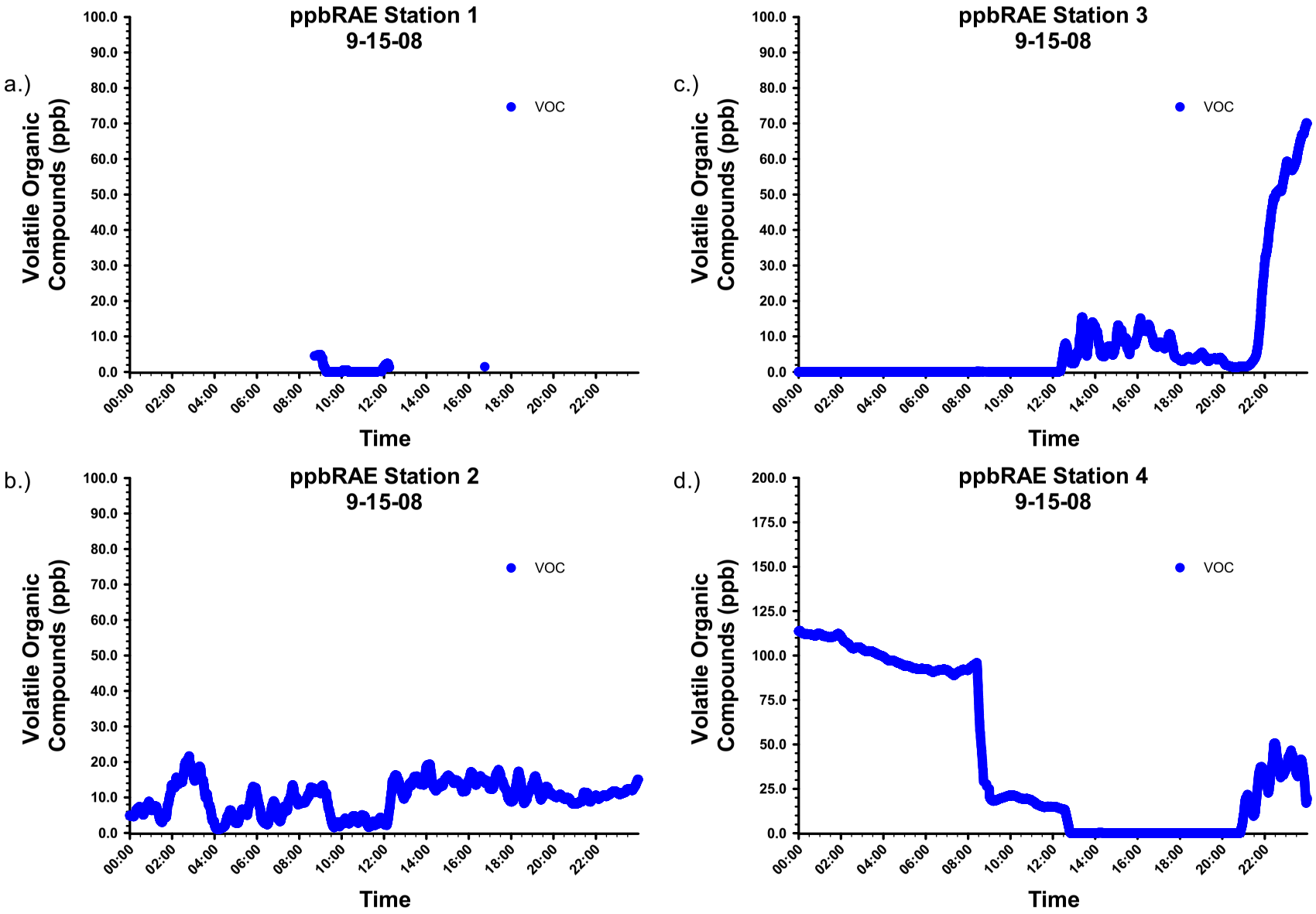
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 14, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



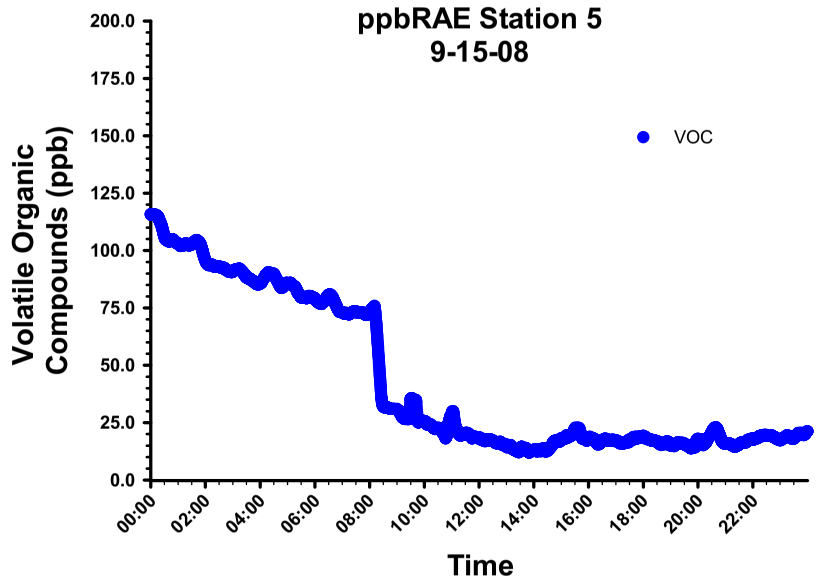
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 14, 2008, at

a) ppbRAE Station 5.



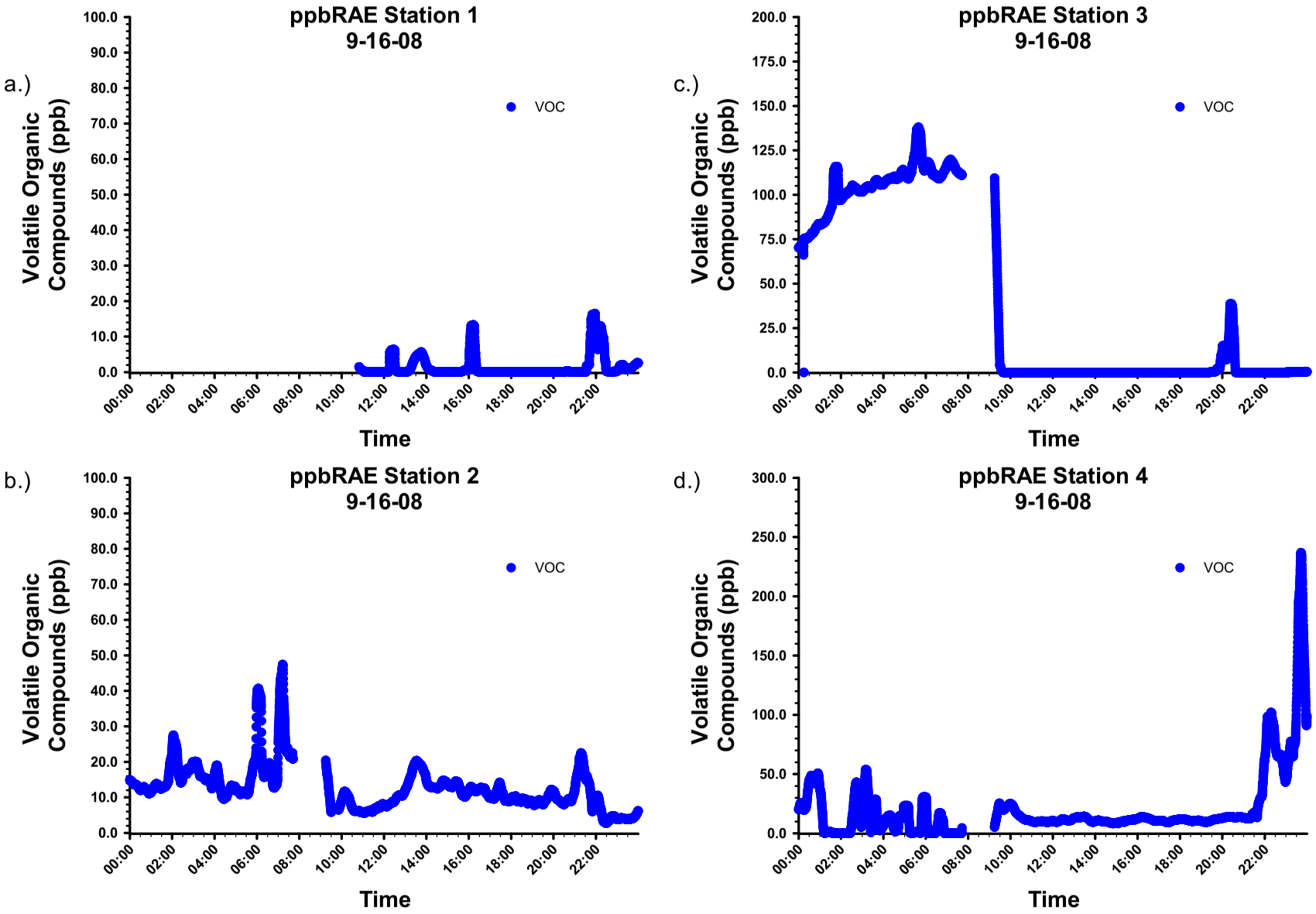
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 15, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



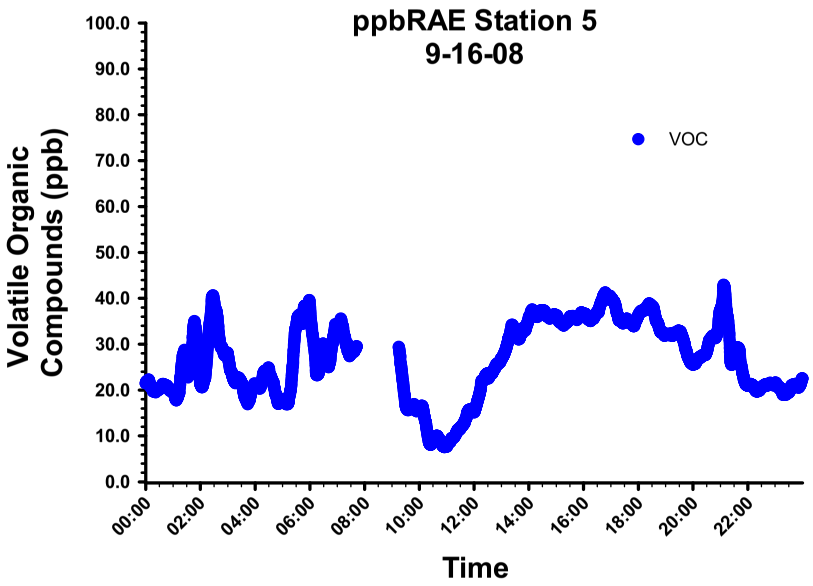
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 15, 2008, at

a) ppbRAE Station 5.



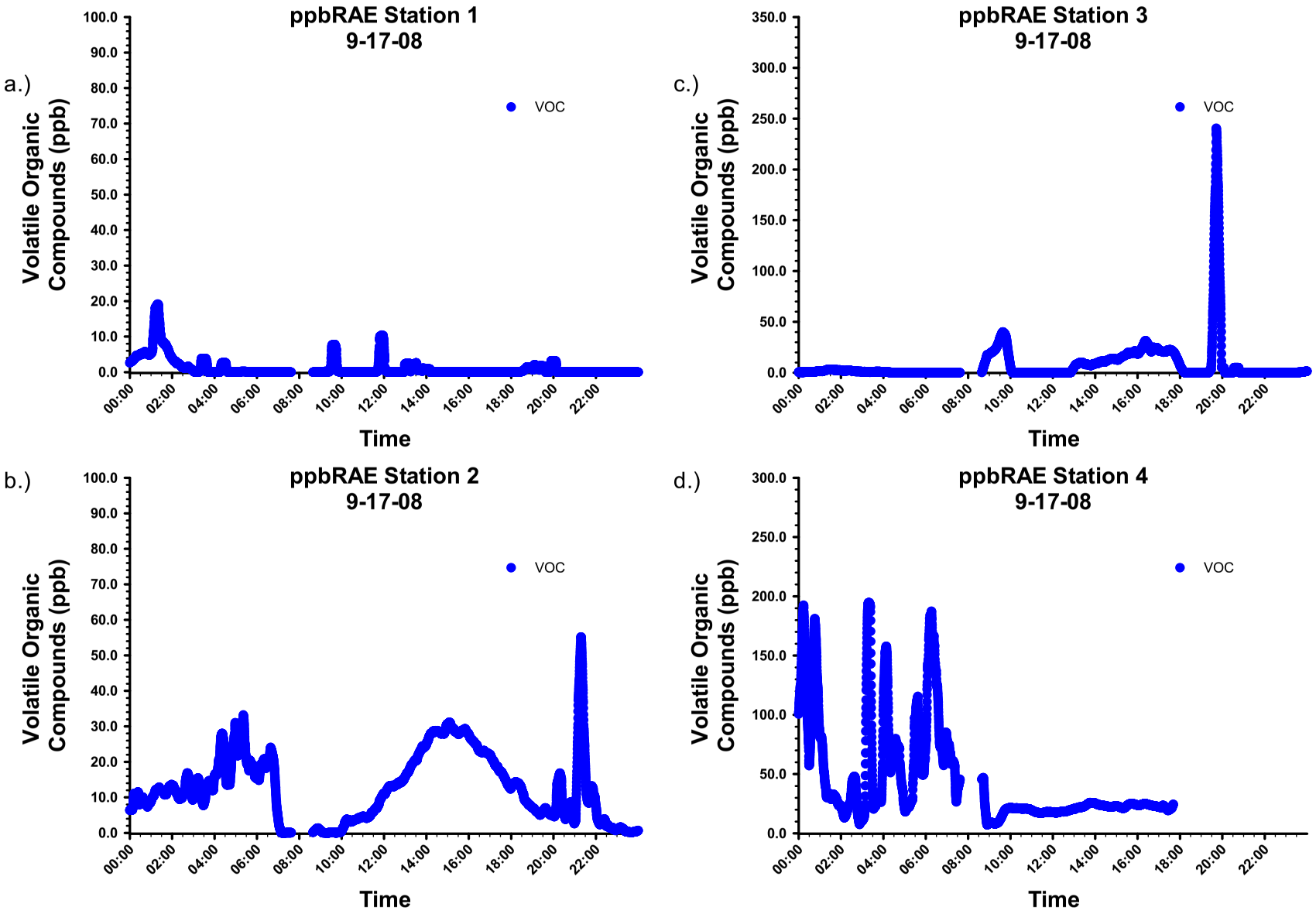
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 16, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



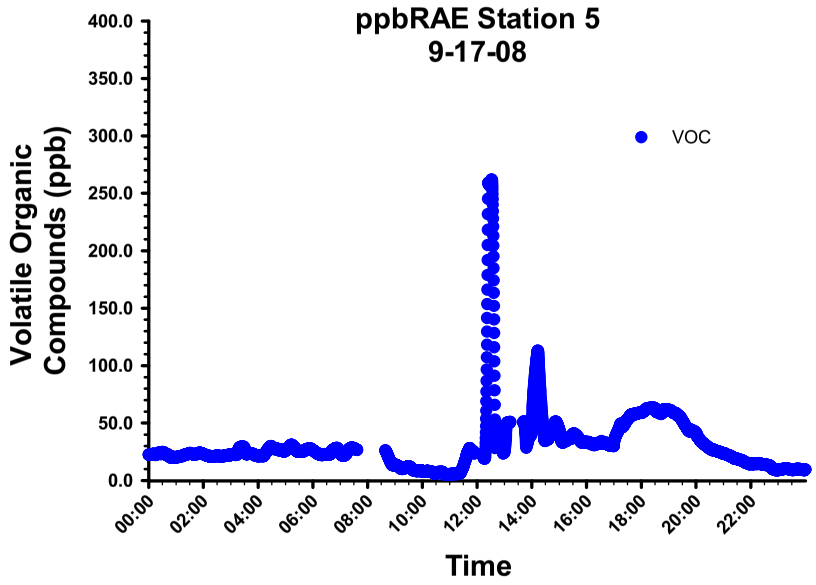
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 16, 2008, at

a) ppbRAE Station 5.



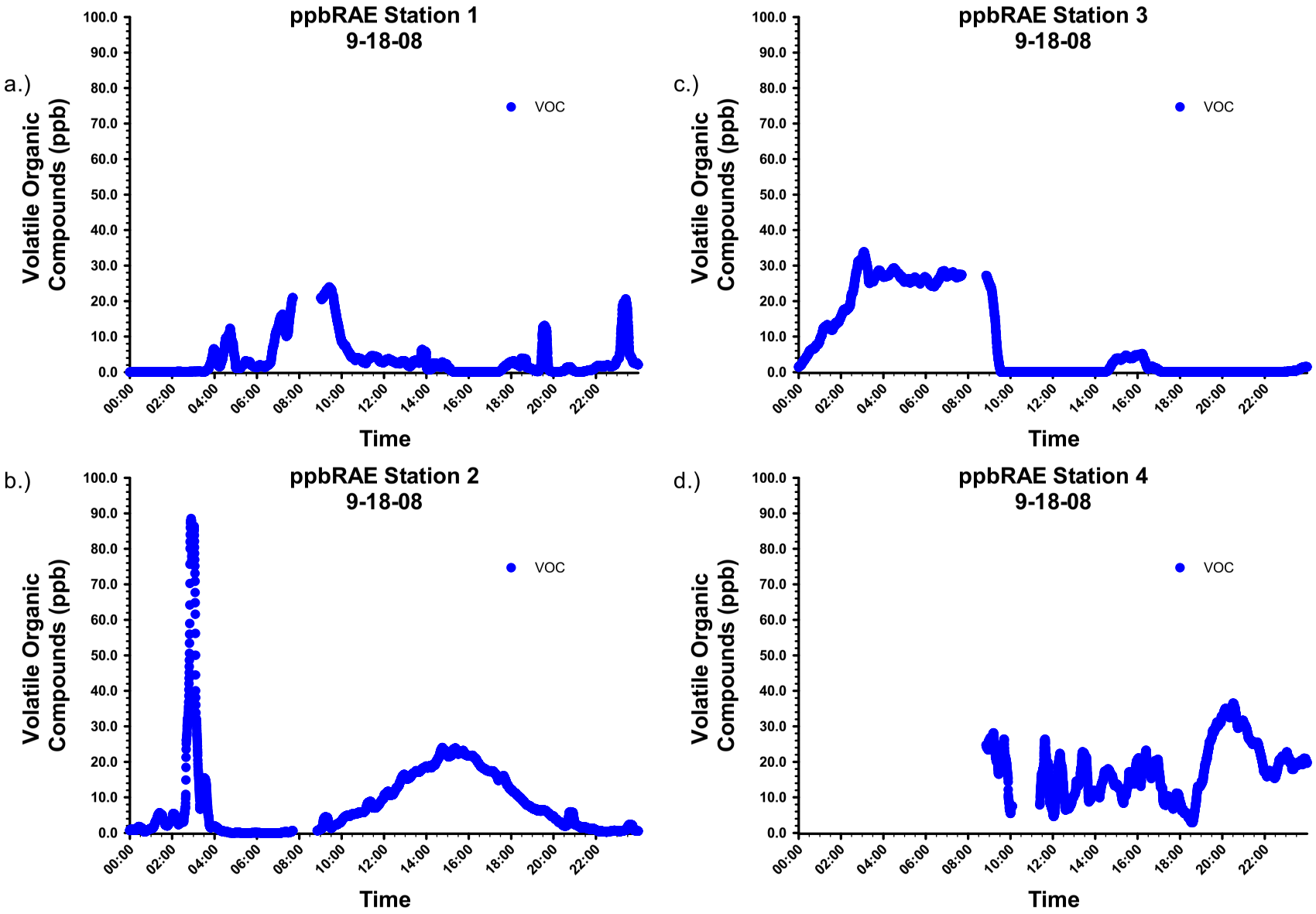
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 17, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



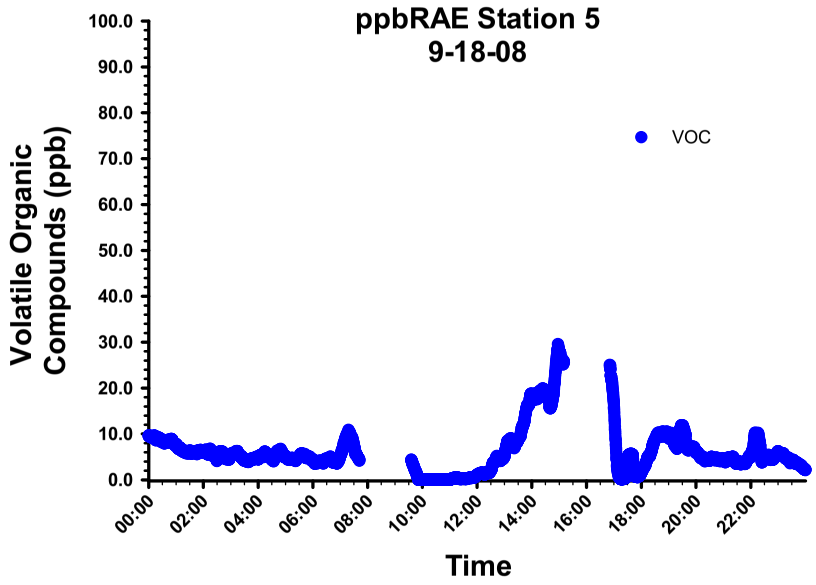
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 17, 2008, at

a) ppbRAE Station 5.



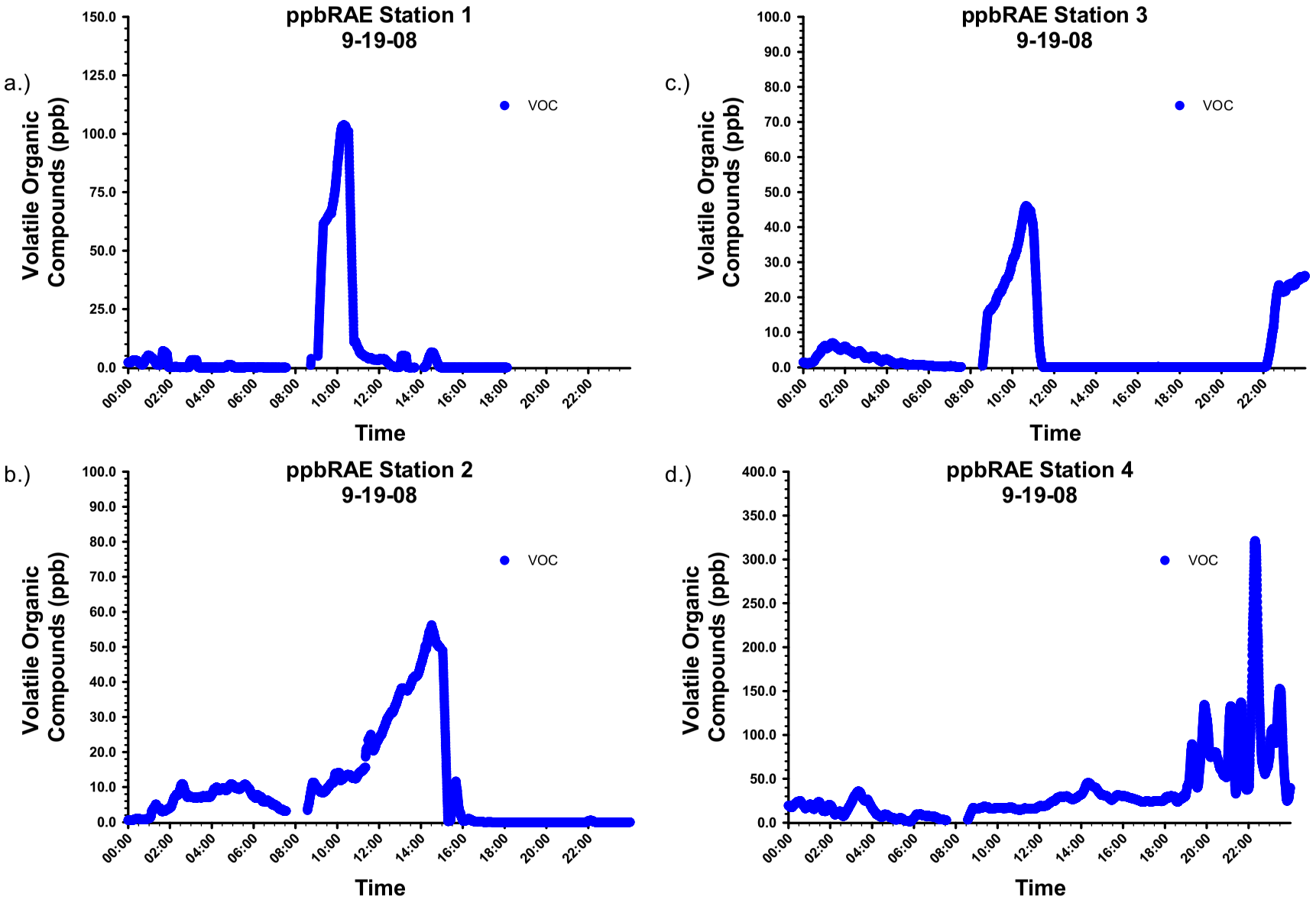
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 18, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



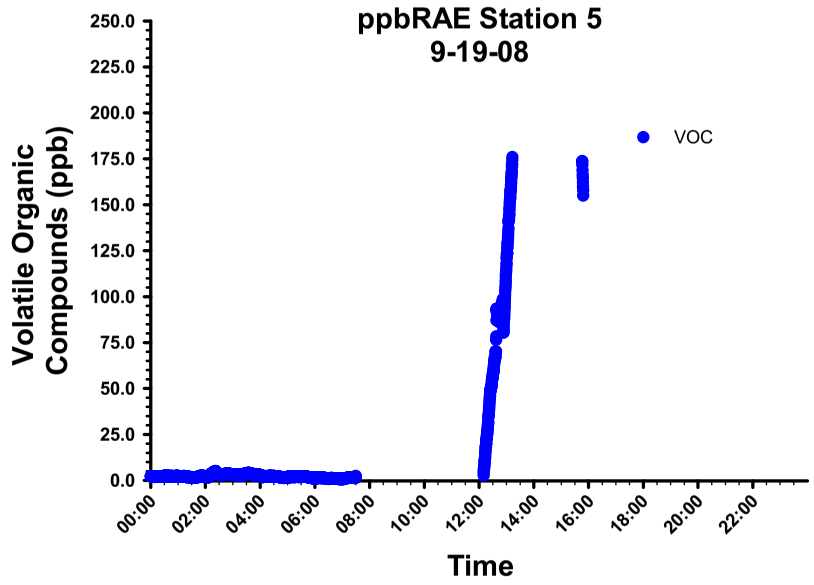
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 18, 2008, at

a) ppbRAE Station 5.



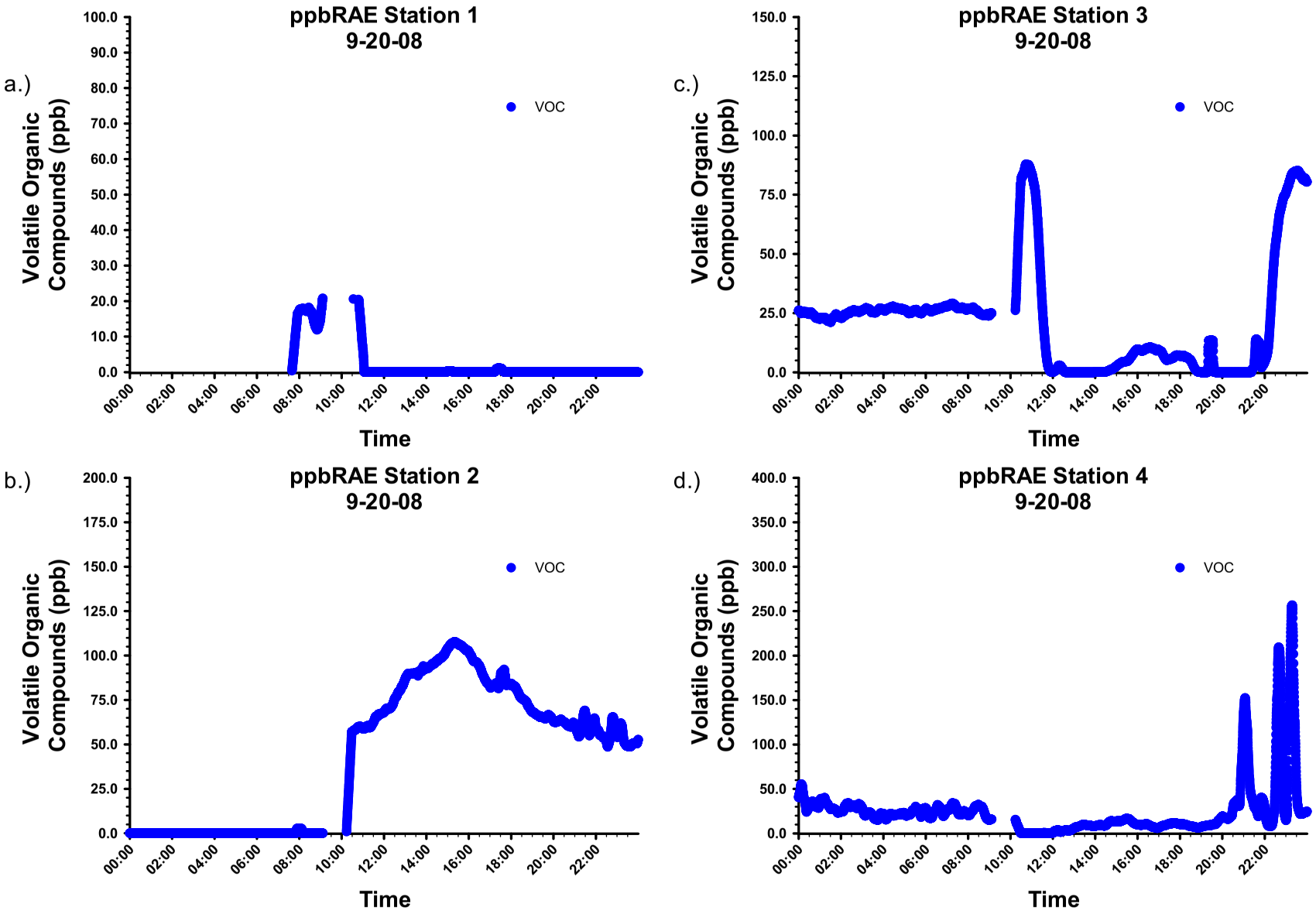
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 19, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



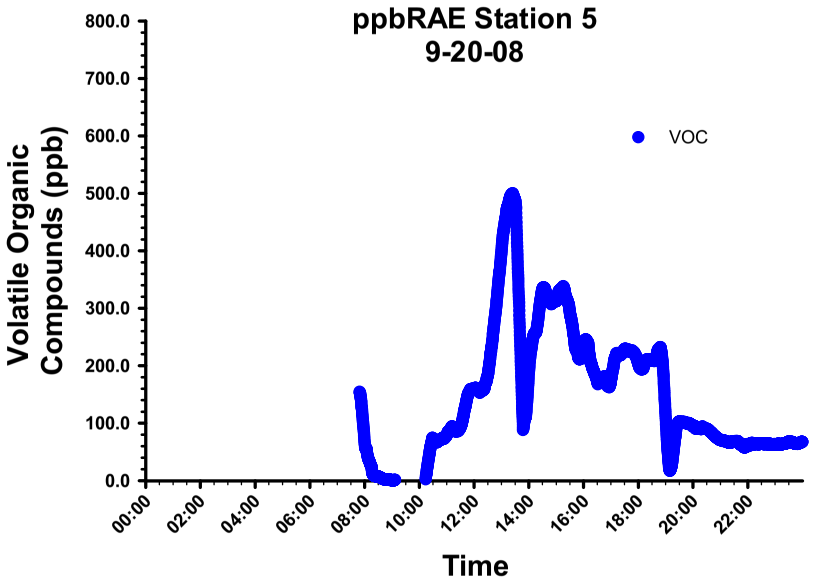
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 19, 2008, at

a) ppbRAE Station 5.



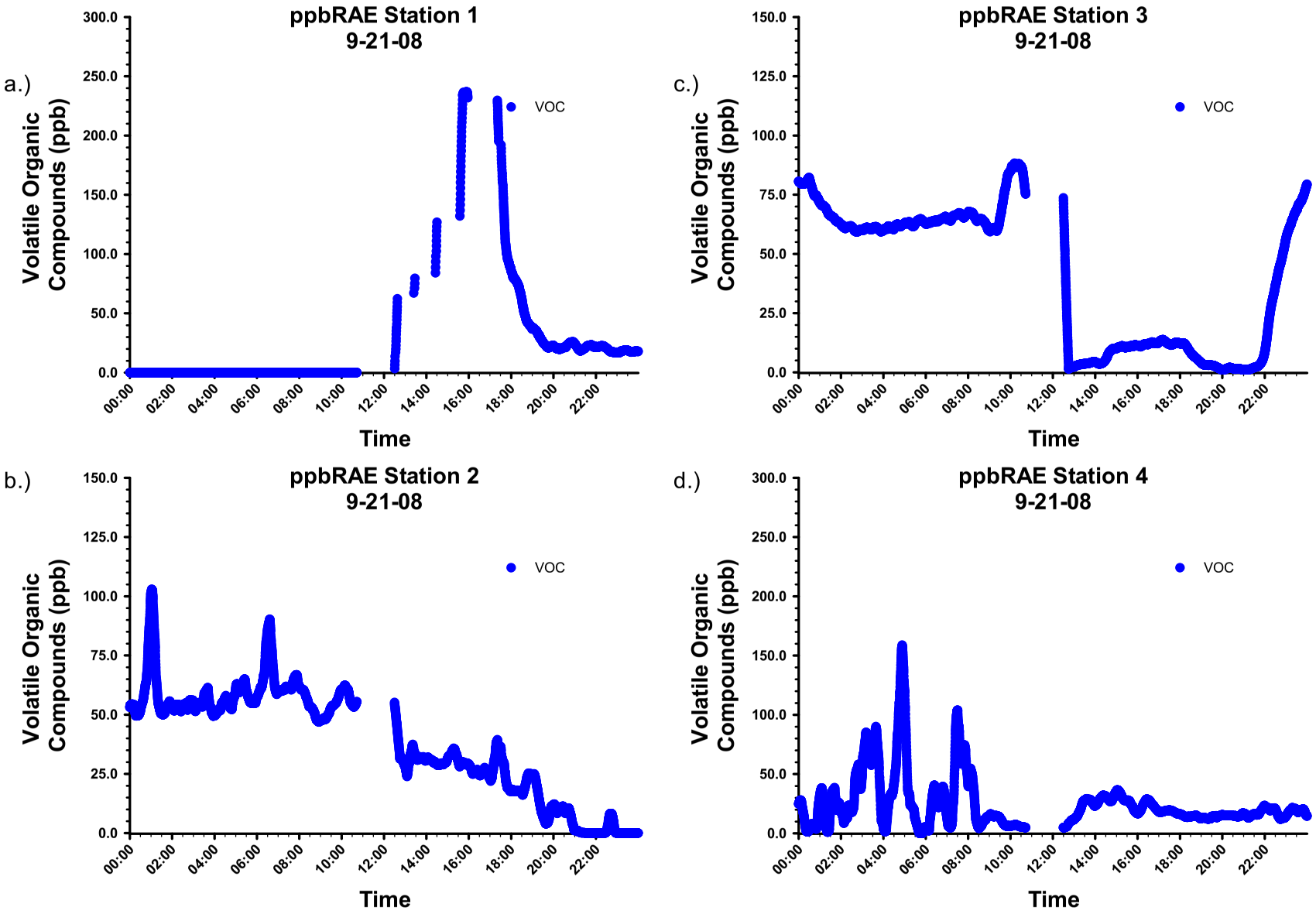
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 20, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



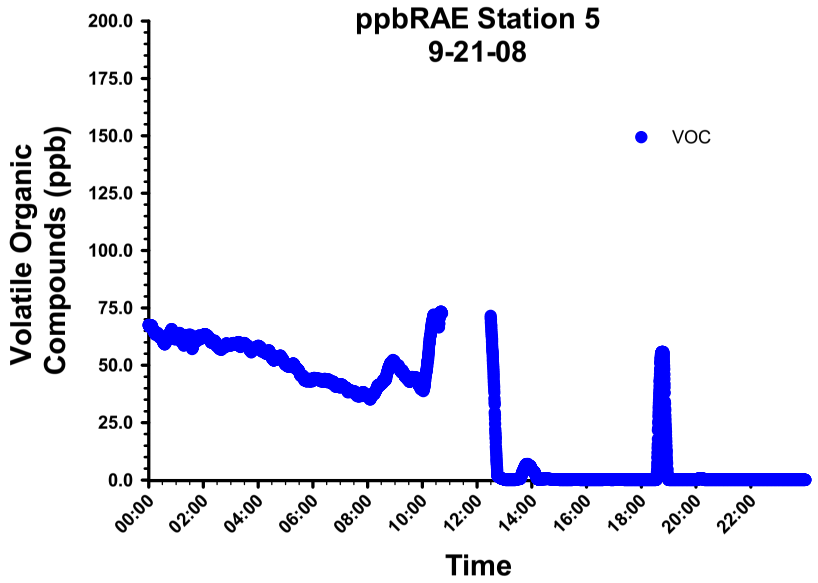
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 20, 2008, at

a) ppbRAE Station 5.



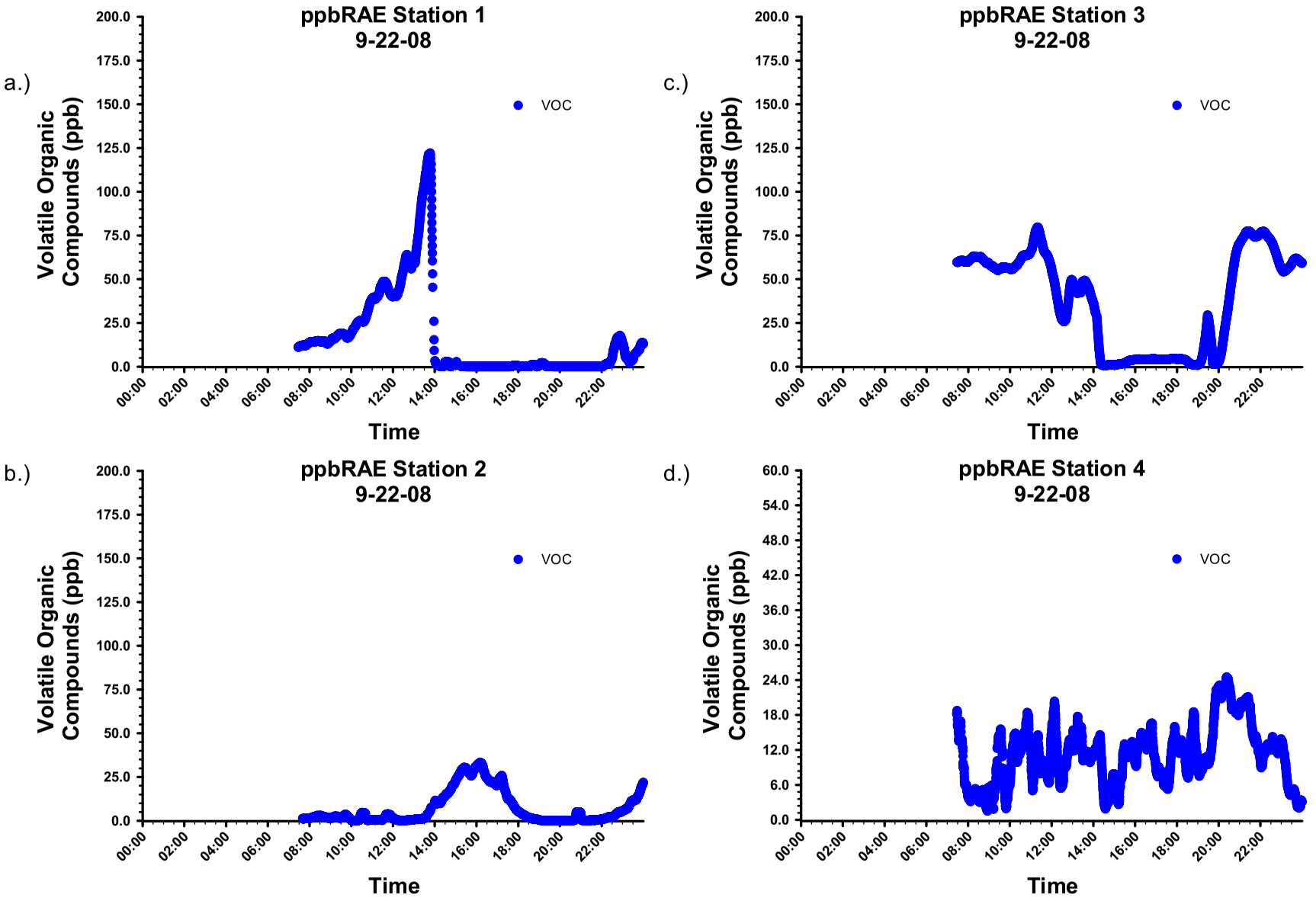
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 21, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



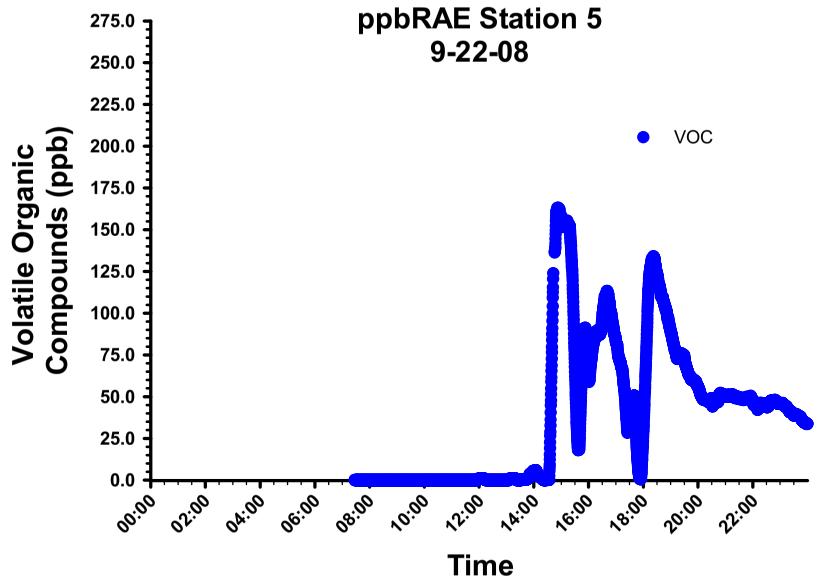
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 21, 2008, at

a) ppbRAE Station 5.



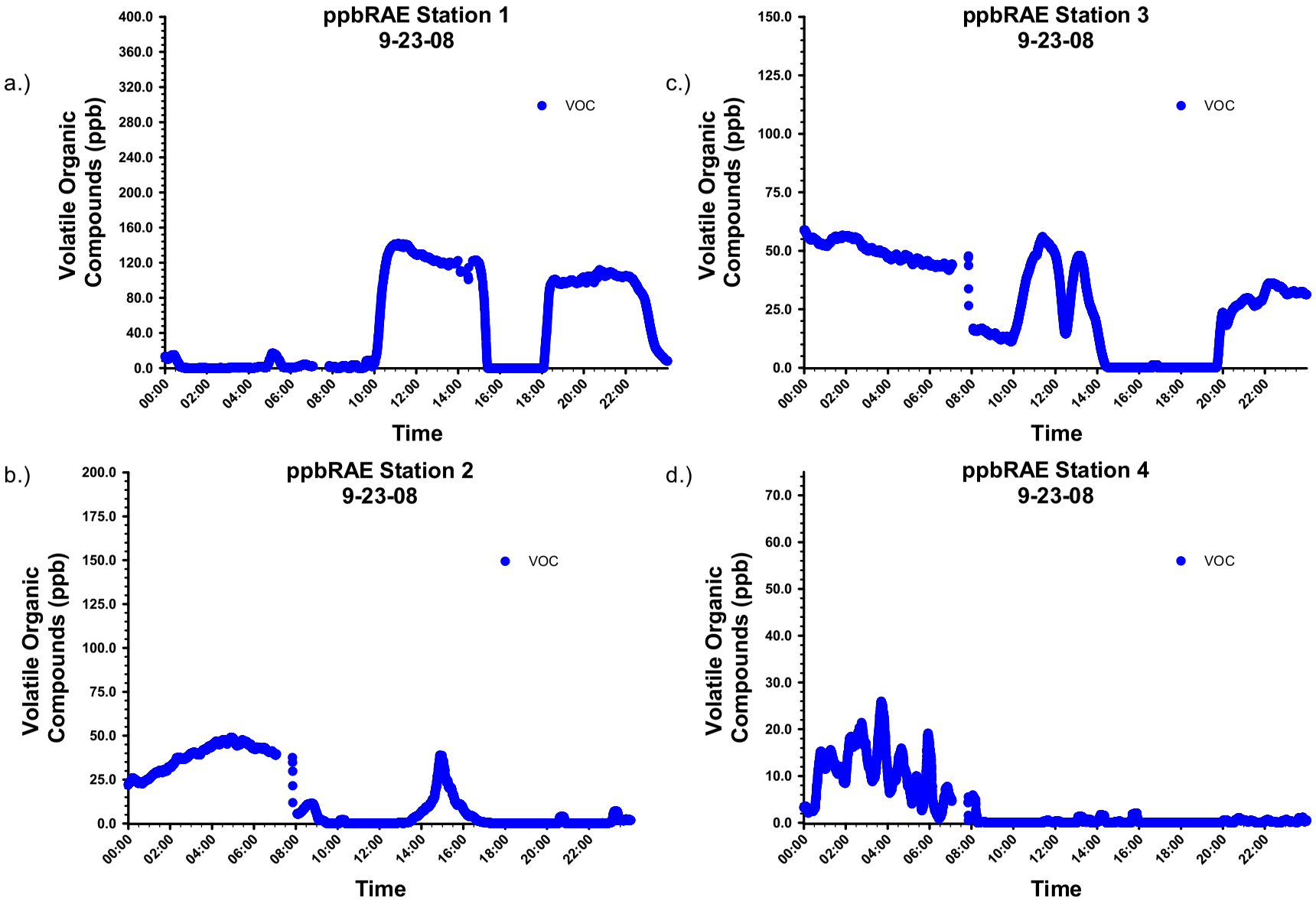
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 22, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



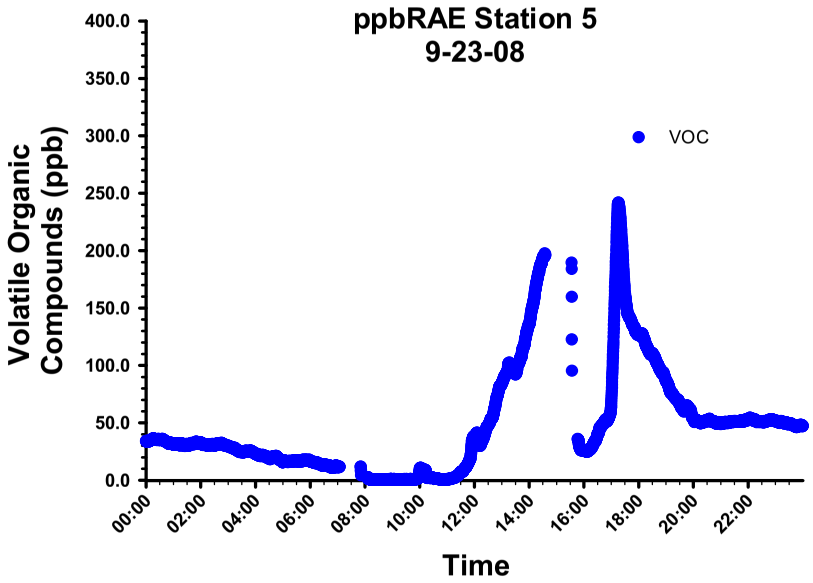
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 22, 2008, at

a) ppbRAE Station 5.



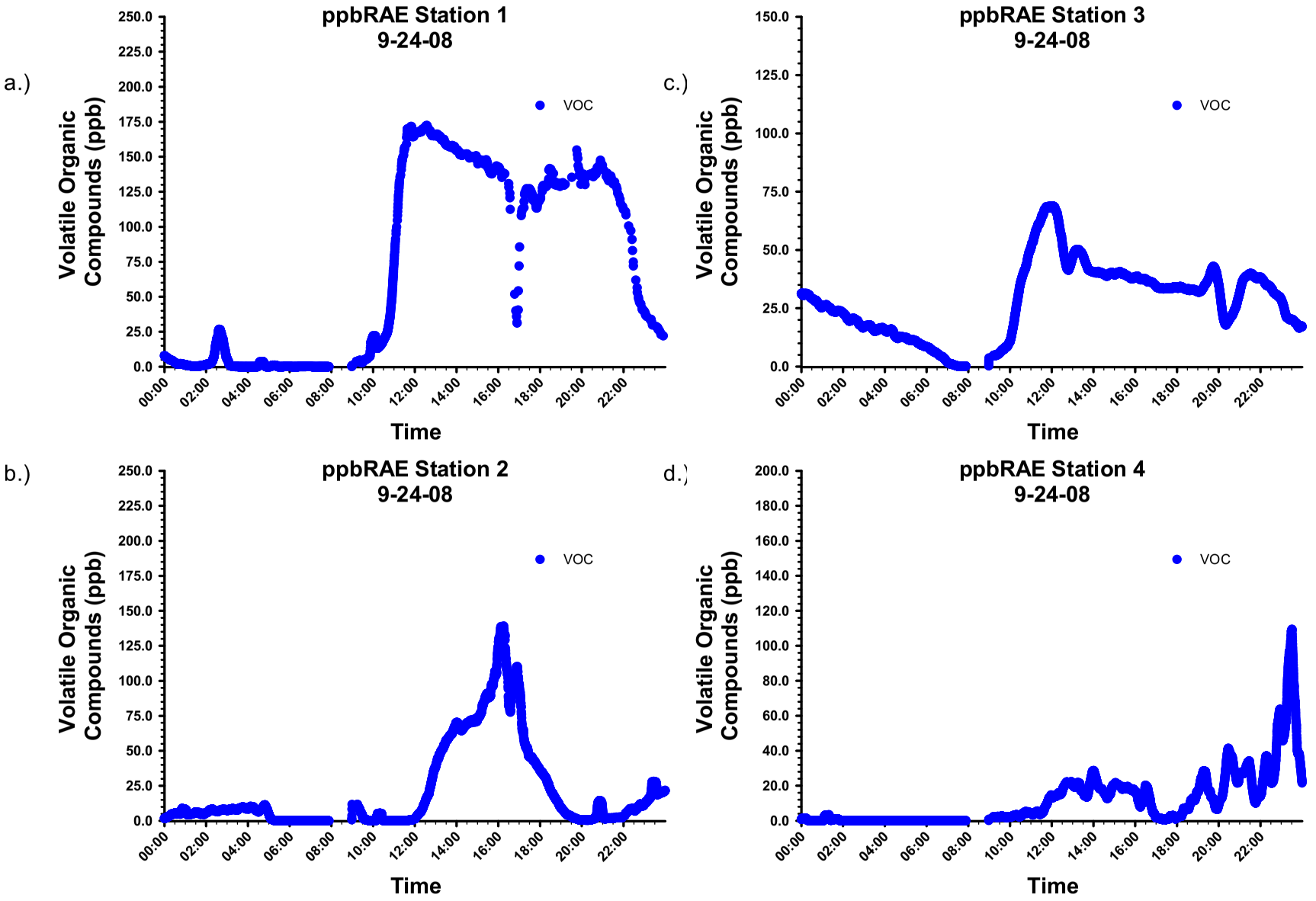
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 23, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



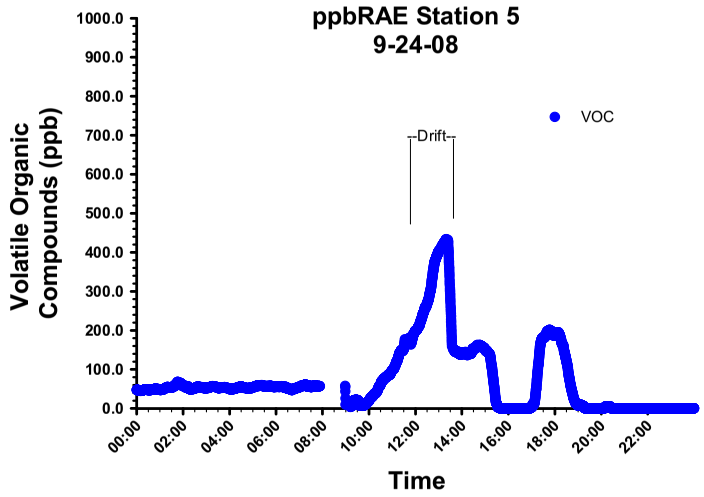
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 23, 2008, at

a) ppbRAE Station 5.



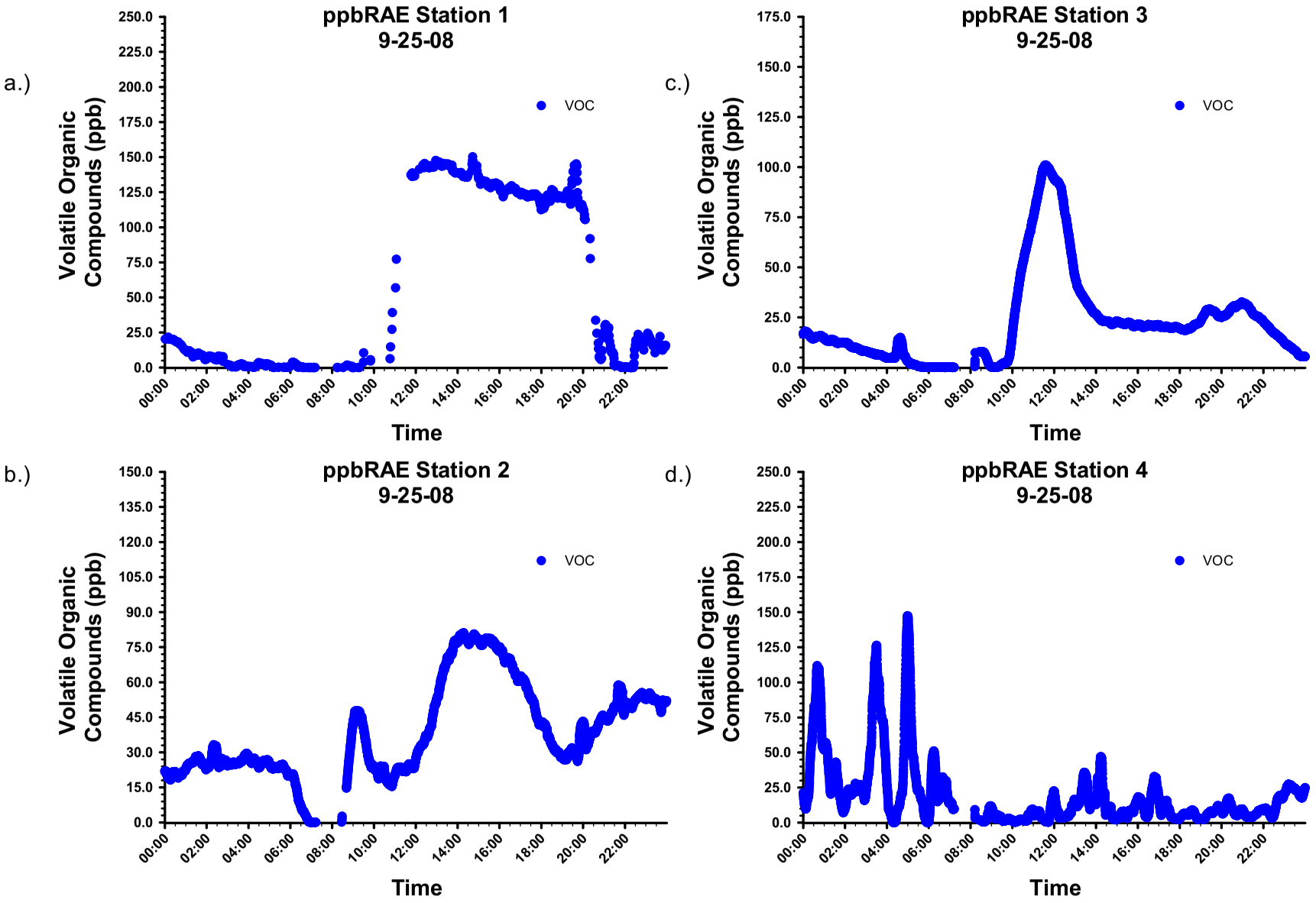
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 24, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



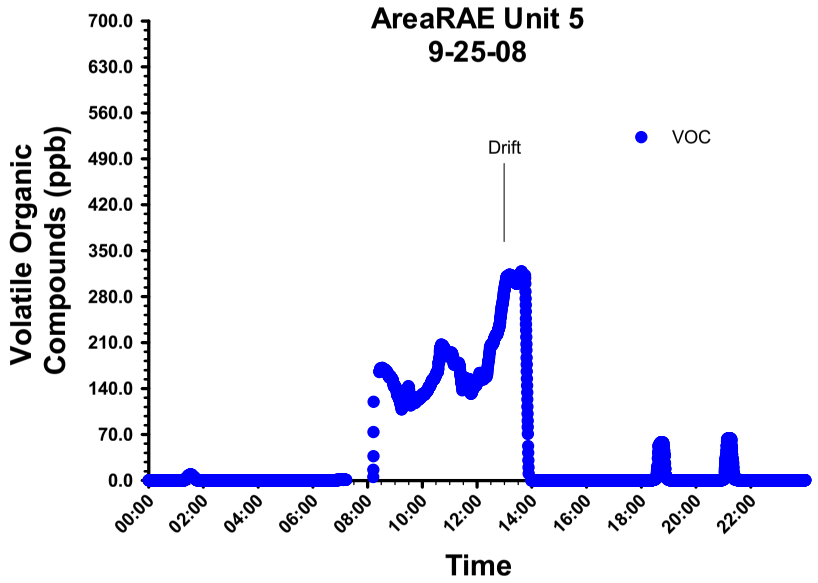
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 24, 2008, at

a) ppbRAE Station 5.



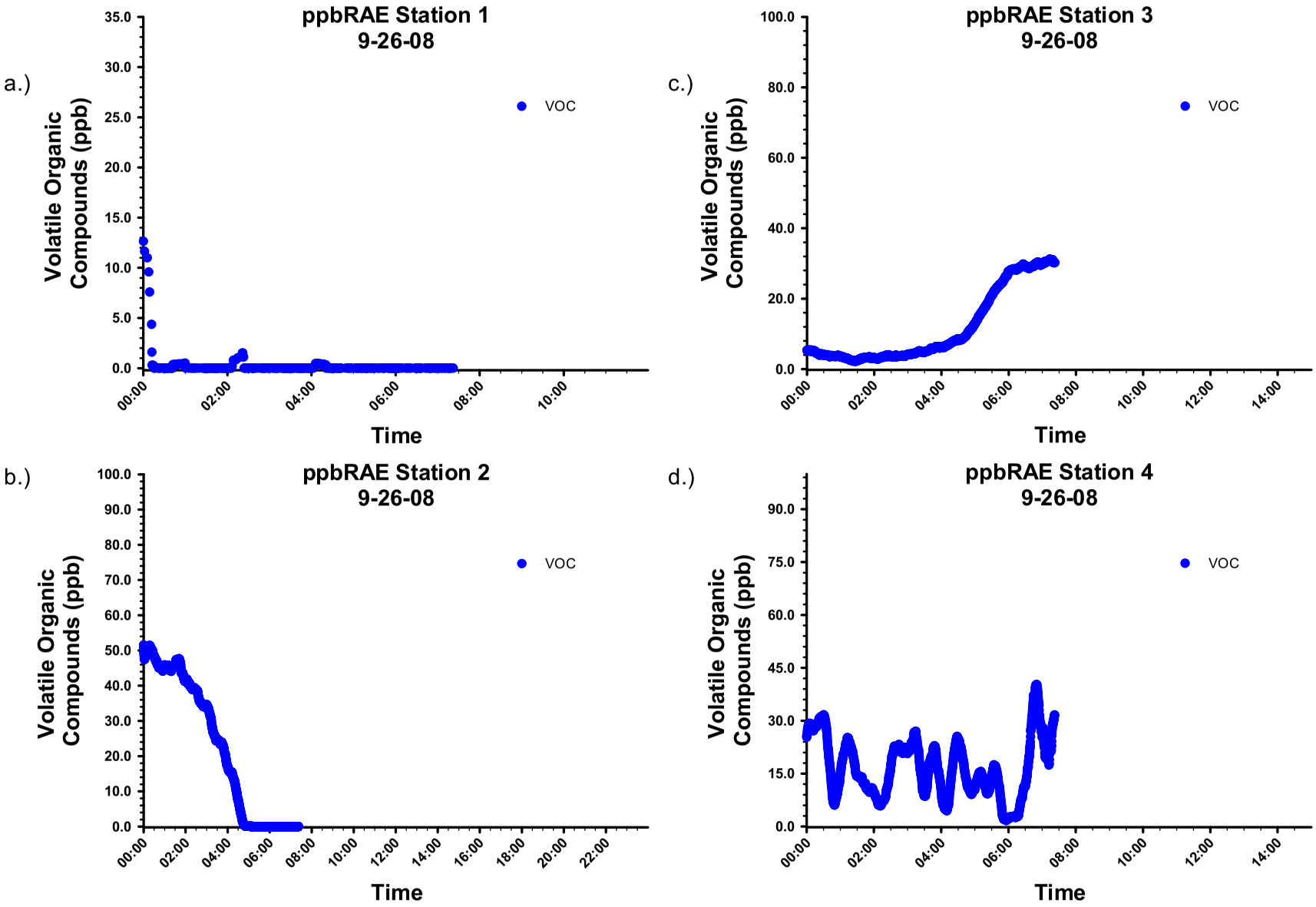
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 25, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



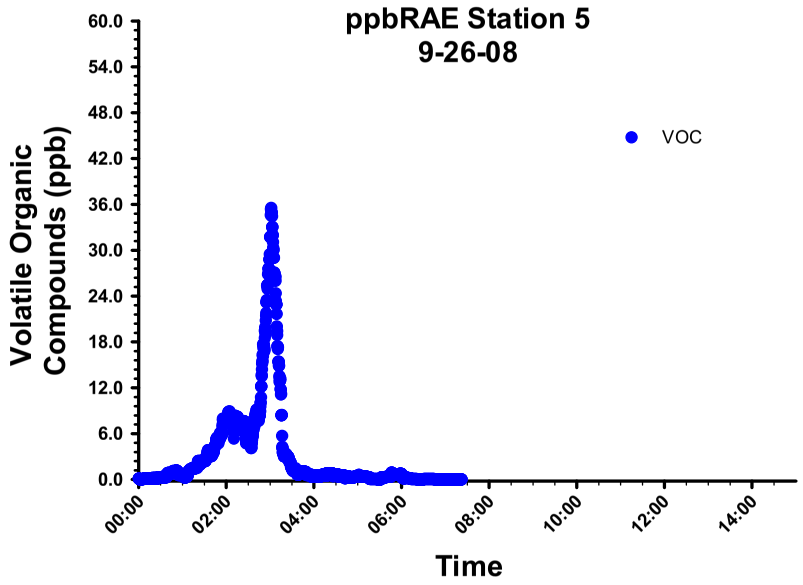
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 25, 2008, at

a) ppbRAE Station 5.



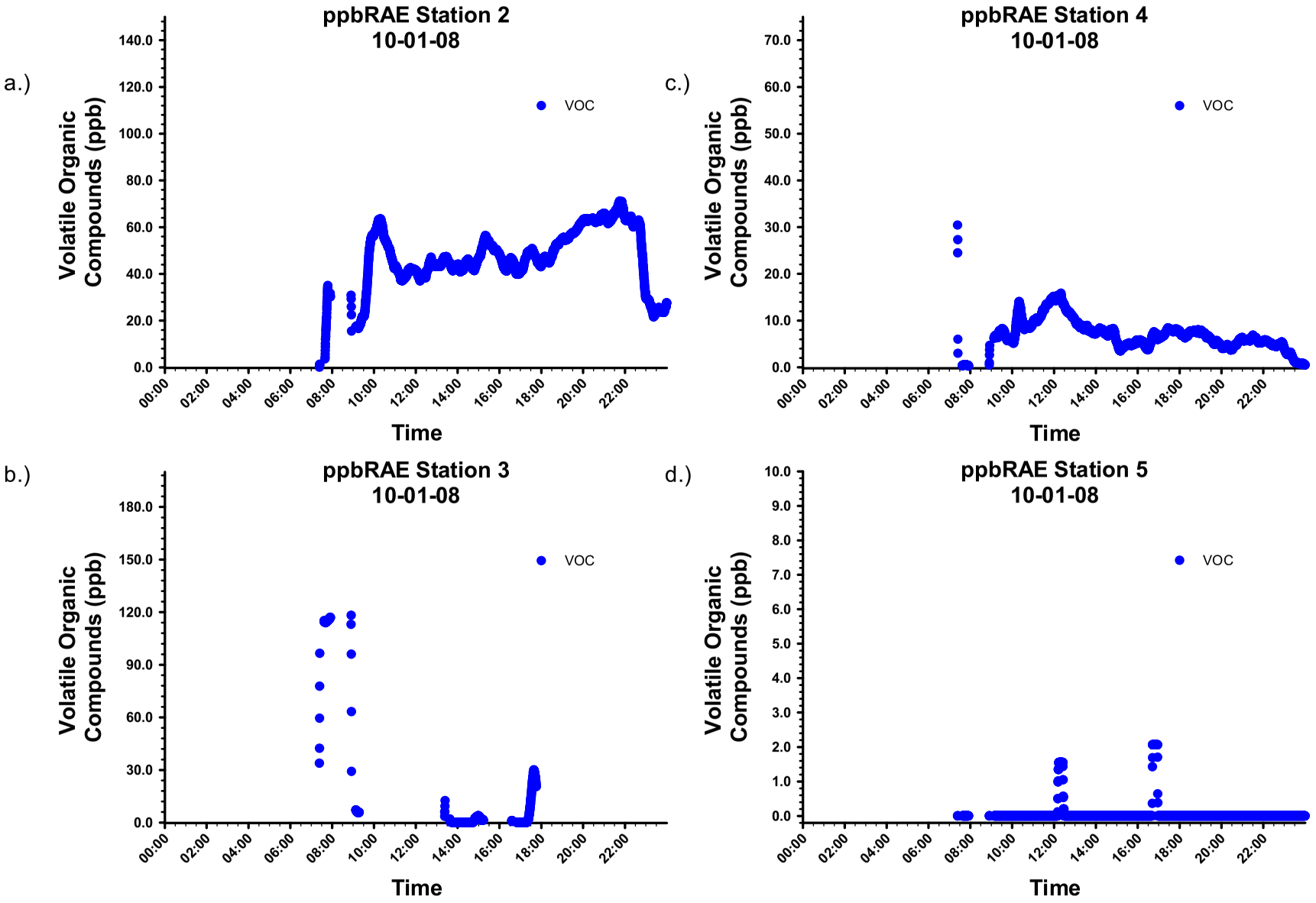
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 26, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)

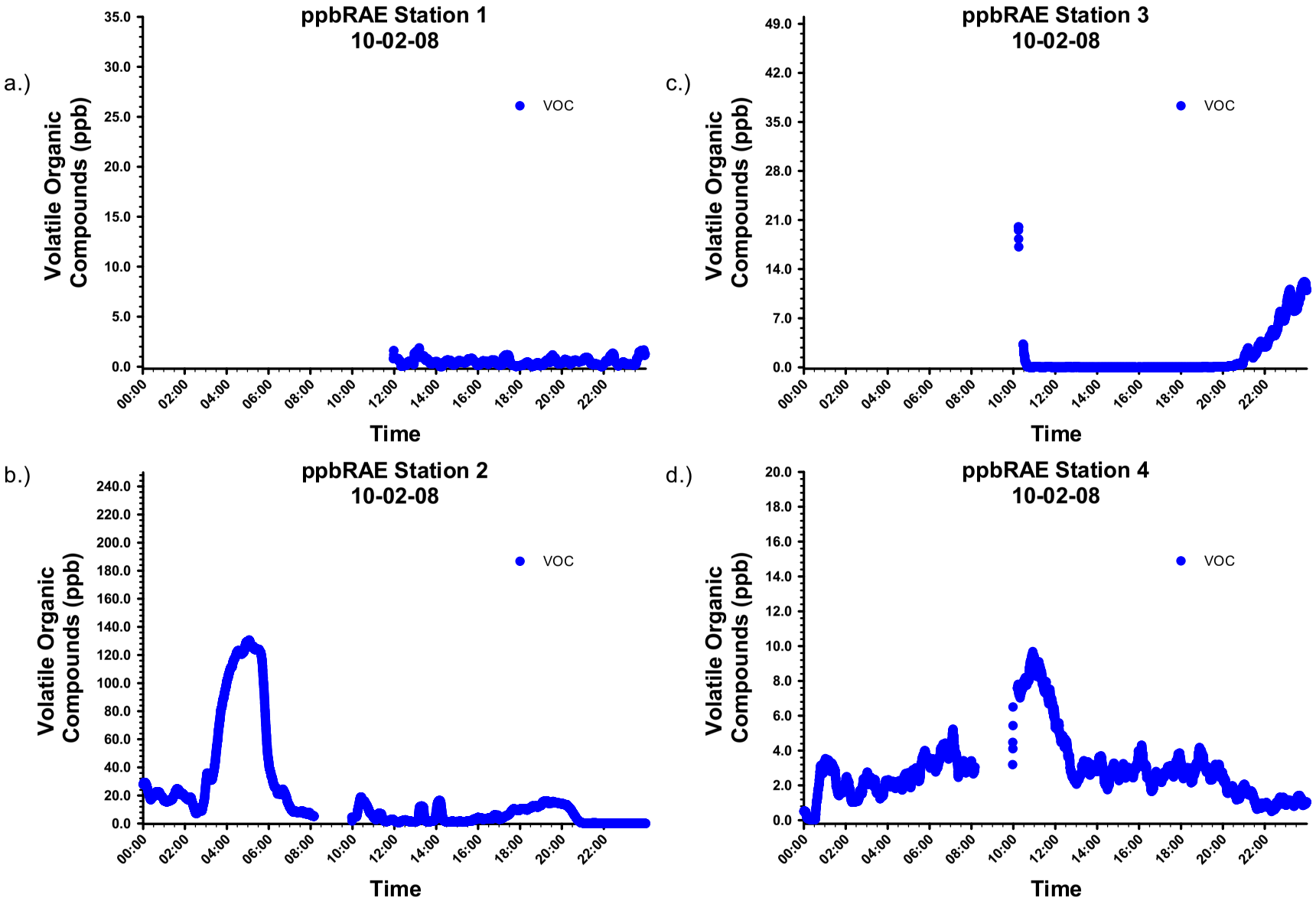


15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on September 26, 2008, at

a) ppbRAE Station 5.

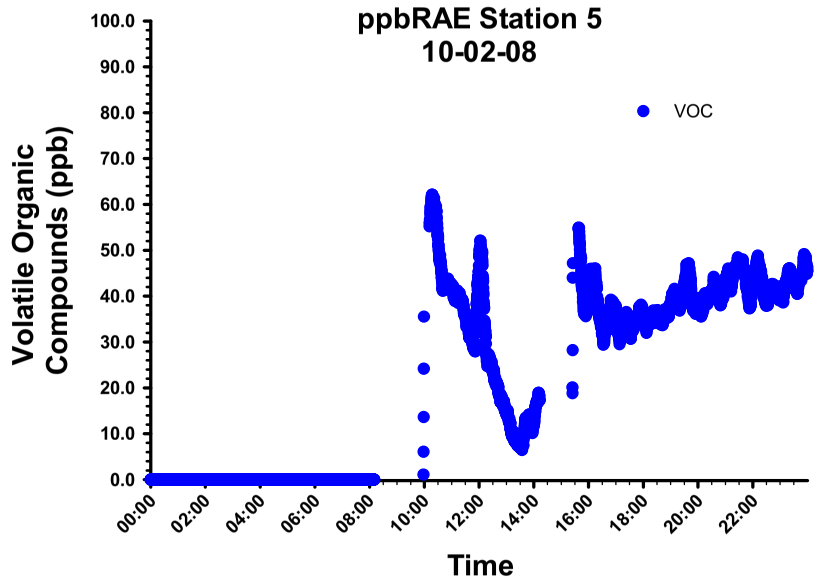


15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 1, 2008, at a) ppbRAE Station 2, b) ppbRAE Station 3, c) ppbRAE Station 4, and d) ppbRAE Station 5.



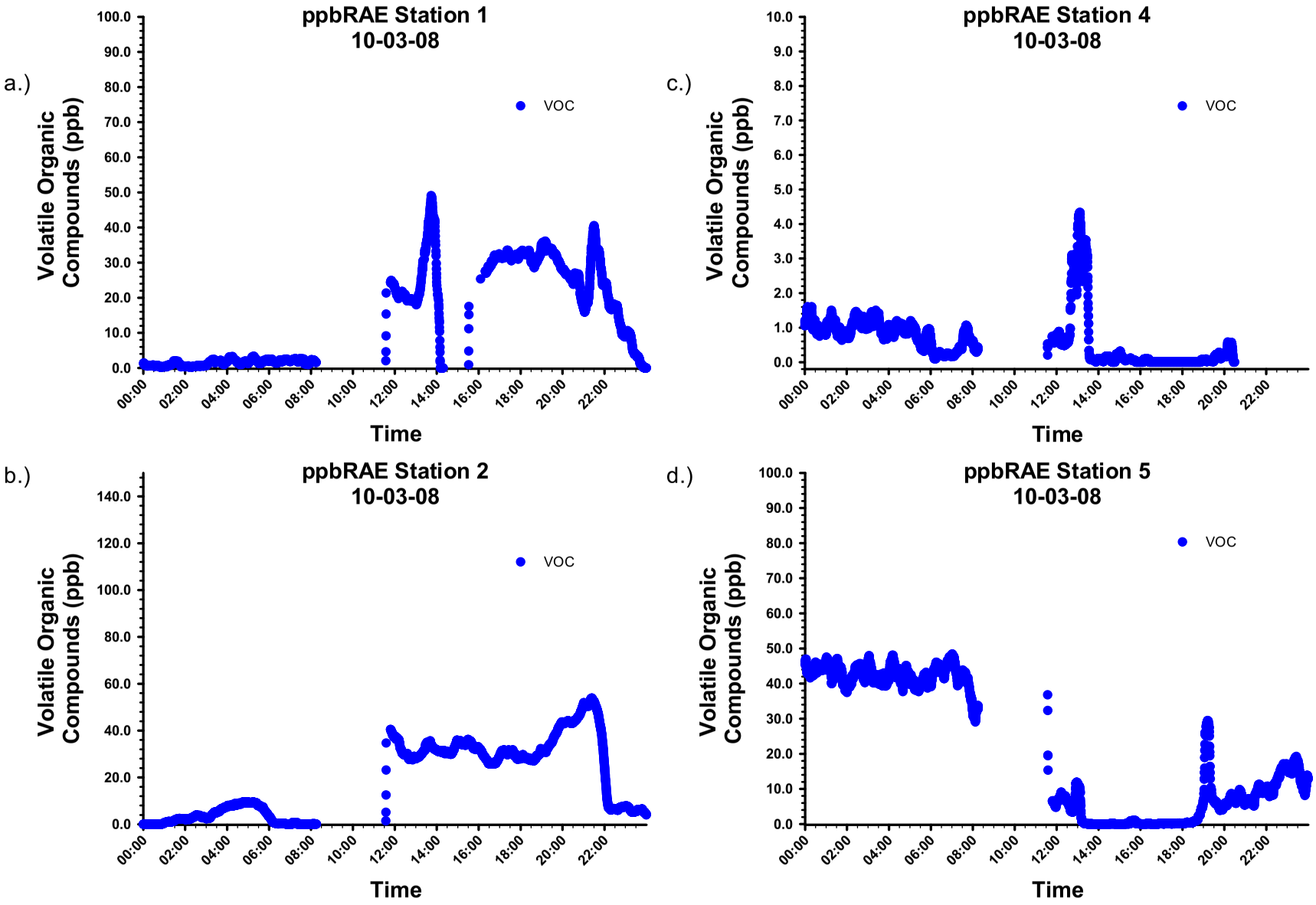
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 2, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)

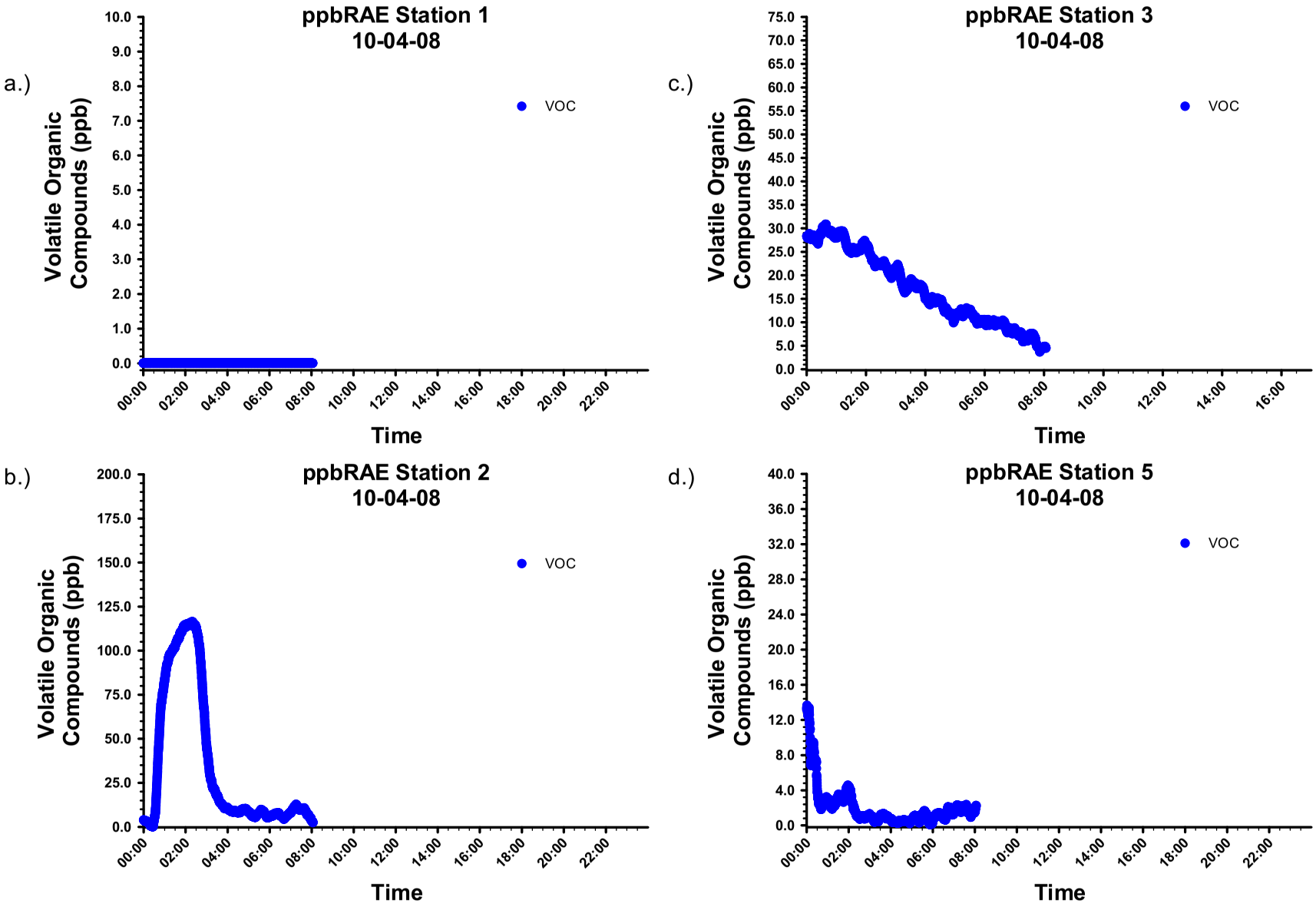


15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 2, 2008, at

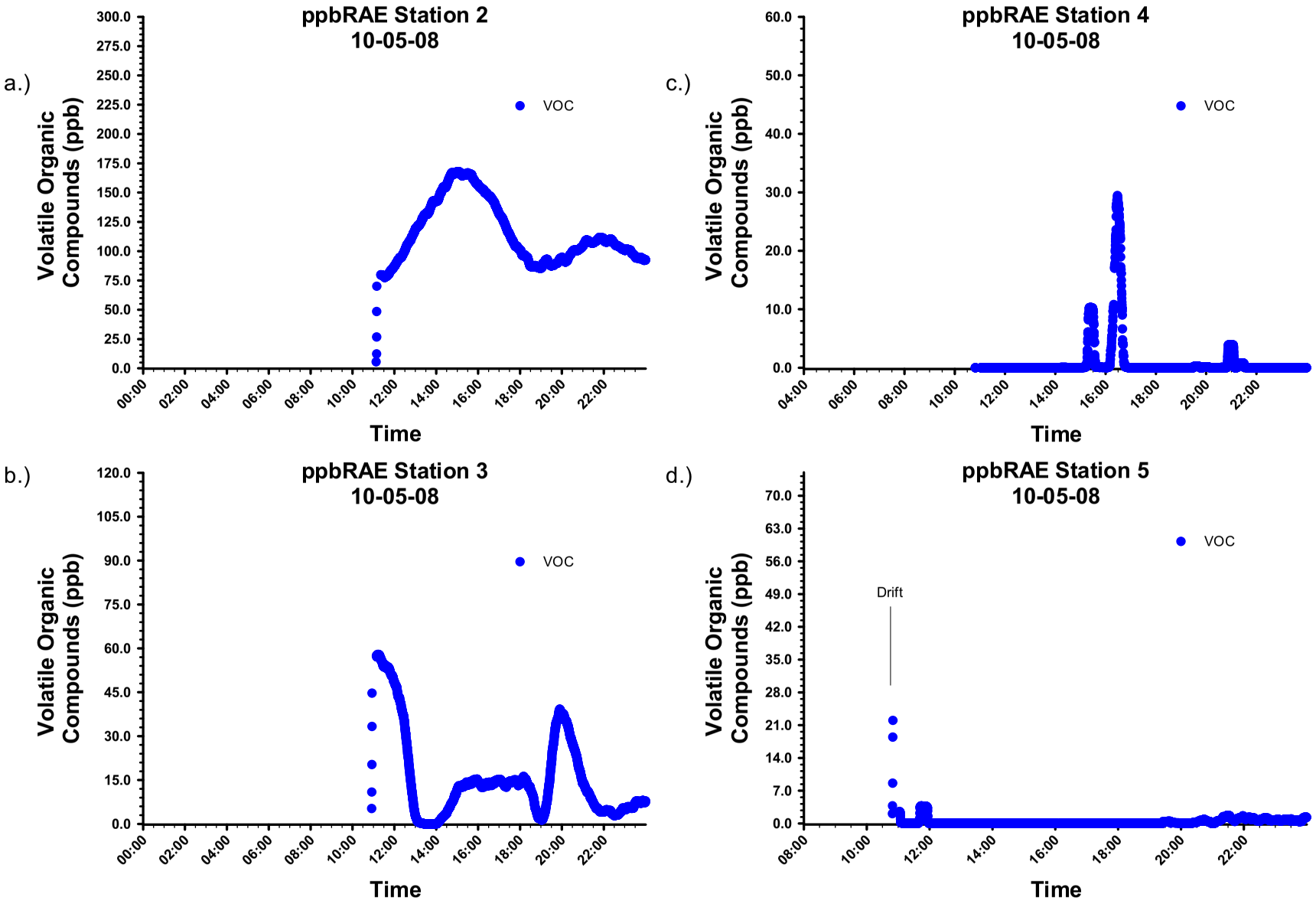
a) ppbRAE Station 5.



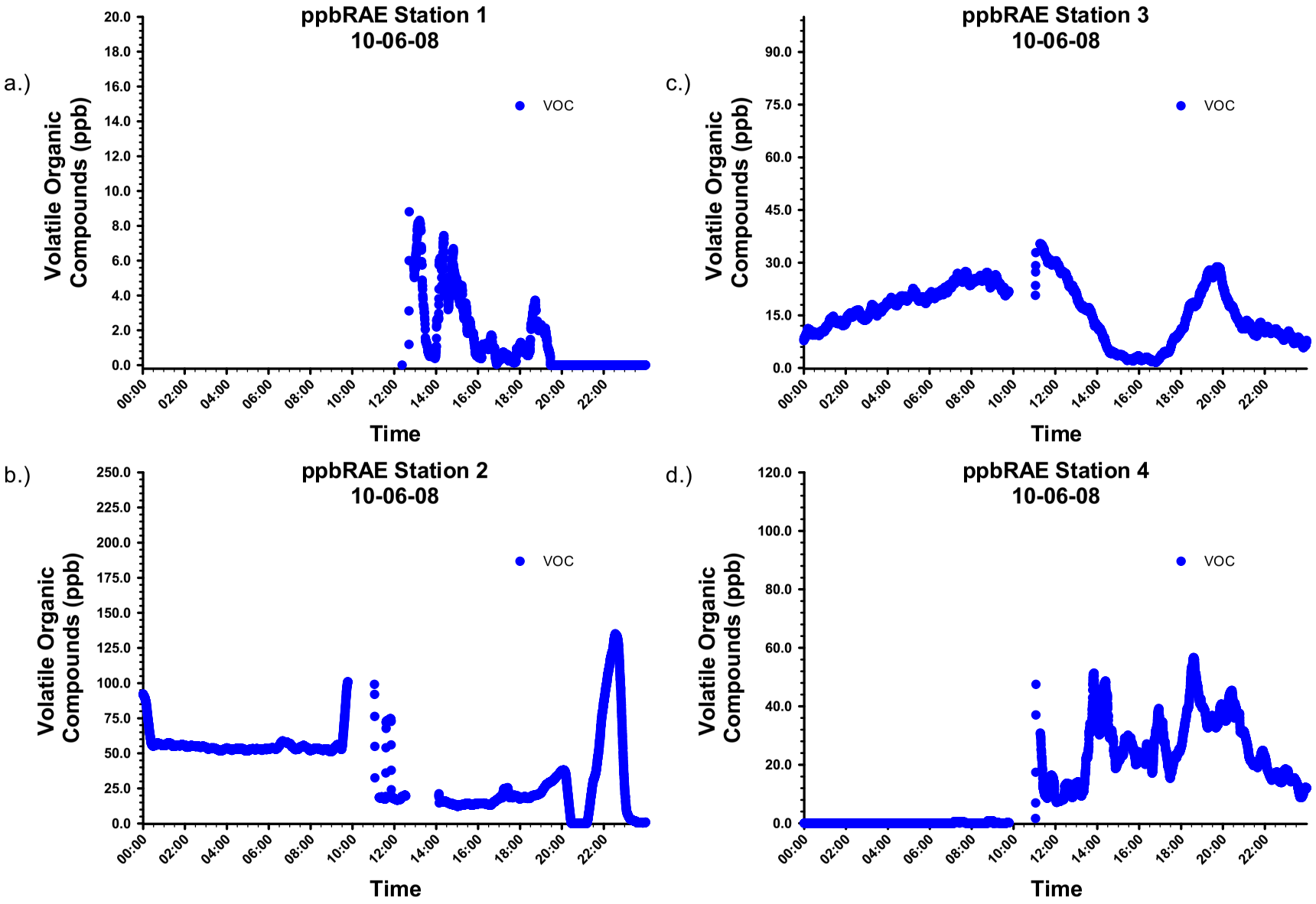
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 3, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 4, and d) ppbRAE Station 5.



15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 4, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 5.

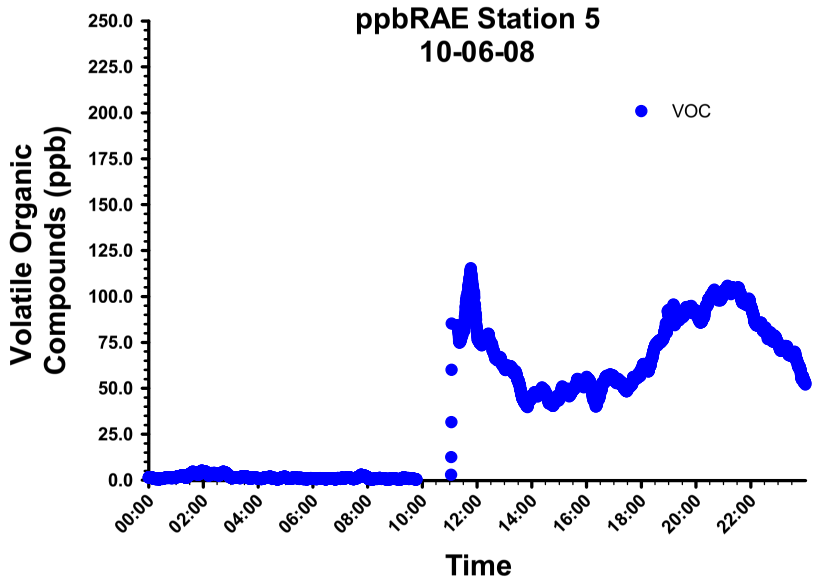


15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 5, 2008, at a) ppbRAE Station 2, b) ppbRAE Station 3, c) ppbRAE Station 4, and d) ppbRAE Station 5.



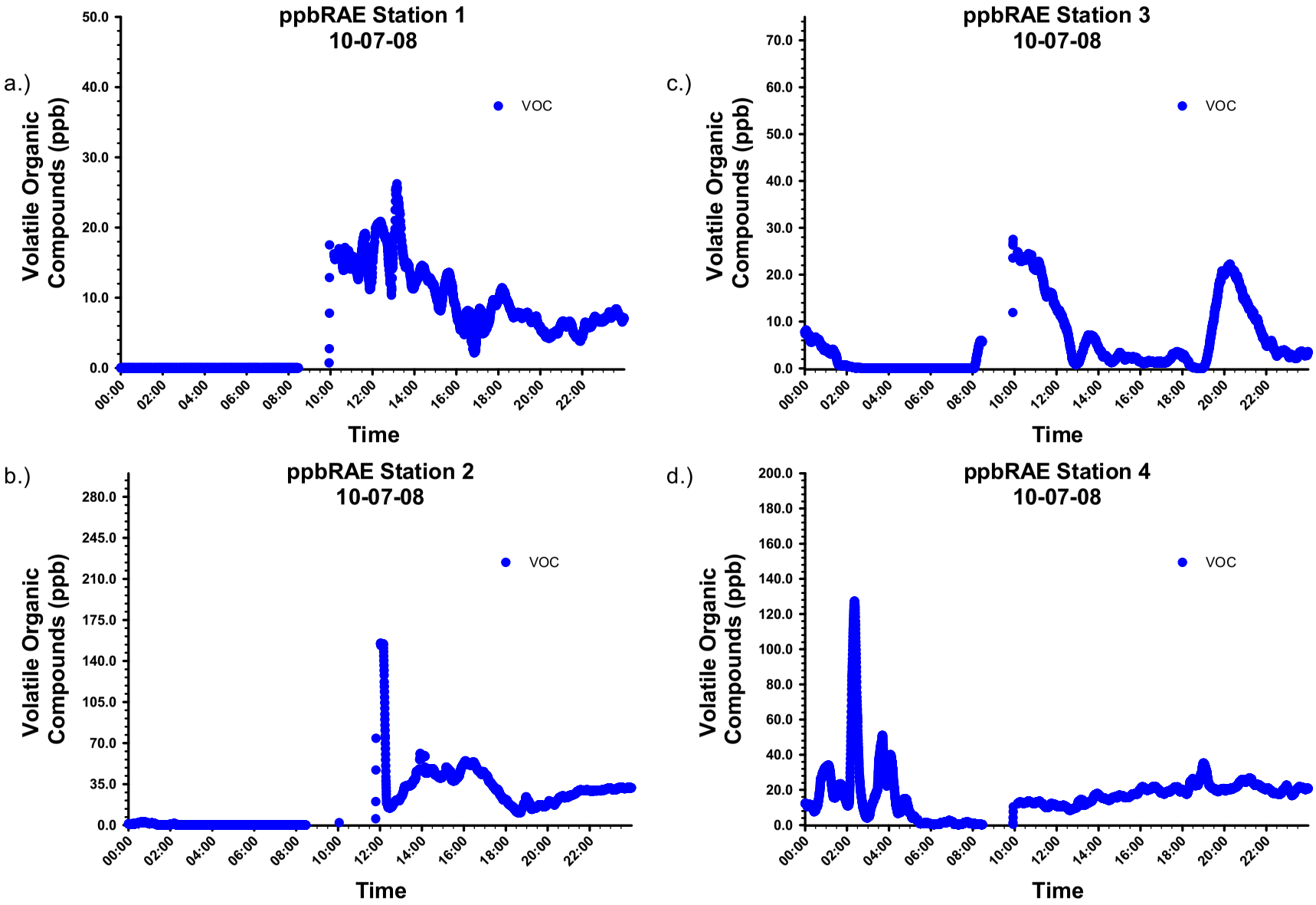
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 6, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



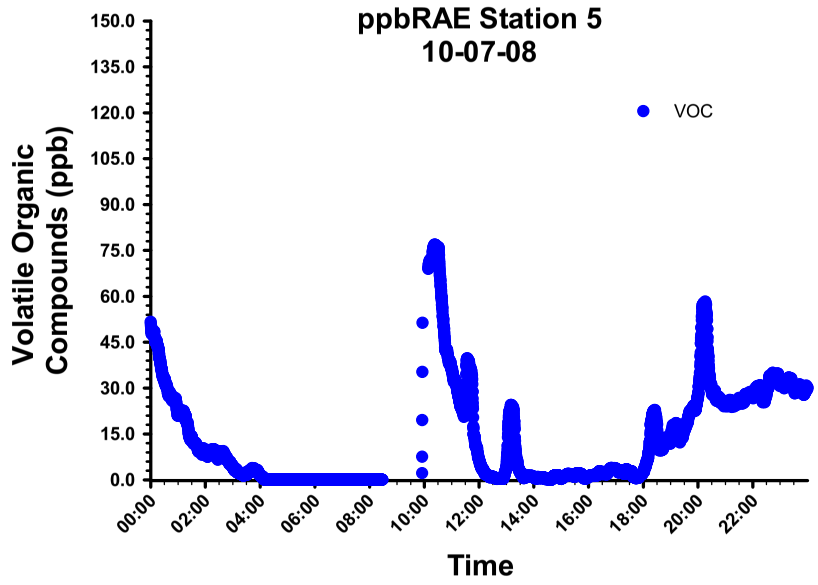
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 6, 2008, at

a) ppbRAE Station 5.



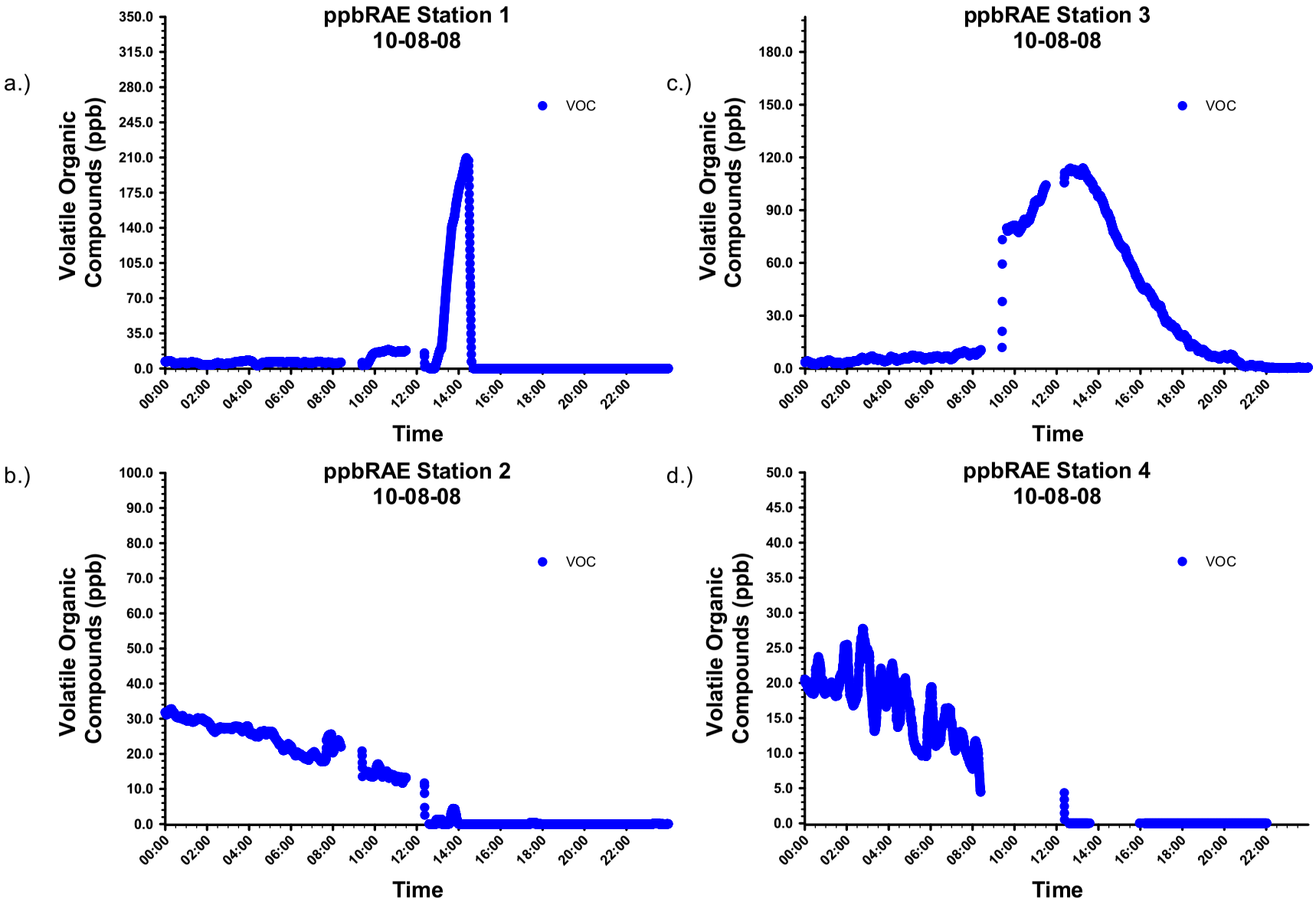
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 7, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



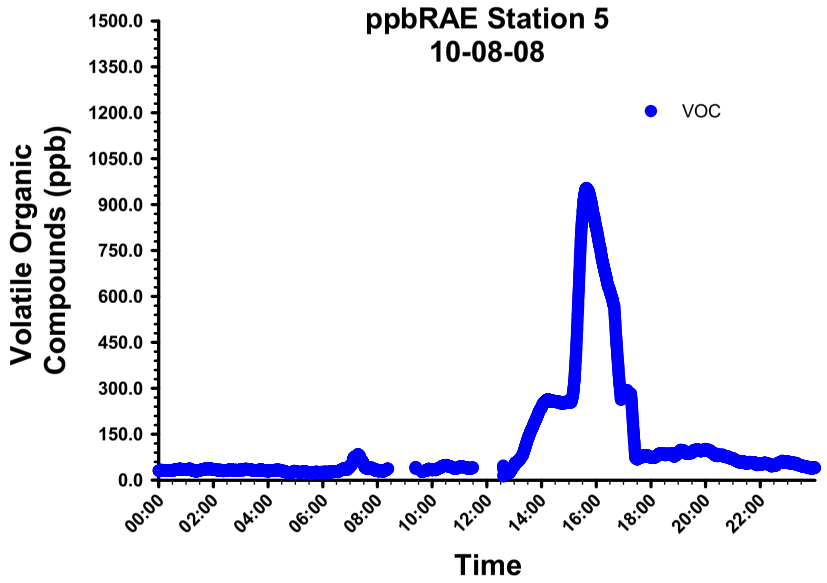
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 7, 2008, at

a) ppbRAE Station 5.



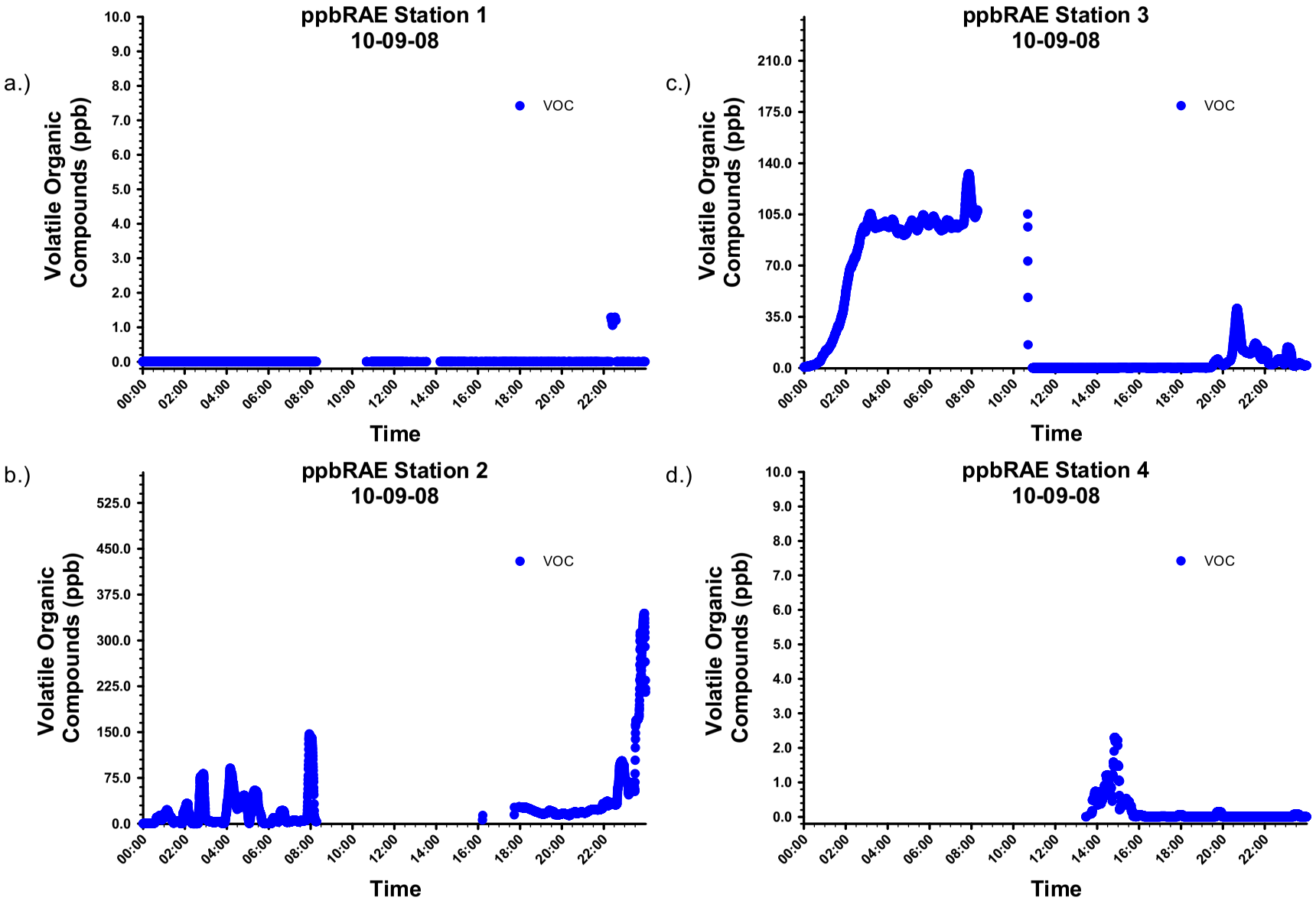
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 8, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



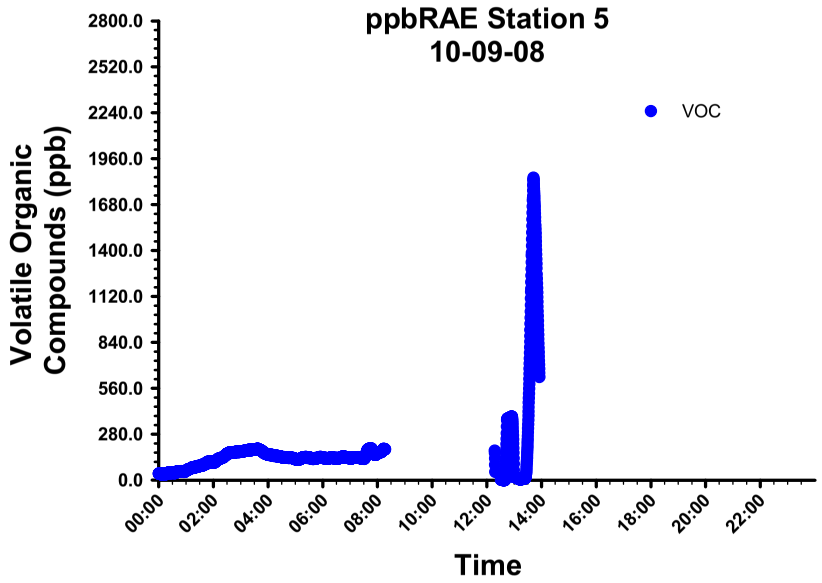
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 8, 2008, at

a) ppbRAE Station 5.



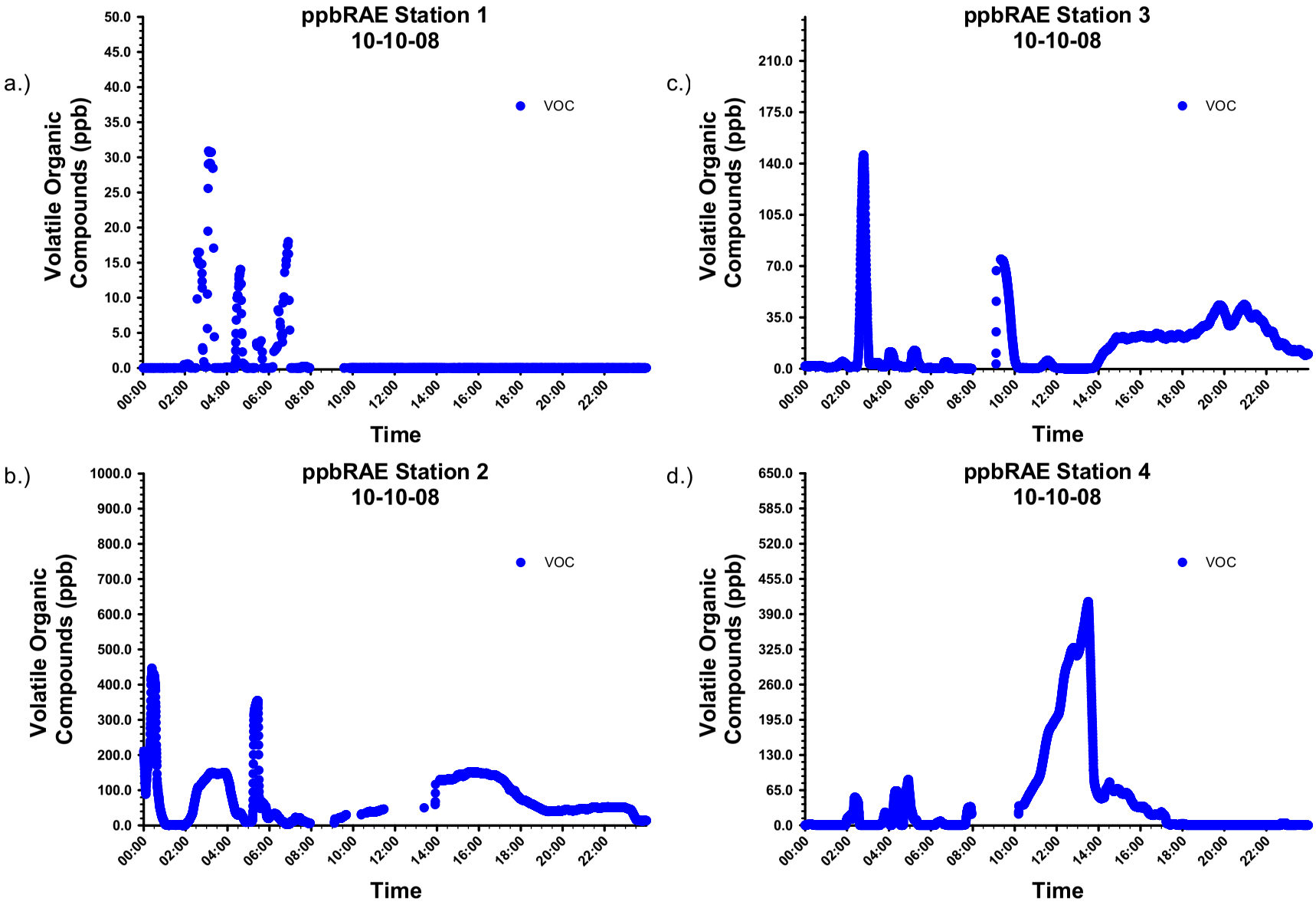
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 9, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)

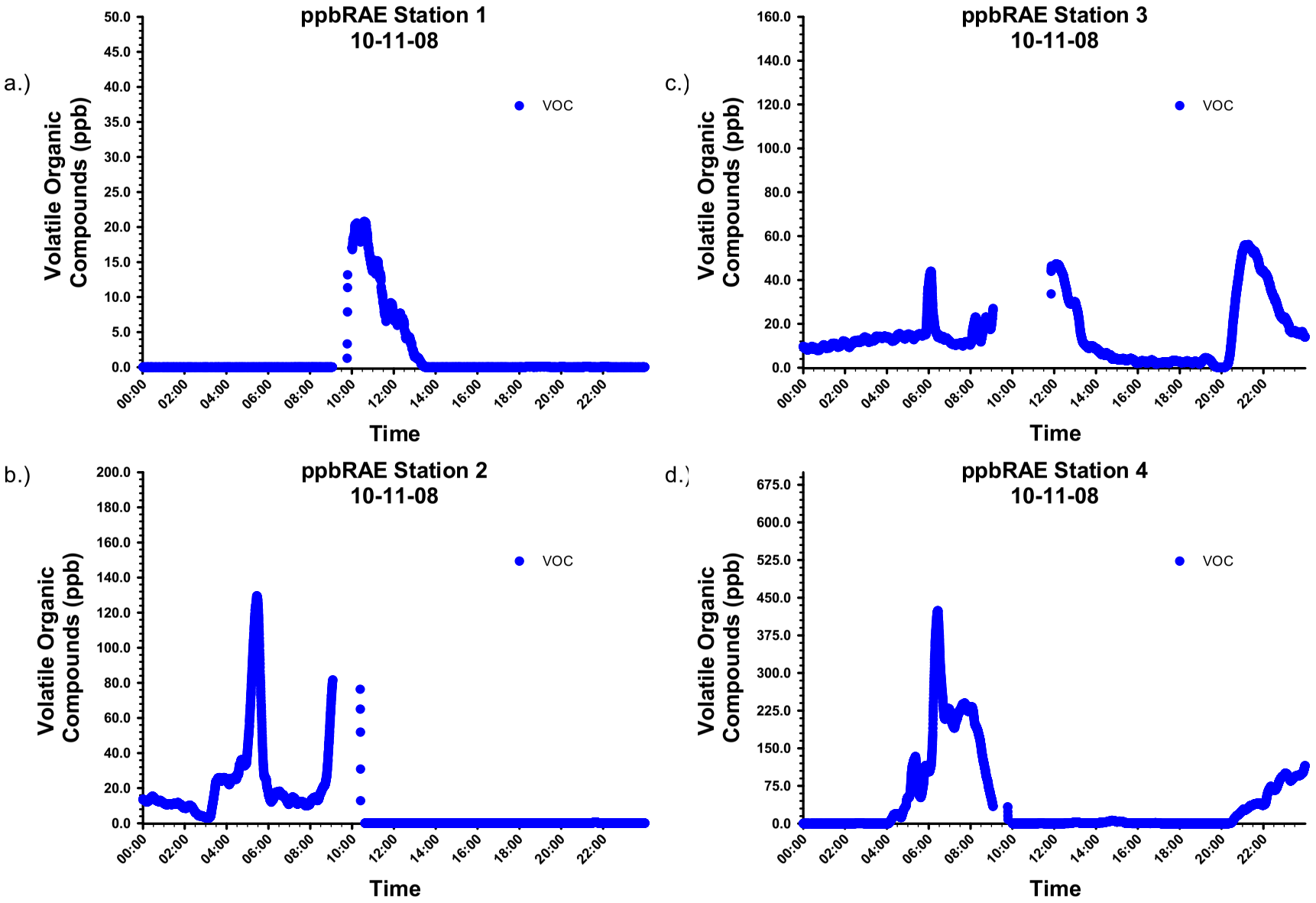


15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 9, 2008, at

a) ppbRAE Station 5.

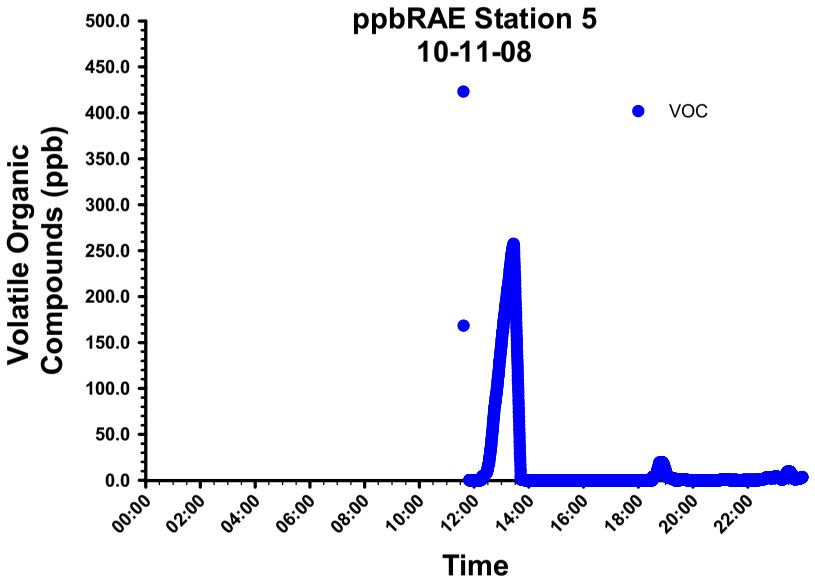


15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 10, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.



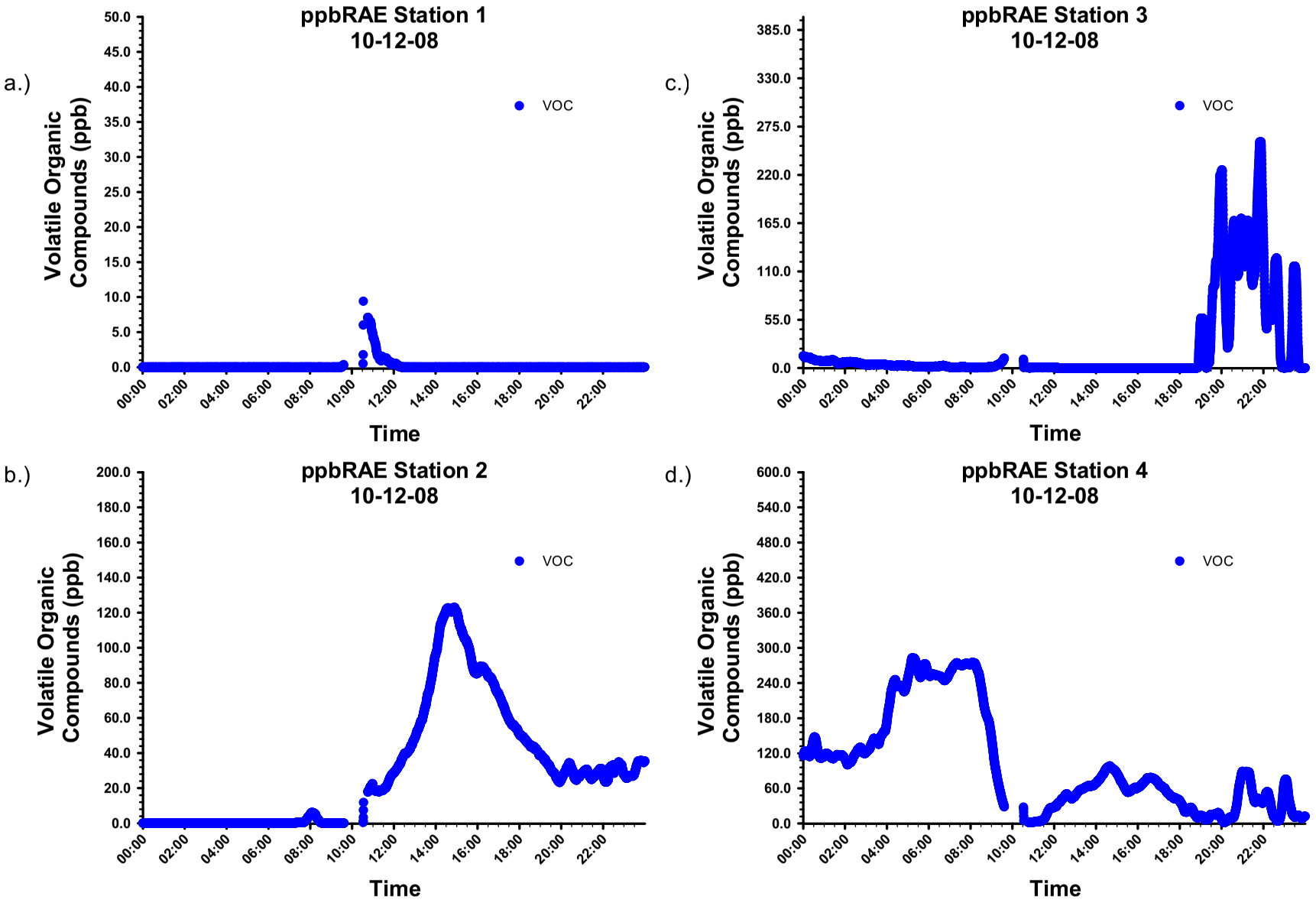
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 11, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



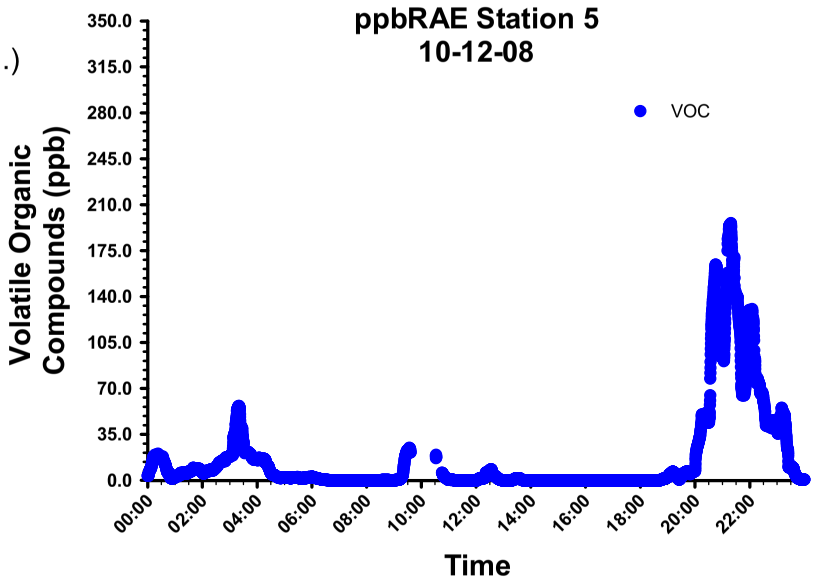
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 11, 2008, at

a) ppbRAE Station 5.



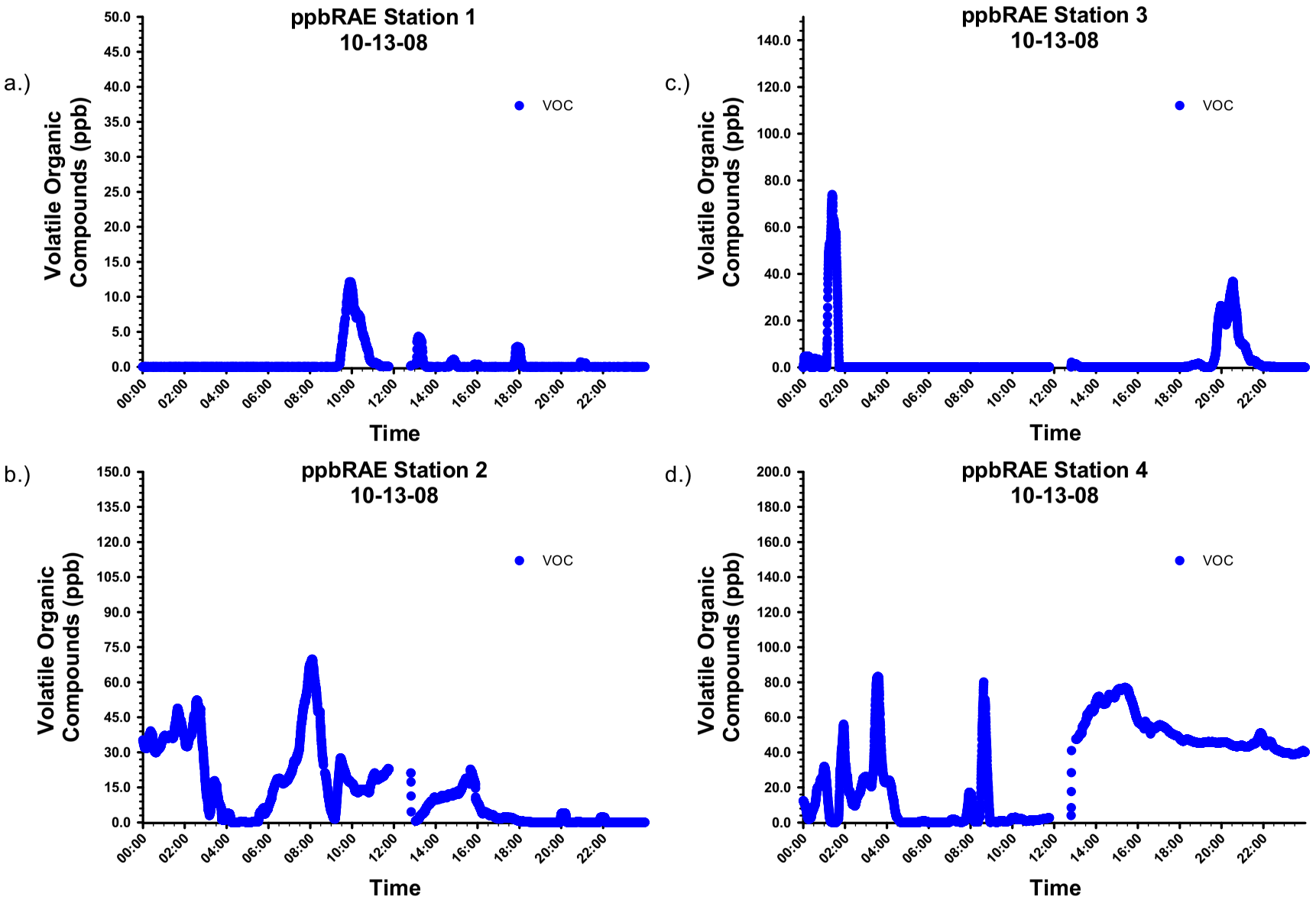
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 12, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



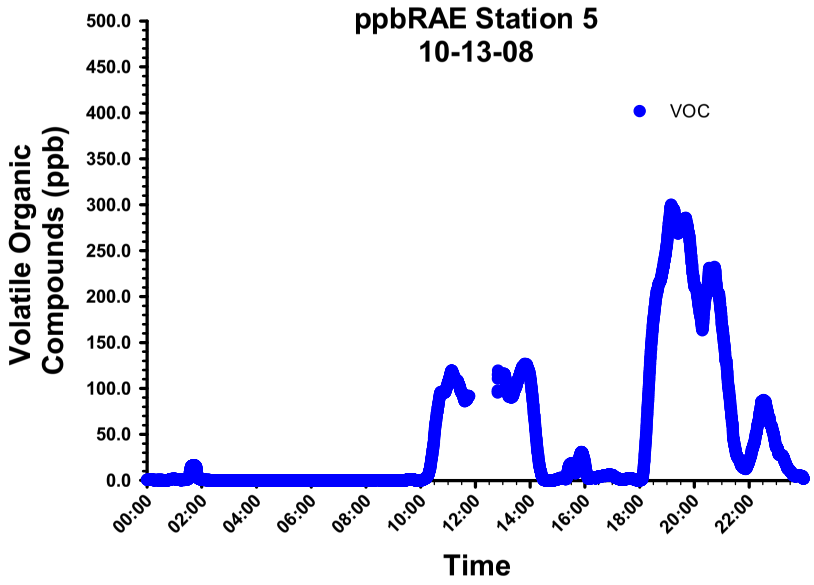
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 12, 2008, at

a) ppbRAE Station 5.



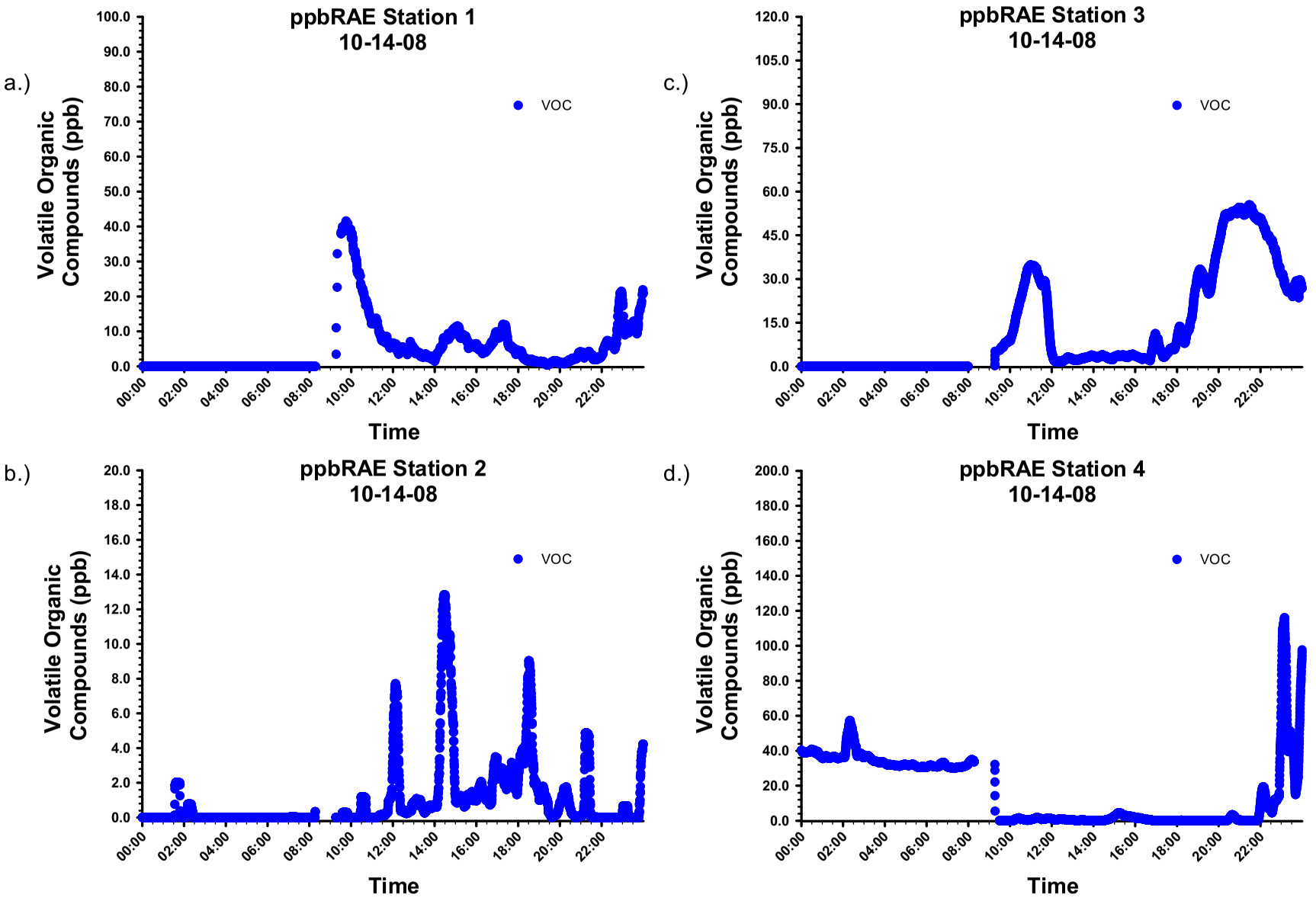
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 13, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



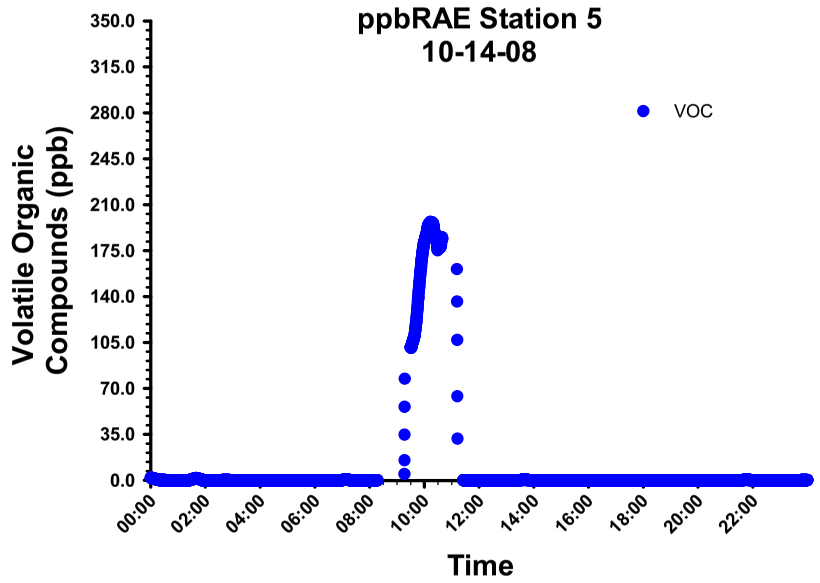
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 13, 2008, at

a) ppbRAE Station 5.



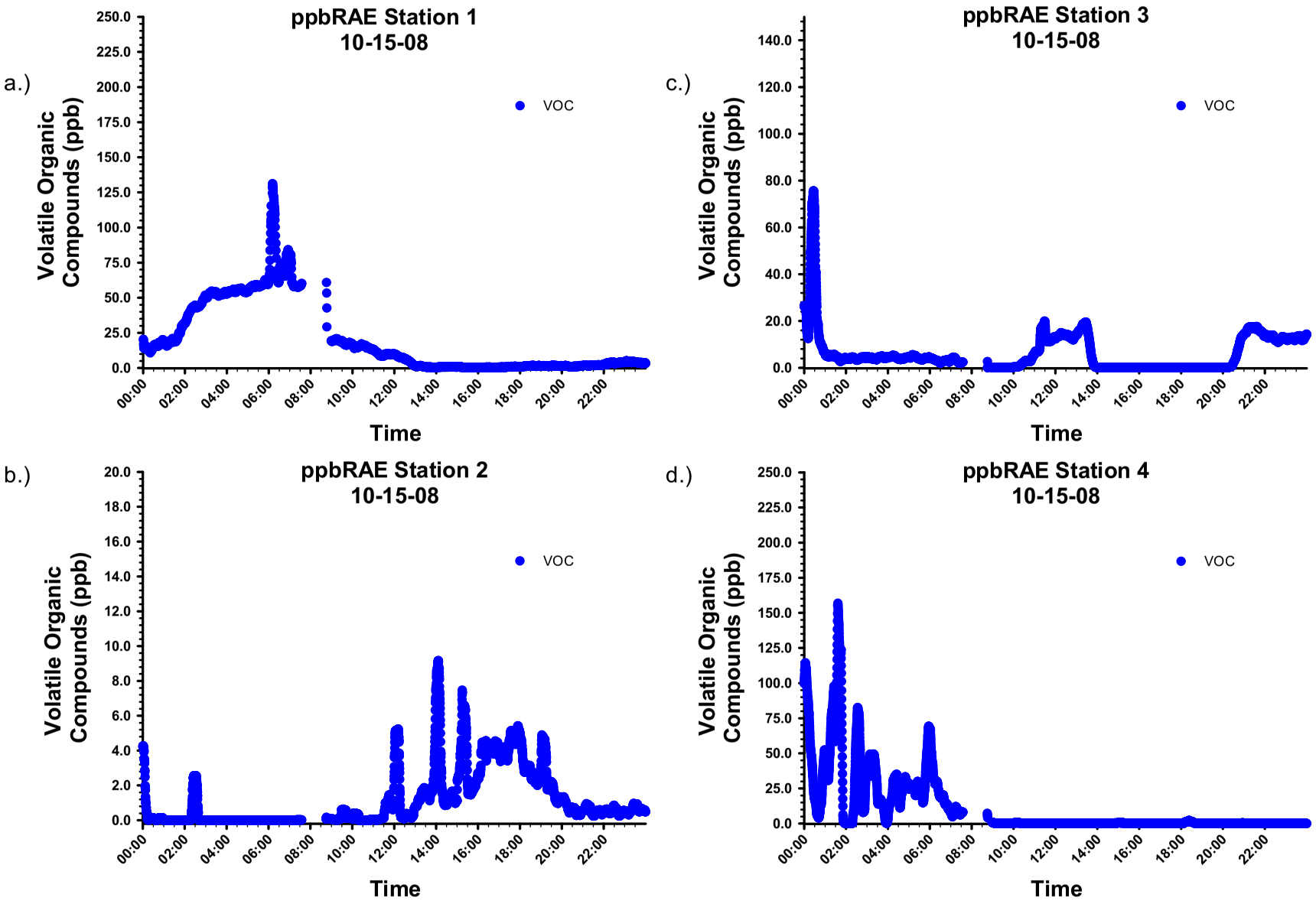
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 14, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



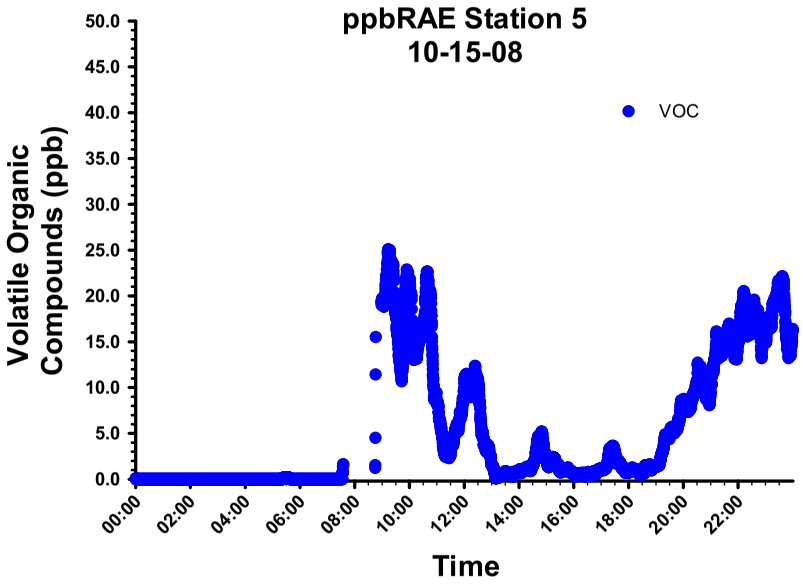
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 14, 2008, at

a) ppbRAE Station 5.



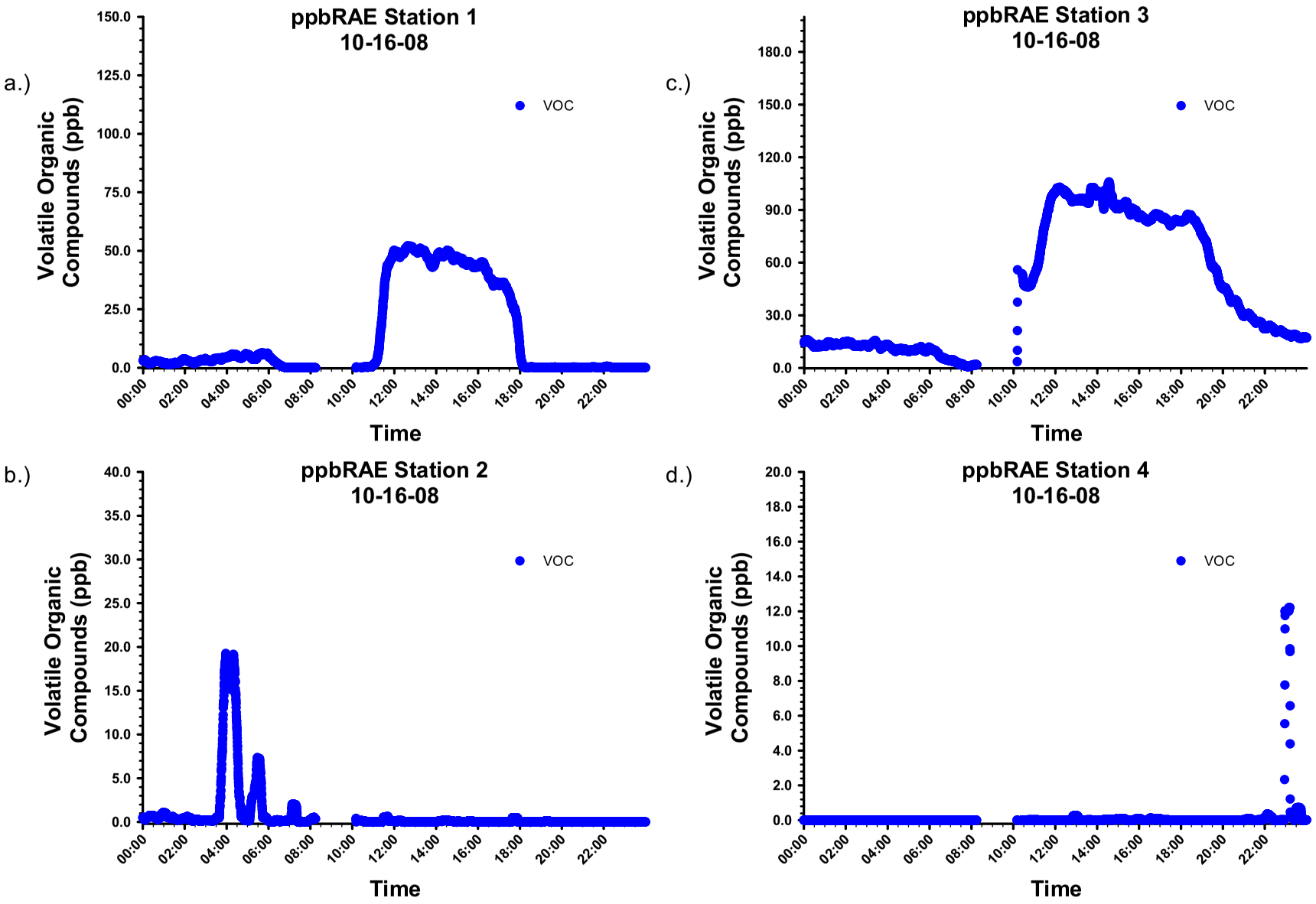
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 15, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



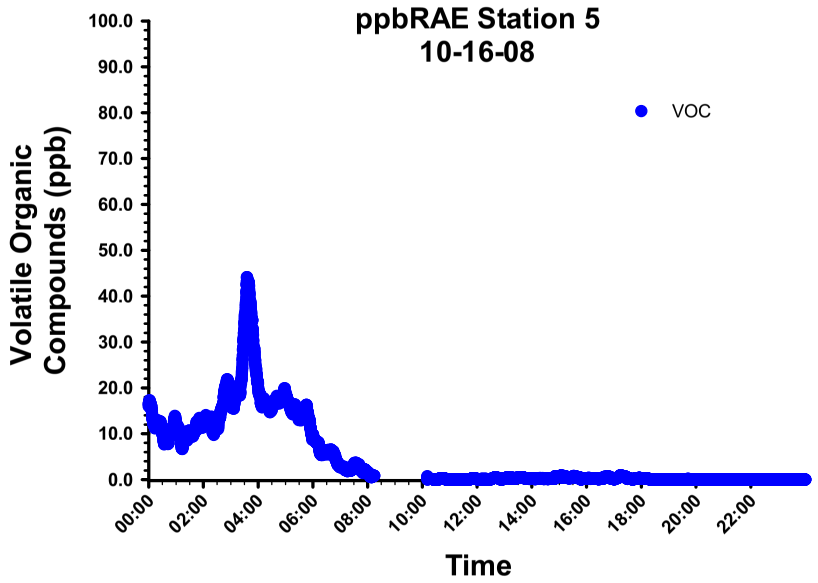
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 15, 2008, at

a) ppbRAE Station 5.



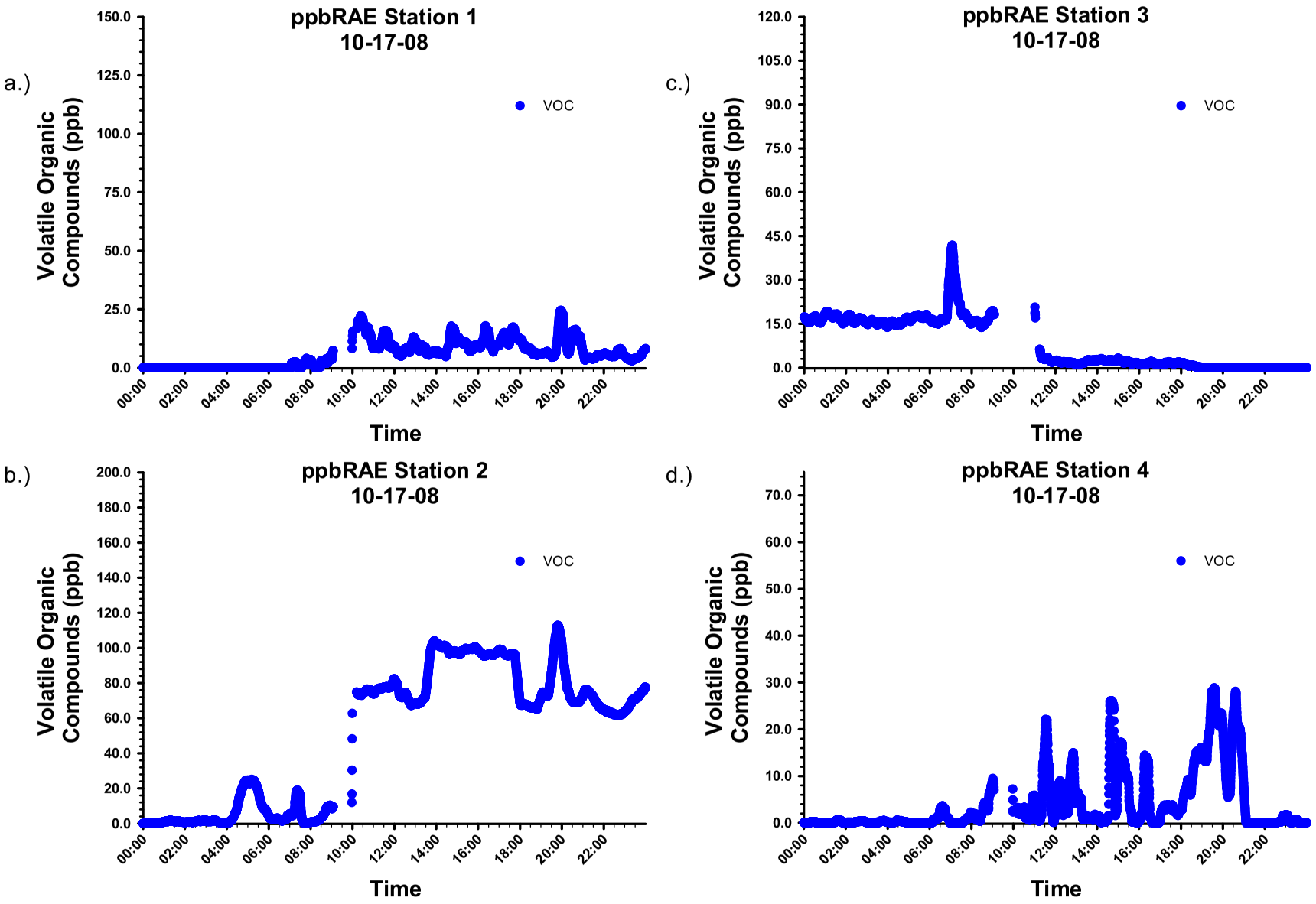
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 16, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



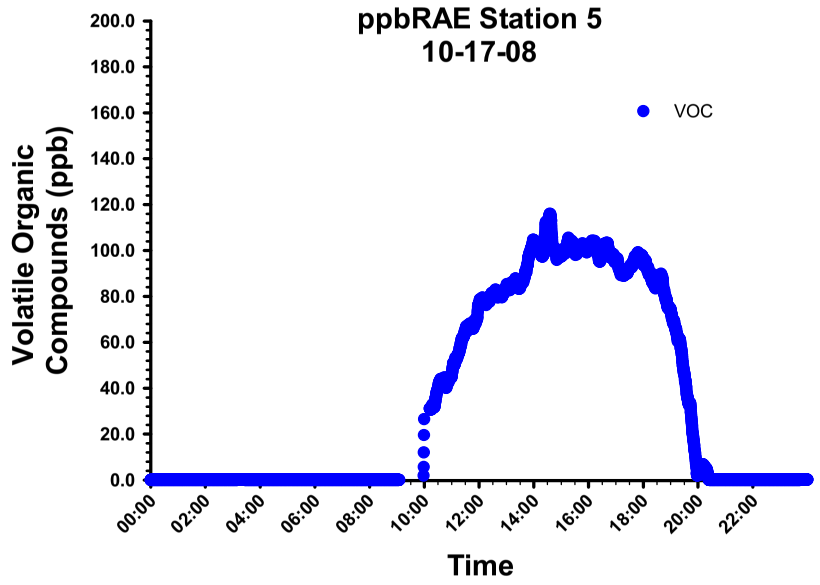
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 16, 2008, at

a) ppbRAE Station 5.



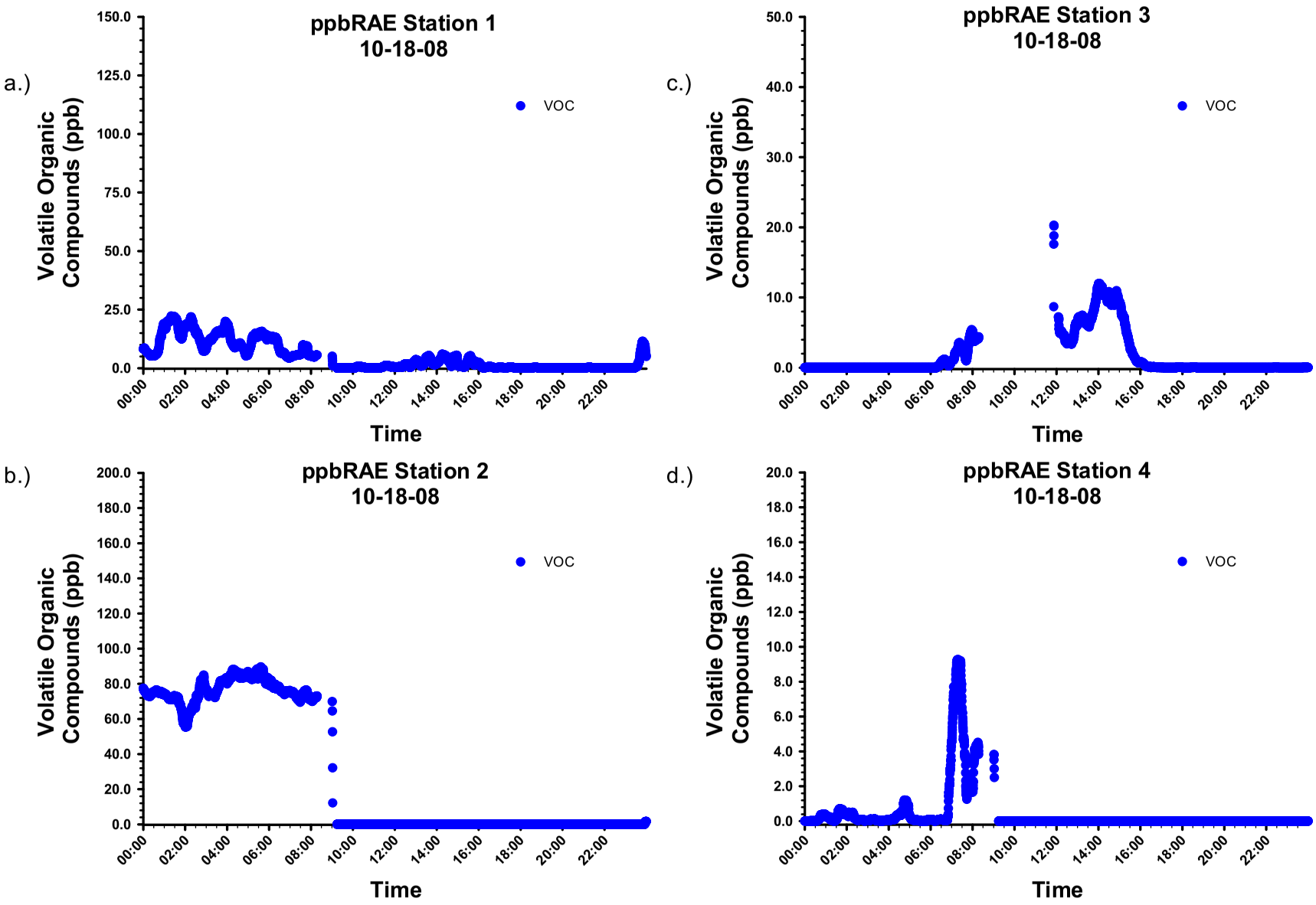
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 17, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



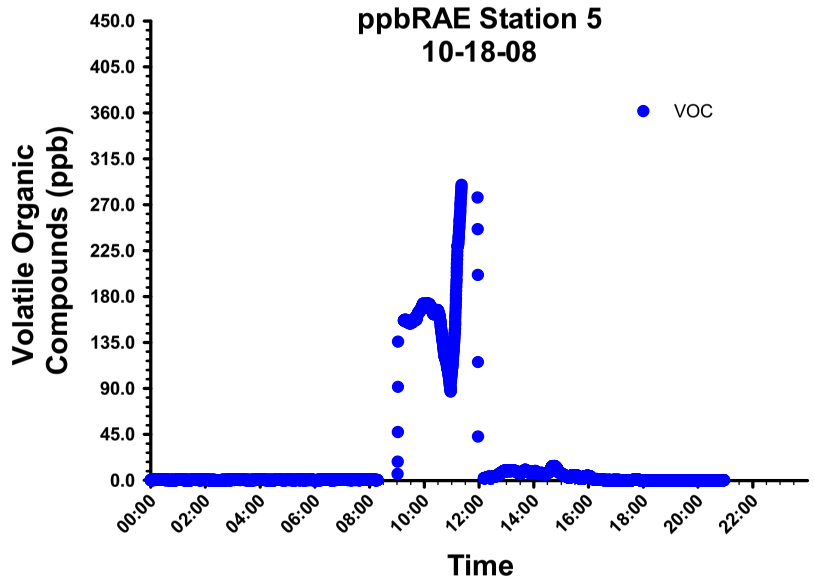
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 17, 2008, at

a) ppbRAE Station 5.



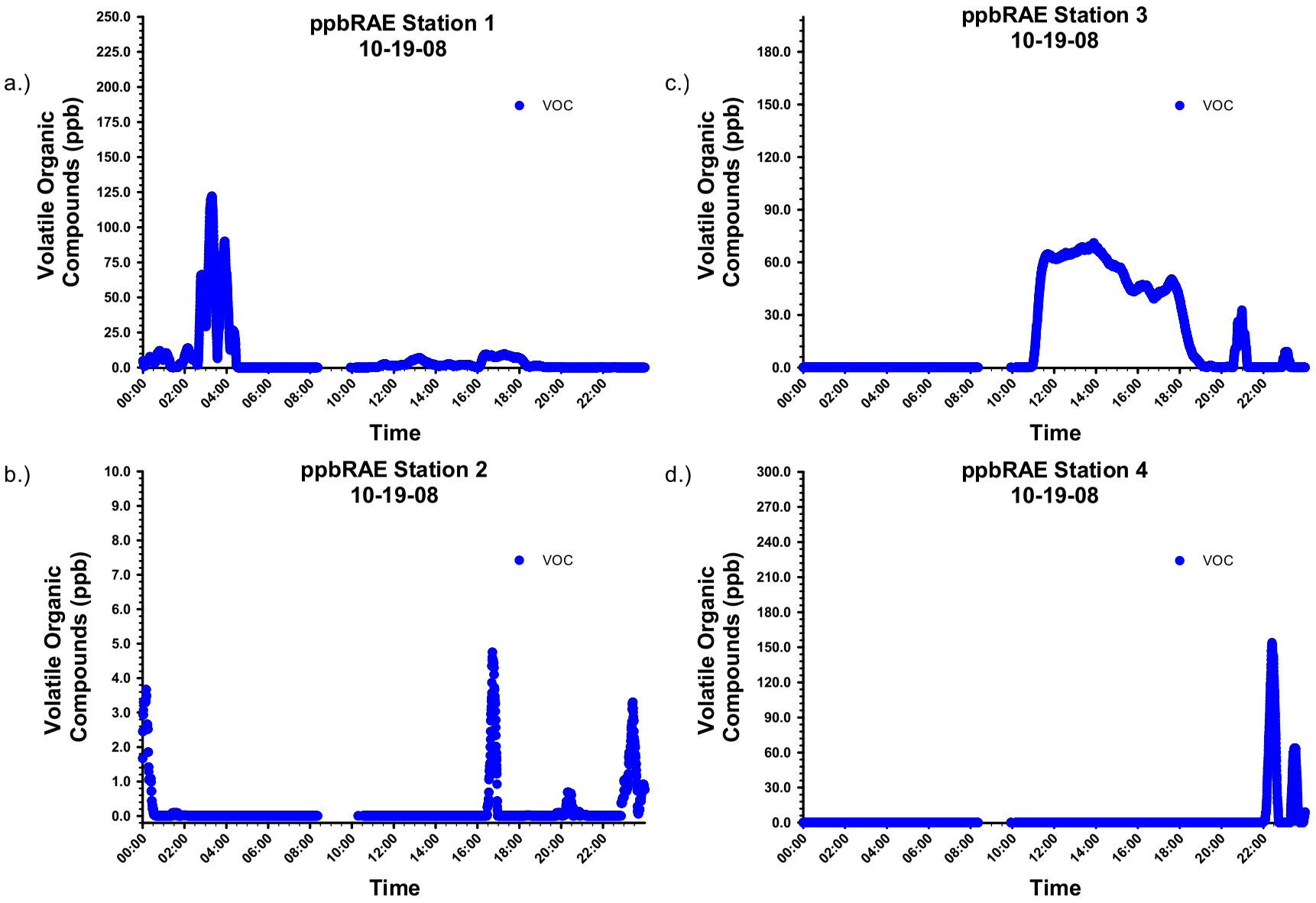
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 18, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



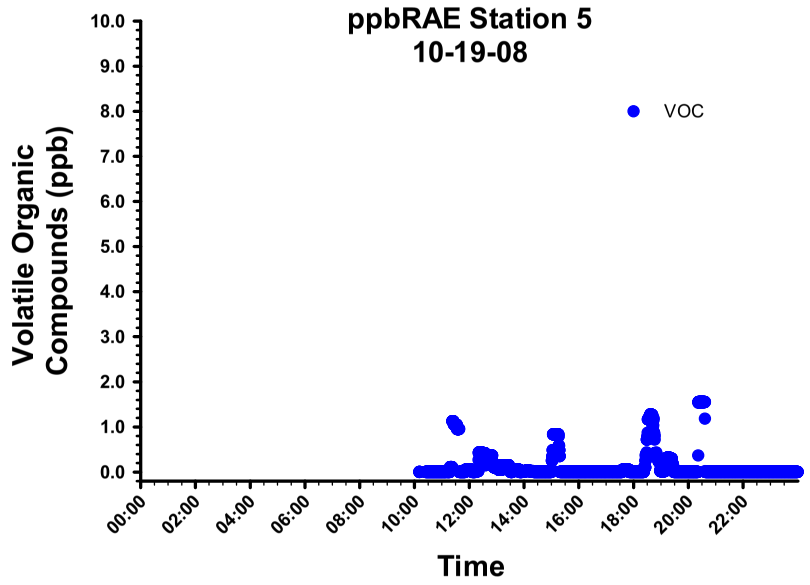
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 18, 2008, at

a) ppbRAE Station 5.



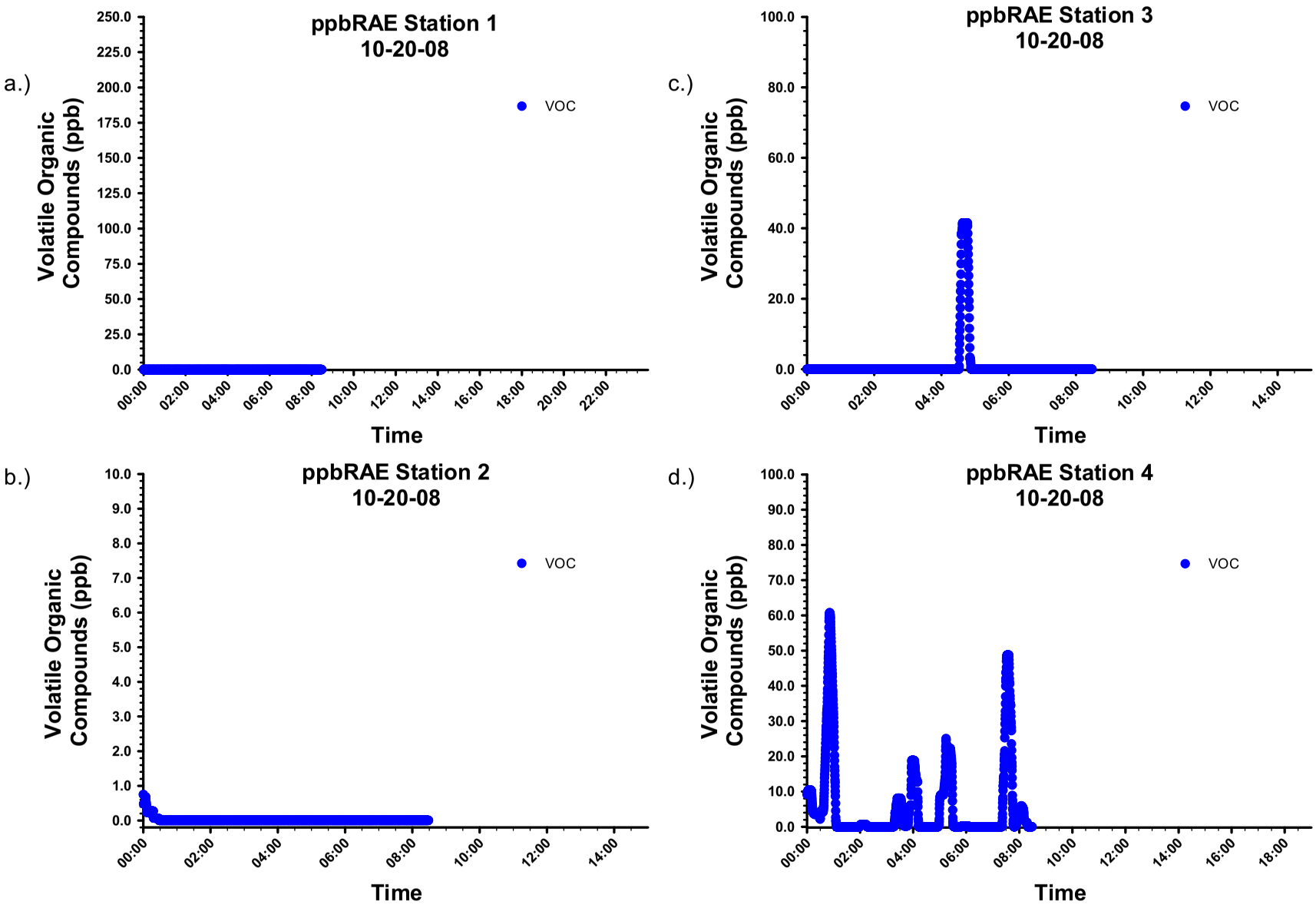
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 19, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



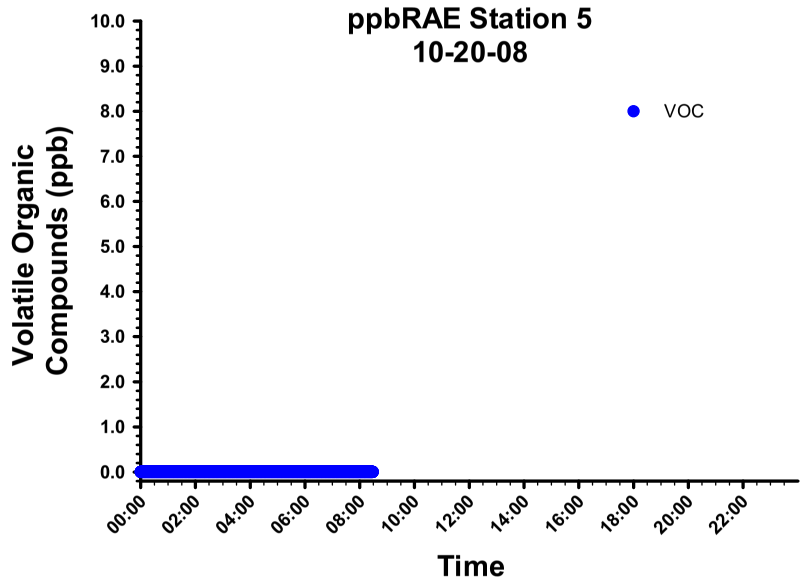
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 19, 2008, at

a) ppbRAE Station 5.



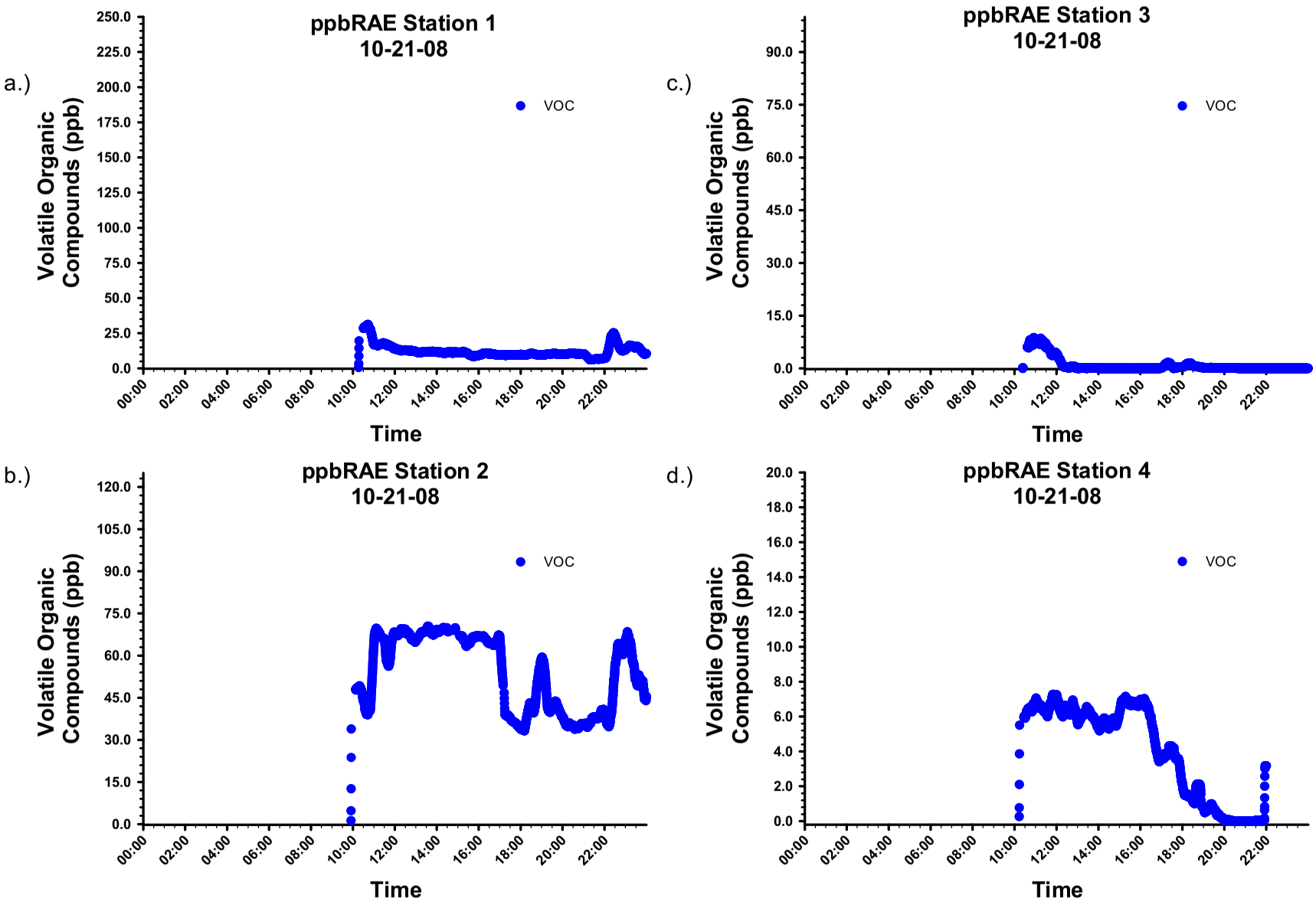
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 20, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



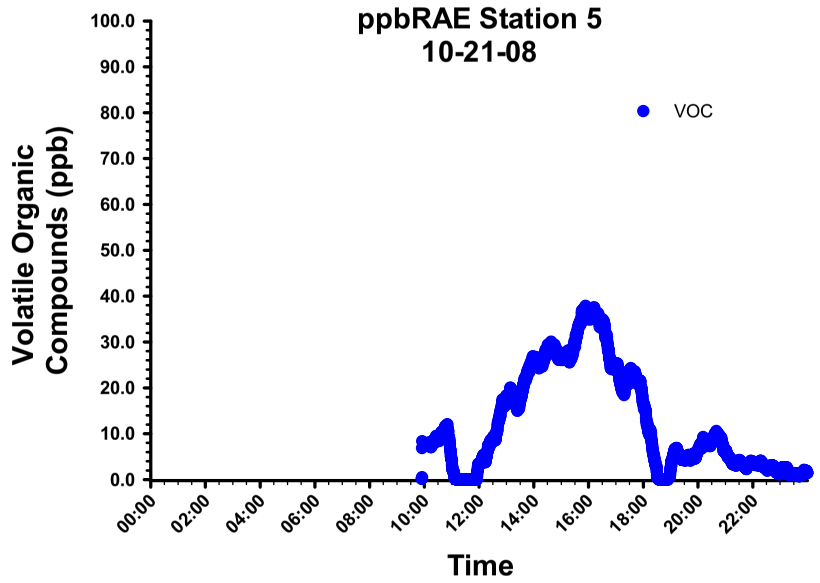
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 20, 2008, at

a) ppbRAE Station 5.



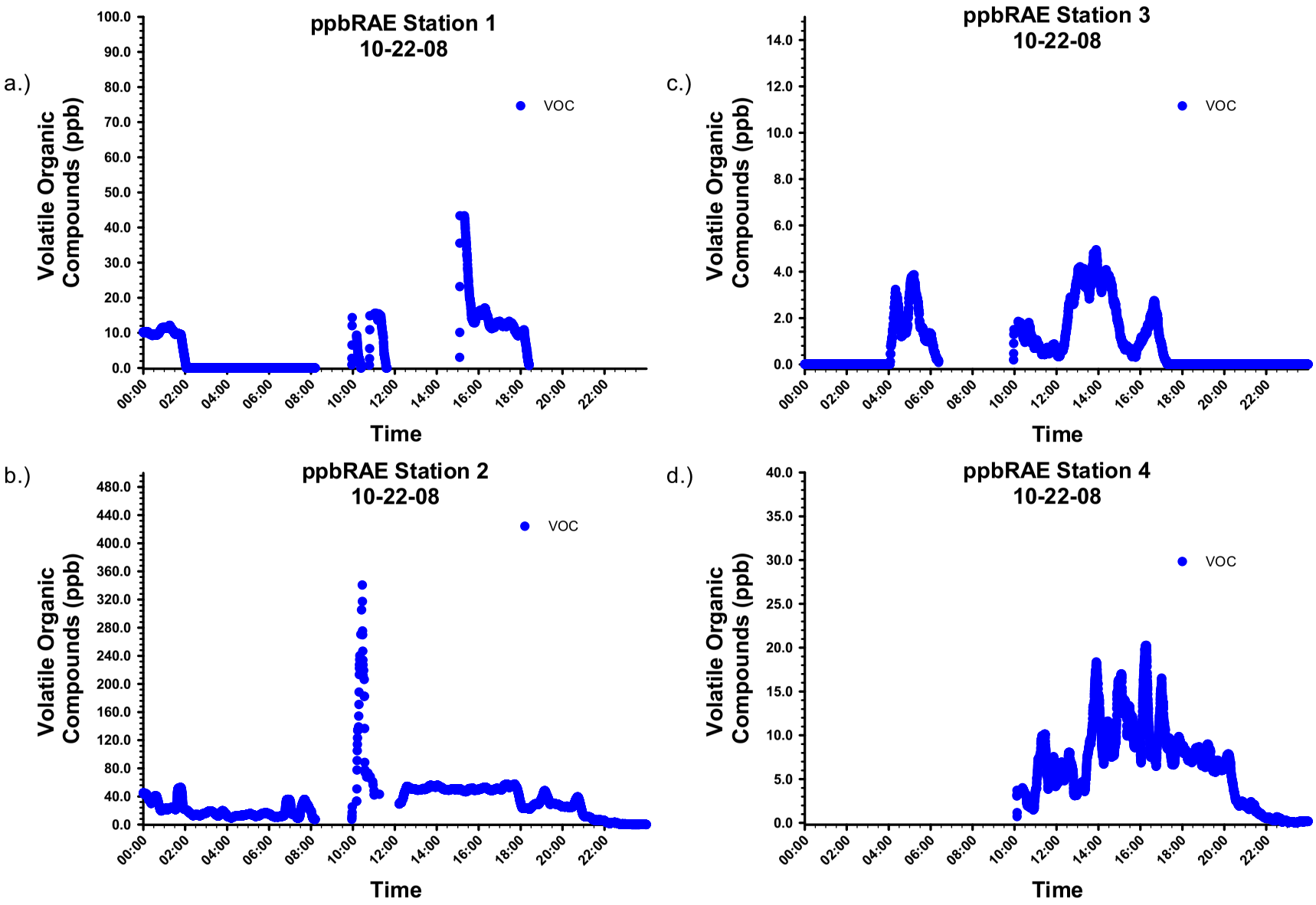
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 21, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



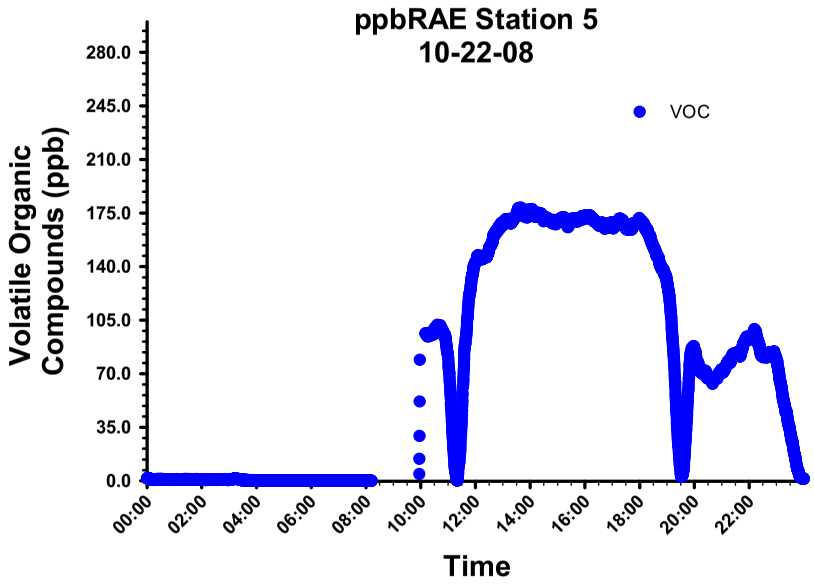
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 21, 2008, at

a) ppbRAE Station 5.



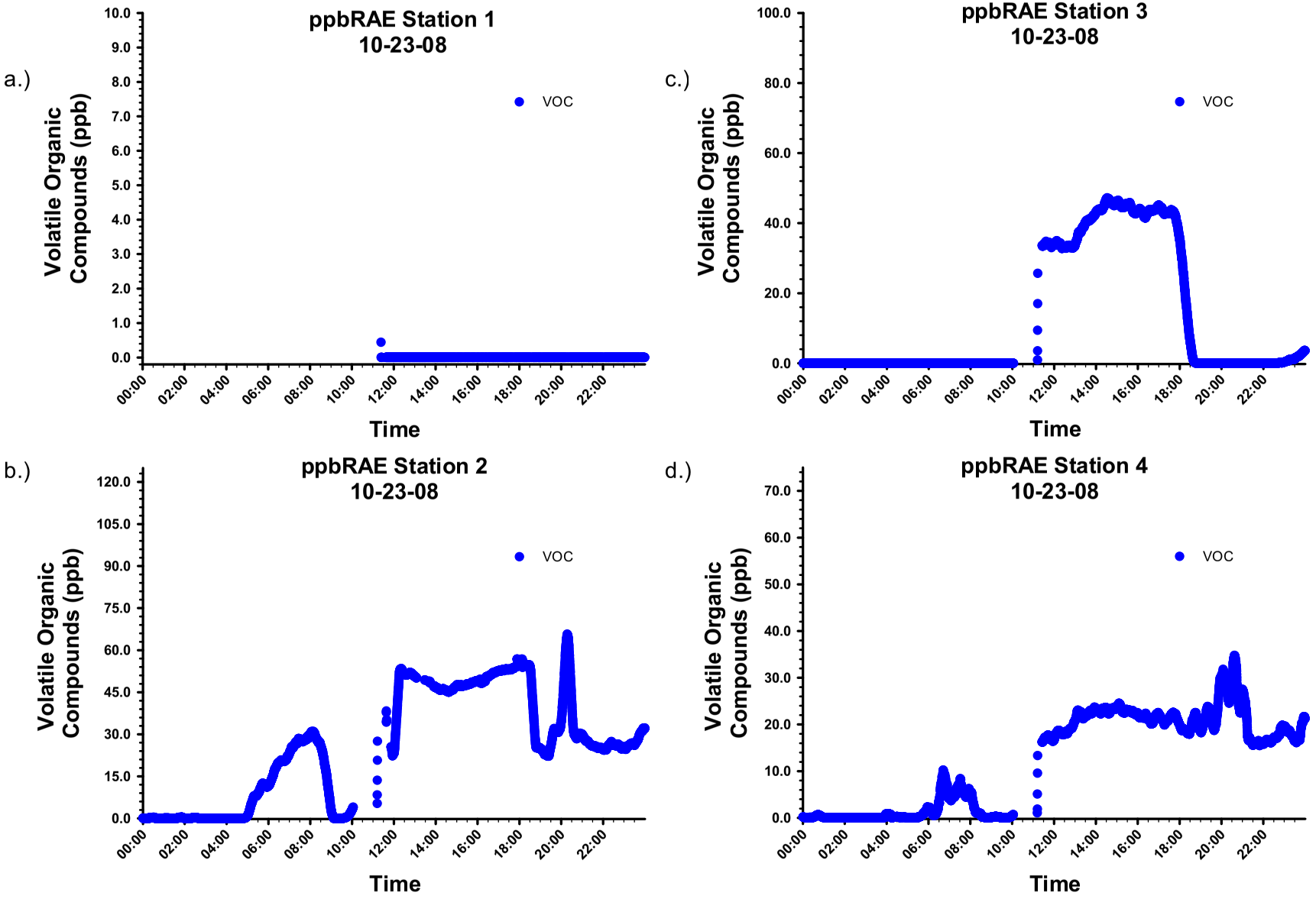
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 22, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



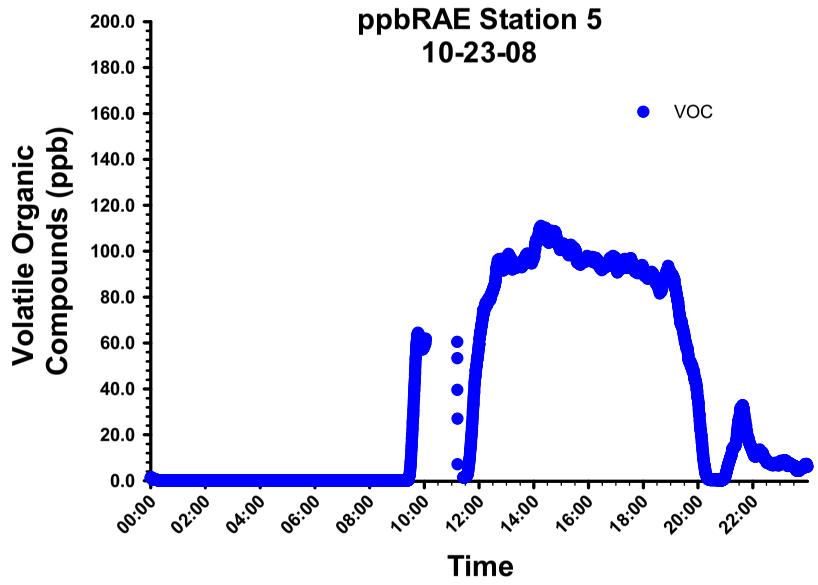
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 22, 2008, at

a) ppbRAE Station 5.



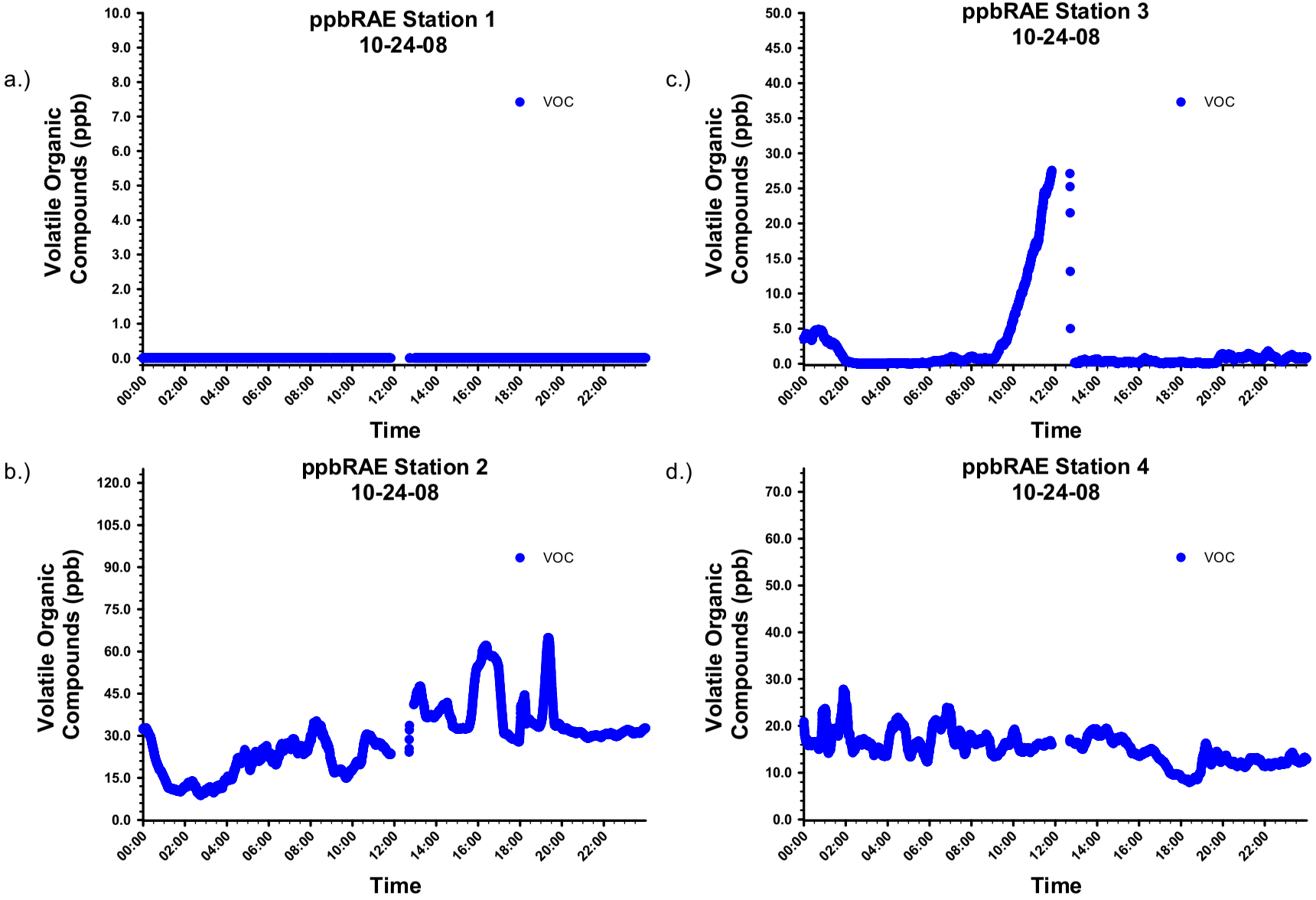
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 23, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



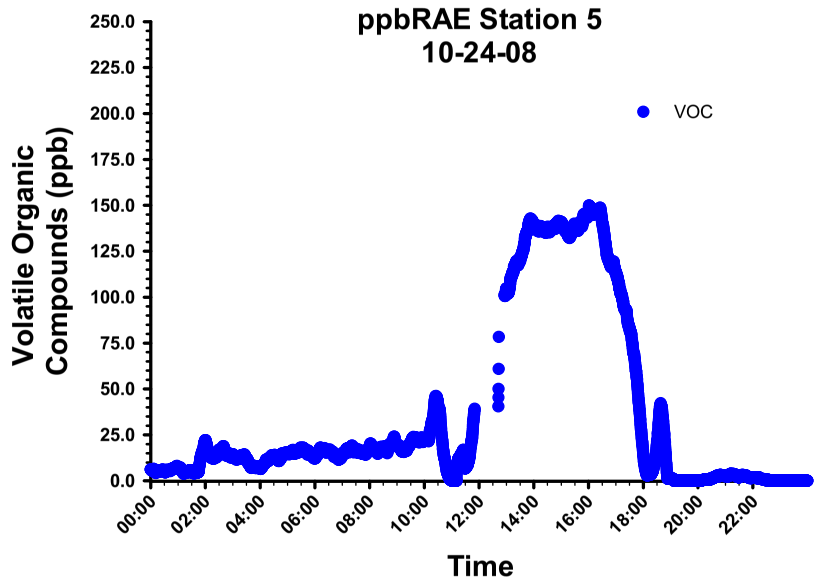
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 23, 2008, at

a) ppbRAE Station 5.



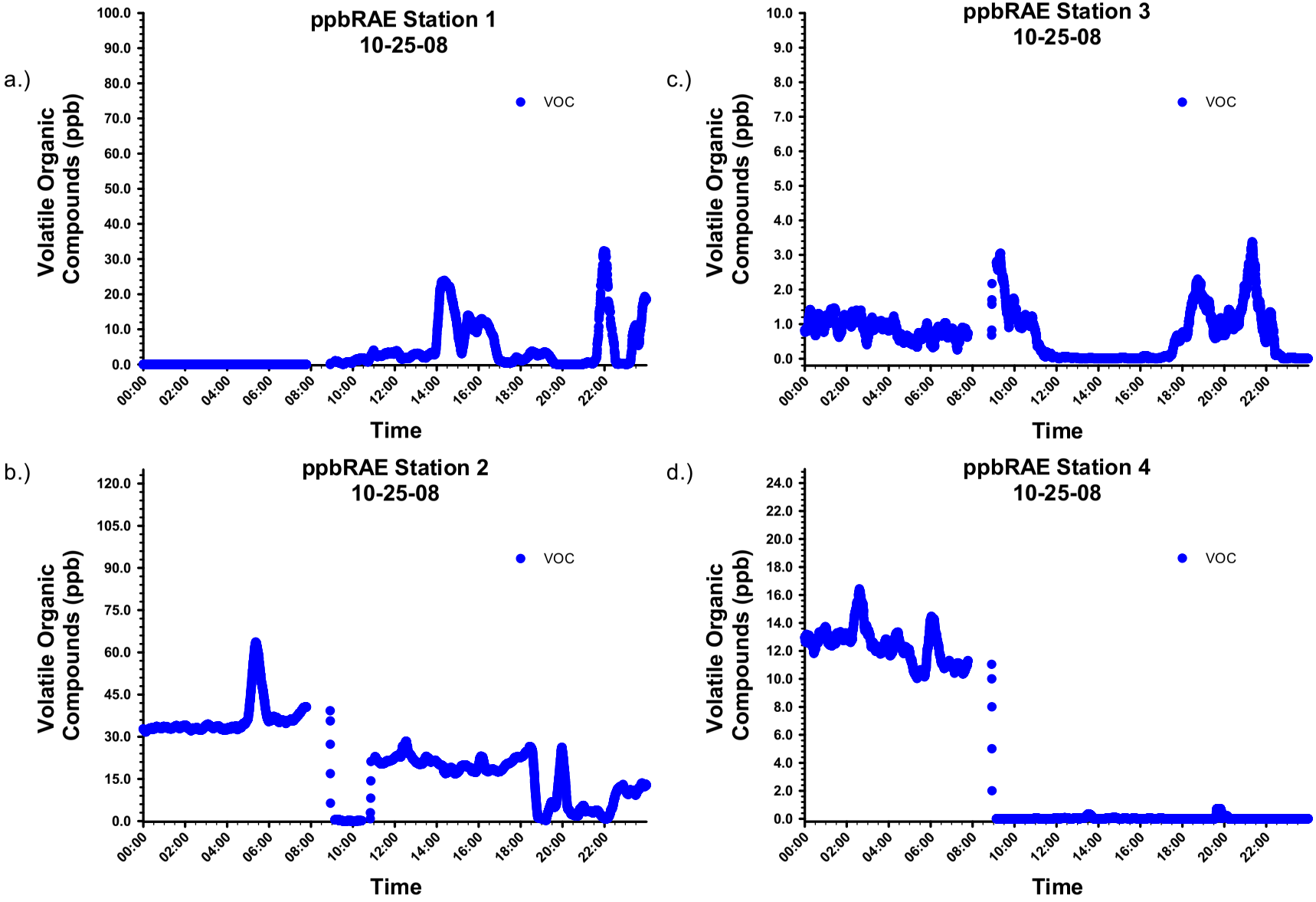
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 24, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



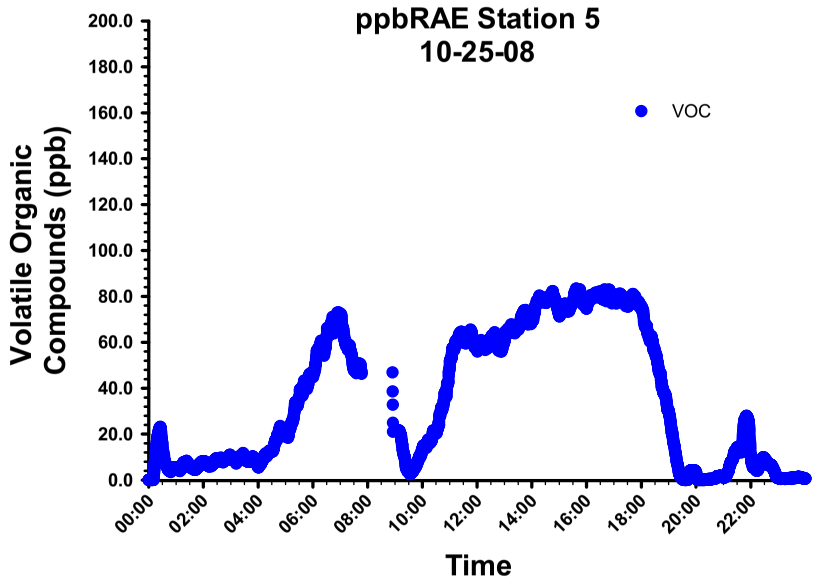
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 24, 2008, at

a) ppbRAE Station 5.



15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 25, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



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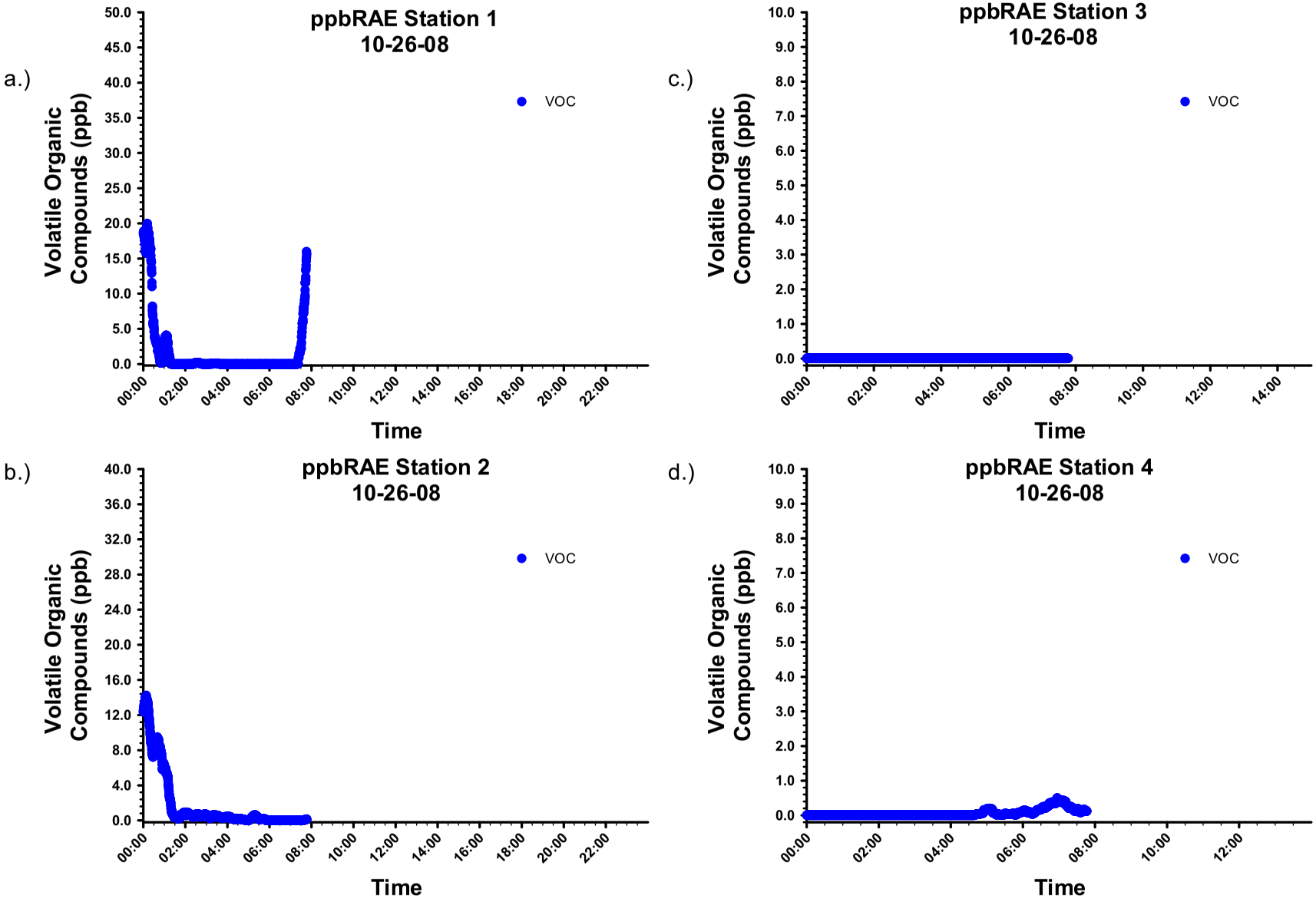
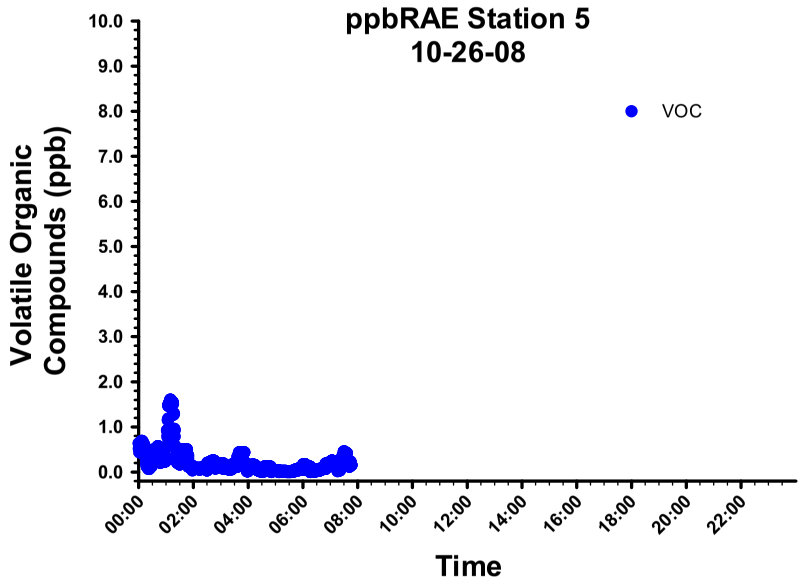
a) ppbRAE Station 5.



15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 26, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



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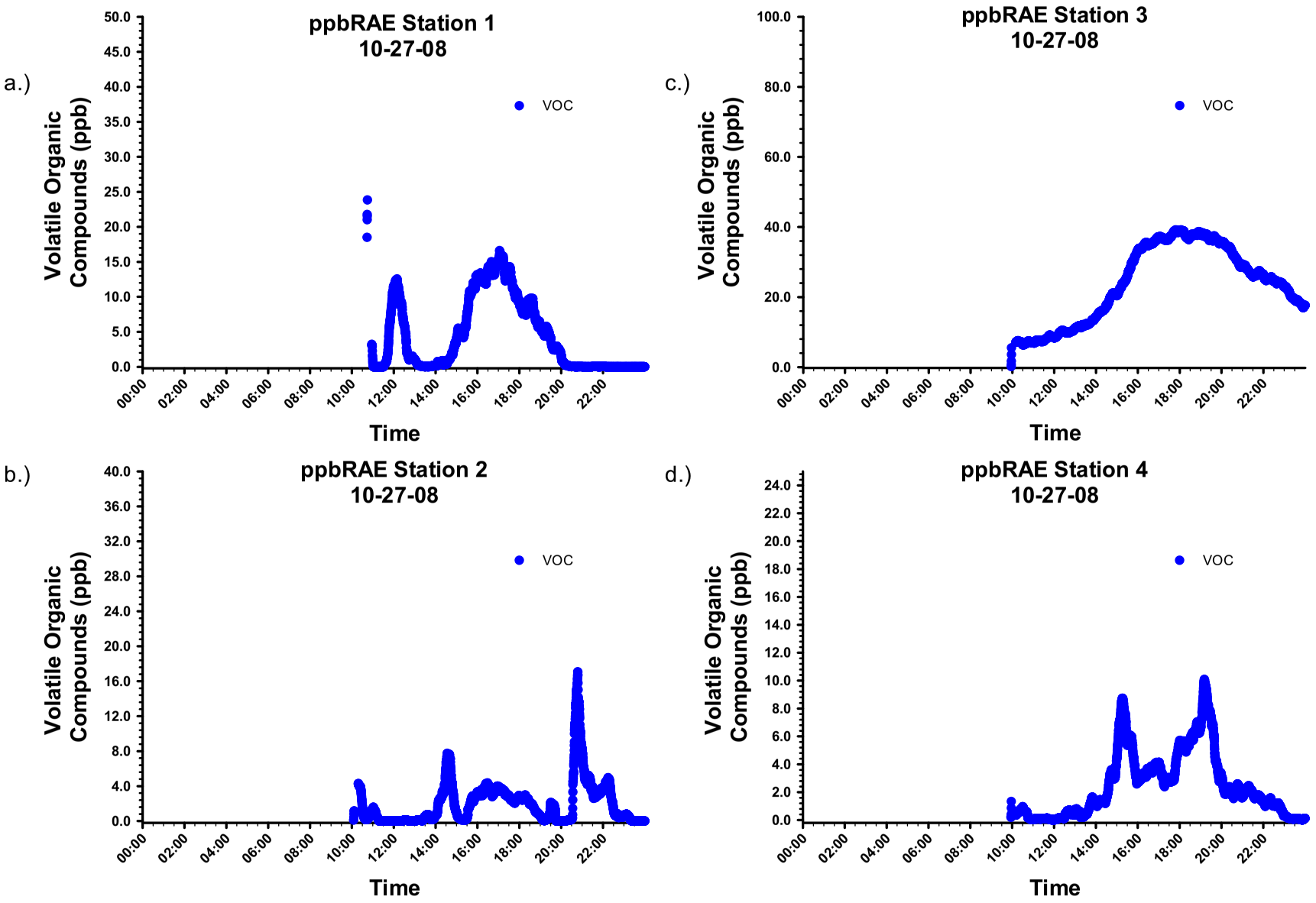
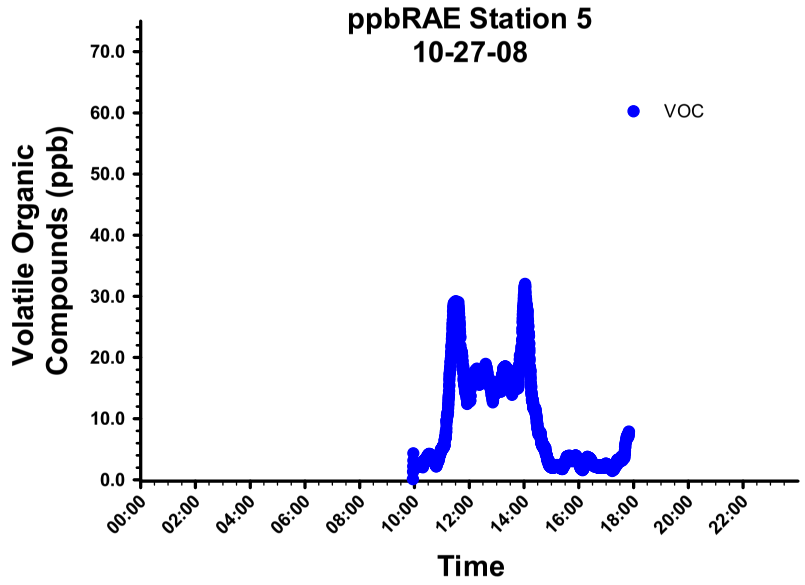


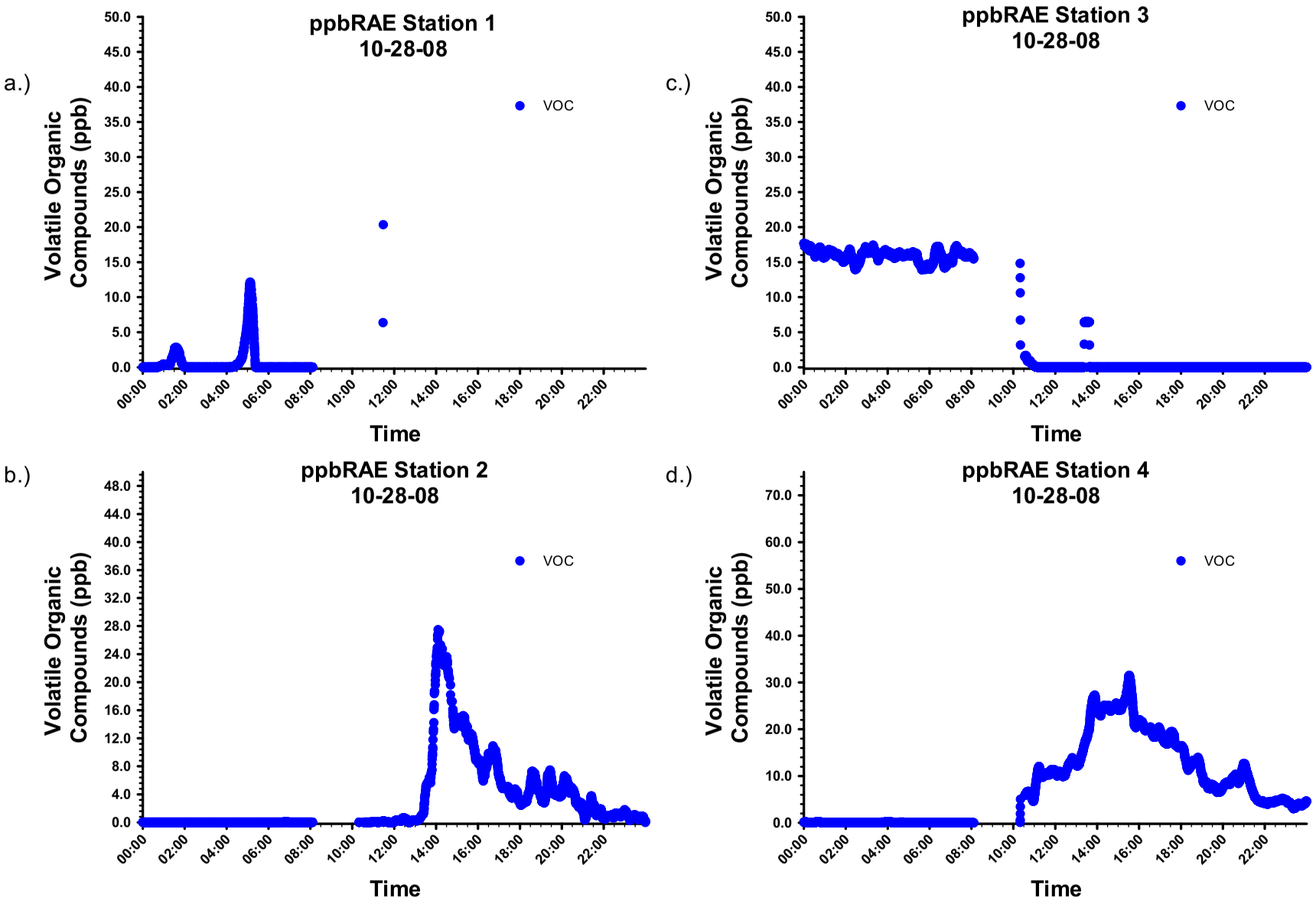
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 27, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



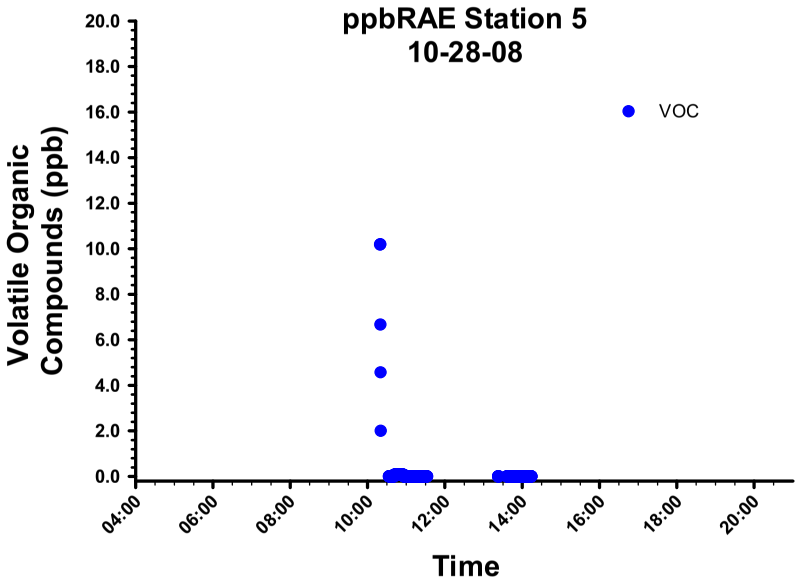
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 27, 2008, at

a) ppbRAE Station 5.



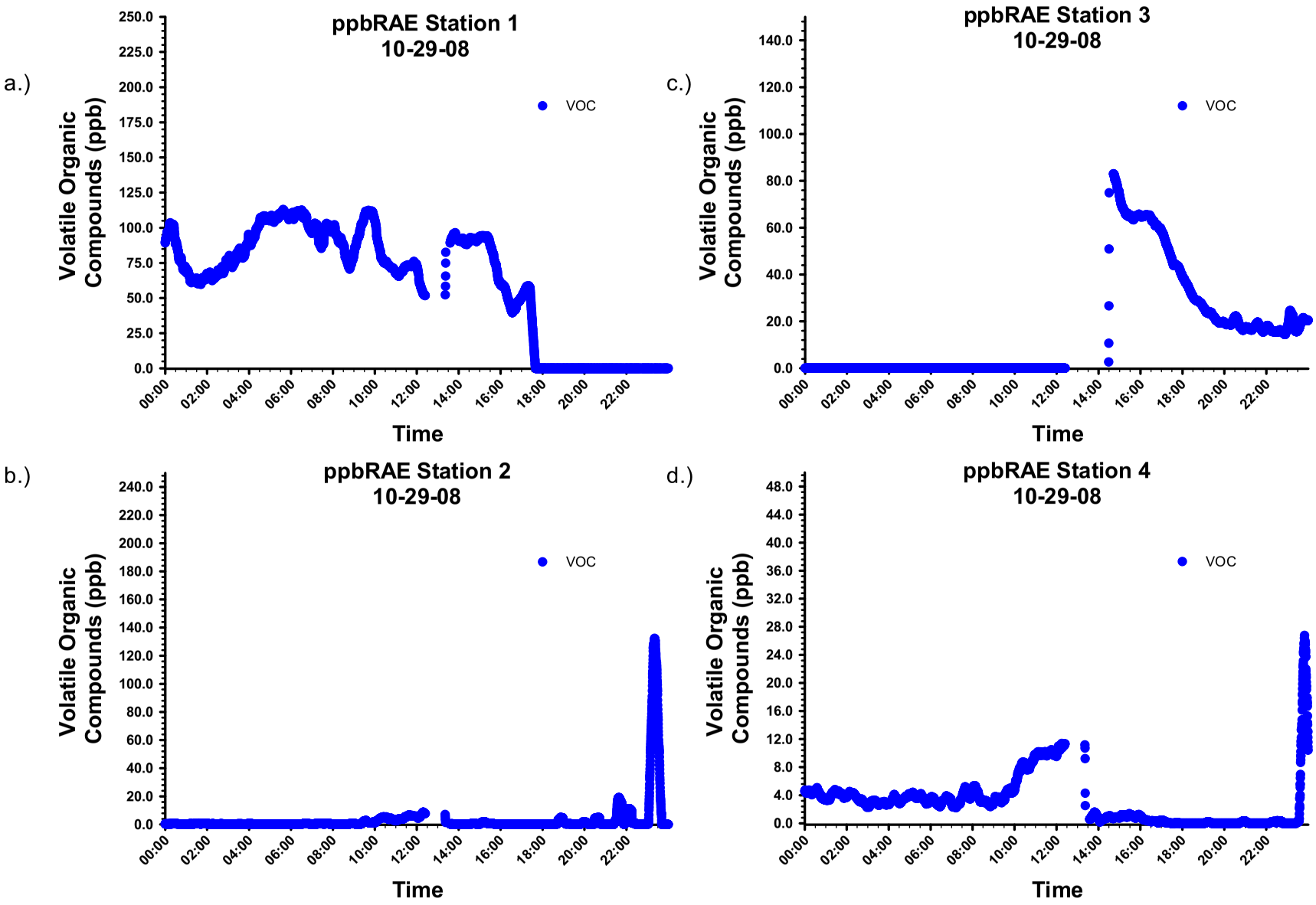
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 28, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



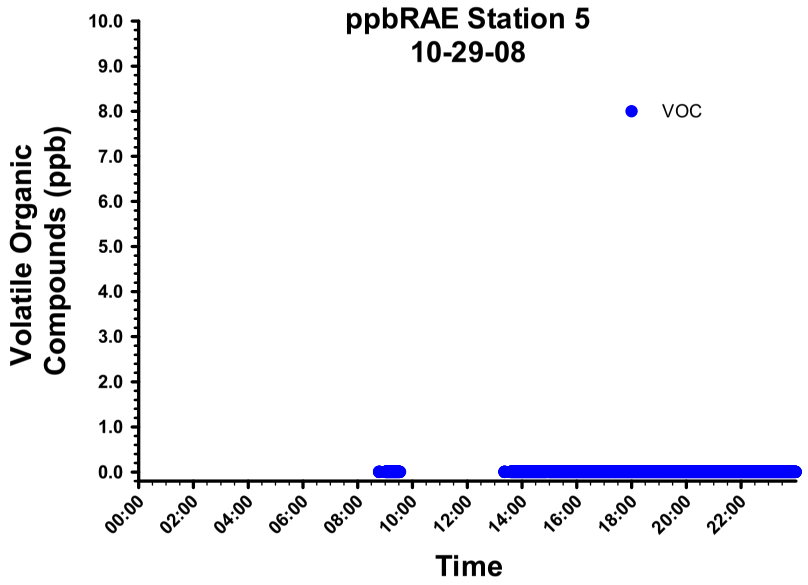
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 28, 2008, at

a) ppbRAE Station 5.



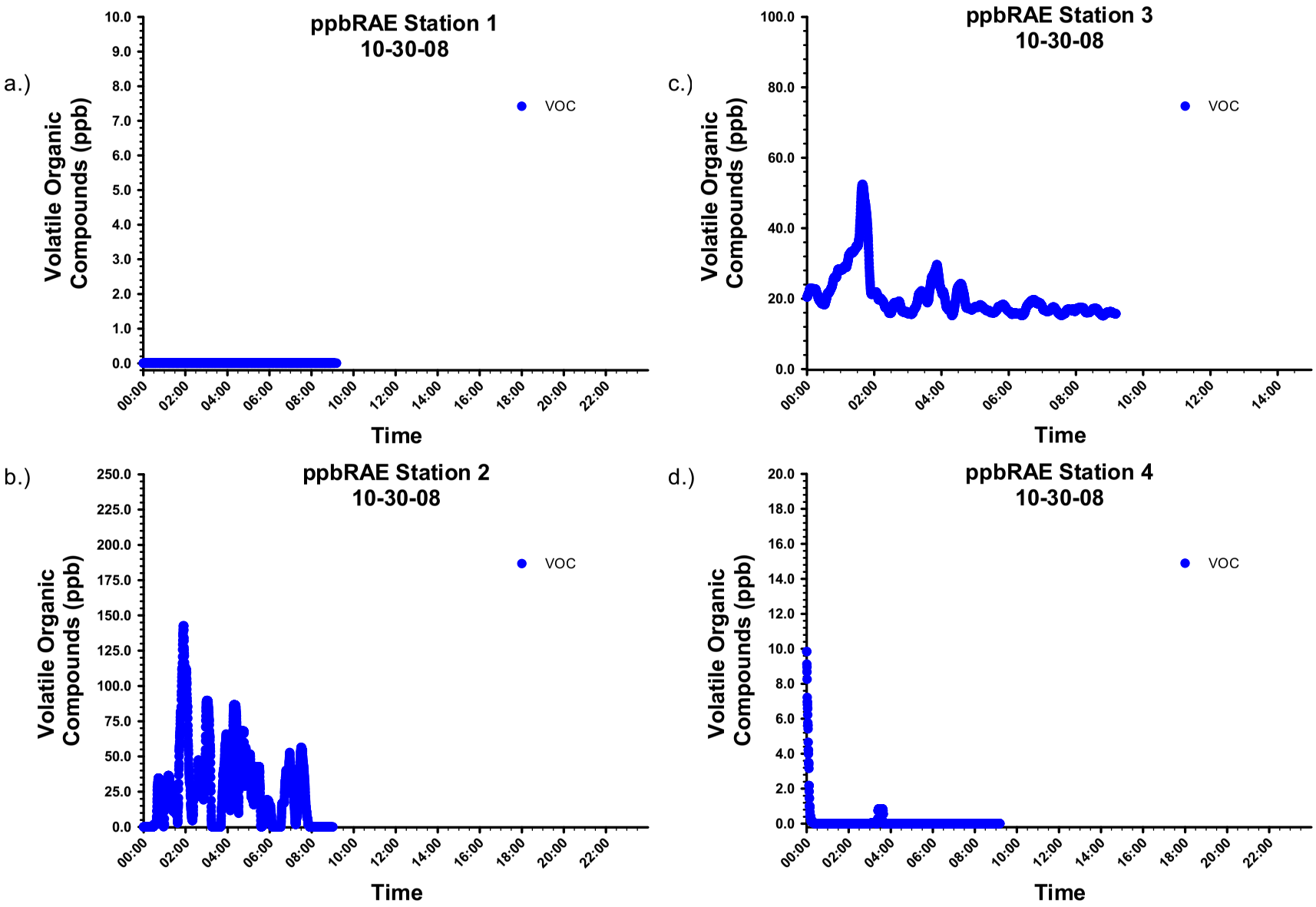
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 29, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



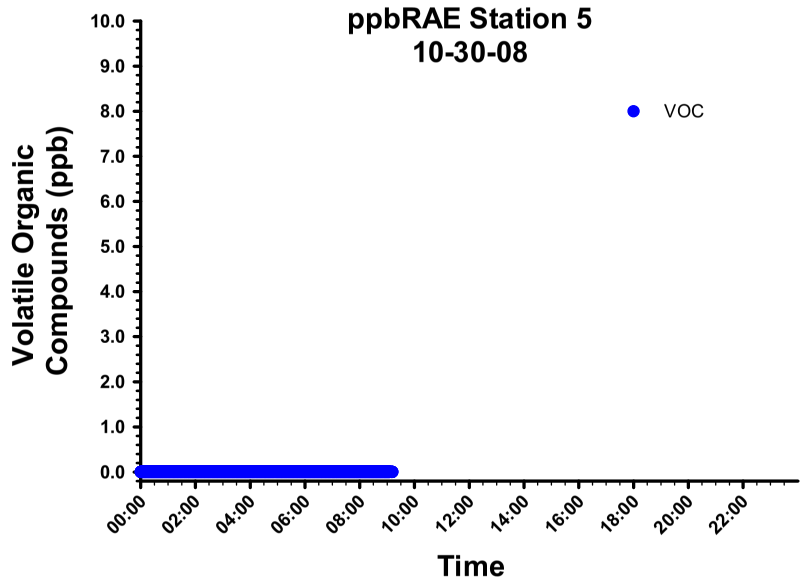
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 29, 2008, at

a) ppbRAE Station 5.



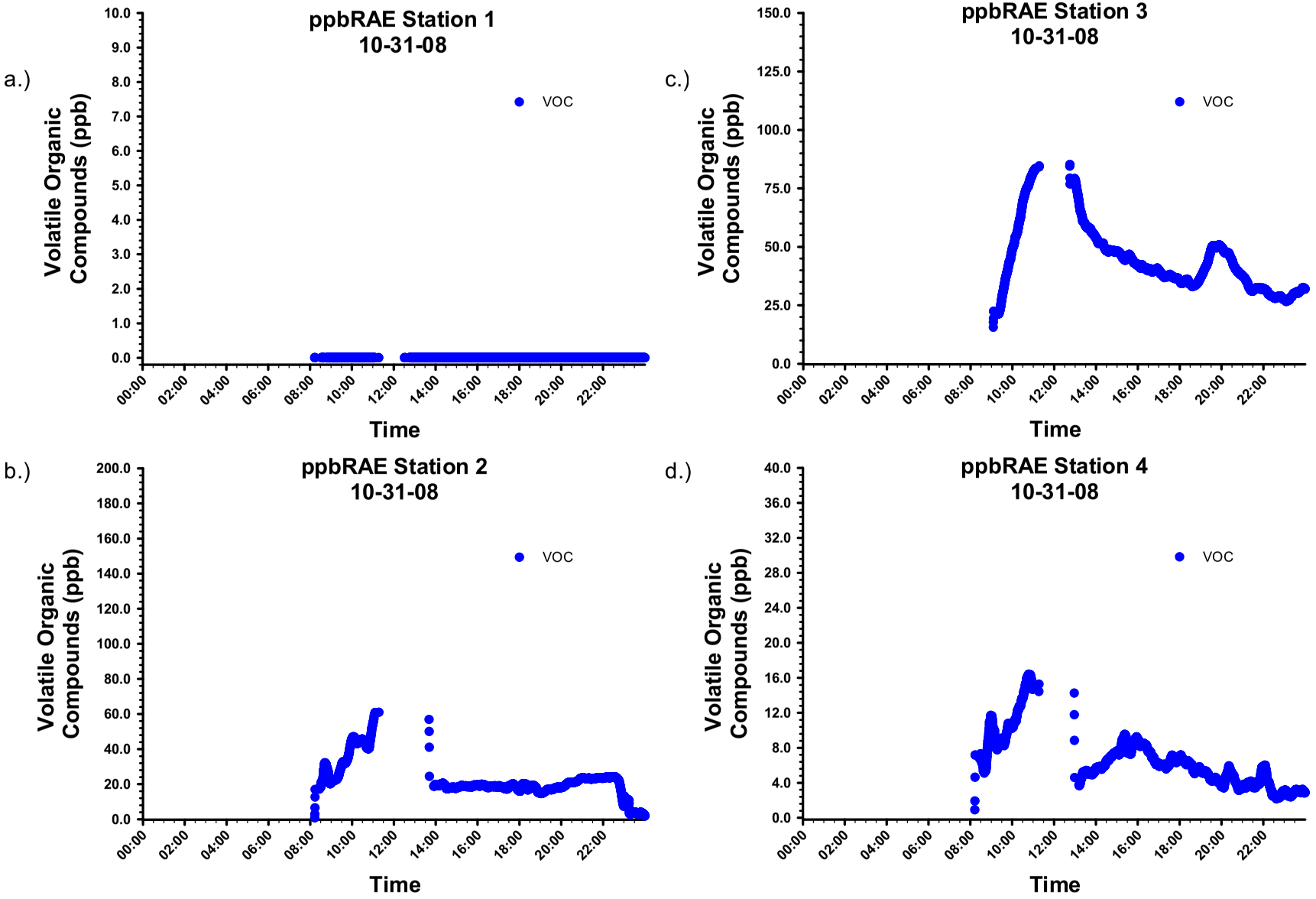
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 30, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



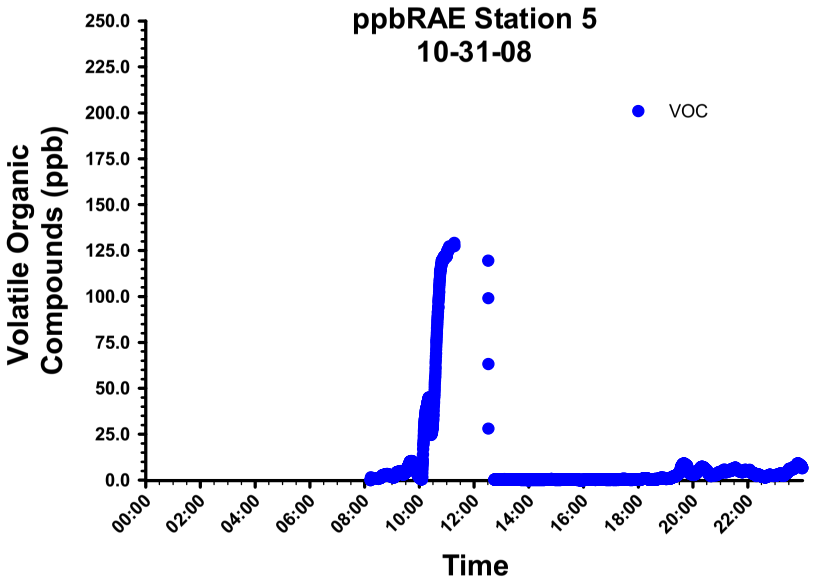
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 30, 2008, at

a) ppbRAE Station 5.



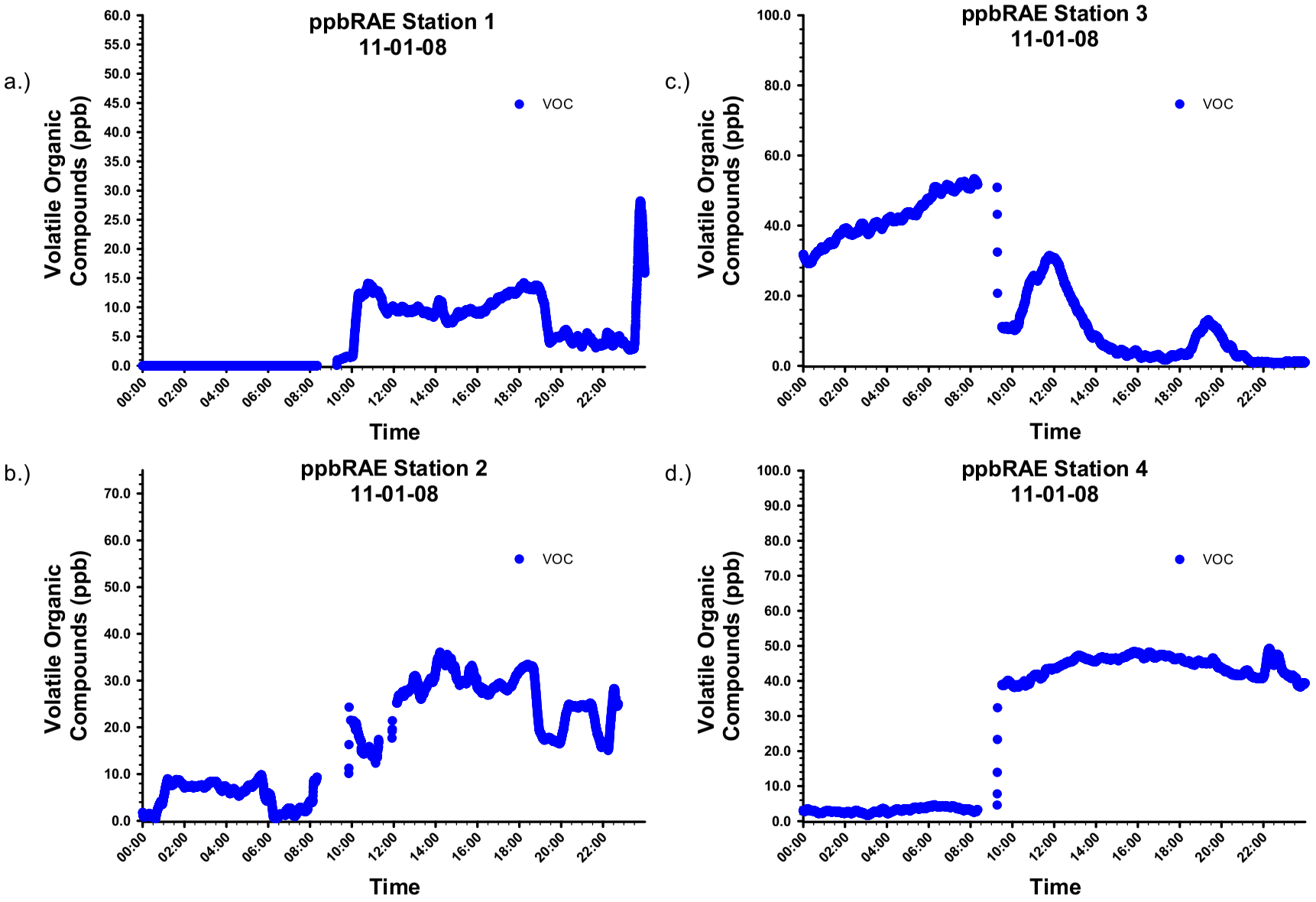
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 31, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



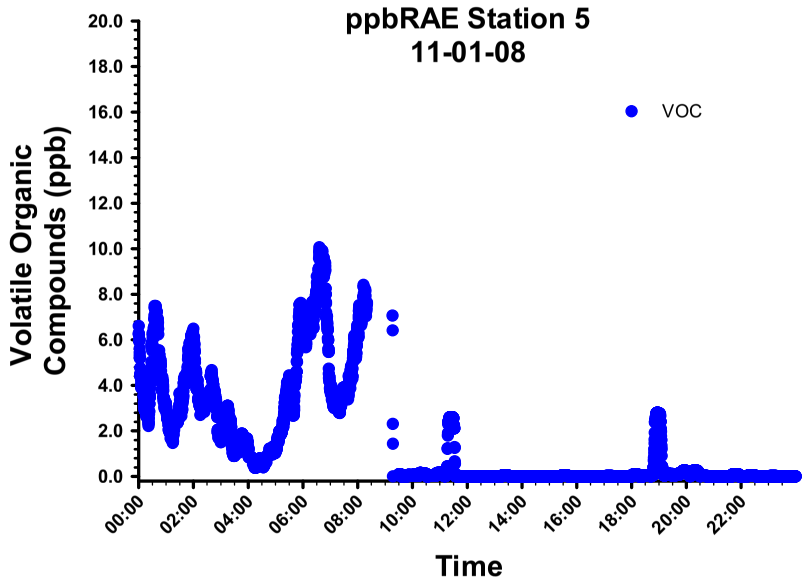
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on October 31, 2008, at

a) ppbRAE Station 5.



15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 1, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 1, 2008, at

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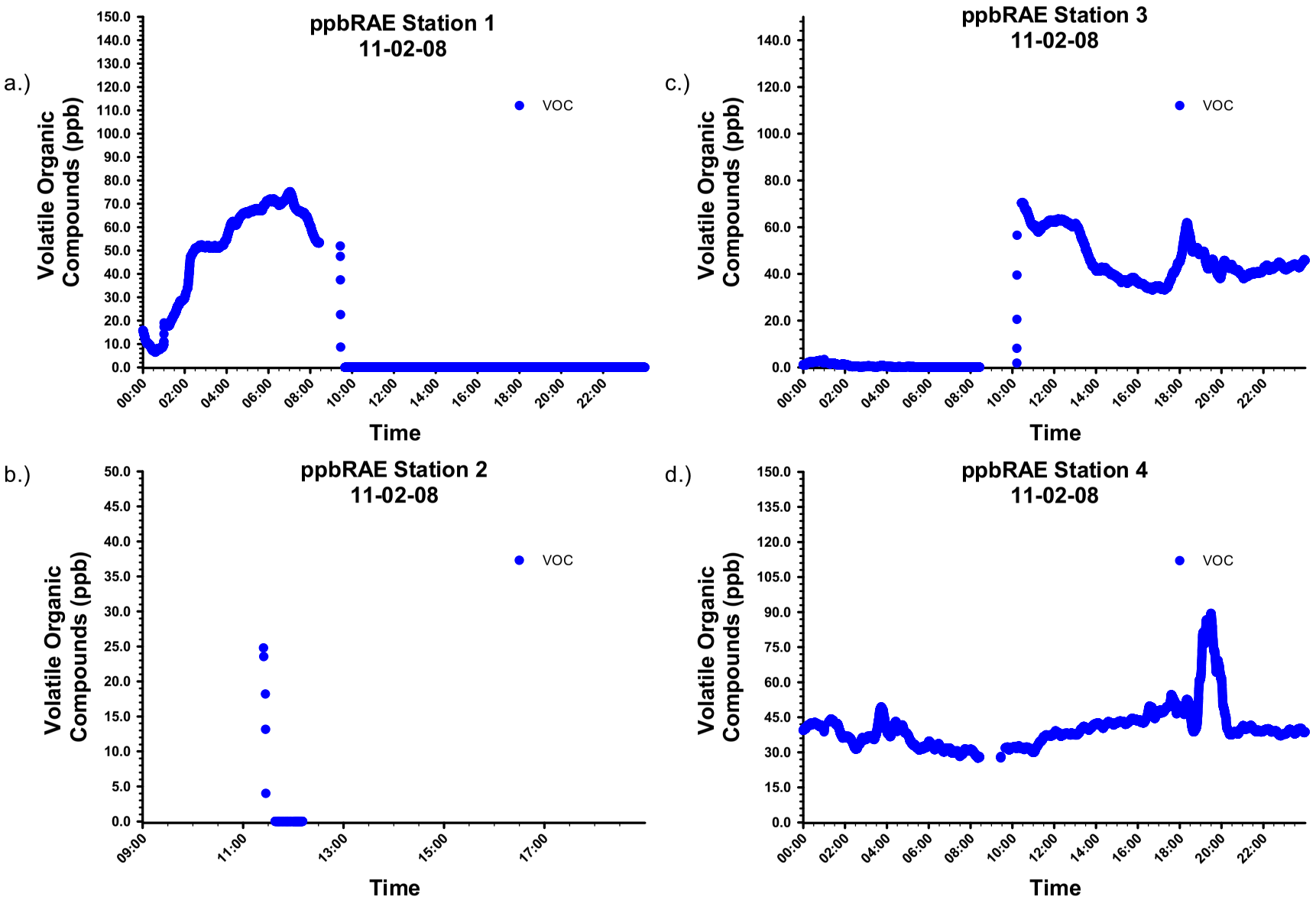
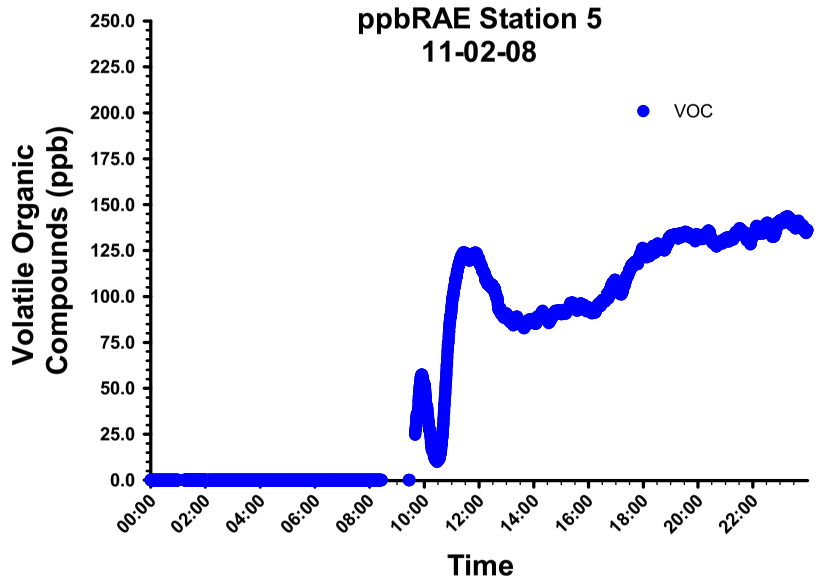


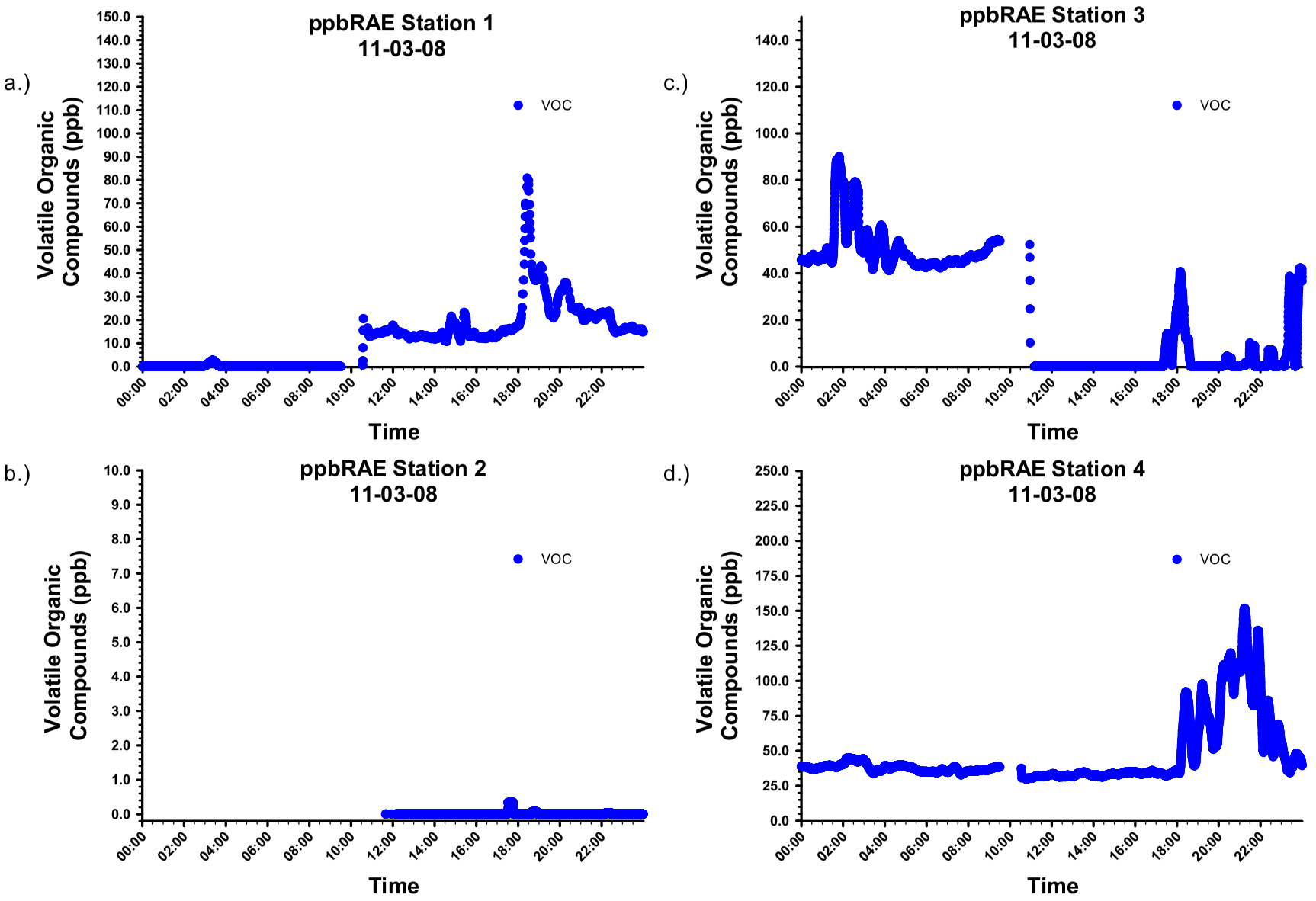
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 2, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



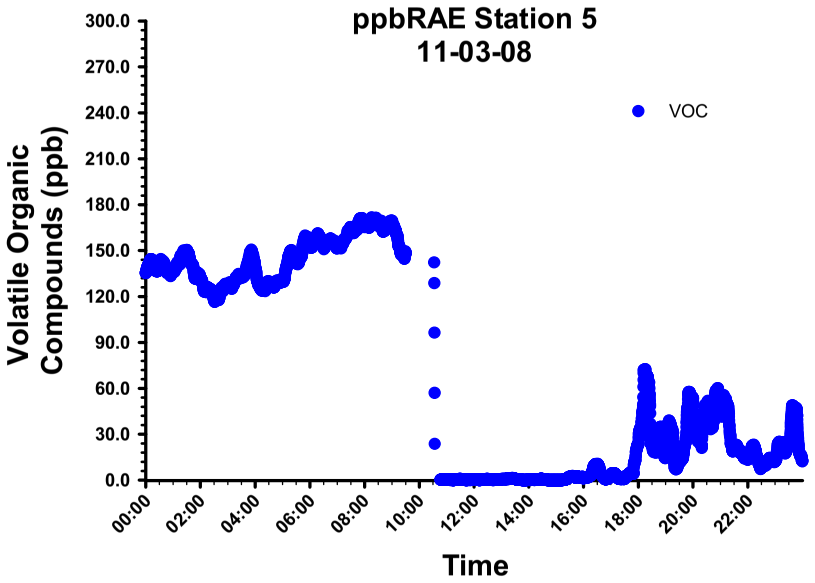
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 2, 2008, at

a) ppbRAE Station 5.



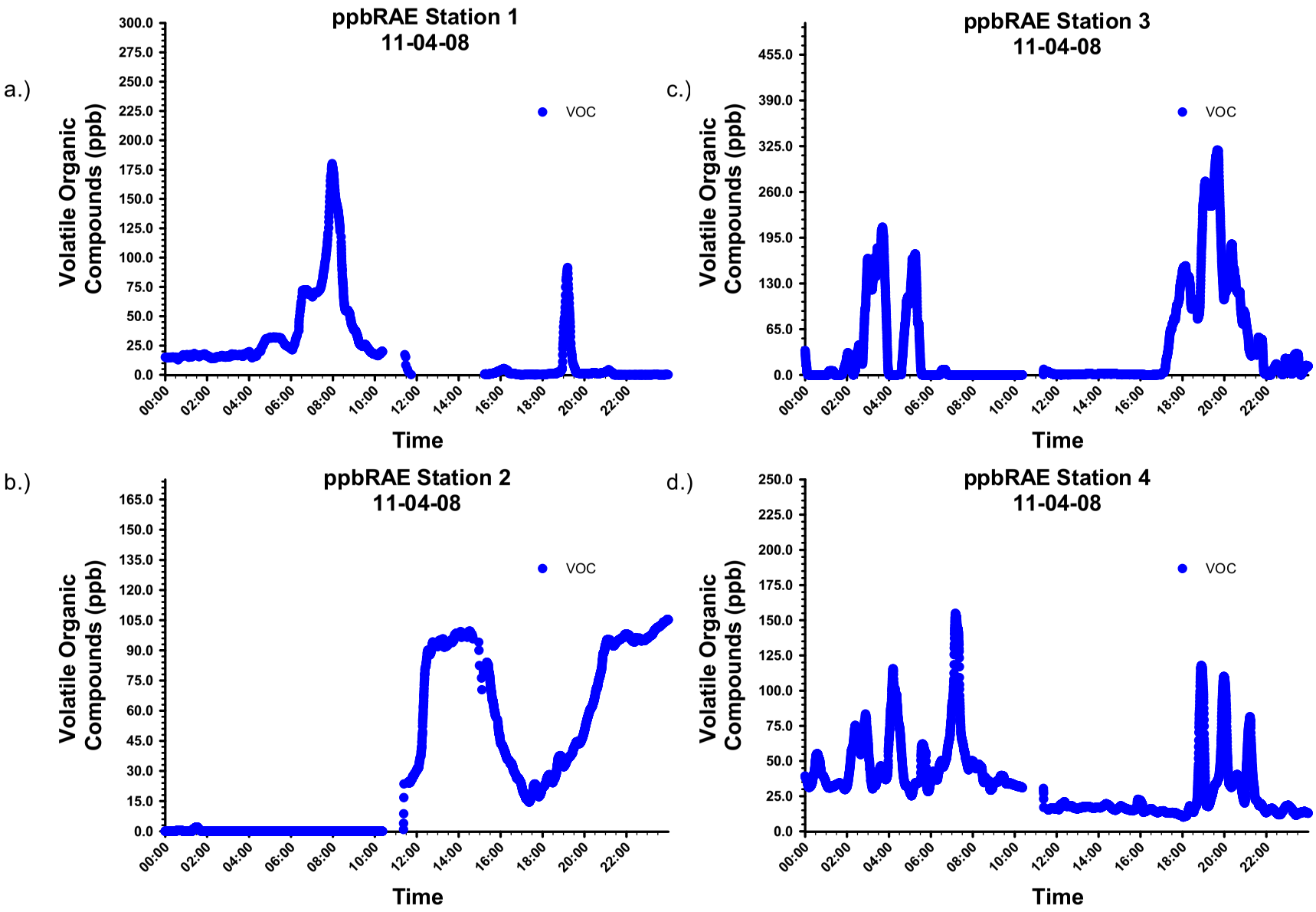
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 3, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



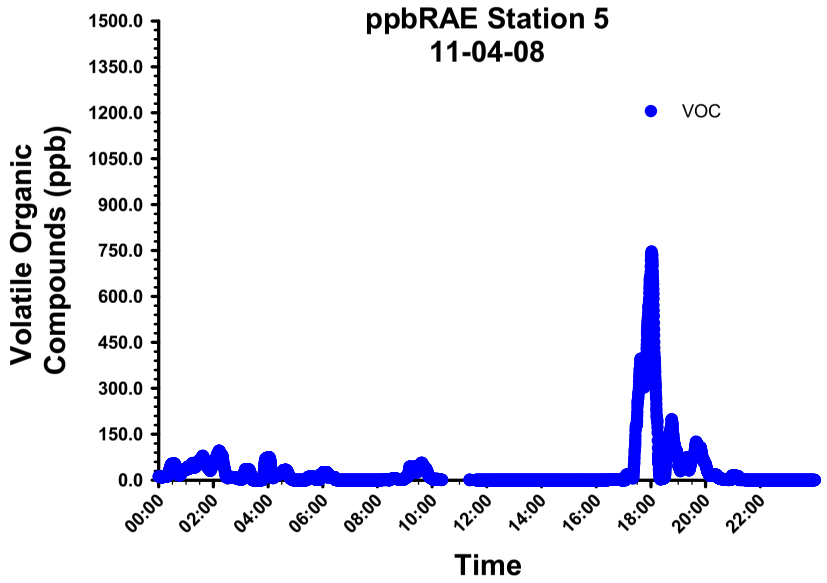
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 3, 2008, at

a) ppbRAE Station 5.



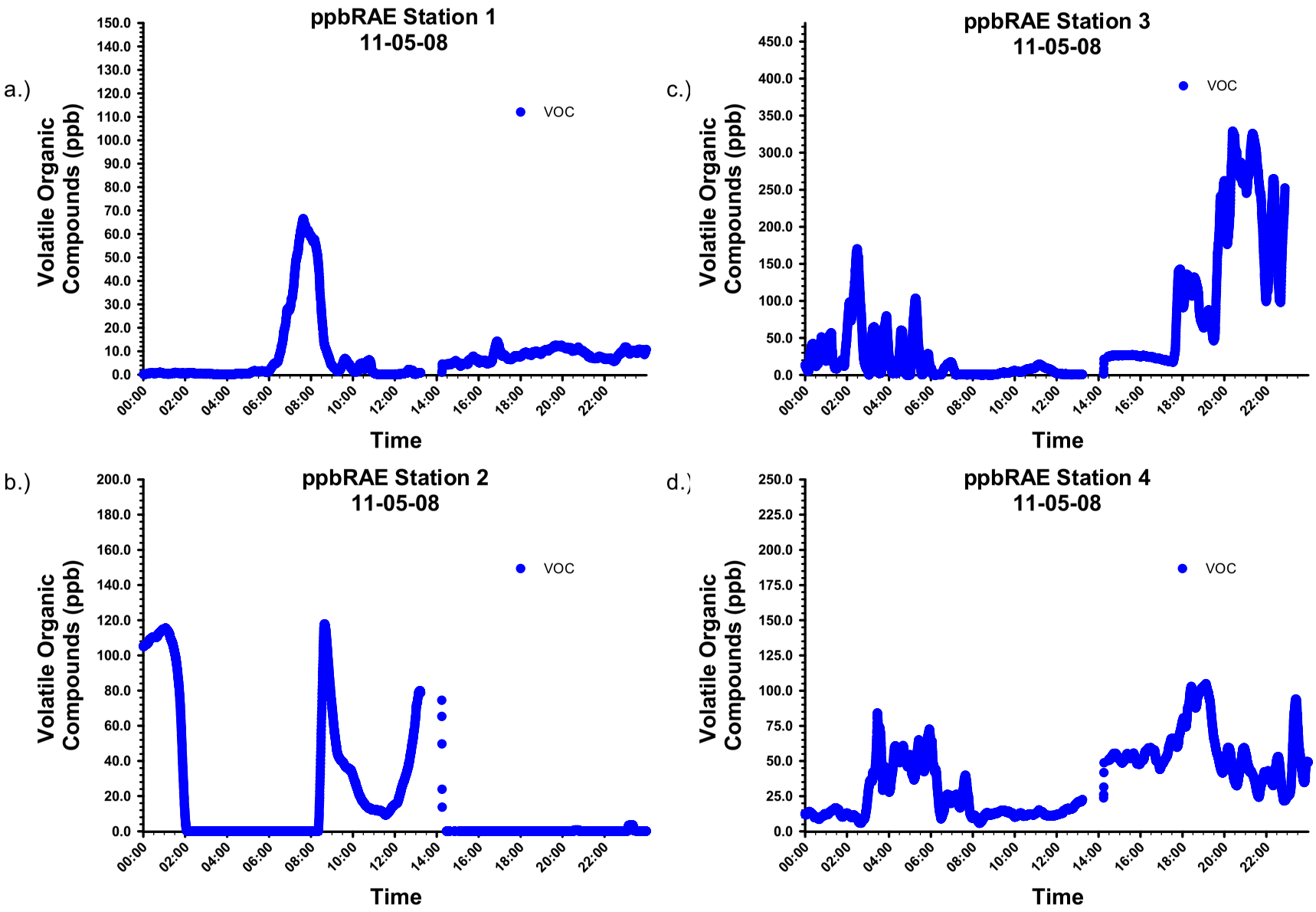
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 4, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



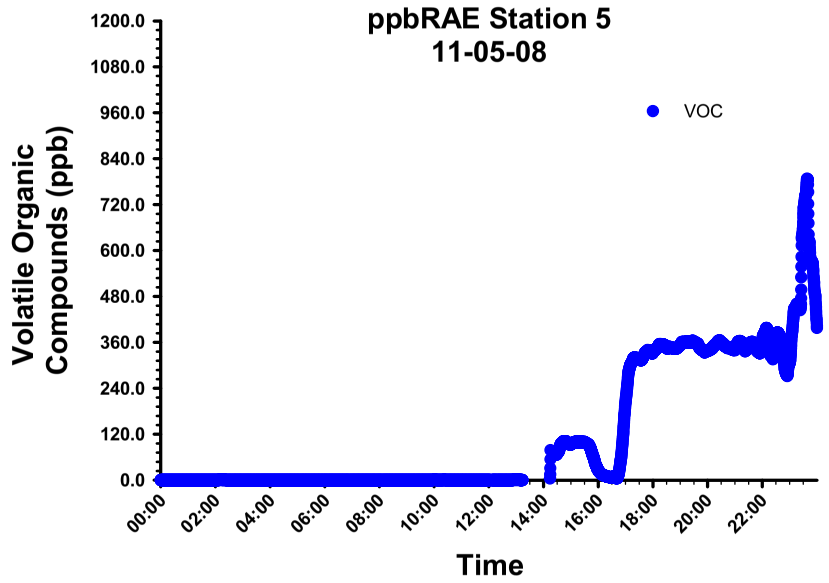
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 4, 2008, at

a) ppbRAE Station 5.



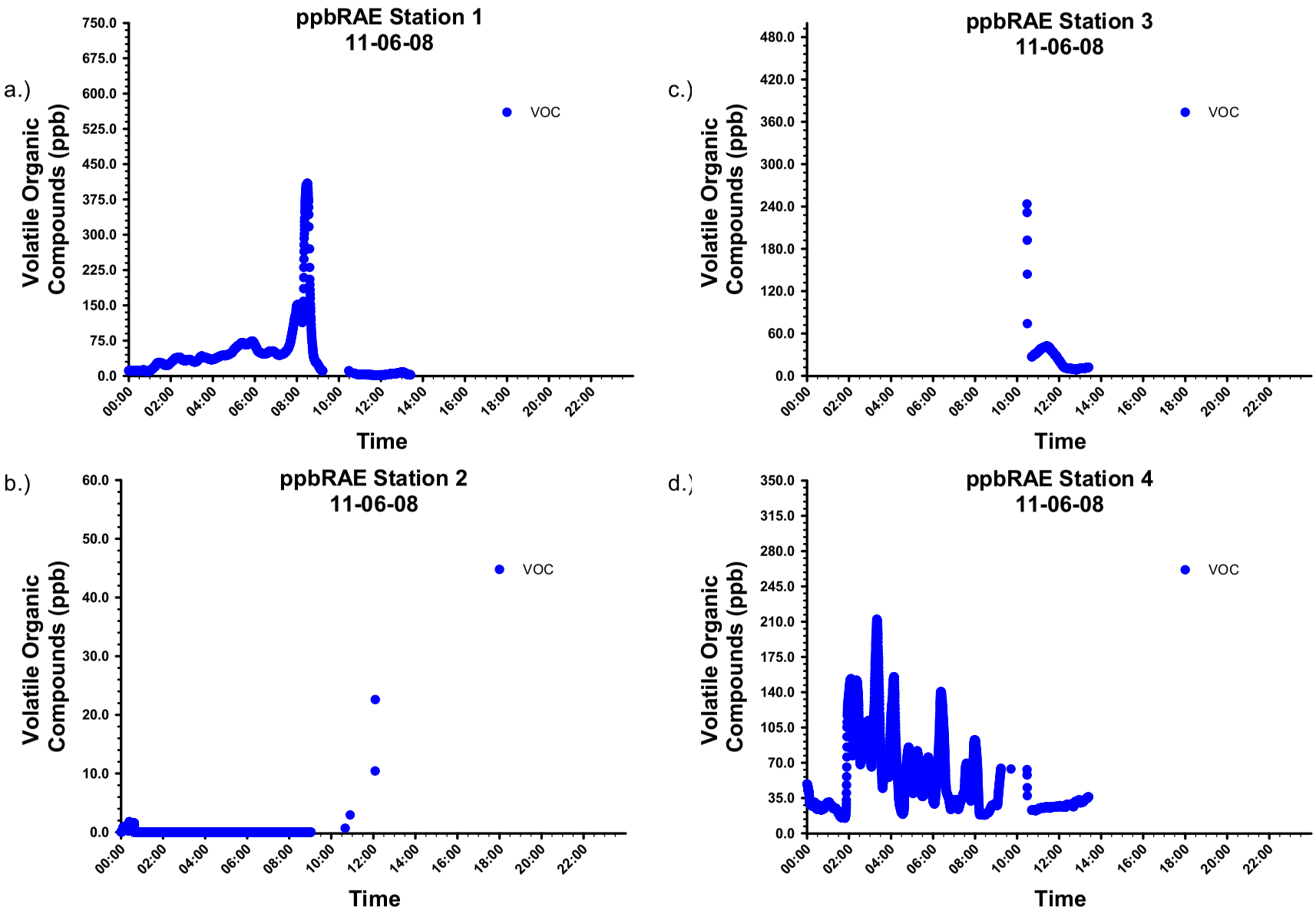
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 5, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



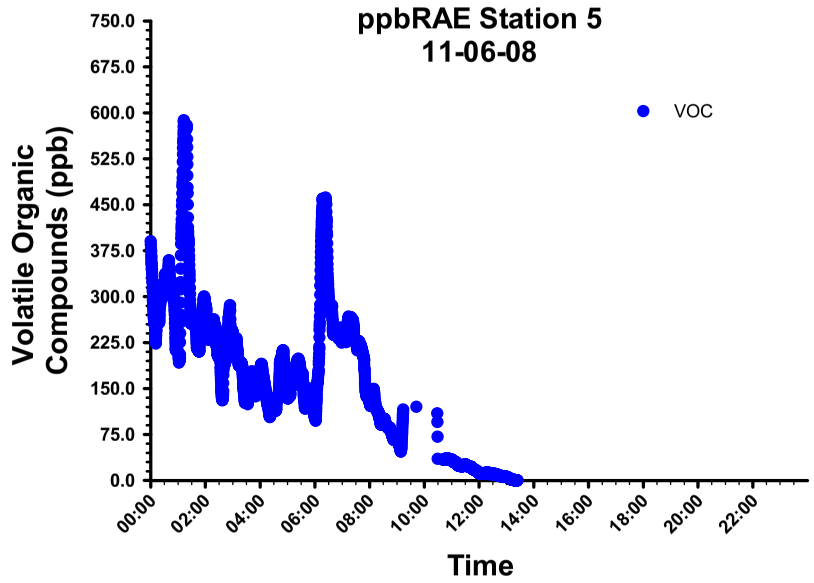
15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 5, 2008, at

a) ppbRAE Station 5.



15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 6, 2008, at a) ppbRAE Station 1, b) ppbRAE Station 2, c) ppbRAE Station 3, and d) ppbRAE Station 4.

a.)



15-Minute Rolling Average Graphs displaying airborne VOC concentrations recorded on November 6, 2008, at

a) ppbRAE Station 5.

APPENDIX E

Stage C Ambient Air Monitoring Report, CTEH, October 15, 2009

Center for Toxicology and Environmental Health, L.L.C.
5120 North Shore Drive North Little Rock, AR 72118 Phone: 501.801.8500 Fax: 501.801.8501 www.cteh.com

Stage C Ambient Air Monitoring Report

Prepared for
Republic Services of Ohio II, LLC
3619 Gracemont Street, SW
East Sparta, OH. 44626
(330) 874-3855

Prepared by
Center for Toxicology and Environmental Health, L.L.C.
5120 North Shore Drive
North Little Rock, AR 72118

October 15, 2009

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1.0 Introduction

Center for Toxicology and Environmental Health, L.L.C. (CTEH®) was requested by Republic Services to provide air monitoring and consulting support at the Countywide Recycling & Disposal Facility in East Sparta, Ohio (Countywide Recycling). The facility is located at 3619 Gracemont St. S.W. in East Sparta, Ohio.

On July 3, 2008, prior to implementation of the Stage B monitoring system, Republic Services utilized Lawhon and Associates to perform air monitoring during construction activities. The initial construction monitoring, later known as Stage A monitoring, allowed field work activities to proceed while working towards the ultimate goal of approval and implementation of a system of fixed continuous monitors. Stage A monitoring was used on July 8, 2008, to monitor installation of two gas extraction wells and was resumed on a consistent basis on July 17, 2008, with the beginning of intrusive capping preparation activities, and was concluded on September 2, 2008. CTEH was requested by Republic Services to provide an interim 24 hour continuous Volatile Organic Compounds (VOC) monitoring system until the Stage C fully automated system was in place. Stage B ambient air monitoring began on September 9, 2008 and continued through November 6, 2008. On August 22, 2008, Countywide proposed the development of a continuous monitoring system. This system would allow 24 hour continuous real-time air monitoring, automatic triggering of analytical air sampling and real-time collection of meteorological data at all five continuous monitoring stations. The general concept of this plan was approved by the United States Environmental Protection Agency (US EPA) in a letter dated August 27, 2008 which further required that a comprehensive Work Plan be developed. The fixed continuous monitoring system consisted of four fixed stations and one mobile station located on the perimeter of Countywide Recycling. The Stage C monitoring system began collecting data on October 2, 2008 and continued through August 10, 2009. Table 1.0 summarizes the Countywide Recycling ambient air monitoring timeline.

Table 1.0 Countywide Monitoring Timeline

Project Stage	Project Description	Start Date	Stop Date
A	Initial Construction Monitoring	07/17/2008	09/02/2008
B	Interim Fixed Continuous Monitoring	09/09/2008	11/06/2008
C	Final Fixed Continuous Monitoring	10/2/2008	08/10/2009

2.0 Stage C Monitoring Equipment

The term “real–time air monitoring” refers to the use of direct reading instruments that provide an immediate or nearly immediate determination of airborne chemical concentrations. These instruments have quick response times and can detect rapid changes in concentration. Continuous real-time air monitoring, automatic triggering of analytical air sampling and real-time collection of meteorological data was collected 24 hours per day at the Countywide Recycling facility. Photos of the stage C monitoring system can be found in Appendix A.

2.1 RAEguard PID

The RAEGuard PID is a robust field instrument that is specifically designed for continuous monitoring applications. RAEGuards were placed at a height of approximately two meters above grade at each of the five monitoring stations. These instruments have a detection of 10.0 ppb to 20.00 parts per million (ppm) in air, and also feature a built-in self-cleaning duty cycle pump, 10.6 eV UV lamp, and a 3D sensor for low maintenance. Power to these instruments was supplied by solar panels with external batteries. PIDs measure VOC and other gases by the use of high energy UV light. The UV light ionizes compounds producing an electrical current proportional to VOC concentrations. The RAEGuard detects changes in electrical current and displays a digital concentration reading. PIDs are not specific for any chemical. Station specific VOC data has been electronically archived and is available for review upon request.

2.2 Meteorological Station

Vaisala meteorological sensors (Model WXT520) were located at each fixed air monitoring station. Stations 1, 2, 3, and 5 collected wind speed and wind direction only. In addition to wind speed and direction, Station 4 collected ambient temperature, solar radiation, humidity, horizontal stability, vertical stability, scalar wind speed, scalar wind direction, and sigma wind speed. The collection of meteorological data at these five stations assisted in determining the location of potential offsite receptors and helped support the air monitoring and sampling efforts. They also provide information about local wind conditions at the individual sites that can vary from regional wind conditions due to wind obstructions near the monitoring stations. Station-specific meteorological data has been electronically archived and is available for review upon request.

2.3 Analytical Air Sampling

Analytical air sampling was performed by an automatic telemetry operated solenoid valve which opens the orifice valve of a 6-L Summa canister at a predetermined trigger level. The sampling valve remained open for approximately 15 minutes. Subsequent

analysis was performed for VOC in accordance with US EPA method TO-15 plus Tentatively Identified Compounds (TIC). The SUMMA samples were sent to Test America Laboratories, Inc. under Chain of Custody (COC) for analysis.

2.4 Trigger Levels

A triggering event is defined as an airborne concentration of total VOCs greater than or equal to the selected trigger value. A triggering event assisted in defining the nature and extent of a potential airborne release at the Countywide Recycling facility. A SUMMA sample is automatically collected after a sustained five minute VOC concentration (five consecutive readings) exceeds the stations trigger. The five minute window was chosen to take into account instrument drift and to distinguish from transient background contributions (vehicle exhaust, minor instrument "drift"). "Drift" refers to instrument readings different from the instrument baseline reading that are not attributable to chemicals in air. Once a VOC concentration above the trigger level was sustained for five minutes, the central computer automatically triggered the station solenoid to open resulting in the collection of a 15 minute SUMMA canister. After a triggering event occurred, an indicator light on the central computer and web portal would indicate that a sample had been collected. Trigger levels were initially established by performing statistical analysis of the first thirty days of real time data that were collected at each station. Mean PID concentrations and percentile ranges were later calculated independently at each of the five stations' to determine the stations initial trigger levels. Initial trigger levels are summarized in Table 2.0.

Table 2.0 Stage C Initial Trigger Levels

Station	Trigger Level	Start Date	Stop Date
1	0.50 ppm	11/01/2008	08/10/2009
2	0.18 ppm	11/01/2008	01/26/2009
3	0.13 ppm	11/01/2008	01/26/2009
4	0.10 ppm	11/01/2008	01/26/2009
5	0.17 ppm	11/01/2008	01/26/2009

These established trigger levels continued through January 26, 2009. On January 27, 2009 trigger levels at all stations changed to 0.50 ppm and continued through August 10, 2009.

2.5 Data Collection and Reporting

The data collected at each station were transmitted wirelessly to a central computer where it was collected at a frequency of one reading per minute and reported as a one minute instantaneous concentration. The data collected in the Stage C Web Portal included analytical, real-time, and meteorological information as well as a list of site activities for the corresponding time period. Data reporting included a graphical control panel where users could monitor the status of the fixed air monitoring stations around the site. Additionally, access to historical data was available for each station for further analysis. This portal also allowed end users to export weekly CSV's of the data collected. In addition to the Web Portal, CTEH provided monthly data summaries of the real time and analytical data.

3.0 Real-Time Air Monitoring Results

Approximately 1,697,908 real time VOC readings were recorded during the Stage C monitoring period. Of these readings, the VOC concentrations reached or exceeded the established trigger level on 39 occasions. Some of the challenges faced during the Stage C monitoring included instrument drift due to variances in humidity, filter and pump replacements due to dusty conditions and below freezing ambient temperatures. These challenges were similar to what was experienced during the stage B monitoring system and were met by having monitoring personnel continuously diagnose and maintain the Stage C monitors. Stage C data statistics and monthly reports did not include data that were outside of the measuring range of the RAEguard PID. For example, a recorded negative concentration or a concentration exceeding the peak value of the instrument (20.0 ppm) was removed prior to analyzing the data. Additionally, SUMMA canister samples were not analyzed if the VOC data concentrations were outside of the measuring range of the PID. A summary table of the total VOC readings recorded, corresponding trigger levels, triggering events and average PID concentration throughout the Stage C monitoring period can be viewed in Table 3.0.

Table 3.0 Summary Table of VOC Data

Station	Analyte	Total VOC Readings Recorded	Trigger Level (ppm)	Triggering events	Average Concentration (ppm)
1	VOC	334,203	0.50	3	0.03
2	VOC	381,303	0.18	3	0.06
			0.50	1	

3	VOC	274,860	0.13	1	0.07
			0.50	5	
4	VOC	371,875	0.10	8	0.07
			0.50	2	
5	VOC	335,667	0.17	5	0.08
			0.50	11	

A monthly VOC data summary can be viewed in Appendix B.

4.0 Analytical Air Sampling Results

Analytical sampling during the Stage C monitoring period resulted in the collection of thirty nine SUMMA canisters. Data derived from analytical methods employed at Countywide landfill and in the surrounding community were compared to applicable health- and/or risk-based benchmark values derived and approved by a joint effort between representatives of CTEH®, US EPA Region 5, Ohio EPA, and Agency for Toxic Substance and Disease Registry (ATSDR). A concerted effort was made to identify the most relevant comparison benchmarks with regard to route and duration of exposure and consideration of the most sensitive receptors including children, the elderly, pregnant women, and individuals with respiratory compromise. The ATSDR acute Minimal Risk Levels (MRL) were chosen for comparison with analytical air sampling results. MRLs represent very conservative values when directly comparing to results from a 15 minute SUMMA canister sample. Laboratory results of detections for the Stage C SUMMA samples are summarized in Table. 4.0.

Table 4.0 SUMMA Sample Data Summary

Analyte	Total of Analyte Detected	Detection Limit (ppbv)	Concentration Range[1] (ppbv)	ATSDR MRL (ppb)
1,1,1-Trichloroethane	3	0.2-0.33	0.037-0.43	2000
1,1,2,2-Tetrachloroethane	2	0.2	0.067-0.94	NE
1,1,2-Trichloro-1,2,2-trifluoroethane	20	0.2-0.33	0.062-0.1	NE
1,1-Dichloroethane	3	0.2	0.049-0.14	NE

Analyte	Total of Analyte Detected	Detection Limit (ppbv)	Concentration Range[1] (ppbv)	ATSDR MRL (ppb)
1,2,4-Trichlorobenzene	2	1.0-1.6	0.11-0.18	NE
1,2,4-Trimethylbenzene	30	0.2-0.33	0.65-5	NE
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2	0.2	0.075-0.077	NE
1,2-Dichlorobenzene	3	0.2-0.33	0.093-6.4	NE
1,2-Dichloroethane	5	0.2-0.33	0.1-0.72	NE
1,3,5-Trimethylbenzene	20	0.2-0.33	0.066-1.8	NE
1,3-Butadiene	1	0.4	0.081	NE
1,3-Dichlorobenzene	5	0.2-0.33	0.082-1.5	NE
1,4-Dichlorobenzene	9	0.2-0.33	0.066-1.4	NE
1-Butanol	1	NR	6.9	NE
1-Propanol	2	NR	12-13	NE
1-Propene, 2-methyl-	1	NR	5.7	NE
2,2,4-Trimethylpentane	29	0.5-0.82	0.041-6.4	NE
2-Butanol, (.+/-.)-	1	NR	14	NE
2-Butanol, (R)-	1	NR	6.2	NE
2-Butanone (MEK)	31	1-1.6	0.22-7.4	NE
2-Cyano-2-O-fluorosulfatofluoropropane	1	NR	2.9	NE
4-Ethyltoluene	17	0.4-0.65	0.68-1.7	NE

Analyte	Total of Analyte Detected	Detection Limit (ppbv)	Concentration Range[1] (ppbv)	ATSDR MRL (ppb)
4-Methyl-2-pentanone (MIBK)	27	0.5-0.82	0.049-1.7	NE
Acetaldehyde	3	NR	3.5-7.8	NE
Acetone	35	5-41	11-92	26000
Benzene	29	0.2-0.33	0.13-4.7	9
Bromomethane	4	0.2	0.049-0.16	50
Butanal	1	NR	4	NE
Butane	3	NR	6.7-17	NE
Butane, 2-methyl-	8	NR	14-72	NE
Butanoic acid, ethyl ester	1	NR	2.6	NE
Carbon disulfide	34	0.5-0.82	0.033-0.93	NE
Carbon tetrachloride	25	0.2-0.33	0.063-0.22	NE
Chlorobenzene	1	0.2	0.081	NE
Chloroethane	9	0.2	0.038-0.23	NE

Analyte	Total of Analyte Detected	Detection Limit (ppbv)	Concentration Range[1] (ppbv)	ATSDR MRL (ppb)
Chloroform	7	0.2	0.053-0.17	100
Chloromethane	25	0.5-0.82	0.48-1.1	500
cis-1,2-Dichloroethene	3	0.2	0.063-0.13	NE
Cyclohexane	26	0.5-0.82	0.043-1.8	NE
Dichloro difluoromethane	18	0.2-0.33	0.36-1.6	NE
Dimethyl ether	1	NR	3.2	NE
Disulfide, dimethyl	1	NR	2.7	NE
Ethane, 1,1-difluoro-	4	NR	3.2-9	NE
Ethane, 1-chloro-1,1-difluoro-	1	NR	4.6	NE
Ethanol	3	NR	3-6.4	NE
Ethyl alcohol	8	NR	13-78	NE
Ethylbenzene	33	0.2-0.33	0.089-3.5	10000
Ethylene oxide	1	NR	2.6	NE

Analyte	Total of Analyte Detected	Detection Limit (ppbv)	Concentration Range[1] (ppbv)	ATSDR MRL (ppb)
Furan	1	NR	3.5	NE
Hexane, 3-methyl-	1	NR	2.5	NE
Hydroxylamine, O-methyl-	1	NR	3.5	NE
Isobutane	1	NR	30	NE
Isopropyl Alcohol	4	NR	6.9-14	NE
Methyl Alcohol	5	NR	7.8-10	NE
Methylene chloride	33	0.5-0.82	0.17-6	600
m-Xylene & p-Xylene	35	0.2-0.33	0.16-7.1	NE
N,N'-Methylenebismethacrylamide	1	NR	2.9	NE
n-Heptane	31	0.5-0.82	0.07-2.7	NE
n-Hexane	28	0.5	0.081-2.8	NE
Oxirane, ethyl-	1	NR	4	NE
o-Xylene	30	0.2-0.33	0.092-5.4	NE

Analyte	Total of Analyte Detected	Detection Limit (ppbv)	Concentration Range[1] (ppbv)	ATSDR MRL (ppb)
Pentafluoro propionamide	1	NR	97	NE
Pentane	5	NR	2.3-54	NE
Pentane, 2-methyl-	2	NR	2.9-3.9	NE
Propane	4	NR	2-3.2	NE
Propane, 1,1,1,3,3,3-hexafluoro-2-triflu	1	NR	5.3	NE
Propene	2	NR	4.1-4.5	NE
Propene, hexafluoro-	14	NR	67-120	NE
Styrene	24	0.2-0.33	0.061-6.2	2000
tert-Butyl alcohol	31	2-3.3	0.04-1.4	NE
Tetrachloroethene	16	0.2-0.33	0.042-4.1	200
Tetrahydrofuran	25	1-1.6	0.066-5.6	NE
Toluene	30	0.2-0.33	0.2-6	1000
trans-1,2-Dichloroethene	3	0.2	0.066-0.14	NE

Analyte	Total of Analyte Detected	Detection Limit (ppbv)	Concentration Range[1] (ppbv)	ATSDR MRL (ppb)
Trichloroethene	27	0.2-0.33	0.045-13	2000
Trichlorofluoromethane	19	0.2-0.33	0.16-0.88	NE
Vinyl chloride	3	0.2	0.1-0.39	500

NR Not reported by the laboratory
NE Not Established
[1] Concentration range includes J qualified estimated results as determined by the testing laboratory.

A summary table of Stage C sampling data and corresponding VOC data can be found in Appendix C.

5.0 Conclusions

Stage C monitoring and sampling results indicate that concentrations of VOCs at Countywide are consistent with background levels of VOCs in suburban environments or that are typical of air in analytical laboratories. Of the thirty nine SUMMA samples collected during Stage C, no VOCs, including benzene, were detected at levels that exceeded the ATSDR acute MRL. These data indicate that average landfill emissions from the site under the Stage C monitoring conditions did not pose a risk to human health.

Appendix A

Photos of the Stage C Monitoring System

Location: Countywide Recycling

Description: Sampling Station

Location: Countywide Recycling

Description: Sampling Station with MET Station View

Location: Countywide Recycling

Description: Sampling Station Weather Proof Enclosure

Location: Countywide Recycling

Description: RAEGuard PID

Location: Countywide Recycling

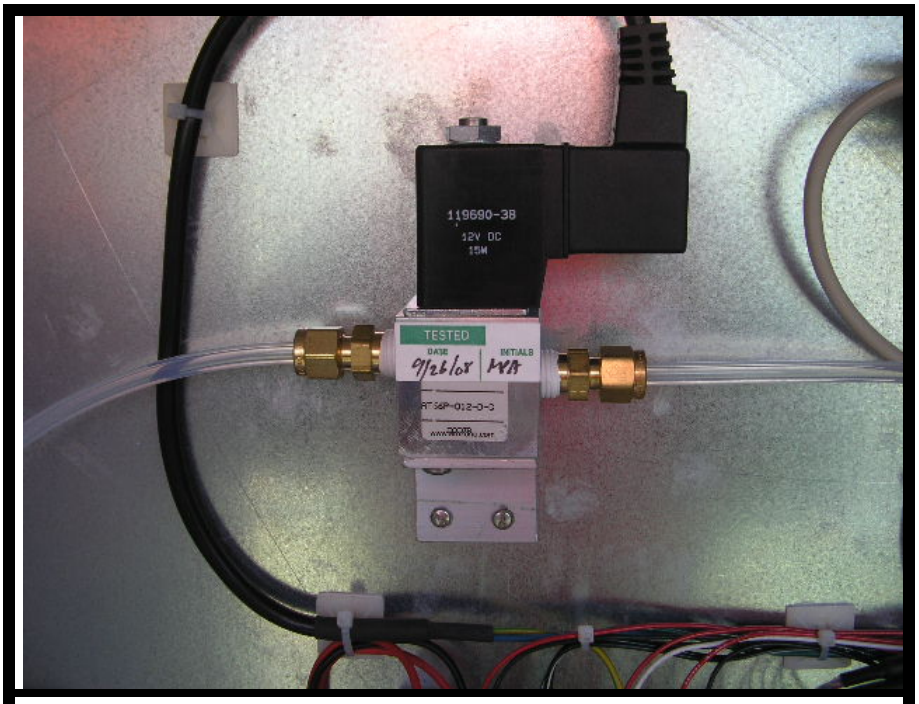
Description: Solar Panel

Location: Countywide Recycling

Description: Sample Collection Reset

Location: Countywide Recycling

Description: Data Logger



Location: Countywide Recycling

Description: Summa Sample Trigger Solenoid

Appendix B

Monthly VOC Data Summary

Stage C Real-Time Air Monitoring Summary

November 1-23, 2008					
Station	**Analyte**	**Total VOC Readings Recorded**	**Trigger Level**	**Triggering events**	**Average Concentration**
1	VOC	32,695	0.5	2	0.06 ppm
2	VOC	34,911	0.18	2	0.07 ppm
3	VOC	30.611	0.13	0	0.03 ppm
4	VOC	34,814	0.1	1	0.05 ppm
5	VOC	34,584	0.17		0.05 ppm
November 24, 2008- December 29, 2008					
Station	**Analyte**	**Total VOC Readings Recorded**	**Trigger Level**	**Triggering events**	**Average Concentration**
1	VOC	44,494	0.5	1	0.01 ppm
2	VOC	50,412	0.18	0	0.06 ppm
3	VOC	41,162	0.13	1	0.01 ppm
4	VOC	52,210	0.1	4	0.05 ppm
5	VOC	38,075	0.17	1	0.04 ppm
December 29, 2008- January 29, 2009					
Station	**Analyte**	**Total VOC Readings Recorded**	**Trigger Level**	**Triggering events**	**Average Concentration**
1	VOC	30,359	0.5	0	0.01 ppm
2	VOC	39,036	0.18	0	0.07 ppm
3	VOC	40,272	0.13	0	0.01 ppm
4	VOC	43,757	0.1	2	0.04 ppm
5	VOC	44,720	0.17	4	0.05 ppm
January 30, 2009- February 23, 2009					
Station	**Analyte**	**Total VOC Readings Recorded**	**Trigger Level**	**Triggering events**	**Average Concentration**
1	VOC	29,115	0.5	0	0.01 ppm
2	VOC	35,611	0.5	2	0.08 ppm
3	VOC	29,645	0.5	0	0.01 ppm
4	VOC	36,763	0.5	0	0.06 ppm
5	VOC	34,810	0.5	2	0.05 ppm
February 24, 2009- March 27, 2009					
Station	**Analyte**	**Total VOC Readings Recorded**	**Trigger Level**	**Triggering events**	**Average Concentration**
1	VOC	30,832	0.5	0	0.02 ppm
2	VOC	43,732	0.5	0	0.08 ppm
3	VOC	34,724	0.5	0	0.04 ppm
4	VOC	39,653	0.5	0	0.09 ppm
5	VOC	42,335	0.5		0.05 ppm

Stage C Real-Time Air Monitoring Summary

March 28, 2009- April 28, 2009					
Station	**Analyte**	**Total VOC Readings Recorded**	**Trigger Level**	**Triggering events**	**Average Concentration**
1	VOC	44,309	0.5	0	0.01 ppm
2	VOC	44,233	0.5	0	0.06 ppm
3	VOC	42,175	0.5	1	0.08 ppm
4	VOC	45,229	0.5	0	0.09 ppm
5	VOC	41,062	0.5	2	0.06 ppm
April 29, 2009- May 27, 2009					
Station	**Analyte**	**Total VOC Readings Recorded**	**Trigger Level**	**Triggering events**	**Average Concentration**
1	VOC	39,353	0.5	0	0.10 ppm
2	VOC	42,792	0.5	0	0.05 ppm
3	VOC	32,038	0.5	3	0.08 ppm
4	VOC	40,715	0.5	0	0.07 ppm
5	VOC	39,794	0.5	2	0.24 ppm
May 28, 2009- June 29, 2009					
Station	**Analyte**	**Total VOC Readings Recorded**	**Trigger Level**	**Triggering events**	**Average Concentration**
1	VOC	30,568	0.5	0	0.14 ppm
2	VOC	33,076	0.5	0	0.06 ppm
3	VOC	17,761	0.5	1	0.13 ppm
4	VOC	17,656	0.5	0	0.05 ppm
5	VOC	22,302	0.5	0	0.07 ppm
July 3, 2009- July 29, 2009					
Station	**Analyte**	**Total VOC Readings Recorded**	**Trigger Level**	**Triggering events**	**Average Concentration**
1	VOC	36,335	0.5	0	0.00 ppm
2	VOC	39,005	0.5	1	0.05 ppm
3	VOC	37,052	0.5	0	0.15 ppm
4	VOC	33,818	0.5	2	0.13 ppm
5	VOC	37,985	0.5	3	0.10 ppm
July 30, 2009- August 10, 2009					
Station	**Analyte**	**Total VOC Readings Recorded**	**Trigger Level**	**Triggering events**	**Average Concentration**
1	VOC	16,143	0.5	0	0.00 ppm
2	VOC	18,495	0.5	0	0.05 ppm
3	VOC	17, 093	0.5	1	0.15 ppm
4	VOC	27,260	0.5	0	0.13 ppm
5	VOC	16, 803	0.5	1	0.10 ppm

Stage C Real-Time Air Monitoring Summary

Overall Summary of the Data Collected					
Station	**Analyte**	**Total VOC Readings Recorded**	**Trigger Level**	**Average Triggering Event**	**Average Concentration**
1	VOC	334,203		3	0.03
2	VOC	381,303		4	0.06
3	VOC	274,860		6	0.07
4	VOC	371,875		10	0.07
5	VOC	335,667		16	0.08

Appendix C

Stage C Sampling Summary

Stage C Analytical Air Sampling Summary

Sample ID	Set out Date	Location	Trigger Level	Trigger Date/Time	Wind Direction	Downwind of Reaction Area	Results (Link)	Average 15 min PID Reading During Sample	TICS Identified/ Sampling Methods	Ambient Sampling Temp (Celsius)
ESOH1108-1-SC001	11/8/2008	Station 1	0.50 ppm	11/12/2008 22:52	134	NO	ESOH1108-1-SC001	0.58	None	
ESOH1108-2-SC002	11/8/2008	Station 2	0.18 ppm	11/10/2008 4:38	266	YES	ESOH1101-2-SC002	-0.50	Hexaflouropropylene	7.8
ESOH1108-3-SC003	11/8/2008	Station 3	Sample Fault-Calibration gas triggered the Summa collection system							
ESOH1108-5-SC004	11/8/2008	Station 5	0.17 ppm	12/20/2008 3:53	12	NO	ESOH1108-5-SC004	22.52*	Ethane, 1,1 diflouro; Ethylene Oxide; Isopropyl Alcohol; Propane; 1,1,1,3,3,3,-hexaflouro-2-triflu; Propene, hexaflouro	7.8
ESOH1110-2-SC005	11/10/2008	Station 2	0.18 ppm	11/10/2008 20:15	338	YES	ESOH1110-2-SC005	0.17	unknown	-0.2
ESOH1111-2-SC006	11/11/2008	Station 2	Sample Fault Calibration gas triggered the Summa collection system							
ESOH1111-4-SC007	11/11/2008	Station 4	0.10 ppm	11/23/2008 14:06	227	NO	ESOH1111-4-SC007	0.09	Isopropyl alcohol; Propene, Hexafluoro-; Unknown	2.3
ESOH1113-1-SC008	11/13/2008	Station 1	0.50 ppm	11/13/2008 21:02	181	NO	ESOH1113-1-SC008	0.60	Ethyl alcohol; Propene, hexafluoro; Unknown	10.8
ESOH1114-1-SC009	11/11/2008	Station 1	0.50 ppm	11/24/2008 15:13	179	NO	ESOH1114-1-SC009	0.53	Methyl alcohol,; Propene, hexafluoro	4.6
ESOH1119-3-SC010	11/19/2008	Station 3	Sample Fault- Leaking SUMMA Cannister							
ESOH1123-3-SC011	11/23/2008	Station 3	0.13 ppm	11/29/2008 3:06	290	Downwind of Working phase	ESOH1123-3-SC011	0.04	Butane; Butane, 2 methyl-; Disulfide, dimethyl; Ethane, 1-chloro-1,1-difluoro-; Ethyl alcohol; Isobutane; Pentane; Pentane, 2-methyl-; Propane; Propene, hexafluoro-	-1.6
ESOH1124-4-SC012	11/24/2008	Station 4	0.10 ppm	11/24/2008 14:23	226	NO	ESOH1124-4-SC012	0.10	None	4.1
ESOH1124-4-SC013	11/24/2008	Station 4	Sample Fault-Calibration gas triggered the Summa collection system							

Stage C Analytical Air Sampling Summary

Sample ID	Set out Date	Location	Trigger Level	Trigger Date/Time	Wind Direction	Downwind of Reaction Area	Results (Link)	Average 15 min PID Reading During Sample	TICS Identified/ Sampling Methods	Ambient Sampling Temp (Celsius)
ESOH1124-1-SC014	11/24/2008	Station 1	Sample Fault							
ESOH1126-4-SC015	11/26/2008	Station 4	0.10 ppm	11/29/2008 11:51	192	NO	ESOH1126-4-SC015	0.10	Ethyl alcohol;Methyl Alcohol; Propene, hexafluoro-	2.7
ESOH1129-3-SC016	11/29/2008	Station 3	Sample Fault							
ESOH1129-4-SC017	11/24/2008	Station 4	Sample Fault							
ESOH1202-4-SC018	12/2/2008	Station 4	0.10 ppm	12/3/2008 8:28	195	NO	ESOH1202-4-SC018	0.10	None	-2.0
ESOH1203-4-SC019	12/3/2008	Sample Fault due to PID malfunction								
ESOH1205-4-SC020	12/5/2008	Station 4	Sample Fault							
ESOH1208-4-SC021	12/8/2008	Station 4	0.10 ppm	12/21/2008 5:52	292	NO	ESOH1208-4-SC021	0.26	Acetaldehyde; Butane, 2-methyl-; Pentane; Propene, hexafluoro-	-1.3
ESOH1218-3-SC022	12/18/2008	Station 3	Sample Fault- Leaking SUMMA Cannister							
ESOH1220-5-SC023	12/20/2008	Station 5	Sample Fault- Leaking SUMMA Cannister							
ESOH1222-4-SC024	12/22/2008	Station 4	0.10 ppm	1/6/2009 0:02	110	Yes	ESOH1222-4-SC024	0.06	Butane; Butane, 2-methyl-; Dimethyl ether; Ethyl alcohol; Hexane,3-methyl-; Hydroxylamine, O-methyl; Pentane; Pentane, 2-methyl-; Propene, hexafluoro-, 1-propene, 2-methyl-	-3.6
ESOH1230-5-SC025	12/30/2008	Station 5	0.17 ppm	1/8/2009 10:59	243	Yes	ESOH1230-5-SC025	0.16	Butanoic acid, ethyl ester; Ethane, 1,1 -difluoro-; Ethyl alcohol; Isopropyl Alcohol; Methyl Alcohol; Propene, hexafluoro-; 1-Propanol; 2-Butanol, (R-)	-7.0
ESOH0106-4-SC026	1/6/2009	Station 4	0.10 ppm	1/7/2008 20:11	258	No	ESOH0106-4-SC026	0.10	Butane; Butane, 2-methyl-; Ethane, 1,1-difluoro-; Pentafluoropropionamide; Pentane	-2.2
ESOH0107-2-SC027	1/7/2009	Station 2	0.18 ppm	2/9/2009 2:23	223	No	ESOH0107-2-SC027	0.92*	Propene, hexafluoro-	1.6

Stage C Analytical Air Sampling Summary

Sample ID	Set out Date	Location	Trigger Level	Trigger Date/Time	Wind Direction	Downwind of Reaction Area	Results (Link)	Average 15 min PID Reading During Sample	TICS Identified/ Sampling Methods	Ambient Sampling Temp (Celsius)
ESOH0108-4-SC028	1/8/2009	Station 4	0.10 ppm	Unknown			ESOH0108-4-SC028			
ESOH0108-5-SC029	1/8/2009	Station 5	0.17 ppm	1/19/2009 0:32	215	Yes	ESOH0108-5-SC029	0.26	Ethyl alcohol; Furan; Propene	-11.70
ESOH0108-3-SC030	1/8/2009	Station 3	0.13 ppm	4/25/2009 12:00			ESOH0108-3-SC030	0.20	Acetaldehyde; Butane, 2-methyl-; Ethanol; Propane; Propene, hexafluoro-2-Cyano-2-O-fluorosulfatofluoropropane	25.4
ESOH0119-5-SC031	1/19/2009	Station 5	0.13 ppm	1/19/2009 13:22	267	Yes	ESOH0119-5-SC031	0.17	Ethyl alcohol; Isopropyl Alcohol; Methyl Alcohol; 1-Butanol; 1-Propanol; 2-Butanol;	-9.30
ESOH0119-5-SC032	1/19/2009	Station 5	0.13 ppm	1/26/2009 9:21	220	Yes	ESOH0119-5-SC032	0.18	Ethyl alcohol; Propene, hexafluoro;	-12.6
ESOH0119-1-SC033	1/19/2009	Station 1	0.50 ppm	Current Sample						
ESOH0119-5-SC034	1/19/2009	Station 5	0.50 ppm	2/16/2009 7:02	10	No	ESOH0127-5-SC034	0.78	Butane, 2-methyl-; Pentane; Propane; Propene, hexaflouro-	-4.6
ESOH0209-2-SC035	2/9/2009	Station 2	0.50 ppm	2/10/2009 6:25	211	No	ESOH0209-2-SC035	1.41*	Propene, hexafluoro-	8.4
ESOH0210-2-SC036	2/10/2009	Station 2	0.50 ppm	7/10/2008 0:00						
ESOH0216-5-SCO37	2/16/2009	Station 5	0.50 ppm	2/18/2009 6:12	168	Yes	ESOH0216-5-SC037	0.56	Acetaldehyde; Propene	2.1
ESOH0218-5-SC038	2/18/2009	Station 5	0.50 ppm	4/14/2009 16:39	97	No	ESOH0218-5-SC038	14.16	Butane, 2-methyl-; Ethane, 1,1-diflouro-; Ethanol; Methyl Alcohol; N,N'-Methylenebismethacrylamide; Oxirane, ethyl-; Propane; Propene, hexaflouro-	10.1
ESOH0416-5-SC039	4/16/2009	Station 5	0.50 ppm	4/20/2009 18:17	240	Yes	ESOH0416-5-SC039	0.04	Acetaldehyde; Butane, 2-methyl-; Propene, hexaflouro-	9.0
ESOH0422-5-SC040	4/22/2009	Station 5	0.50 ppm	5/5/2009 6:49	199	Yes	ESOH0422-5-SC040	0.59	Ethanol; Propene, hexaflouro-; Unknown; Unknown	14.7
ESOH0429-3-SC041	4/29/2009	Station 3	0.50 ppm	5/15/2009 12:30	229	Yes	ESOH0429-3-SC041	0.46		21.2

Stage C Analytical Air Sampling Summary

Sample ID	Set out Date	Location	Trigger Level	Trigger Date/Time	Wind Direction	Downwind of Reaction Area	Results (Link)	Average 15 min PID Reading During Sample	TICS Identified/ Sampling Methods	Ambient Sampling Temp (Celsius)
ESOH0504-5-SC042	5/4/2009	Station 5	0.50 ppm	5/16/2009 18:44	308	Yes	ESOH0504-5-SC042	22.54		12.9
ESOH0518-3-SC043	5/18/2009	Station 3	0.50 ppm	5/21/2009 12:20	227	Yes	ESOH0518-3-SC043	0.88		24.0
ESOH0520-5-SC044	5/20/2009	Station 5	0.50 ppm	6/2/2009 7:59	224	Yes	No Analysis PID error	17.41		16.8
ESOH0522-3-SC045	5/22/2009	Station 3	0.50 ppm	5/23/2009 11:40	197	No	ESOH0522-3-SC045	0.61		24.6
ESOH0528-3-SC046	5/28/2009	Station 3	0.50 ppm	6/27/2009 6:52	347	No	ESOH0528-3-SC046	1.94		15.2
ESOH0609-5-SC047	6/9/2009	Station 5	0.50 ppm	6/19/2009 18:58	313	Yes	No Analysis PID error	11.32		15.2
ESOH0624-5-SC048	6/24/2009	Station 5	0.50 ppm	7/4/2009 4:03	310	Yes	ESOH0624-5-SC048	0.64		16.2
ESOH0707-5-SC049	7/7/2009	Station 5	0.50 ppm	7/10/2009 6:29			ESOH0707-5-SC049	0.54		
ESOH0710-3-SC050	7/10/2009	Station 3	0.50 ppm	8/3/2009 4:12			ESOH0710-3-SC050	0.48		
ESOH0710-4-SC051	7/10/2009	Station 4	0.50 ppm	7/16/2009 17:44			ESOH0710-4-SC051	1.03		
ESOH0714-5-SC052	7/14/2009	Station 5	0.50 ppm	7/23/2009 16:59			ESOH0714-5-SC052	0.45		
ESOH0717-4-SC053	7/17/2009	Station 4	0.50 ppm	8/1/2009 7:22			ESOH0717-4-SC053	0.51		
ESOH0724-5-SC054	7/24/2009	Station 5	0.50 ppm	7/30/2009 5:34			ESOH0724-5-SC054	0.50		
ESOH0803-5-SC055	8/3/2009	Station 5	0.50 ppm	8/3/2009 13:56						

Stage C Analytical Air Sampling Summary

Sample ID	Set out Date	Location	Trigger Level	Trigger Date/Time	Wind Direction	Downwind of Reaction Area	Results (Link)	Average 15 min PID Reading During Sample	TICS Identified/ Sampling Methods	Ambient Sampling Temp (Celsius)
ESOH0804-4-SC056	8/4/2009	Station 4	0.50 ppm	Current Sample						
ESOH0806-3-SC057	8/6/2009	Station 3	0.50 ppm	Current Sample						
ESOH0806-5-SC058	8/6/2009	Station 5	0.50 ppm	Current Sample						

Pending- Sample has been collected awaiting results from the laboratory

Average PID Reading During Sample- Average PID concentration during the SUMMA can sample collection

* Potential RAEGuard PID error (Drift) noted

Station 4 Trigger Change to 0.15 ppm on January 13, 2009

Stations 1 through 5 trigger levels have been changed to 0.50 ppm on January 27,2009

TIC analysis was dropped from the laboratory Summa Results May 15, 2009

Summa Cannisters are Batch cleaned and not individually certified clean May 15, 2009

Stage C monitoring stations were taken offline August 10, 2009

APPENDIX F

As-Built Documentation for Gas Wells PW-332 and PW-358, Letter Report, Golder Associates, January 28, 2009

Golder Associates Inc.
15851 S. US-27, Suite 50
Lansing, Michigan USA 48906
Telephone: (517) 482-2262
Fax: (517) 482-2460

January 28, 2009

08388431.0003

Countywide Recycling and Disposal Facility
Republic Services of Ohio II, LLC
3619 Gracemont Street, SW
East Sparta, Ohio 44626

Attn: Mr. Todd Hamilton, P.E.

RE: COUNTYWIDE RECYCLING & DISPOSAL FACILITY
LANDFILL GAS WELLS PW-332 and PW-358 LOCATED WITHIN THE GAS EXTRACTION AREA, CONSTRUCTION DOCUMENTATION LETTER REPORT

Dear Mr. Hamilton:

In accordance with your request, Golder Associates Inc. (Golder) has prepared this report to provide documentation of the installation of two vertical landfill gas collection wells located within the Gas Extraction Break area at the Countywide Recycling & Disposal Facility in East Sparta. These wells are shown and were required as part of the May 27, 2008 revision of the Gas Extraction and Monitoring Work Plan (GEMWP), prepared by Earth Tech / AECOM.

Golder performed construction quality assurance (CQA) during the drilling and installation of each of the two landfill gas wells (PW-332 and PW-358), which were installed on April 25, 2008, and July 8, 2008, respectively. Observations included; equipment tracking, soil and waste material identification, temperature logging, photographic logging, and well construction assurance. Summary data for each well; such as well name, date constructed, temperatures, and depths are recorded in Table 1, see attached. Attachment 1 contains the daily information reports prepared by Golder personnel during daily drilling activities. Attachment 1 also contains the well construction logs, the borehole logs with descriptions of the materials encountered during drilling, temperature logs, and also the driller's logs, when available. Attachment 2 contains a log of representative photos associated with the drilling of the landfill gas wells.

Golder appreciates this opportunity to assist you and the Countywide Recycling & Disposal Facility. Please contact us if you have any questions or comments regarding the information contained in this report.

Sincerely,

GOLDER ASSOCIATES INC.

Tiffany D. Johnson, P.E.
Senior Project Engineer

John A. Balconi, P.E.
Senior Consultant

Cc: Benjamin Hale – Golder Associates Inc.
Bill Eberts, P.E. – Earthtech AECOM
Michael Beaudoin, P.E. – Earthtech AECOM
File

Attachments:

Table 1 – Summary of Gas Wells Located in the Isolation Break Area

Attachment 1 – Daily Reports, Well Construction Logs, Borehole Logs, and Temperature Logs

Attachment 2 – Photographic Log

Golder Associates
Job Number: 08388431

Made by: TDJ Date: 01/27/09
Rvwd: JAB Date: 01/28/09

TABLE 1
SUMMARY OF
GAS WELLS LOCATED IN THE GAS BREAK AREA

Gas Well in Isolation Break Area	Date Drilled	Date Constructed	Golder Technician	Aluminum Dross Encoutered?	Max.Temperature of Cuttings Encountered at time of Drilling (°F)	Record Pipe Size and Type	Record Depth (ft bgs)	Record Solid Pipe (ft)	Record Perforated Pipe (ft)
PW-332	4/25/2008	4/25/2008	Lionel Montanez	Yes, at 85-90-feet below ground surface (bgs)	147	8" Dia. Sch 80 CPVC	100	25	80
PW-358	7/8/2008	9/15/2006	Julie McGowan	No	136	6" Dia. Sch 80 CPVC	64	22	45

ATTACHMENT 1

Daily Reports, Well Construction Logs, Borehole Logs, and Temperature Logs

DAILY CONSTRUCTION LOG

Golder Associates

Project Location: **Countywide Landfill, East Sparta, OH**

Date: 4/25/2008 **Eng./Tech:** Lionel Montanez

Golder Job No. **043-8072.004 Phase 0007**

Project Description: Gas Well Installation

EQUIPMENT

Description	Type	Quantity	Hours Operation
Drilling Rig	AF 110	1	Daily Flat Rate
Loader	Cat 953 Track	1	Daily Flat Rate
Dump Truck	JIB 718 ADT	1	Daily Flat Rate
Pickup Truck	F-350 1 Ton	1	Daily Flat Rate
Trailer	Load Out	1	Daily Flat Rate

MANPOWER

Description	Name	Quantity	Hours Operation
Supervisor	None		
Driller	Wade Tufford	1	14.0
Operator/Labor	Detin Moore	1	14.0
Operator/Labor	Lee Casey	1	14.0

General Comments:

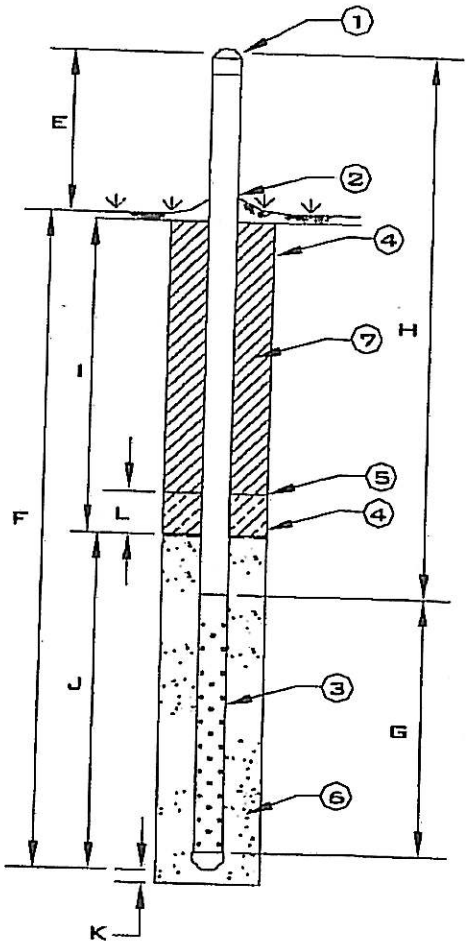
0650 Attended AEG's Safety Morning Meeting, Documentation for the meeting is on file at AEG's Trailer.
0715 Moving all equipment (drill rig, loader) to cell 7 and removing soil pile around the drilling area.
0745 Drill team set up at **PW-332**.
0810 Began to Drill at **PW-332.**
NOTE : Came across **Aluminum Dross** around **90'.**
1105 Stopped drilling at **PW-332 (100 feet).**
1110 Began well installation at **PW-332** (CPVC, Stone Backfill, Bentonite, Soil Backfill).
1130 Moving the drill rig to cell 5.
1230 Completed well **PW-332** installation.
1245 Drill team went to lunch.
1350 Drill team set up at **I1R.**
1410 Began to drill at **I1R.**
1755 Stopped drilling at **I1R (116 feet).**
NOTE: - Because the rig is sitting on a bench and it only can drill up to 120', we reached the limit and could only get down to 116'.
1800 Began well installation at **I1R** (CPVC, Stone Backfill, Bentonite, Soil Backfill).
2000 Completed well **I1R** installation.

for Lionel Montanez

GAS EXTRACTION WELL BORING LOG

Golder Associates

Project Location:	Countywide Recycling & Disposal Facility East Sparta, Ohio	Northing	25210.97
Golder Job No.	043-8072.004	Easting	42435.05
		Gr Elev.	1214.14
Gas Well No.	PW-332	Eng./Tech:	Lionel Montanez
Drilling Date/Time	4/25/2008 Start: 0810 Stop: 1105	Driller:	Wade Tufford



Materials List

1. End cap
2. Solid pipe
3. Perforated Pipe
4. Bentonite Seal
5. Geo-ring
6. Natural Stone 1"-3"
7. Clean Backfill

Specifications

A - Bore Size	36"
B- Pipe Size	8"
C- Pipe Type	CPVC
D- Bore Depth	100'
E- Pipe above ground	5'
F- Pipe below ground	80'
G- Perf pipe length	80'
H- Solid pipe length	25'
I - Cover depth	18'
J- Stone backfill	82'
K- Stone base	0
L- Bentonite Seal	3'
Refuse depth	100'
Leachate depth	DRY
Total pipe length	105'
Average refuse temp.	124.7°F

General Comments:

Notes: - Depth reached 100'
- 1' of bentonite located 2' above perforated pipe (according to specs)
- 2' of bentonite located 1' below ground level (according to specs)

GAS EXTRACTION WELL BORING LOG

Golder Associates

Project Location:	Countywide Recycling & Disposal Facility East Sparta, Ohio	Northing:	25210.97
		Easting:	42435.05
Golder Job No.	043-8072.004	Gr Elev.-	1214.14
Gas Well No.	PW-332	Eng./Tech:	Lionel Montanez
Drilling Date/Time:	4/25/2008	Driller:	Wade Tufford
	Start: 0810 Stop: 1105		

DEPTH	MATERIAL DESC.	COMPOSITION	WET/DRY	AGE	TEMP (F)
0 -	Cover	Clay soil			
- 5	HHCT	PA/PL/CL/M/GL	DRY		61.0
5 - 10	HHCT	PA/PL/CL/W/M/R	DRY		88.0
10 - 15	HHCT	PA/PL/CL/W/M	DRY	12/10/2006	96.0
15 - 20	HHCT	PA/PL/CL/W	DRY		115.0
20 - 25	HHCT	PA/PL/CL/W/M/R	DRY		123.0
25 - 30	HHCT	PA/PL/CL/M	DRY		125.0
30 - 35	HHCT	PA/PL/CL/W/M/GL	DRY		126.0
35 - 40	HHCT	PA/PL/CL/W	DRY		124.0
40 - 45	HHCT/SOIL/ROCKS	PA/PL/CL/W/M	DRY		127.0
45 -50	HHCT	PA/PL/CL/W/M/R	DRY		130.0
50 - 55	HHCT	PA/PL/CL/W/M	DRY		131.0
55 - 60	HHCT	PA/PL/CL/M	DRY	7/4/2006	127.0
60 - 65	HHCT	PA/PL/CL/W	DRY		130.0
65 - 70	HHCT/CLAY	PA/PL/CL/W/M	DRY		143.0
70 - 75	HHCT/SOIL/ROCKS	PA/PL/CL/W/M/R	DRY		137.0
75 - 80	HHCT	PA/PL/CL/M	DRY		135.0
80 - 85	HHCT	PA/PL/CL/M	DRY		143.0
85 - 90	HHCT	ALUMINUM DROSS	DRY		147.0
90 - 95	HHCT	PA/PL/CL/W/M	DRY		145.0
95 - 100	HHCT	PA/PL/CL/W/M	DRY		141.0
100 - 105		DROSS			
105 - 110					
110 - 115					
115 - 120					
				AVE TEMP	124.7

General Comments:

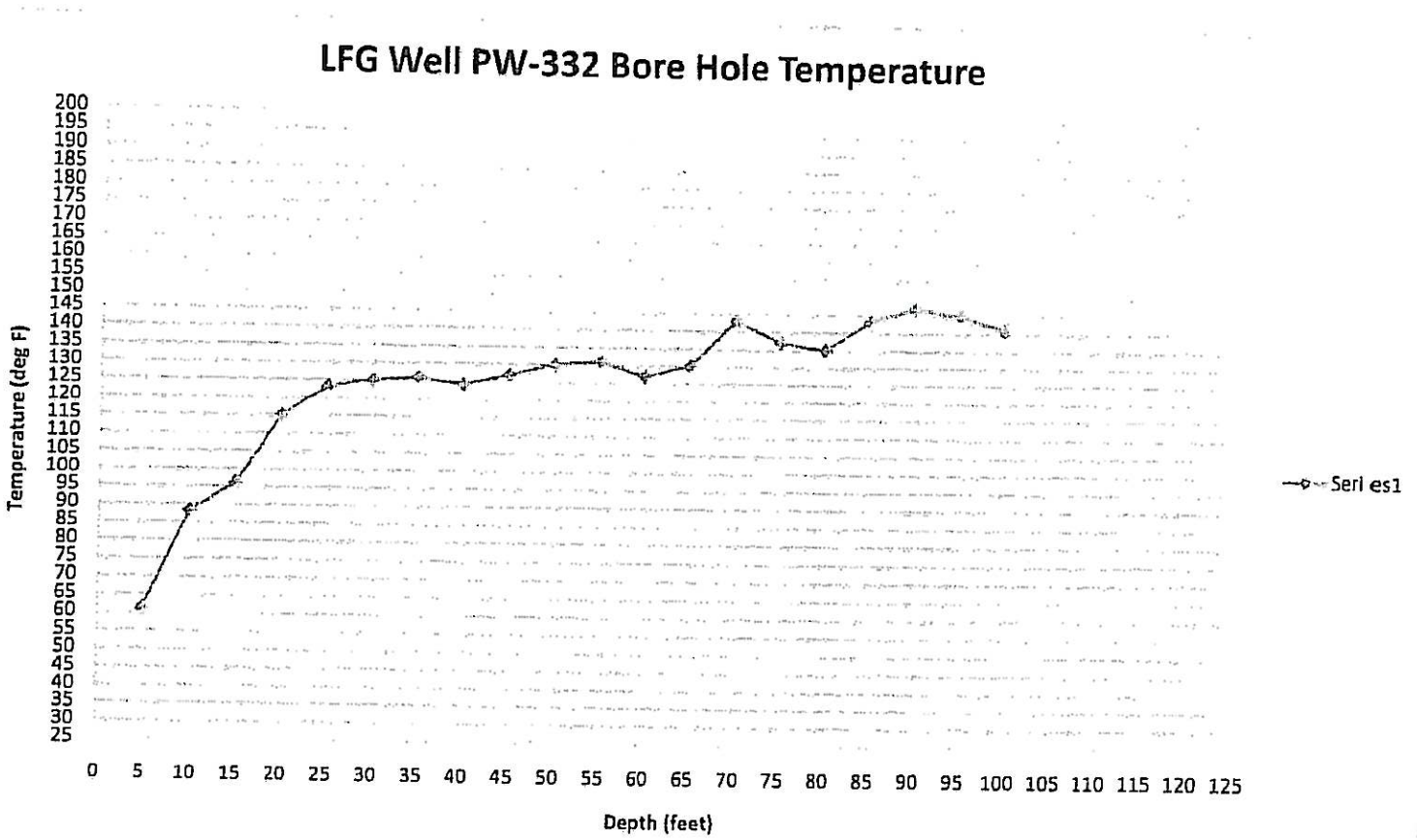
HHCT - House Hold Common Trash
PA - Paper/ Cardboard products
PL - Plastic Products
CL - Textile (clothes, fabrics)
W - Wood
M - Metal
R - Rubber
GL - Glass (Jars, Bottles)
PD - Partially Decomposed
NOTES: - Deapth reached 100'

April 20( )

TEMPERATURE BORE HOLE

043 2-004

Depth	Temp
0	0.0
5	61.0
10	88.0
15	96.0
20	115.0
25	123.0
30	125.0
35	126.0
40	124.0
45	127.0
50	130.0
55	131.0
60	127.0
65	130.0
70	143.0
75	137.0
80	135.0
85	143.0
90	147.0
95	145.0
100	141.0



GOLDER ASSOCIATES INC

Prepared by Lionel Montanez

FIELD MONITORING REPORT

PROJECT NUMBER:	043-8072.004	**PROJECT TITLE:**	CWRDF/Dewatering Well Installation/CQA/OH
OWNER:	Republic Services	**CONTRACTOR:**	AEG
LOCATION:	East Sparta,OH	**CONTRACTOR REP:**	Bob Caron

DATE: 7/8/2008 S M T W T F S

THE FOLLOWING WAS NOTED:

Julie McGowan and Amy Shubitowski arrived on site at 6:30am attended the Golder safety meeting about Open Excavation.
Then Amy proceeded to PW-359 to monitor the drilling process, while Julie attended the EPA meeting about wells PW-358 and PW-359.
AEG drilling crew arrived on site at 7:00am.
Drilling crew mobilized to PW-359.
Set up all engineering controls around the area. Did not start drilling until EPA meeting was over.
AEG awaiting for Lawhan and Associates to install the air monitoring controls.
Continued setting up for drilling.
Began drilling at 9:04am.
Completed drilling at 11:02am.
Golder verified the depth of 58' .
After lunch AEG mobilized to PW-358.
Set up all engineering controls.
Drillers had to haul another load of cover material to expand bench to reach well. Pipe line crew was running a 6" lateral line from the 12" header line to PW-358.
Began drilling at 13:25.
Completed drilling at 16:30.
Golder verified the depth being 64'.
Golder observed all parties involved wearing GX-2001 4 gas meters.

SUBMITTED BY:

Tiffany Lohr for Julie McGowan

GOLDER ASSOCIATES INC.

DAILY CONSTRUCTION LOG

Golder Associates

Project Location: Countywide Landfill, East Sparta, OH
Date: 7/8/2008
Golder Job No. **043-8072.003 Phase 0007**
Project Description: Gas Well Installation

EQUIPMENT

Description	Type	Quantity	Hours Operation
Drilling Rig	AF 110	1	9.5
Dozer			
Excavator	Cat 720C	1	9.5
Loader	Cat 953 Track	1	9.5
Dump Truck	JIB 718 ADT	1	9.5
Dump Truck			
Crain	Terex RT-200	1	9.5

MANPOWER

Description	Name	Quantity	Hours Operation
Supervisor	Wade Tufford	1	11
Foreman			
Operator	Detin Moore	1	11
Operator			
Laborer	Lee Casey	1	11

General Comments:

Drillers arrived on site at 6:30am for safety meeting. Then proceeded to set up for drilling. Upon arrival drillers mobilize to PW-359.

D Bo Julie McGowan

GAS EXTRACTION WELL BORING LOG

Golder Associates

Project Location:	Countywide LF, East Sparta, Oh	Northing:	24856.22
Site Project No.		Easting:	43002.75
Golder Job No.	043-8072.004	Gr Elev.-	1193.6
Gas Well No.	**PW-358**	Eng./Tech:	Julie McGowan
Drilling Date/Time:	7-08-2008 Start time 13:41	Driller:	Wade Tufford

DEPTH	MATERIAL DESC.	DEGREE OF DECOMPOSITION	WET/DRY	AGE	TEMP (F)
0 - 1	Cover	Clay soil	Dry		N/A
1 - 5	HHT	Light	Dry		94.0
5 - 10	HHT/Soil	Moderate	Dry		89.0
10 - 15	HHT/Soil	Moderate	Damp		105.0
15 - 20	HHT/Soil/W	Moderate	Dry		115.0
20 - 25	HHT/Soil	Moderate	Dry	Sept 2007	119.0
25 - 30	HHT	Moderate	Dry		119.0
30 - 35	HHT	Moderate	Dry		123.0
35 - 40	HHT	Moderate	Dry		128.0
40 - 45	HHT	Moderate	Dry		132.0
45 -50	HHT	Moderate	Dry		128.0
50 - 55	HHT/W	Moderate	Dry		128.0
55 - 60	HHT/T	Moderate	Dry		136.0
60 - 65	HHT	Heavy	Wet		134.0
65 - 70					
70 - 75					
75 - 80					
80 - 85					
85 - 90					
90 - 95					
95 - 100					
100 - 105					
105 - 110					
110 - 115					
115 - 120					
				AVE TEMP	119.23

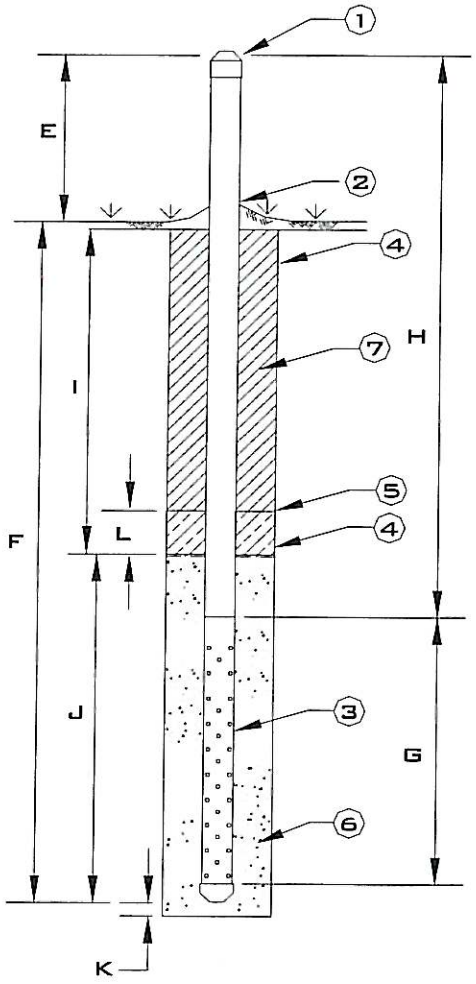
General Comments:

At 13:50 PM, a dross-like substance was noticed. AEG's Bob Caron verified that it was not.
Removed 24 cubic yards of refuse.

GAS EXTRACTION WELL BORING LOG

Golder Associates

Project Location:	Countywide LF, East Sparta, Oh	Northing	24856.22
Site Project No.		Easting	43002.75
Golder Job No.	043-8072.004	Gr Elev.	1193.6
Gas Well No.	PW-358	Eng./Tech:	Julie McGowan
Drilling Date/Time	7-8-08 Start time 13:41	Driller:	Wade Tufford



Materials List

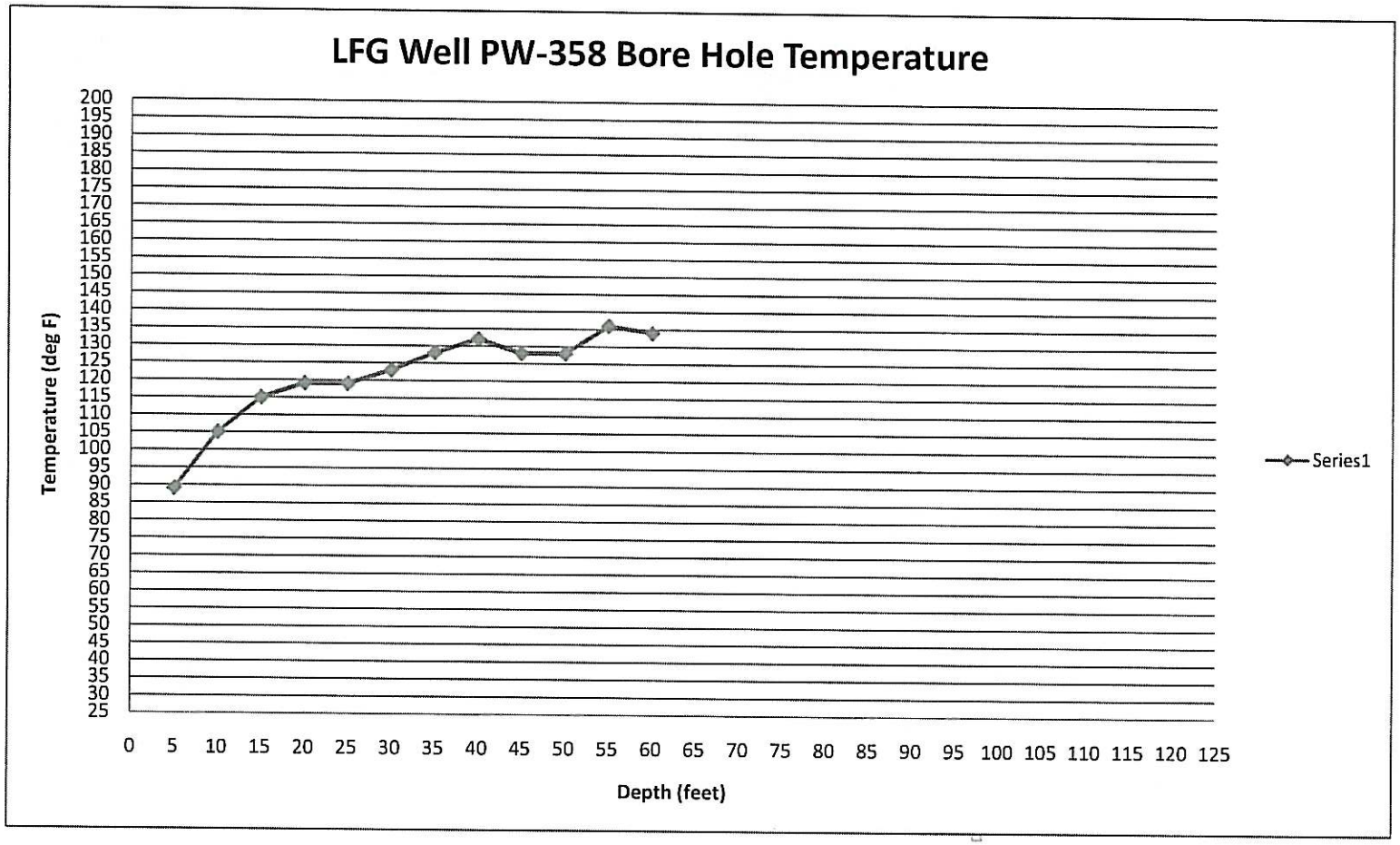
1. End cap
2. Solid pipe
3. Slotted Pipe
4. Bentonite Seal
5. Geotextile (optional)
6. Natural Stone 1"-3"
7. Clean Backfill

Specifications

A - Bore Size	36"
B- Pipe Size	6"
C- Pipe Type	CPVC
D- Bore Depth	64'
E- Pipe above ground	3'
F- Pipe below ground	64'
G- Slotted pipe length	45'
H- Solid pipe length	22'
I - Cover depth	13'
J- Stone backfill	47'
K- Stone base	0
L- Bentonite Seal	1' @ 46' & 2' @ 61'
Refuse depth	84'
Leachate depth	
Total pipe length	67'
Average refuse temp.	119.2

General Comments: Completed depth at 64'. AEG completed drilling at 15:40. Began by placing the 67' of 6" CPVC pipe in the 36" x 64' bore hole, and then placed 46' of #57 Stone. Next added a georing, a bentonite seal using 6 bags, watered it down, added 13' of soil material, then a 2' bentonite seal with 12 bags, and 1' cover.

Depth	Temp
0	94.0
5	89.0
10	105.0
15	115.0
20	119.0
25	119.0
30	123.0
35	128.0
40	132.0
45	128.0
50	128.0
55	136.0
60	134.0
65	
70	
75	
80	
85	
90	
95	
100	
105	



ATTACHMENT 2

Photographic Log

Photo #1 – Drill Rig Set-up on PW-332.

Photo #2 – Drill Cuttings for PW-332.

Photo #3 – PW-332, Newspaper found at depth 15-20ft below ground surface (bgs).

Photo #4 – PW-332, Aluminum Dross found at 90 feet bgs.

Photo #5 – PW-332, verifying depth of borehole.

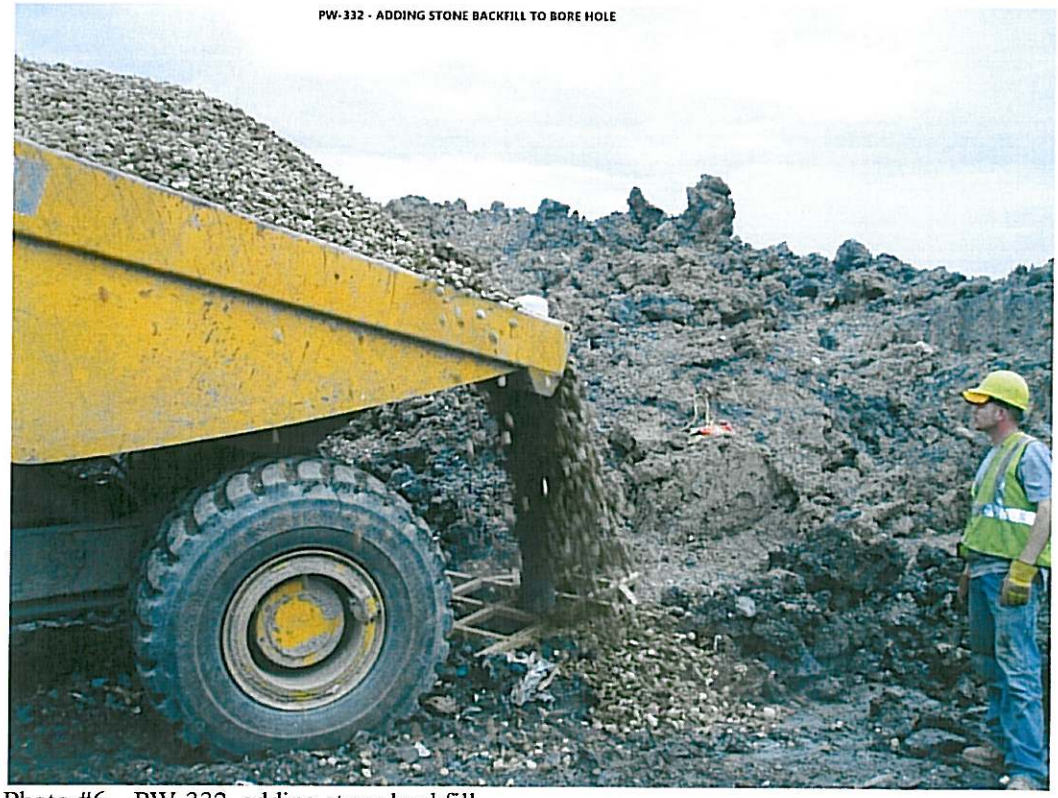


Photo #6 – PW-332, adding stone backfill.

Photo #7 – PW-332 adding bentonite to borehole.

Photo #8 – PW-358, facing southeast, drill rig mobilizing to site.

Photo #9 – PW-358, facing southwest. Drilling and perforated CPVC gas well casing.

Photo #10 – PW-358, facing southwest. Installing CPVC well casing.

Photo #11 – PW-358, adding #57 stone to well.

APPENDIX G

Fire Beak Monitoring
Point Drilling Program Report,
SCS Engineers, August 30, 2008

SCS ENGINEERS

Fire Break Monitoring Point Drilling Program Report

Countywide RDF

REPUBLIC SERVICES, INC.℠
Adding value at every stop!™

Presented to:

Republic Services of Ohio II, LLC

3619 Gracemont Street, S.W.
East Sparta, OH 44626
(330) 874-3855

Presented by:

SCS ENGINEERS
2060 Reading Road, Suite 200
Cincinnati, OH
(513) 421-5353

August 30, 2008
File No. 05206012.00

Offices Nationwide
www.scsengineers.com

Fire Break Monitoring Point Drilling Program Report

Countywide RDF

Presented to:

Republic Services of Ohio II, LLC
3619 Gracemont Street, S.W.
East Sparta, OH 44626
(330) 874-3855

Presented by:

SCS ENGINEERS
2060 Reading Road, Suite 200
Cincinnati, OH
(513) 421-5353

August 30, 2008
File No. 05206012.00

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	Thermocouple Installation	2

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List of Figures

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2	Typical FBMP Detail	10

Attachments

Attachment A Boring Logs and As Built Diagrams
Attachment B Daily Reports
Attachment C Photos

1 INTRODUCTION

Between July and August 2008, Republic Services of Ohio II, LLC (Republic) conducted the installation of the enhanced temperature monitoring system at the Countywide Recycling and Disposal Facility (Countywide), located in East Sparta, Ohio.

Work was conducted in accordance with an approved *Gas Collection and Monitoring Work Plan* submitted to the United States Environmental Protection Agency (USEPA) on April 30, 2008. The approved work plan detailed actions to be taken to address subparagraphs 15b of the Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") entered into voluntarily by the USEPA and Republic.

Specifically, subparagraph 15b of the Settlement Agreement required *"installation of an enhanced temperature monitoring system to accurately track the progression of temperatures towards Cell 7 and the western slope of Cells 1 though 6 of the landfill."*

A total of 18 fire break monitoring points (FBMPs) were installed to comply with the requirements of subparagraph 15b. Five existing FBMPs were replaced and 13 new FBMPs were installed as part of the monitoring network.

Countywide retained SCS Engineers and Frontz Drilling to complete the installation of the FBMPs. The drilling program commenced on July 17, 2008 and was completed on August 7, 2008. The final locations of the FBMPs are shown on attached Figure 1.

2 FIELD INVESTIGATION PROGRAM

FIRE BREAK MONITORING POINT INSTALLATION

Drilling depths and locations were determined prior to drilling activities based on surveyed surface elevations, base liner elevations and spatial orientation.

Prior to drill rig mobilization, the locations of the 18 proposed FBMPs were staked by Diversified Engineering, Inc (DEI) using DEI's GPS enabled Trimble 5800 survey system. Following staking layout, access benches were constructed where necessary by Beaver Excavating Company to provide drill rig access to slopes and areas covered with a temporary cap liner. Following bench construction, the locations were re-staked by DEI prior to drilling to provide verification of final surface elevations and coordinates.

The 18 fire break monitoring points were installed within cells 4, 5A, 5B, 5C and 5D, as shown in Figure 1. All borings were completed using a Versa-Drill Versa-Sonic truck-mounted drill rig advancing a 5.5-inch outside diameter steel drill casing in 10 or 20-foot sections. A lost-point disposable drill bit was used to prevent waste material from entering the drill casing during casing advancement. Subsequently, no samples of waste material were logged or collected during installation of the FBMPs.

Once the drill casing was advanced to the target depth, the disposable drill bit was knocked off the drill casing by means of dropping a weighted steel rod through the drill casing on to the drill

bit and breaking the temporary welds connecting the drill bit to the drill casing. The weighted steel rod was removed prior to thermocouple installation. Water was introduced through the drill rods during drilling to lubricate the drill casing and cool the formation. On average, approximately 2,200 gallons of water was used for every 100 lineal feet of drill depth.

Once the disposable drill bit was freed from the drill casing, the drill depth was again confirmed prior to installation of the thermocouple string.

A boring log and as-built diagram of each borehole was completed which include description of installed components. Copies of the boring logs are included in Attachment A of this report.

THERMOCOUPLE INSTALLATION

Type-T, 20 gauge thermocouples wire of varying lengths were provided by Pyro Services of Madison Heights, Michigan. The pre-cut and welded thermocouples were provided 10-feet longer than the burial depth to facilitate above grade installation and to account for access bench thickness. Pyro Services affixed adhesive labels to each thermocouple wire indicating the total lead length. The adhesive labels therefore indicate a length 10-foot greater than the actual burial depth. A schedule indicating the burial depth of thermocouples at each location is provided as Table 2.

Prior to installation, thermocouple strings were assembled by JMW Welding and Manufacturing according the thermocouple schedule. Thermocouples were installed at 10-foot intervals in each boring beginning at a depth 25 to 35-feet below grade. Individual thermocouple wires were attached to one another every 3-foot to prevent movement during handling and installation. Additionally, color-coded tape was affixed to each thermocouple to facilitate identification of thermocouple lengths should the adhesive labels provided by Pyro Services come loose during installation. The thermocouple wires were then placed in a protective Kevlar sock to prevent abrasion of the wires during installation and handling. The continuous Kevlar sock was extended from the bottom of the borehole to within 5 to 7-feet below grade before transitioning to a 10-foot long, 1.5-inch diameter SCH 40 PVC conduit which extended above grade. The sock was attached to the PVC conduit using a type-NM cable clamp. A 0.375-inch diameter fiberglass rod was attached to the sock and to the 1.5-inch PVC conduit prior to installation in the borehole to act as a spine for the thermocouples and maintain their relative position in the borehole during grouting and drill casing removal.

Following placement of the thermocouple string in the borehole, a grout consisting of 90% Baroid Benseal 8-mesh bentonite and 10% Portland cement was mixed and tremied into the borehole. Following placement of the grout mixture, the drill casing was removed and the grout mixture was topped off. A 5 to 8-foot thick seal of 0.375-inch bentonite chips was placed at the surface and was hydrated following removal of the drill casing. Granular bentonite was placed into the 1.5-inch PVC conduit and was hydrated at locations FBMP-8 to FBMP-18. This was necessary due to landfill gas migrating through the sock and conduit after installation of the thermocouples at FBMP-7.

A 1.5-inch explosion-proof seal-off fitting was attached to the PVC conduit approximately 2 to 3-feet above grade. The seal-off fitting was filled with Chico fiber and Chico A-5 cementitious grout to prevent migration of landfill gas and/or leachate to the surface. A 12”x12”x6” NEMA 3R junction box was attached to the seal-off fitting to provide a weather resistant enclosure for the terminal ends of the individual thermocouples. Type-T mini plug terminals were attached to the individual leads of each thermocouple to facilitate temperature measurements using a Fluke 51-II thermocouple meter. A detail of the typical FBMP detail is included as Figure 2.

Tables

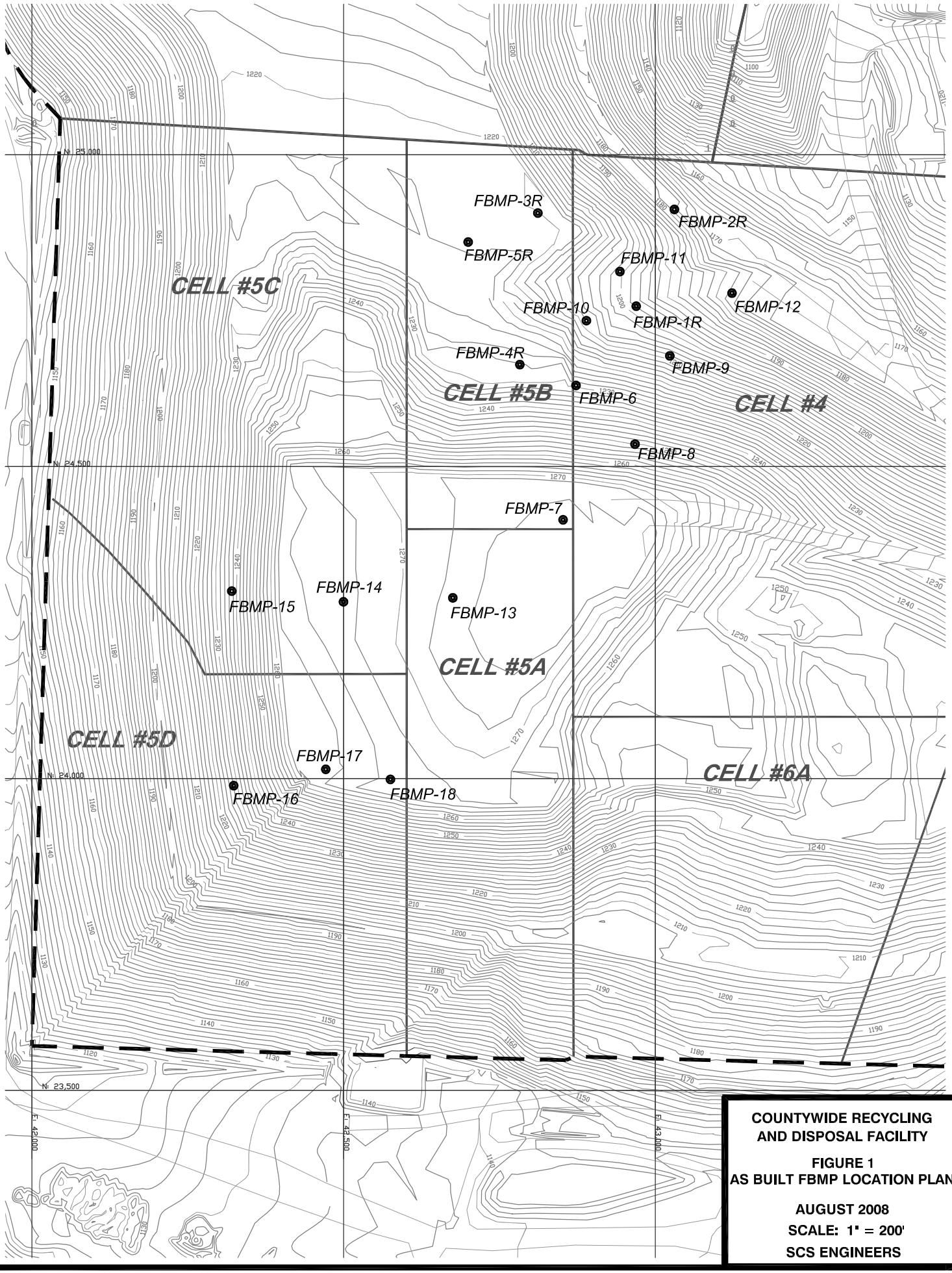
Table 1. As Built FBMP Schedule

Boring Location	Date Installed	Northing	Easting	Surface Elevation (msl)	Base Liner Elevation (msl)	Landfill Depth (feet)	Boring Depth (feet)
FBMP-1R	7/18/08	24757.18	42969.47	1197.62	1075	122.6	105
FBMP-2R	7/22/08	24912.36	43030.68	1176.67	1129	47.7	35
FBMP-3R	7/17/08	24906.54	42811.72	1219.70	1116	103.7	85
FBMP-4R	7/18/08	24663.47	42782.79	1225.93	1056	169.9	140
FBMP-5R	7/21/08	24859.97	42699.94	1220.94	1096	124.9	110
FBMP-6	7/22/08	24630.07	42872.87	1232.27	1067	165.3	145
FBMP-7	7/23/08	24414.69	42852.17	1271.89	1063	208.9	185
FBMP-8	7/23/08	24535.98	42967.59	1239.89	1059	180.9	165
FBMP-9	7/24/08	24677.46	43023.46	1204.75	1058	146.8	125
FBMP-10	7/25/08	24733.95	42889.61	1205.95	1065	141.0	125
FBMP-11	7/28/08	24812.72	42943.32	1197.66	1093	104.7	85
FBMP-12	7/28/08	24778.11	43123.14	1177.03	1086	91.0	75
FBMP-13	7/29/08	24289.56	42675.33	1270.86	1057	213.9	195
FBMP-14	7/30/08	24283.13	42499.91	1265.17	1057	208.2	195
FBMP-15	8/5/08	24300.36	42320.69	1236.58	1058	178.6	155
FBMP-16	8/6/08	23988.48	42323.78	1227.60	1057	170.6	145
FBMP-17	8/6/08	24014.59	42471.46	1259.44	1055	204.4	185
FBMP-18	8/4/08	23998.46	42575.23	1261.54	1058	203.5	185

Table 2. As Built Thermocouple Schedule

Boring Location	Boring Depth (feet)	Thermocouple Depths (feet)																
FBMP-1R	105	35	45	55	65	75	85	95	105									
FBMP-2R	35	32																
FBMP-3R	85	22	32	42	52	62	72	82										
FBMP-4R	140	40	50	60	70	80	90	100	110	120	130	140						
FBMP-5R	110	40	50	60	70	80	90	100	110									
FBMP-6	145	35	45	55	65	75	85	95	105	115	125	135	145					
FBMP-7	185	35	45	55	65	75	85	95	105	115	125	135	145	155	165	175	185	
FBMP-8	165	35	45	55	65	75	85	95	105	115	125	135	145	155	165			
FBMP-9	125	35	45	55	65	75	85	95	105	115	125							
FBMP-10	125	35	45	55	65	75	85	95	105	115	125							
FBMP-11	85	35	45	55	65	75	85											
FBMP-12	75	35	45	55	65	75												
FBMP-13	195	35	45	55	65	75	85	95	105	115	125	135	145	155	165	175	185	195
FBMP-14	195	35	45	55	65	75	85	95	105	115	125	135	145	155	165	175	185	195
FBMP-15	155	35	45	55	65	75	85	95	105	115	125	135	145	155				
FBMP-16	145	35	45	55	65	75	85	95	105	115	125	135	145					
FBMP-17	185	35	45	55	65	75	85	95	105	115	125	135	145	155	165	175	185	
FBMP-18	185	35	45	55	65	75	85	95	105	115	125	135	145	155	165	175	185	

Figures

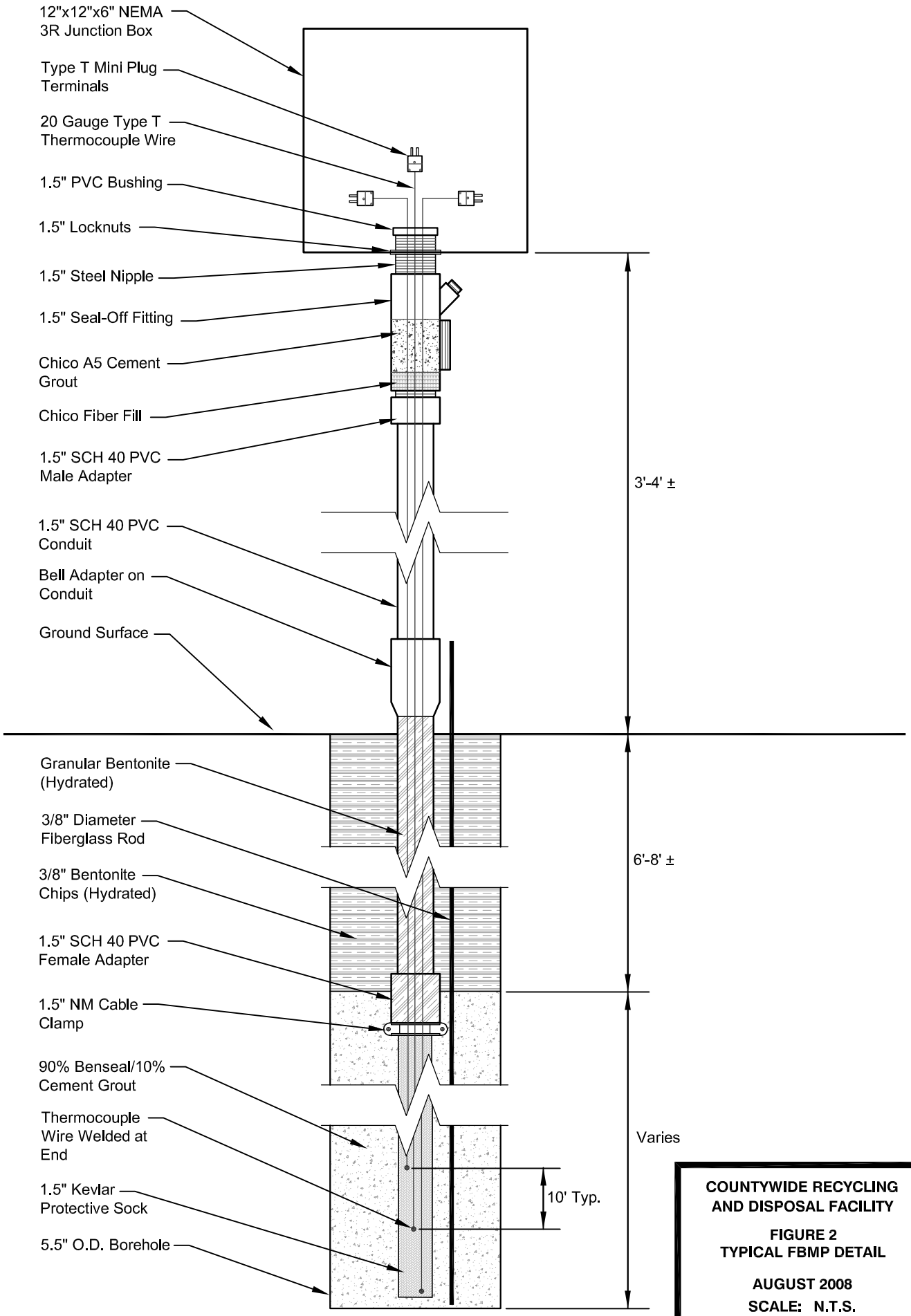


COUNTYWIDE RECYCLING AND DISPOSAL FACILITY

FIGURE 1
AS BUILT FBMP LOCATION PLAN

AUGUST 2008
SCALE: 1" = 200'
SCS ENGINEERS

I: \PROJECT\05206012 – Countywide Landfill\US EPA Settlement Agreement\Implementation of Enhanced Gas Extr & Mon Work Plan\Report\FBMP As Built Plan.dwg Sep 19, 2008 – 4:06pm Layout Name: Layout1 By: 2122apt



COUNTYWIDE RECYCLING AND DISPOSAL FACILITY

FIGURE 2
TYPICAL FBMP DETAIL

AUGUST 2008
SCALE: N.T.S.
SCS ENGINEERS

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Attachment A

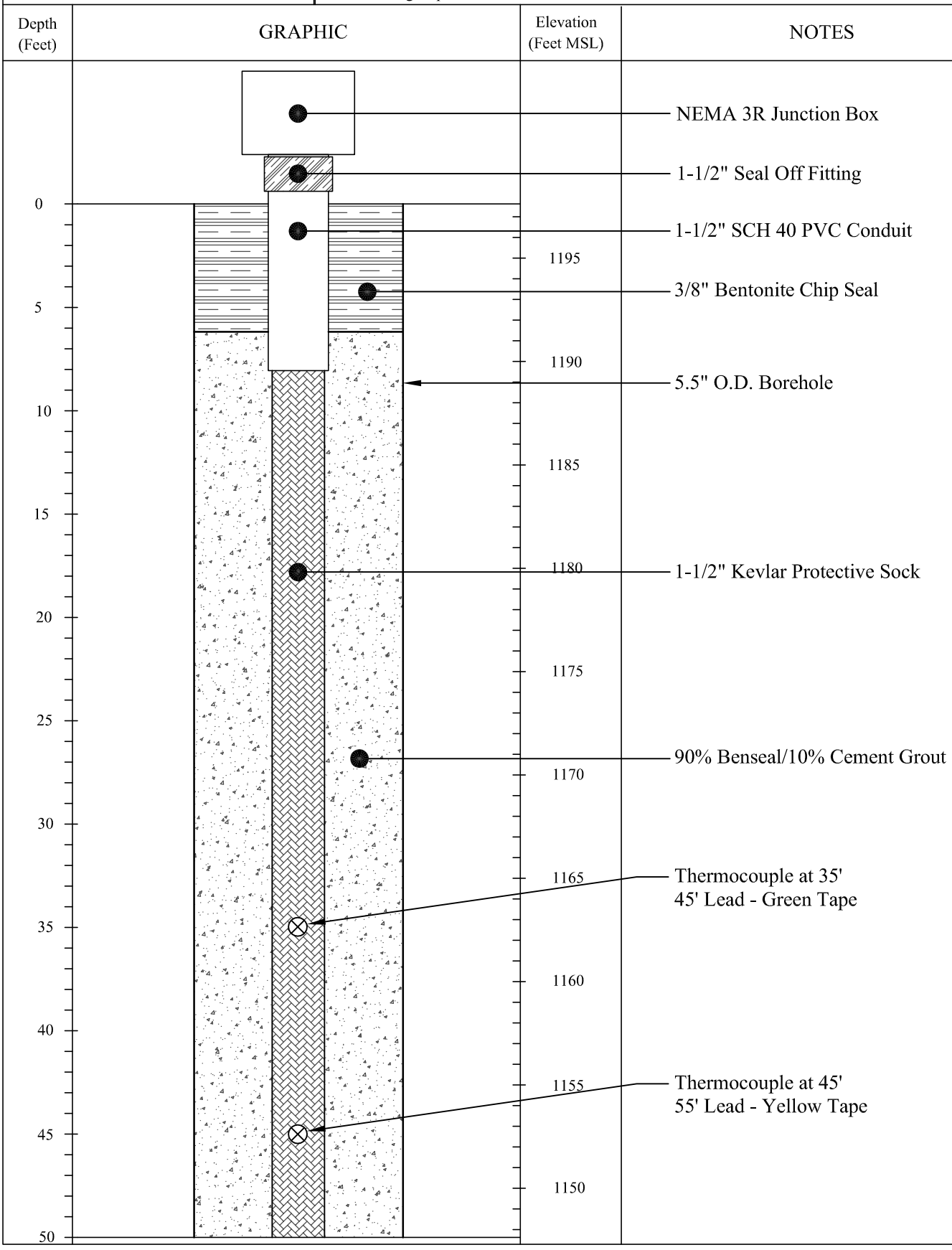
Boring Logs and As-built Diagrams

SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-1R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/17/08
Drilled By:	Frontz Drilling	Date Completed:	07/18/08
Boring Method:	Sonic - Lost Point	Northing:	24757.18
Boring Diameter:	5.5"	Easting:	42969.47
Total Boring Depth:	105'	Surface Elevation:	1197.62

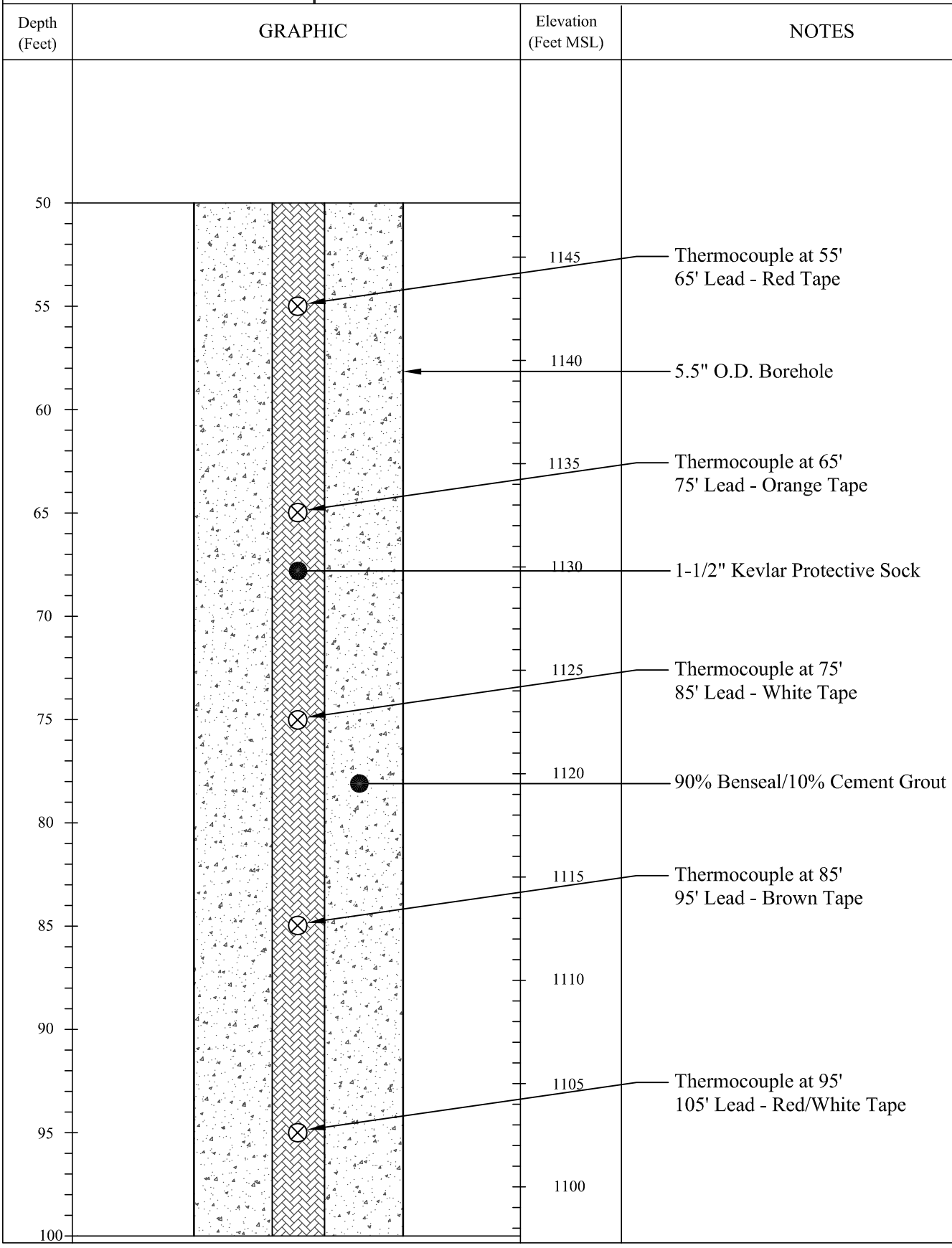


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-1R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/17/08
Drilled By:	Frontz Drilling	Date Completed:	07/18/08
Boring Method:	Sonic - Lost Point	Northing:	24757.18
Boring Diameter:	5.5"	Easting:	42969.47
Total Boring Depth:	105'	Surface Elevation:	1197.62

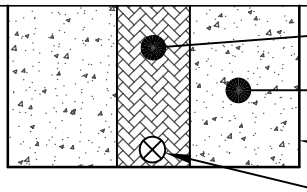


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-1R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/17/08
Drilled By:	Frontz Drilling	Date Completed:	07/18/08
Boring Method:	Sonic - Lost Point	Northing:	24757.18
Boring Diameter:	5.5"	Easting:	42969.47
Total Boring Depth:	105'	Surface Elevation:	1197.62

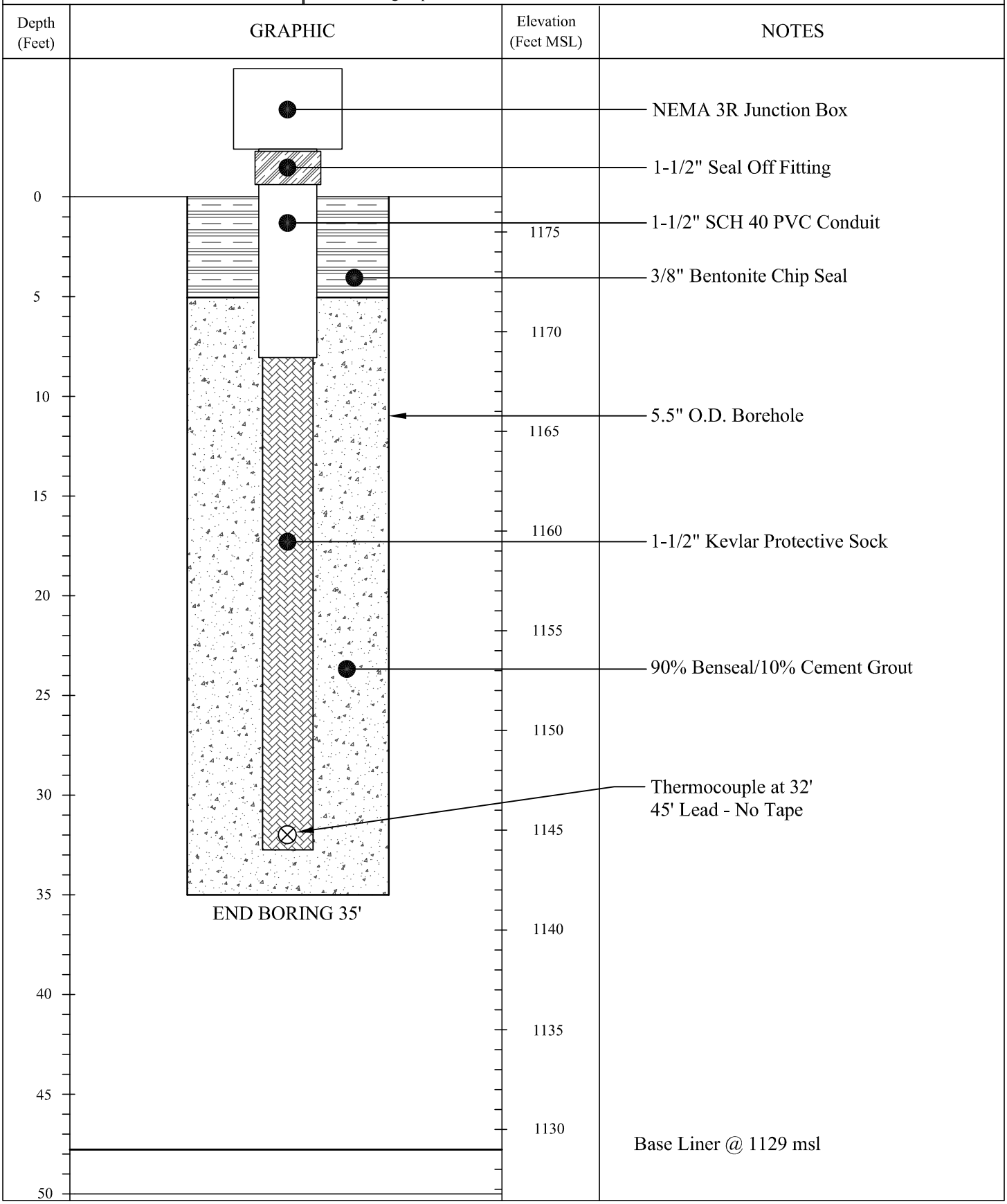
Depth (Feet)	GRAPHIC	Elevation (Feet MSL)	NOTES
100			1-1/2" Kevlar Protective Sock
		1095	90% Benseal/10% Cement Grout
105			5.5" O.D. Borehole
	END BORING 105'	1090	Thermocouple at 105' 115' Lead - Orange/Yellow Tape
110			
		1085	
115			
		1080	
120			
		1075	Base Liner @ 1075' msl
125			
		1070	
130			
		1065	
135			
		1060	
140			
		1055	
145			
		1050	
150			

SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-2R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/22/08
Drilled By:	Frontz Drilling	Date Completed:	07/22/08
Boring Method:	Sonic - Lost Point	Northing:	24912.36
Boring Diameter:	5.5"	Easting:	43030.68
Total Boring Depth:	35'	Surface Elevation:	1176.67

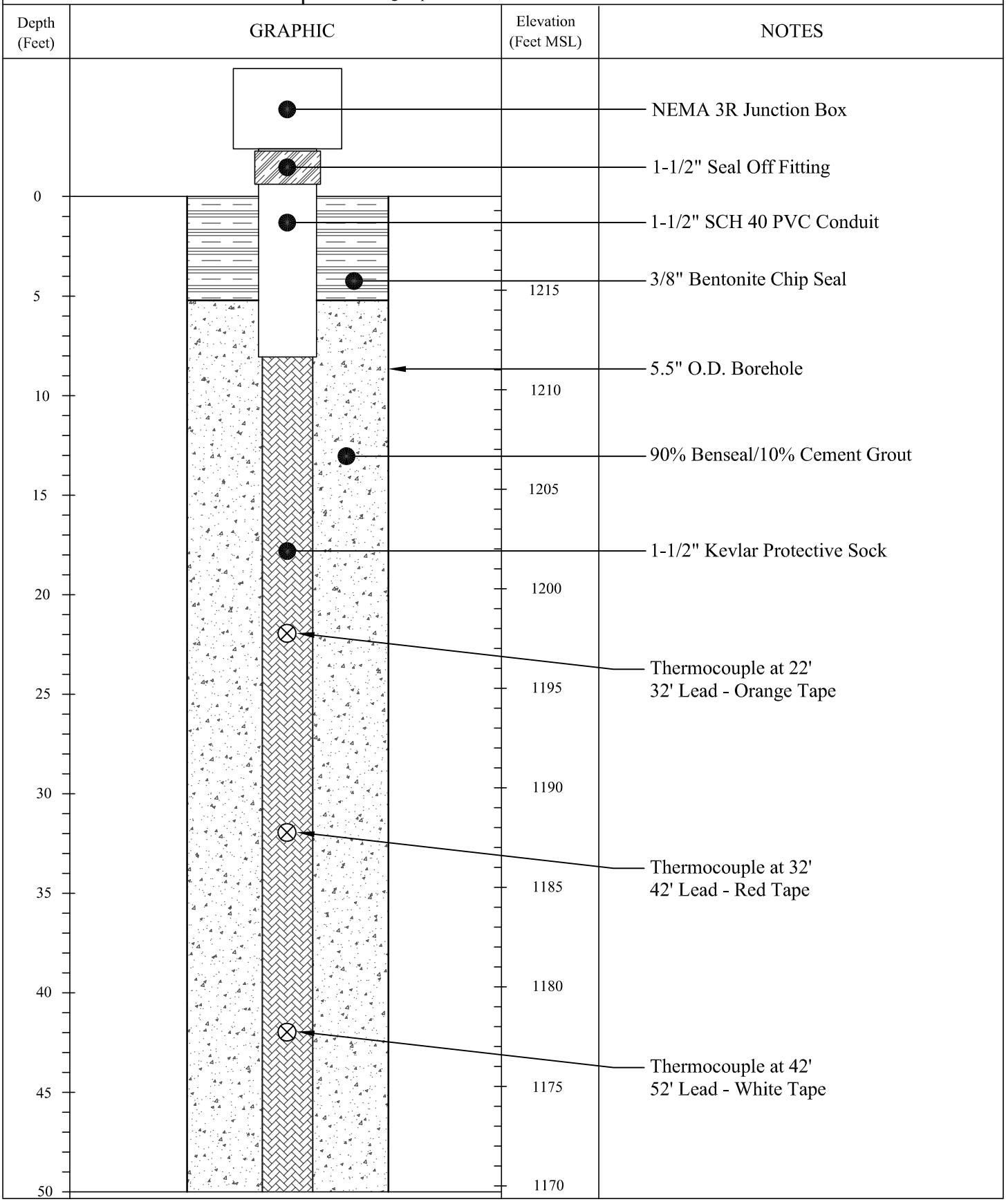


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-3R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/17/08
Drilled By:	Frontz Drilling	Date Completed:	07/17/08
Boring Method:	Sonic - Lost Point	Northing:	24906.54
Boring Diameter:	5.5"	Easting:	42811.72
Total Boring Depth:	85'	Surface Elevation:	1219.70

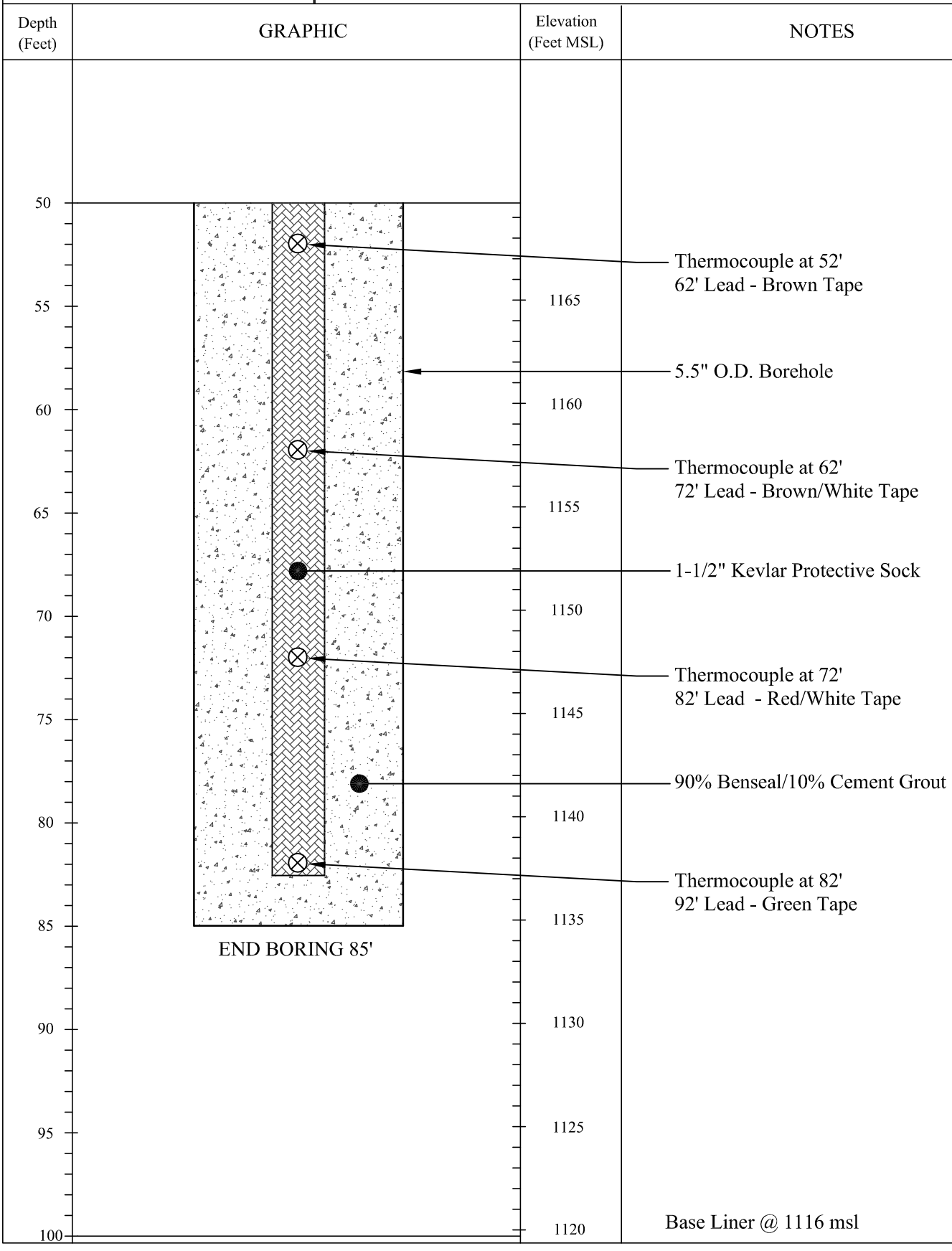


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-3R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/17/08
Drilled By:	Frontz Drilling	Date Completed:	07/17/08
Boring Method:	Sonic - Lost Point	Northing:	24906.54
Boring Diameter:	5.5"	Easting:	42811.72
Total Boring Depth:	85'	Surface Elevation:	1219.70

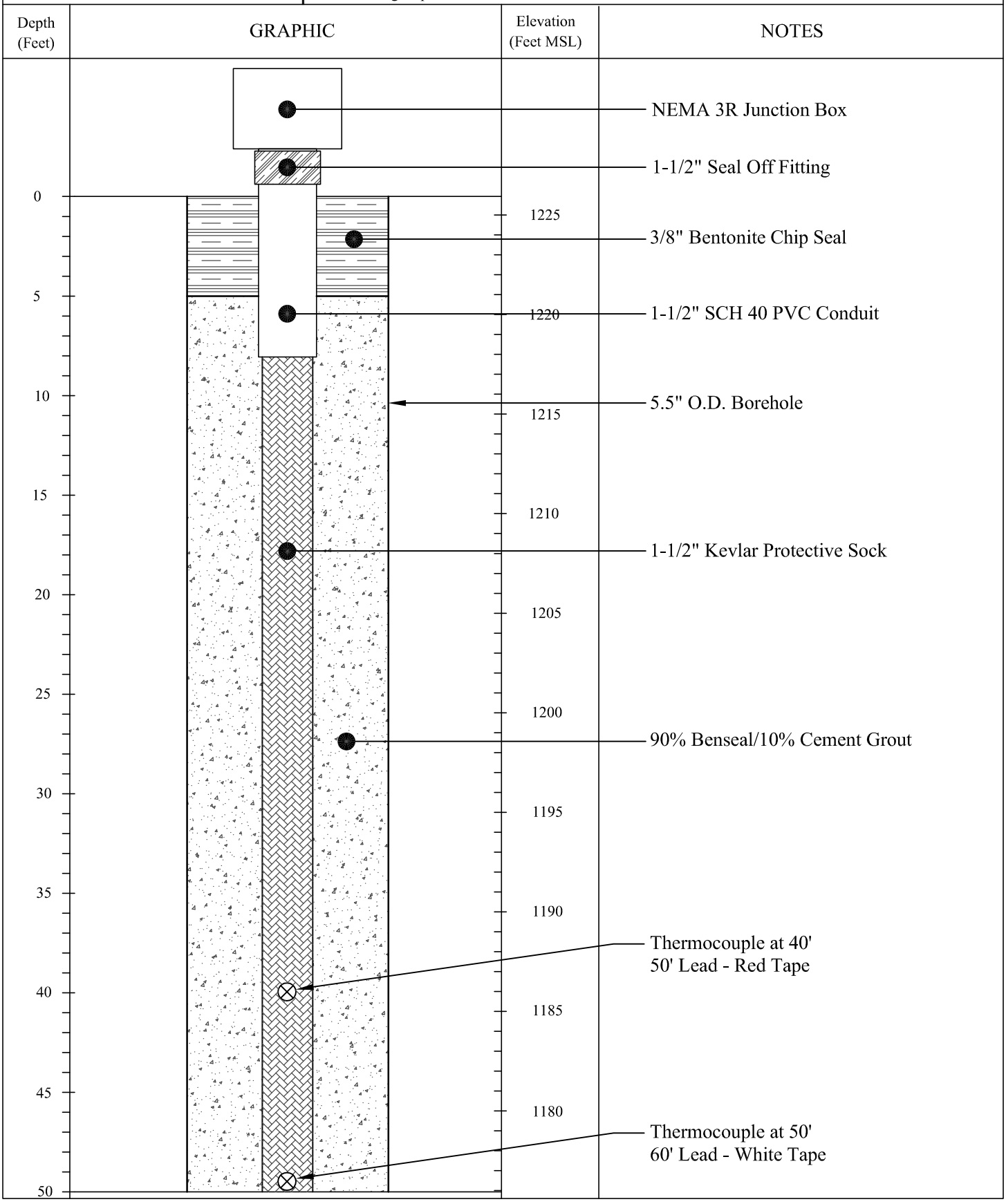


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-4R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/18/08
Drilled By:	Frontz Drilling	Date Completed:	07/18/08
Boring Method:	Sonic - Lost Point	Northing:	24663.47
Boring Diameter:	5.5"	Easting:	42782.79
Total Boring Depth:	140'	Surface Elevation:	1225.93

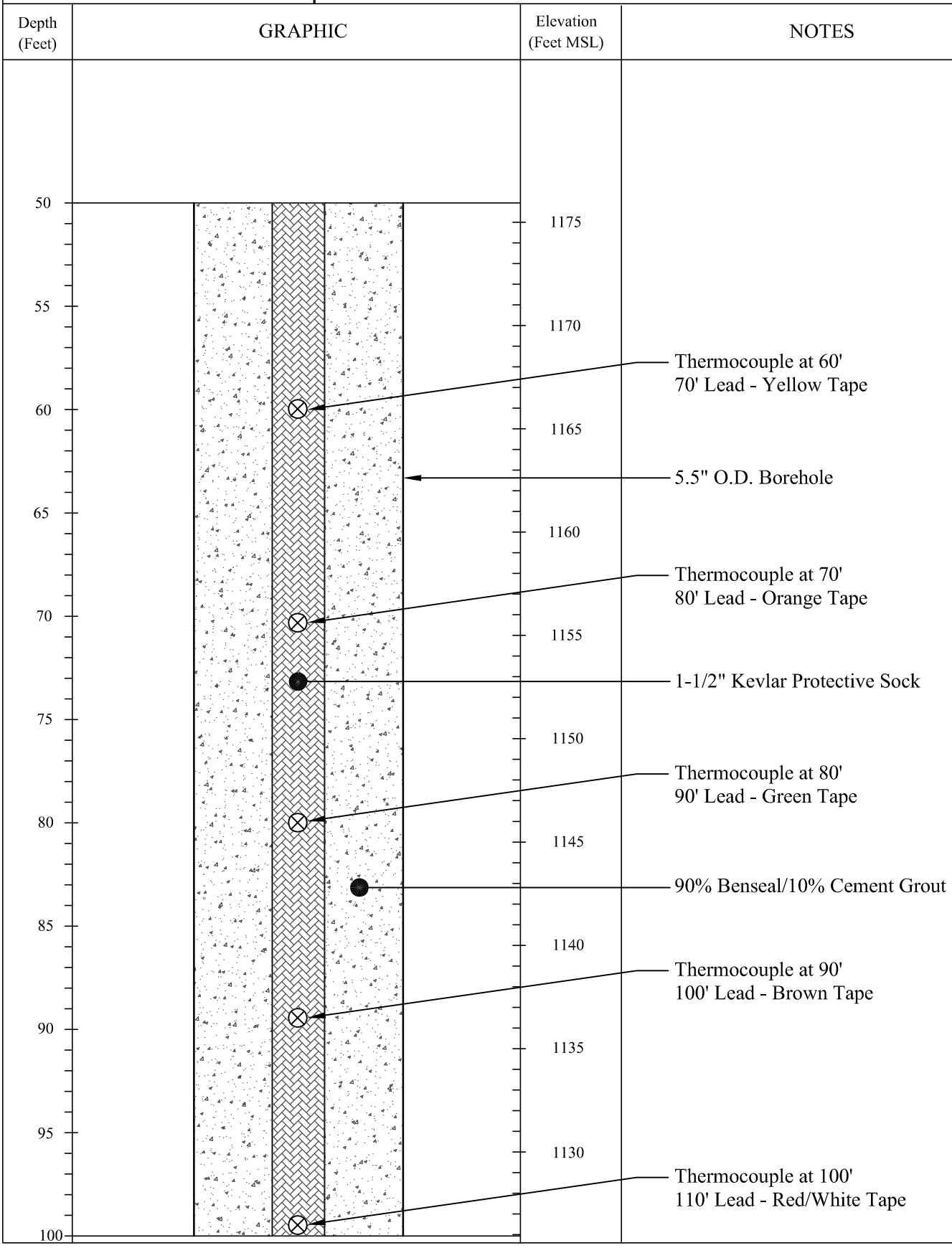


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-4R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/18/08
Drilled By:	Frontz Drilling	Date Completed:	07/18/08
Boring Method:	Sonic - Lost Point	Northing:	24663.47
Boring Diameter:	5.5"	Easting:	42782.79
Total Boring Depth:	140'	Surface Elevation:	1225.93

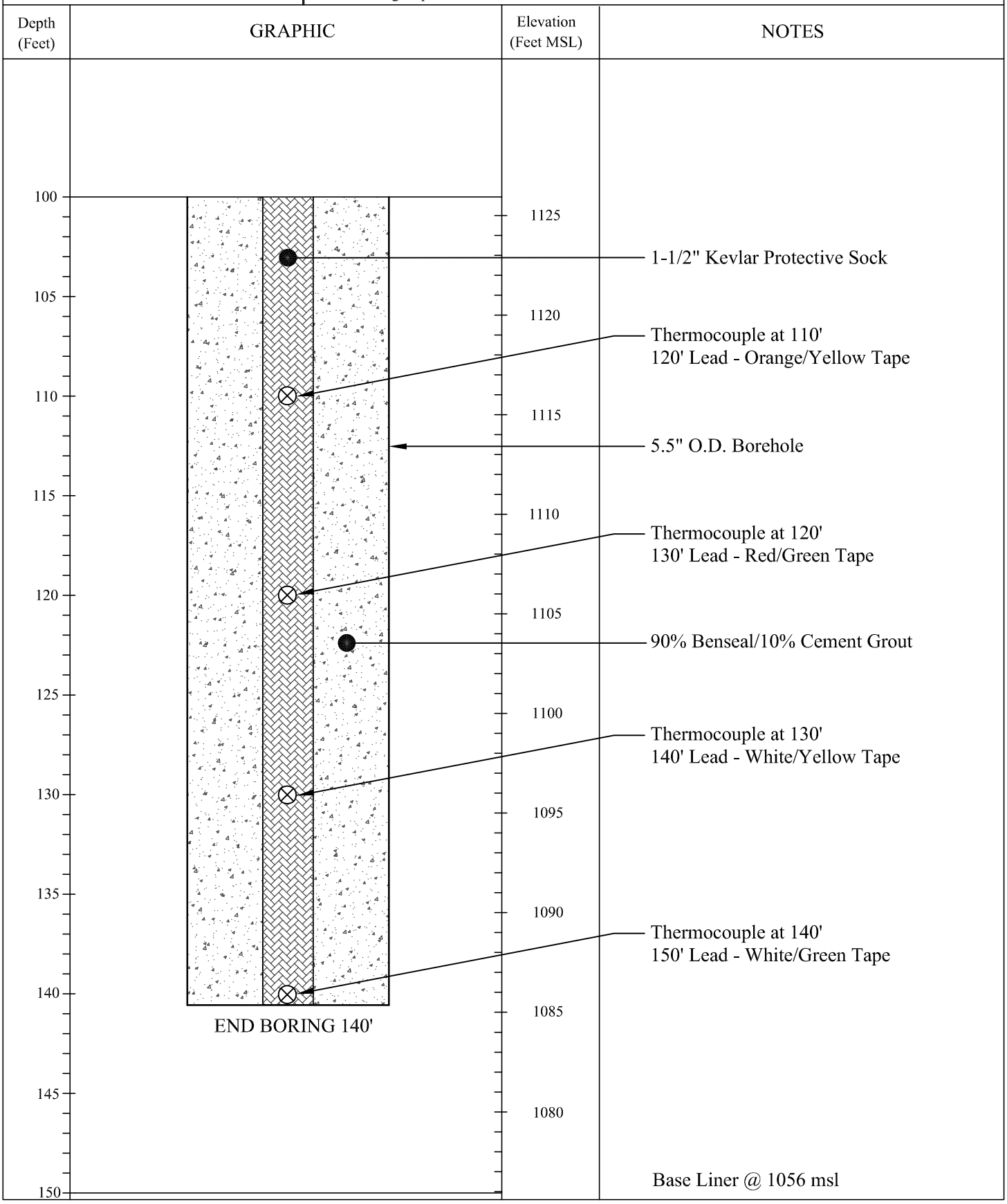


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-4R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/18/08
Drilled By:	Frontz Drilling	Date Completed:	07/18/08
Boring Method:	Sonic - Lost Point	Northing:	24663.47
Boring Diameter:	5.5"	Easting:	42782.79
Total Boring Depth:	140'	Surface Elevation:	1225.93

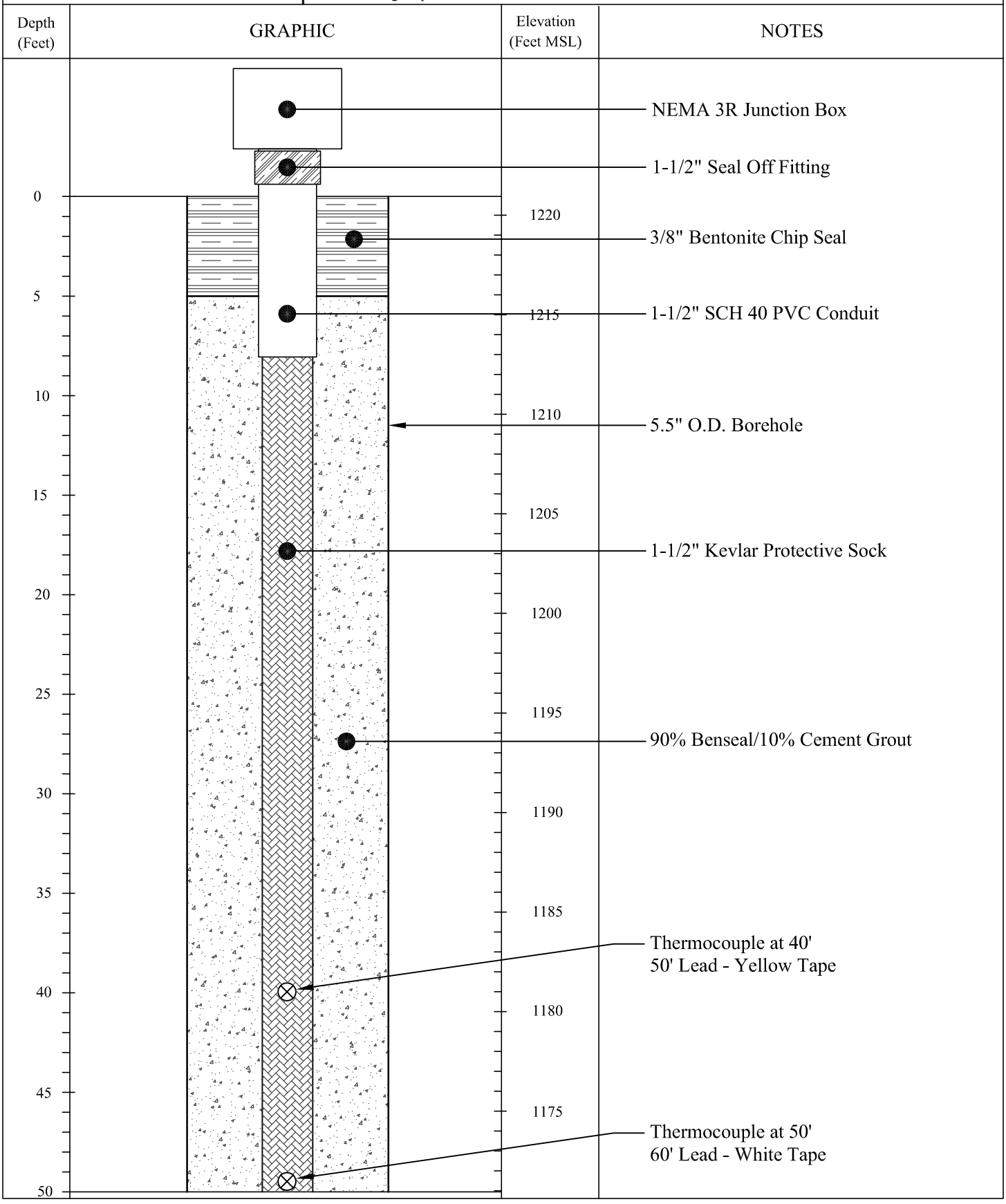


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-5R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/21/08
Drilled By:	Frontz Drilling	Date Completed:	07/21/08
Boring Method:	Sonic - Lost Point	Northing:	24859.97
Boring Diameter:	5.5"	Easting:	42699.94
Total Boring Depth:	110'	Surface Elevation:	1220.94

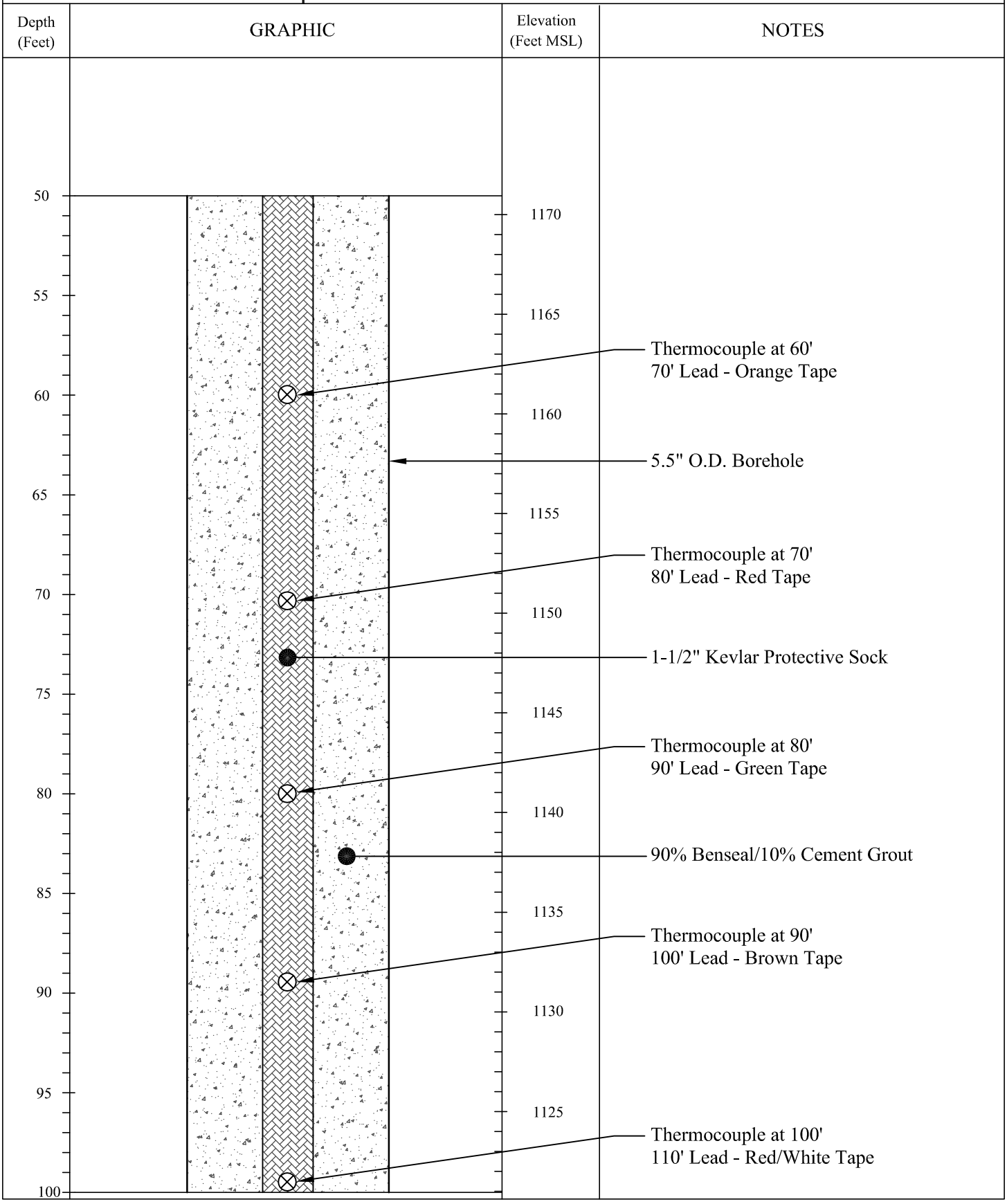


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-5R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/21/08
Drilled By:	Frontz Drilling	Date Completed:	07/21/08
Boring Method:	Sonic - Lost Point	Northing:	24859.97
Boring Diameter:	5.5"	Easting:	42699.94
Total Boring Depth:	110'	Surface Elevation:	1220.94

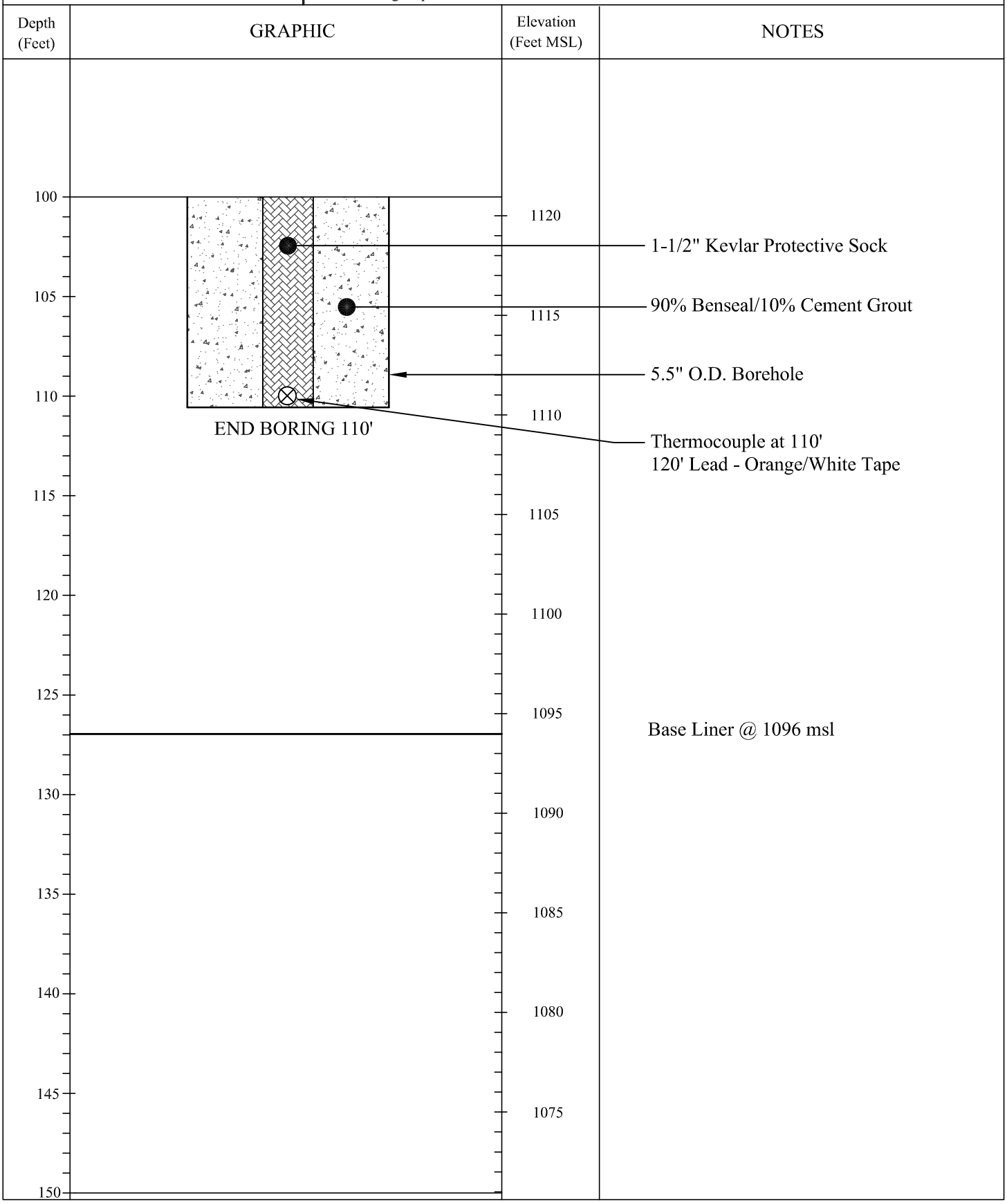


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-5R

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/21/08
Drilled By:	Frontz Drilling	Date Completed:	07/21/08
Boring Method:	Sonic - Lost Point	Northing:	24859.97
Boring Diameter:	5.5"	Easting:	42699.94
Total Boring Depth:	110'	Surface Elevation:	1220.94

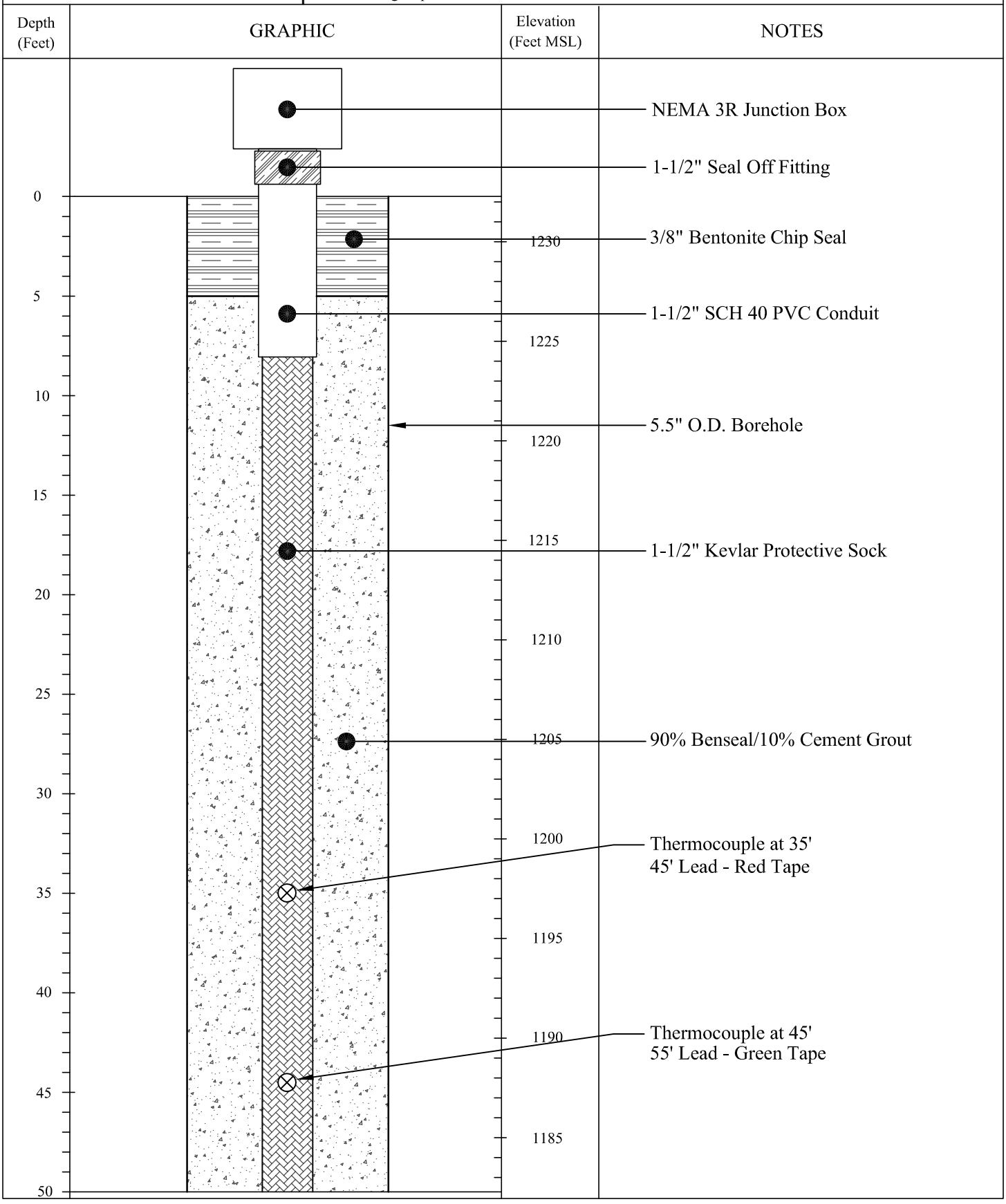


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-6

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/21/08
Drilled By:	Frontz Drilling	Date Completed:	07/22/08
Boring Method:	Sonic - Lost Point	Northing:	24630.07
Boring Diameter:	5.5"	Easting:	42872.87
Total Boring Depth:	145'	Surface Elevation:	1232.27

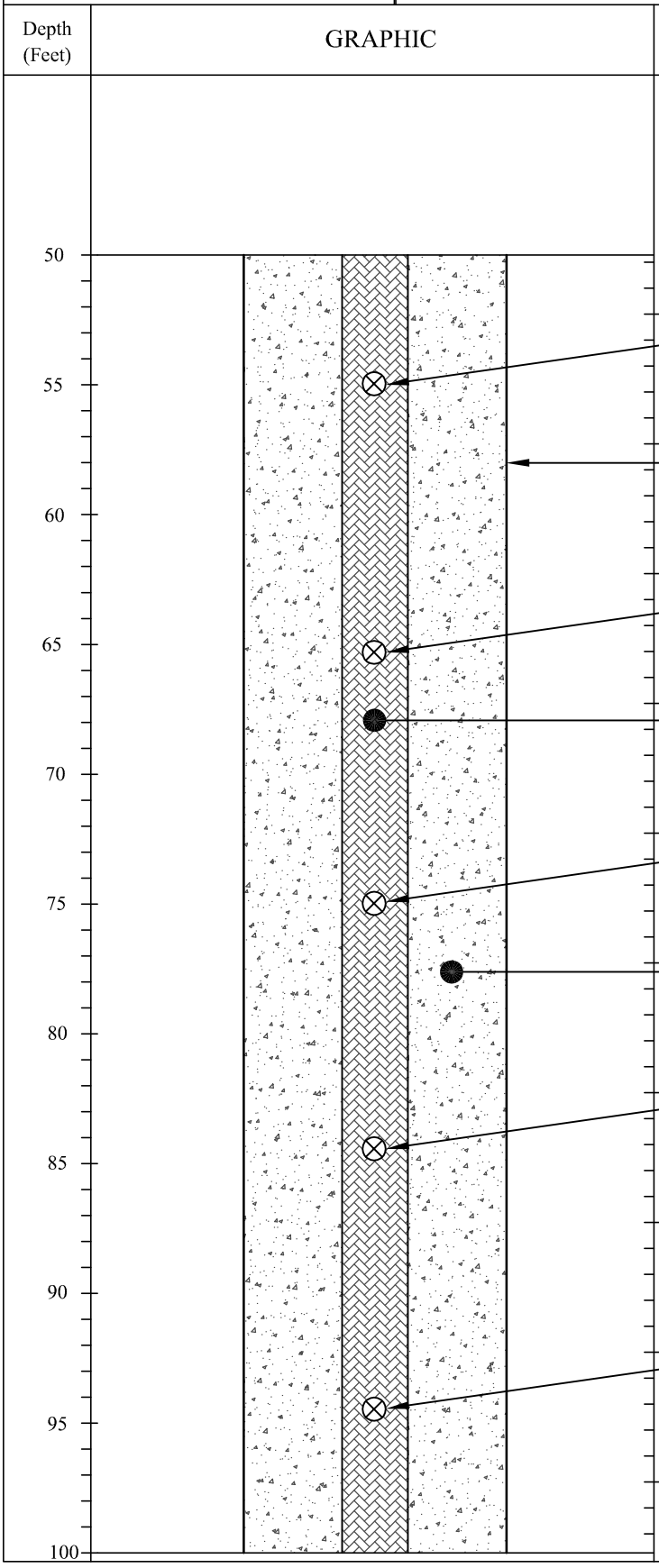


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-6

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/21/08
Drilled By:	Frontz Drilling	Date Completed:	07/22/08
Boring Method:	Sonic - Lost Point	Northing:	24630.07
Boring Diameter:	5.5"	Easting:	42872.87
Total Boring Depth:	145'	Surface Elevation:	1232.27

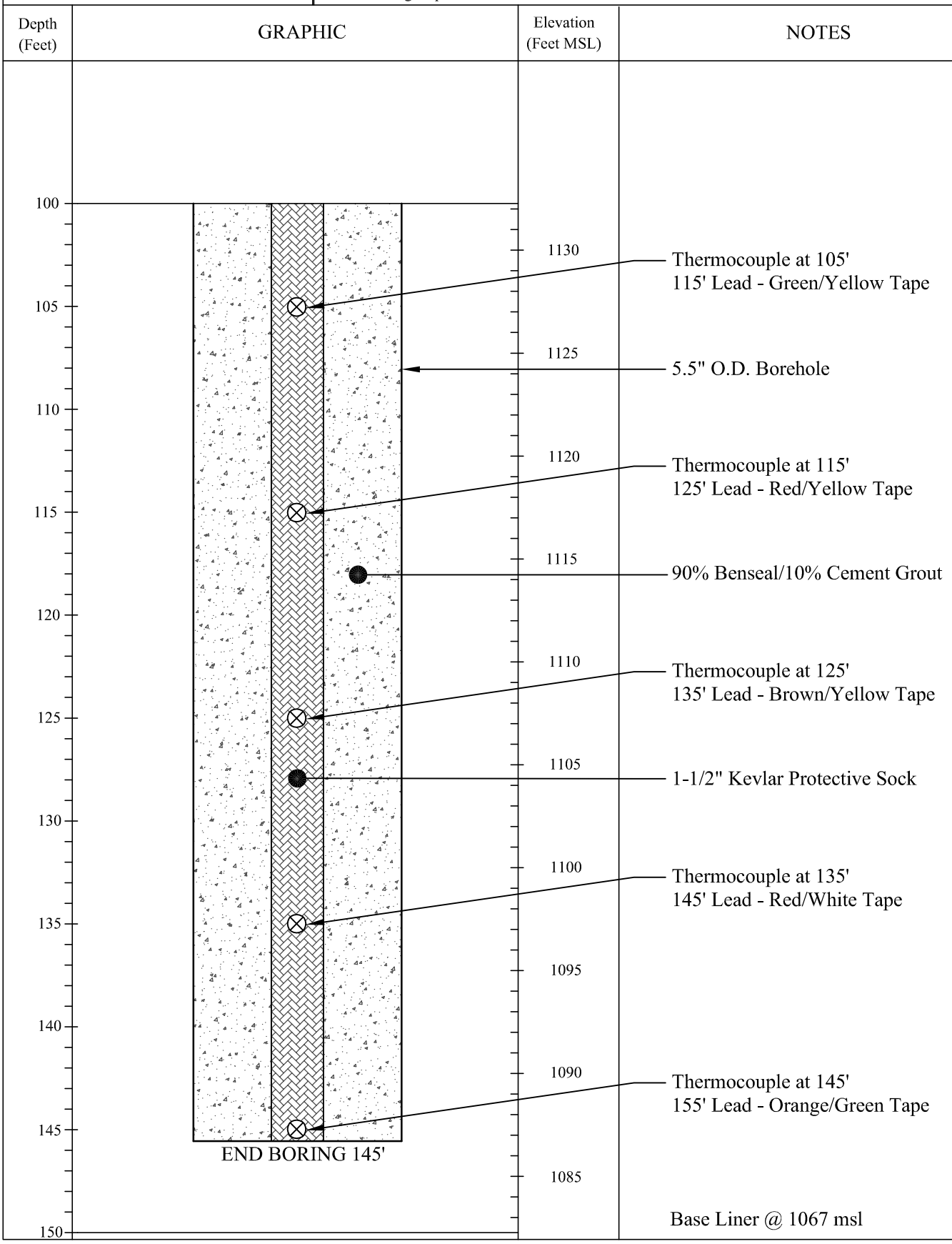


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-6

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/21/08
Drilled By:	Frontz Drilling	Date Completed:	07/22/08
Boring Method:	Sonic - Lost Point	Northing:	24630.07
Boring Diameter:	5.5"	Easting:	42872.87
Total Boring Depth:	145'	Surface Elevation:	1232.27

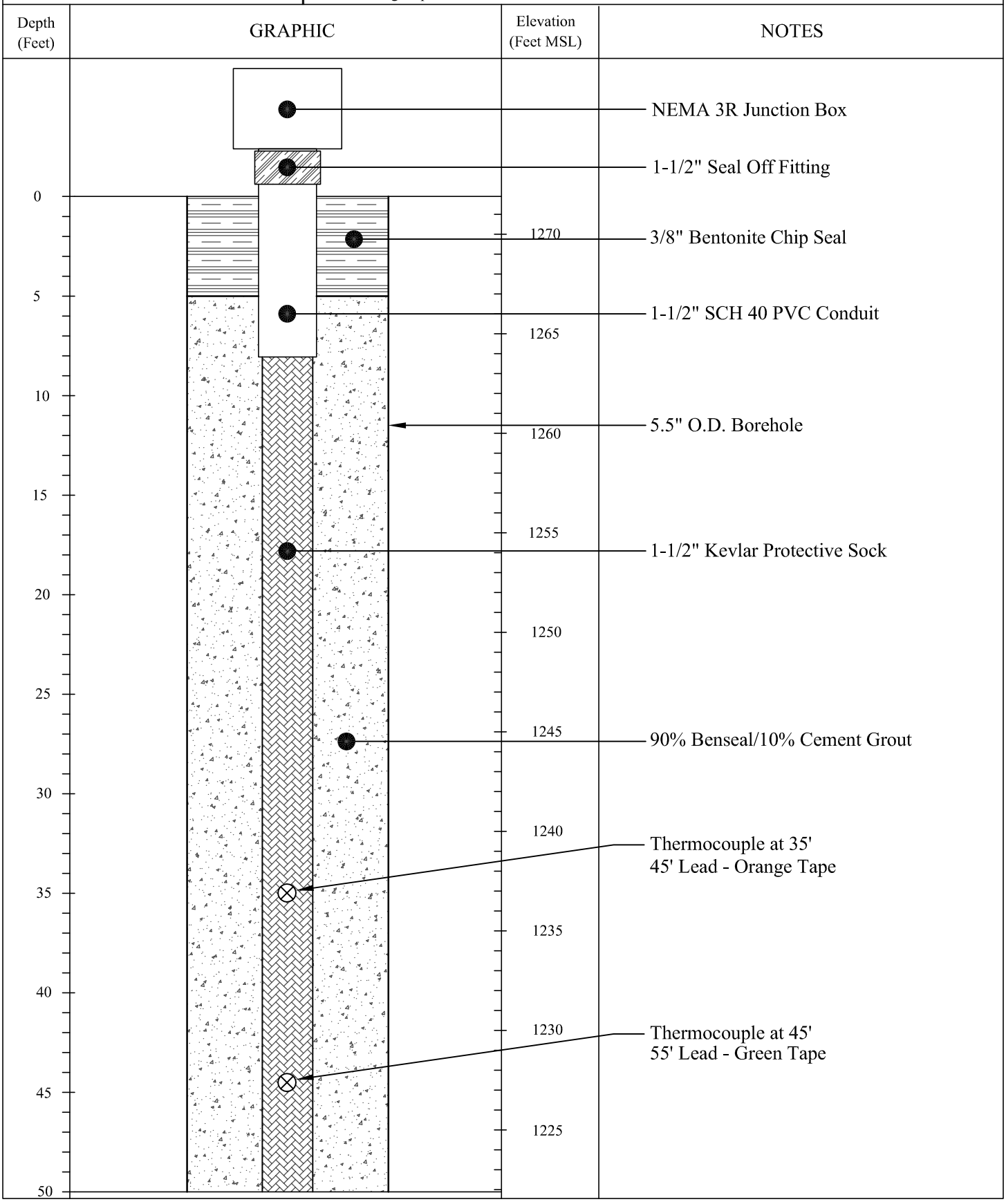


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-7

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/22/08
Drilled By:	Frontz Drilling	Date Completed:	07/23/08
Boring Method:	Sonic - Lost Point	Northing:	24414.69
Boring Diameter:	5.5"	Easting:	42852.17
Total Boring Depth:	185'	Surface Elevation:	1271.89

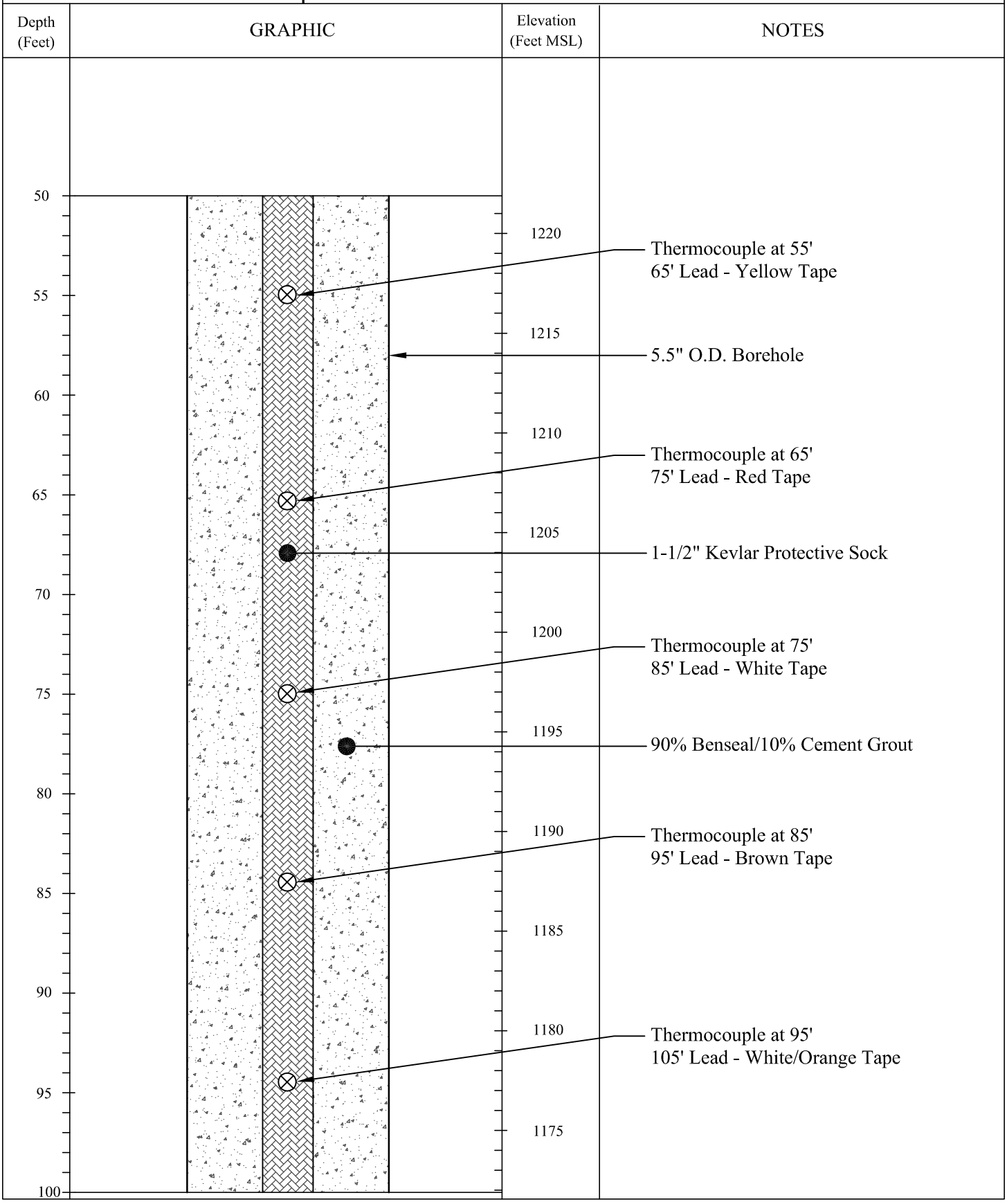


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-7

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/22/08
Drilled By:	Frontz Drilling	Date Completed:	07/23/08
Boring Method:	Sonic - Lost Point	Northing:	24414.69
Boring Diameter:	5.5"	Easting:	42852.17
Total Boring Depth:	185'	Surface Elevation:	1271.89

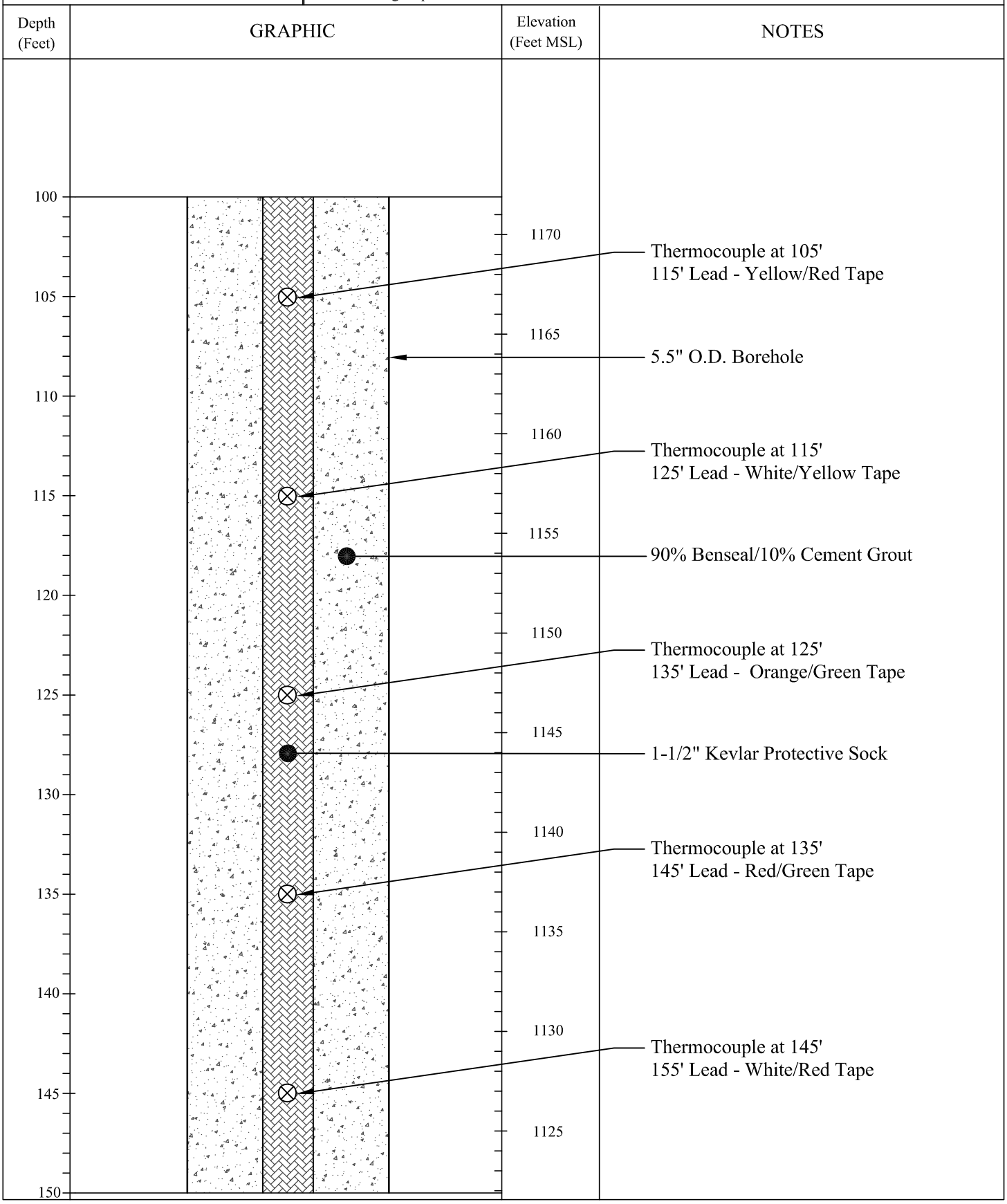


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-7

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/22/08
Drilled By:	Frontz Drilling	Date Completed:	07/23/08
Boring Method:	Sonic - Lost Point	Northing:	24414.69
Boring Diameter:	5.5"	Easting:	42852.17
Total Boring Depth:	185'	Surface Elevation:	1271.89

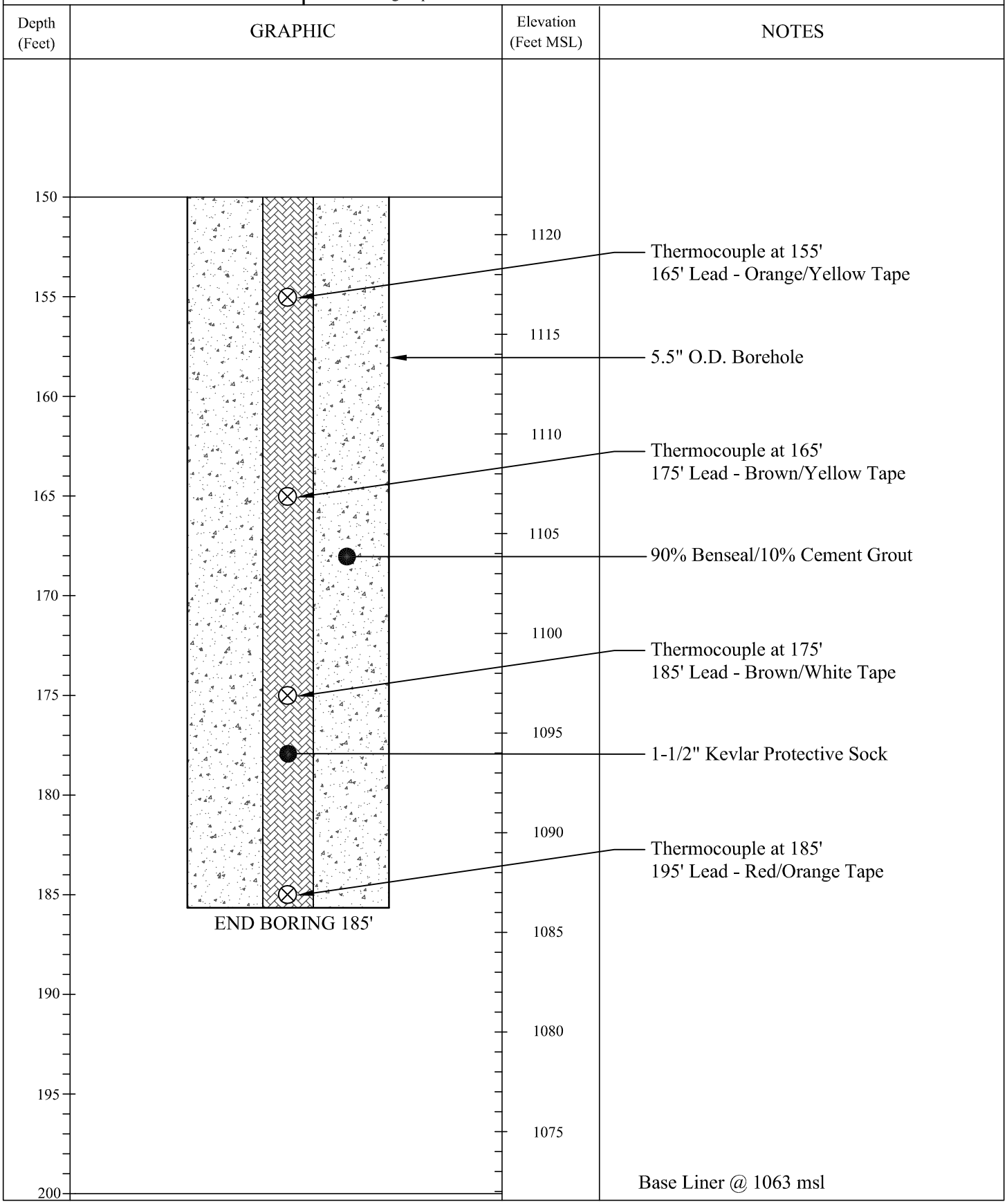


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-7

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/22/08
Drilled By:	Frontz Drilling	Date Completed:	07/23/08
Boring Method:	Sonic - Lost Point	Northing:	24414.69
Boring Diameter:	5.5"	Easting:	42852.17
Total Boring Depth:	185'	Surface Elevation:	1271.89

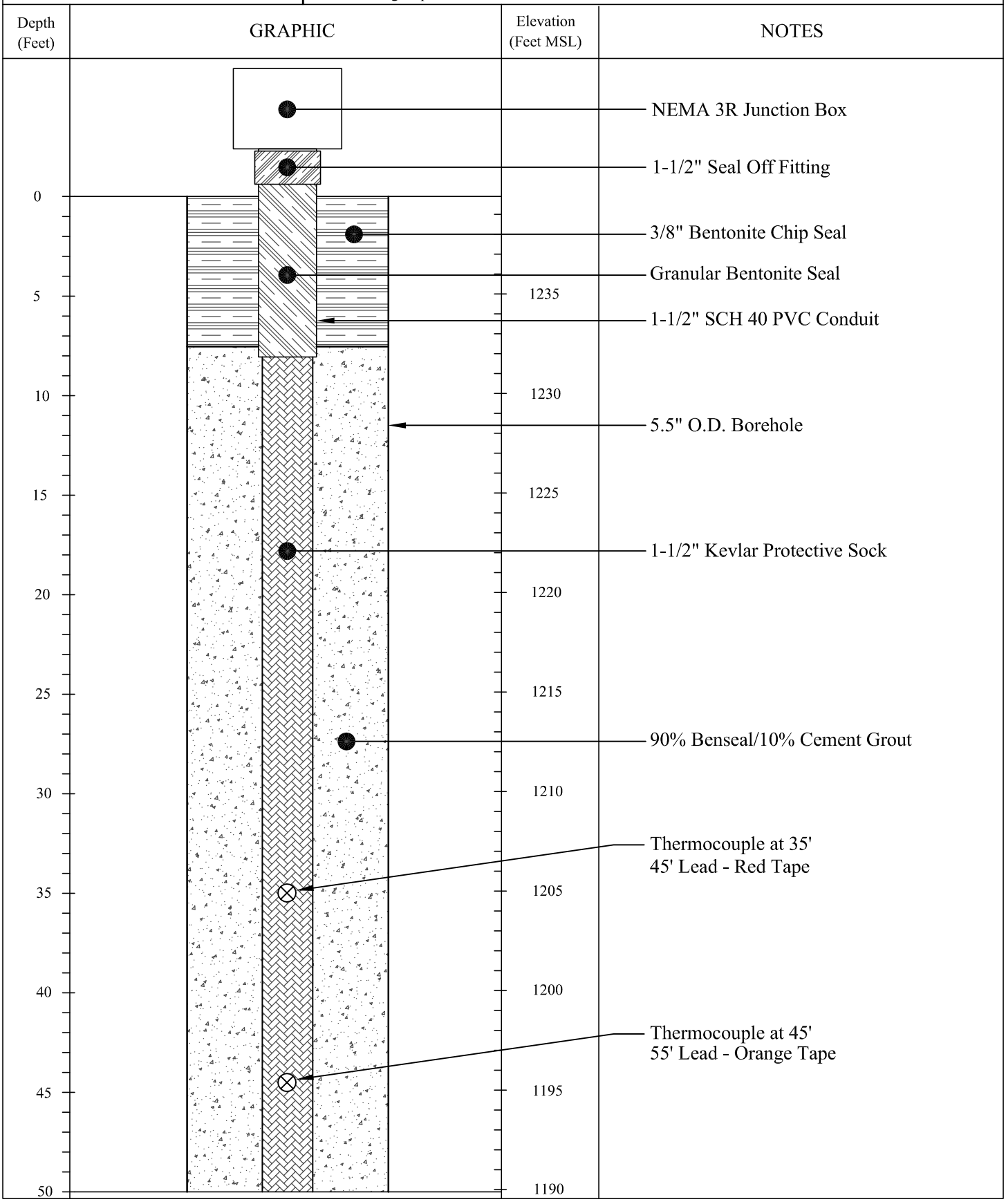


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-8

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/23/08
Drilled By:	Frontz Drilling	Date Completed:	07/23/08
Boring Method:	Sonic - Lost Point	Northing:	24535.98
Boring Diameter:	5.5"	Easting:	42967.59
Total Boring Depth:	165'	Surface Elevation:	1239.89

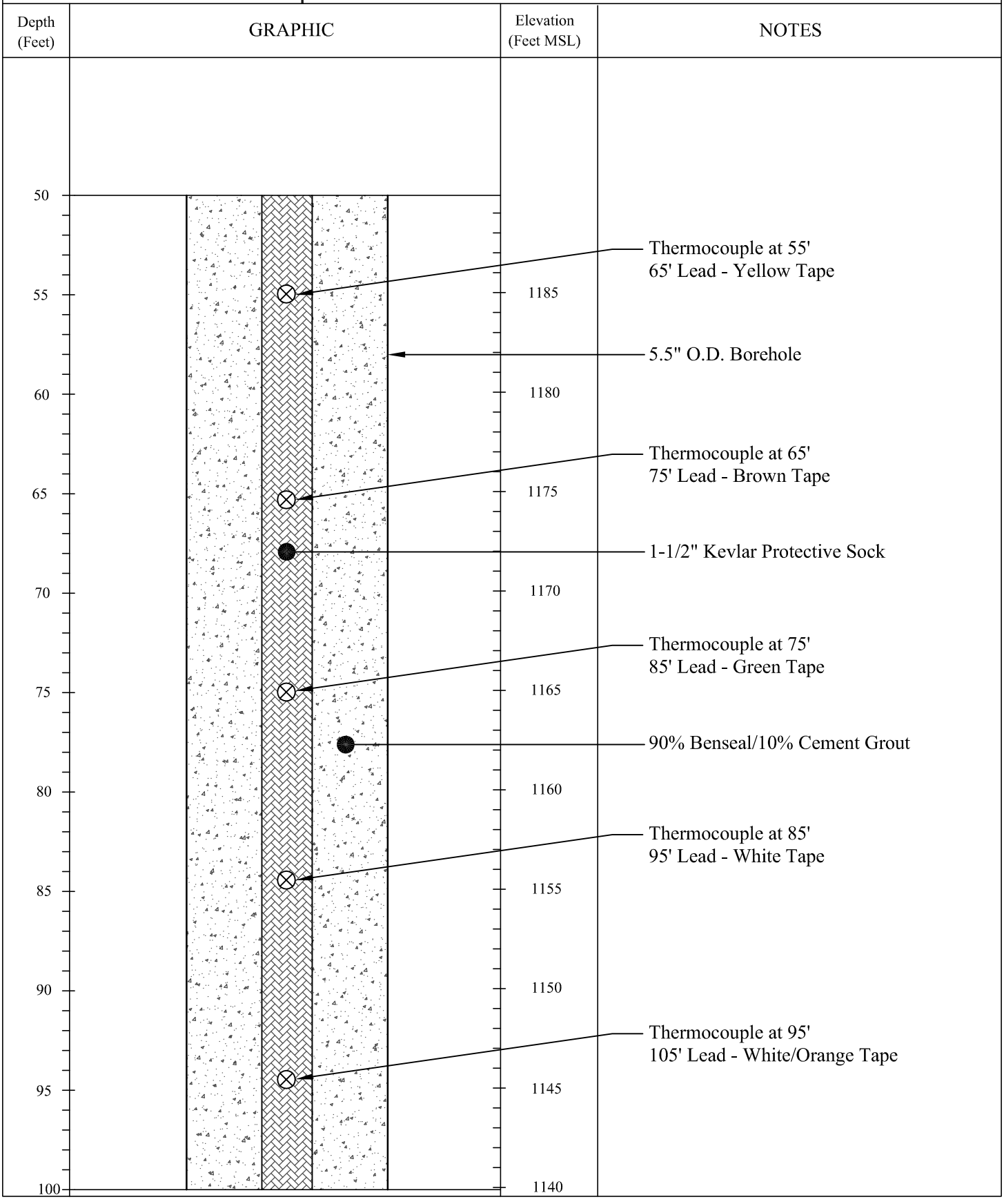


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-8

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/23/08
Drilled By:	Frontz Drilling	Date Completed:	07/23/08
Boring Method:	Sonic - Lost Point	Northing:	24535.98
Boring Diameter:	5.5"	Easting:	42967.59
Total Boring Depth:	165'	Surface Elevation:	1239.89

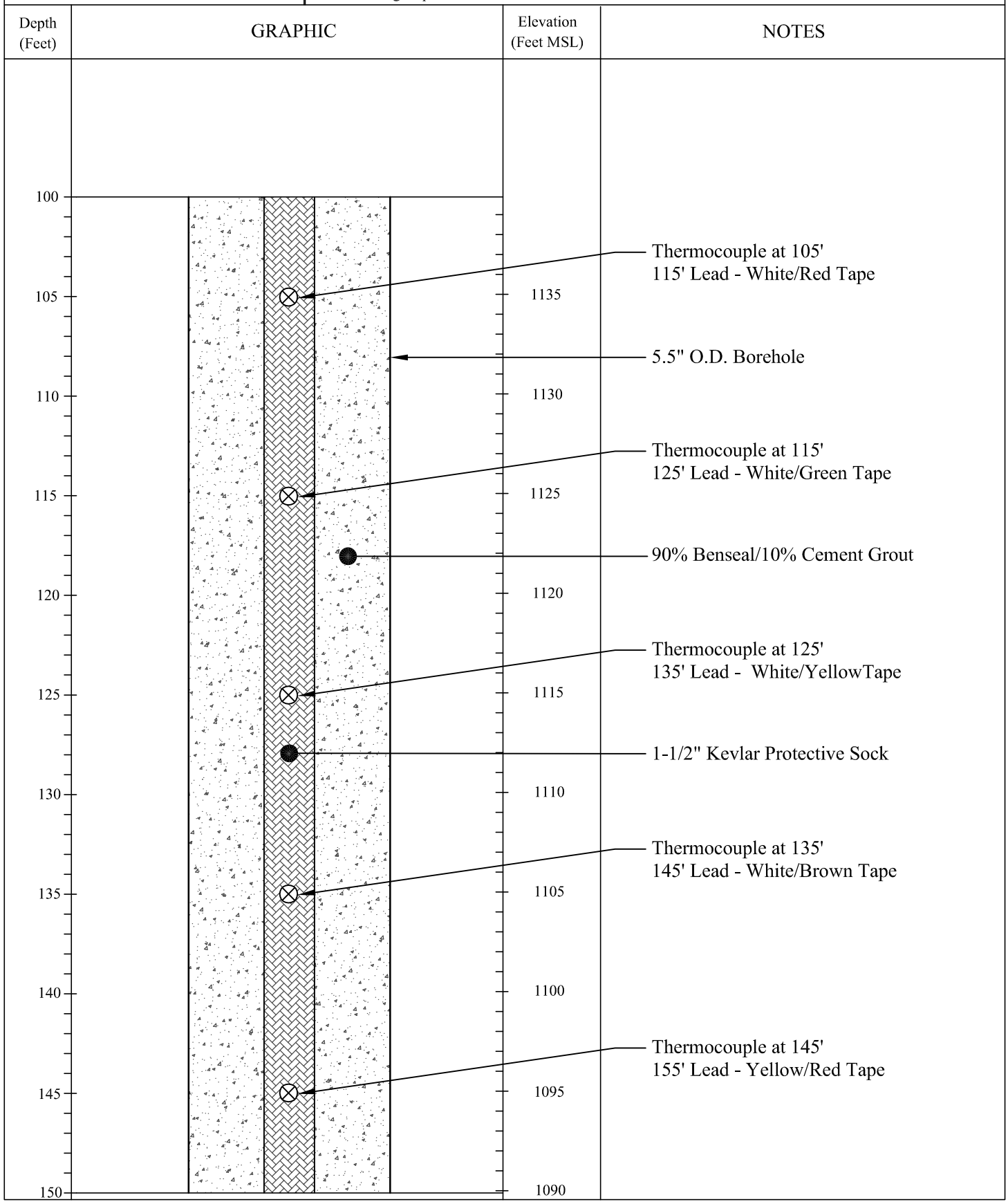


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-8

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/23/08
Drilled By:	Frontz Drilling	Date Completed:	07/23/08
Boring Method:	Sonic - Lost Point	Northing:	24535.98
Boring Diameter:	5.5"	Easting:	42967.59
Total Boring Depth:	165'	Surface Elevation:	1239.89

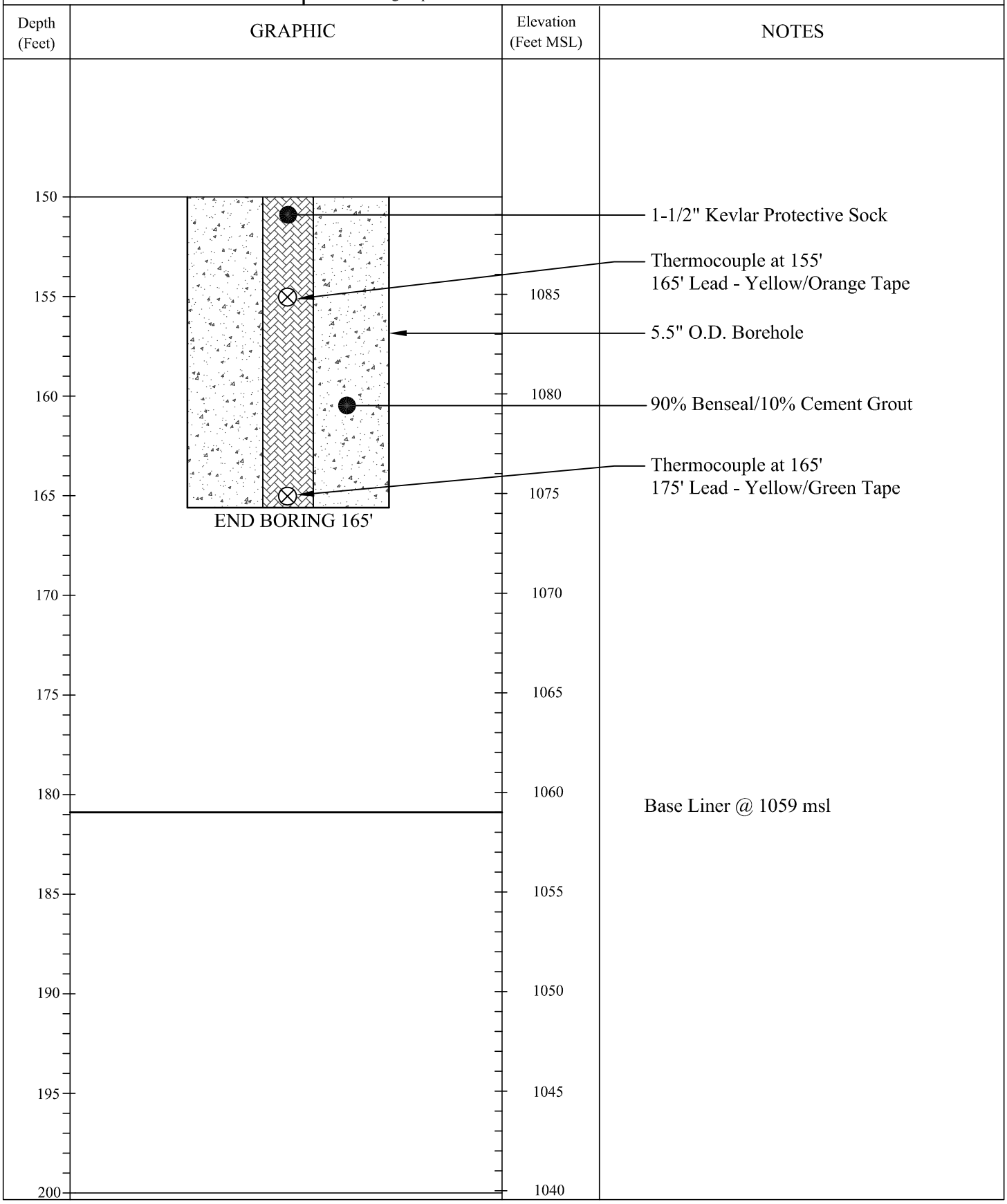


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-8

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/23/08
Drilled By:	Frontz Drilling	Date Completed:	07/23/08
Boring Method:	Sonic - Lost Point	Northing:	24535.98
Boring Diameter:	5.5"	Easting:	42967.59
Total Boring Depth:	165'	Surface Elevation:	1239.89

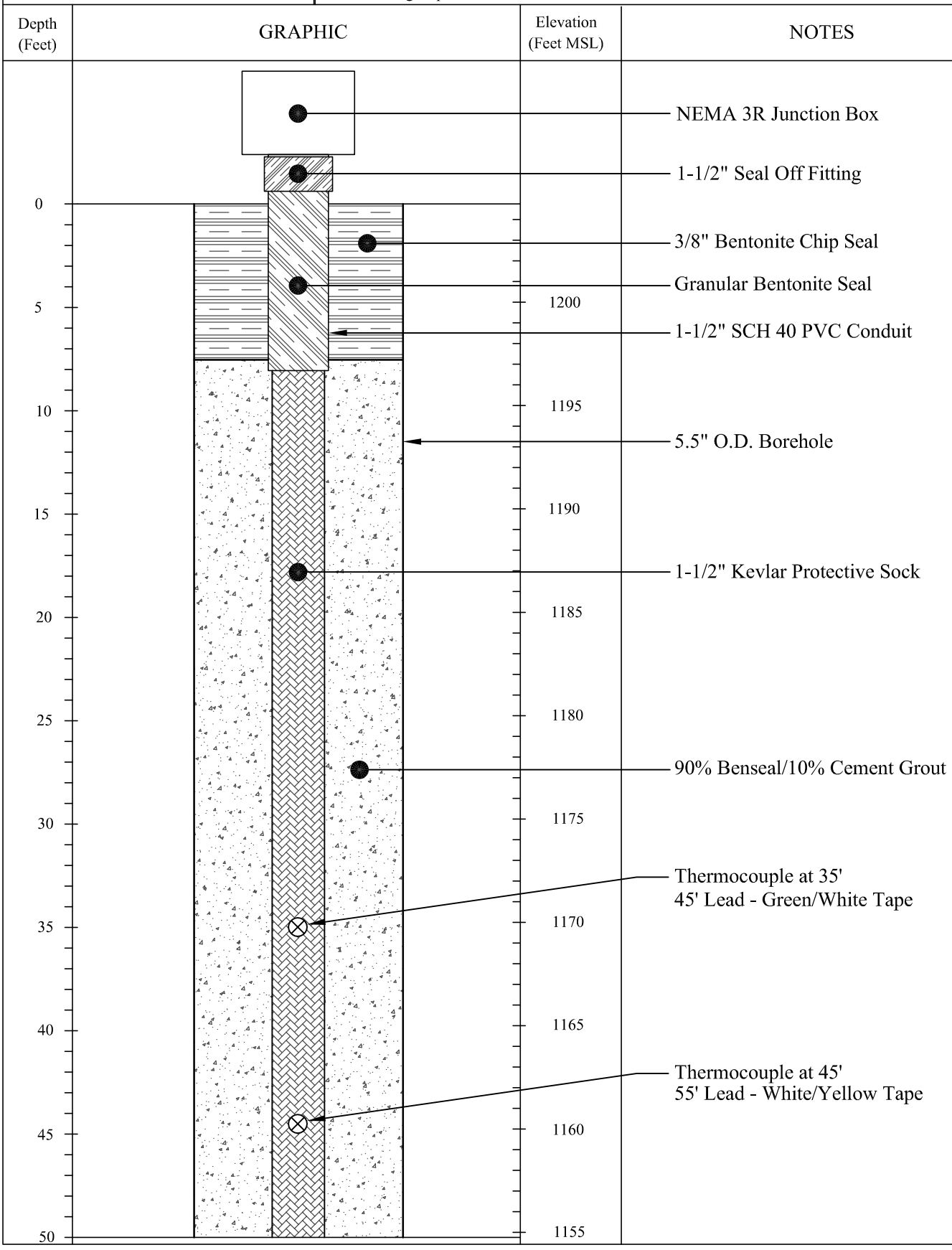


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-9

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/23/08
Drilled By:	Frontz Drilling	Date Completed:	07/24/08
Boring Method:	Sonic - Lost Point	Northing:	24677.46
Boring Diameter:	5.5"	Easting:	43023.46
Total Boring Depth:	125'	Surface Elevation:	1204.75

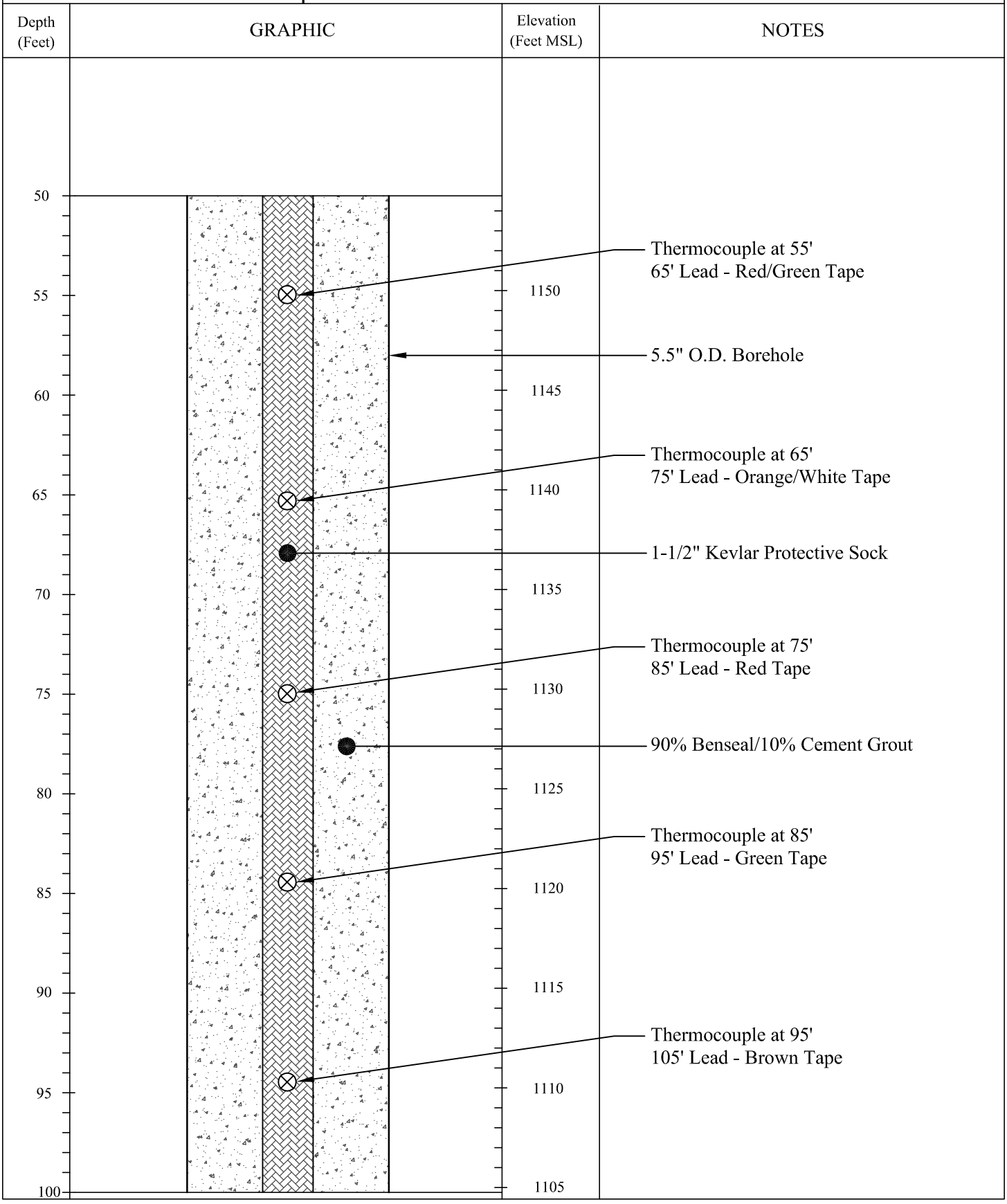


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-9

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/23/08
Drilled By:	Frontz Drilling	Date Completed:	07/24/08
Boring Method:	Sonic - Lost Point	Northing:	24677.46
Boring Diameter:	5.5"	Easting:	43023.46
Total Boring Depth:	125'	Surface Elevation:	1204.75

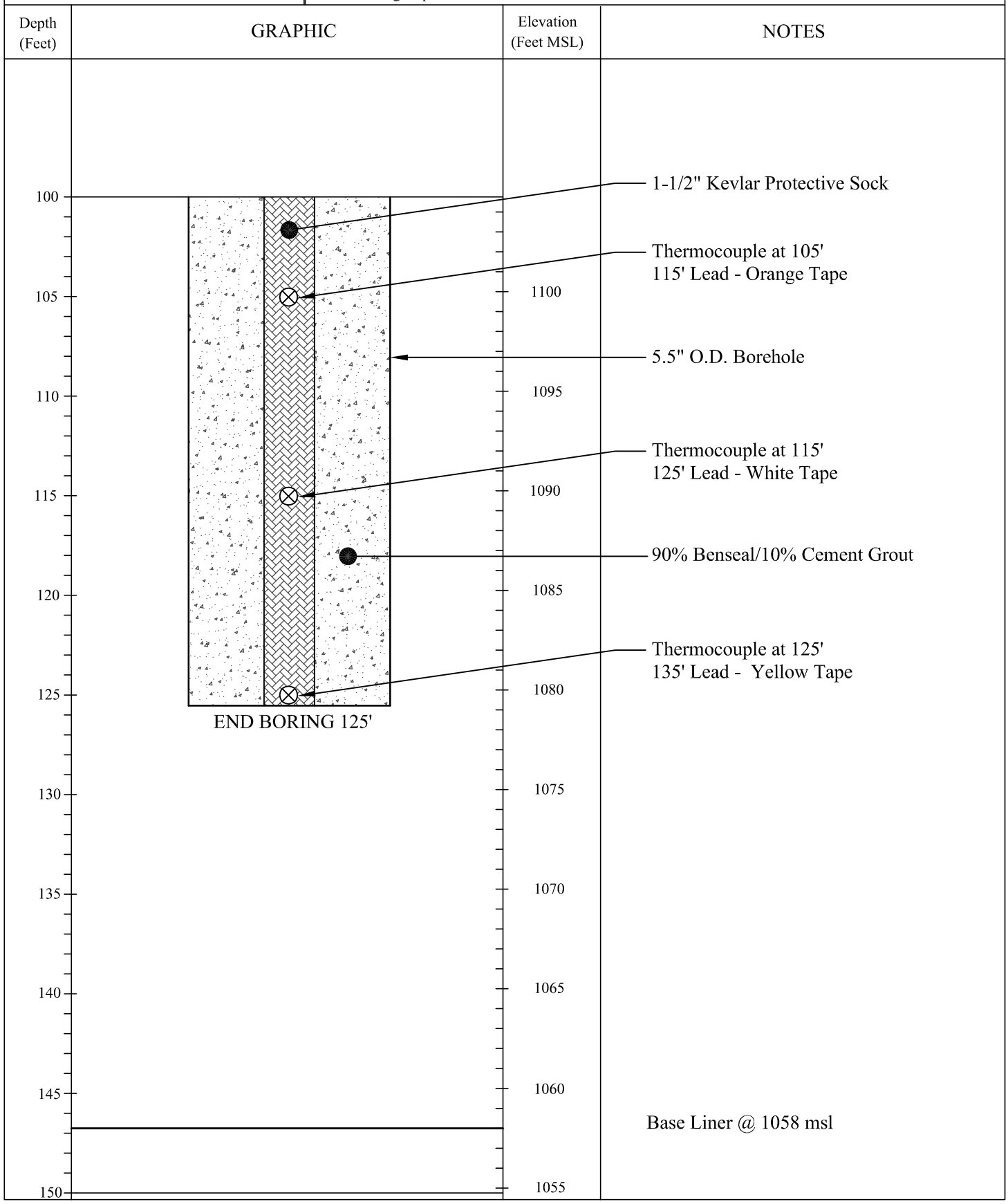


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-9

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/23/08
Drilled By:	Frontz Drilling	Date Completed:	07/24/08
Boring Method:	Sonic - Lost Point	Northing:	24677.46
Boring Diameter:	5.5"	Easting:	43023.46
Total Boring Depth:	125'	Surface Elevation:	1204.75

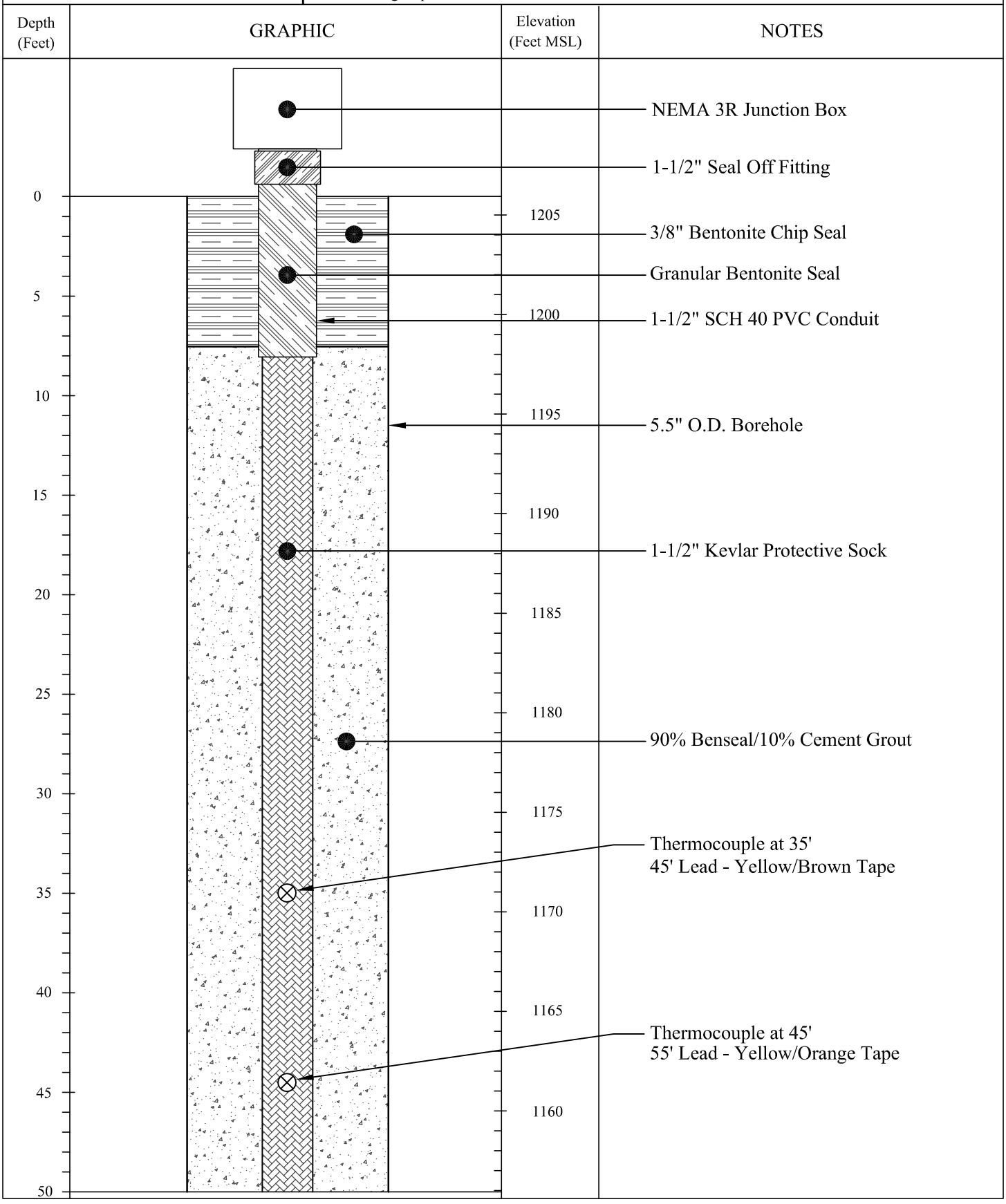


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-10

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/25/08
Drilled By:	Frontz Drilling	Date Completed:	07/25/08
Boring Method:	Sonic - Lost Point	Northing:	24733.95
Boring Diameter:	5.5"	Easting:	42889.61
Total Boring Depth:	125'	Surface Elevation:	1205.95

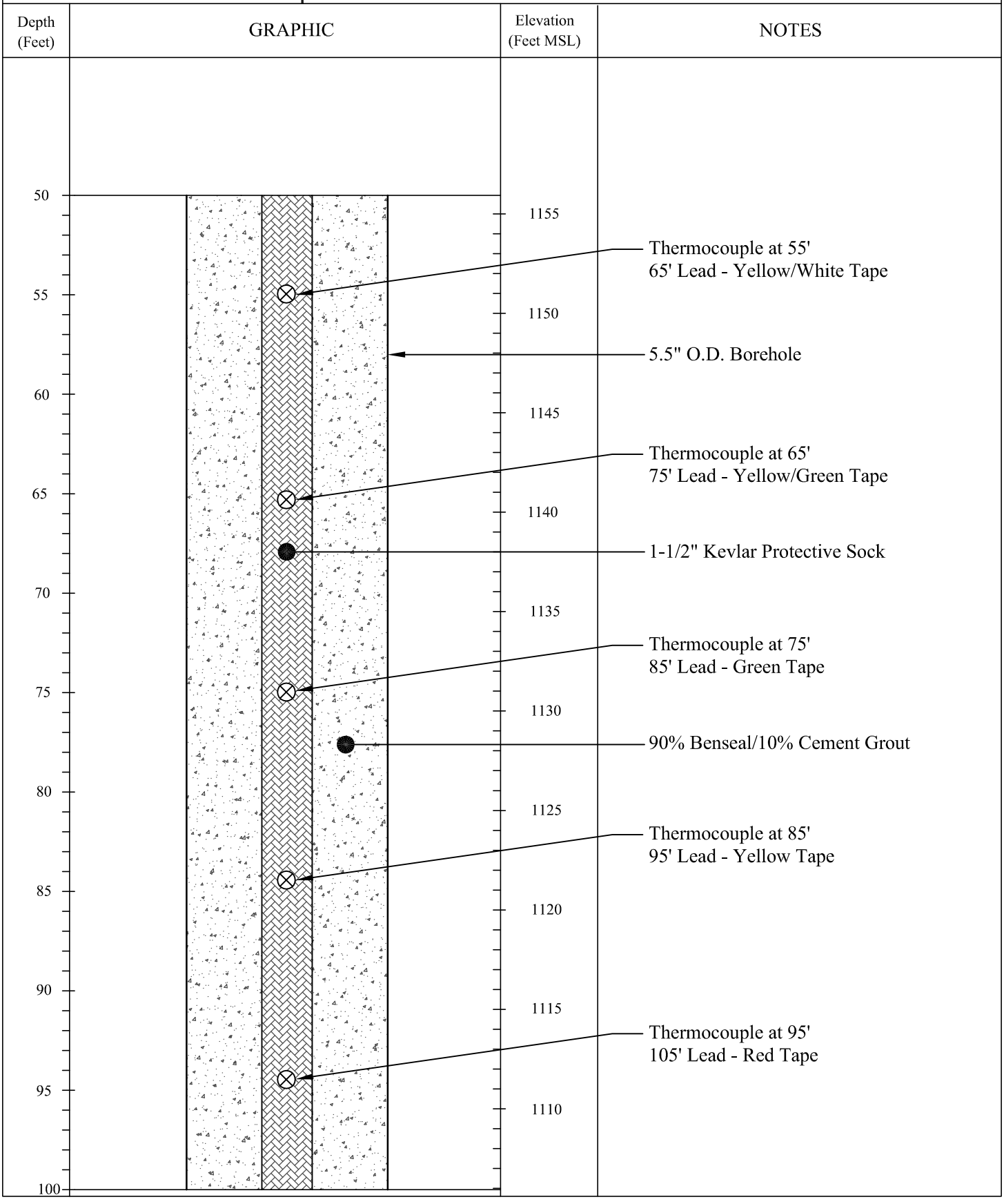


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-10

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/25/08
Drilled By:	Frontz Drilling	Date Completed:	07/25/08
Boring Method:	Sonic - Lost Point	Northing:	24733.95
Boring Diameter:	5.5"	Easting:	42889.61
Total Boring Depth:	125'	Surface Elevation:	1205.95

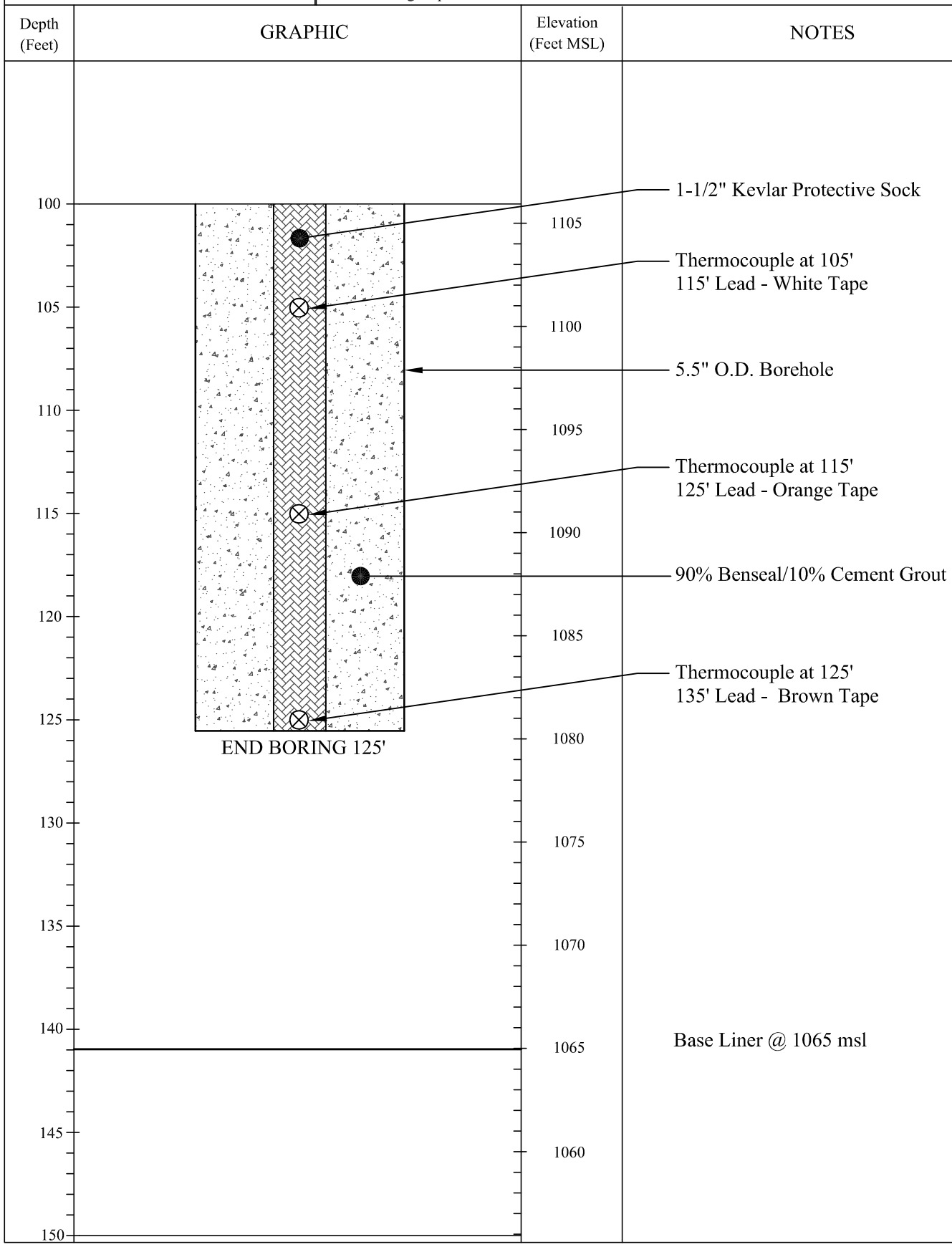


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-10

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/25/08
Drilled By:	Frontz Drilling	Date Completed:	07/25/08
Boring Method:	Sonic - Lost Point	Northing:	24733.95
Boring Diameter:	5.5"	Easting:	42889.61
Total Boring Depth:	125'	Surface Elevation:	1205.95

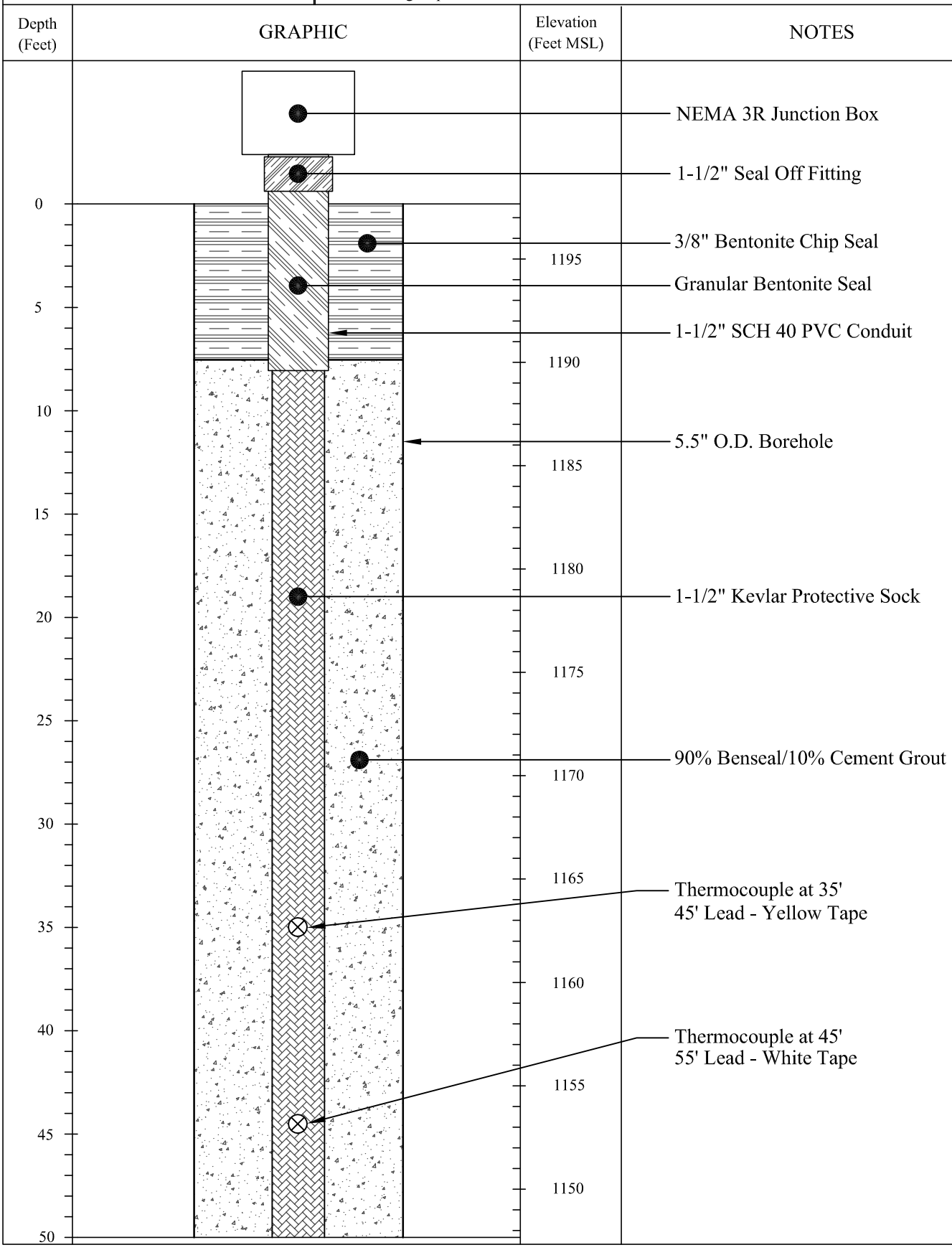


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-11

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/25/08
Drilled By:	Frontz Drilling	Date Completed:	07/28/08
Boring Method:	Sonic - Lost Point	Northing:	24812.72
Boring Diameter:	5.5"	Easting:	42943.32
Total Boring Depth:	85'	Surface Elevation:	1197.66

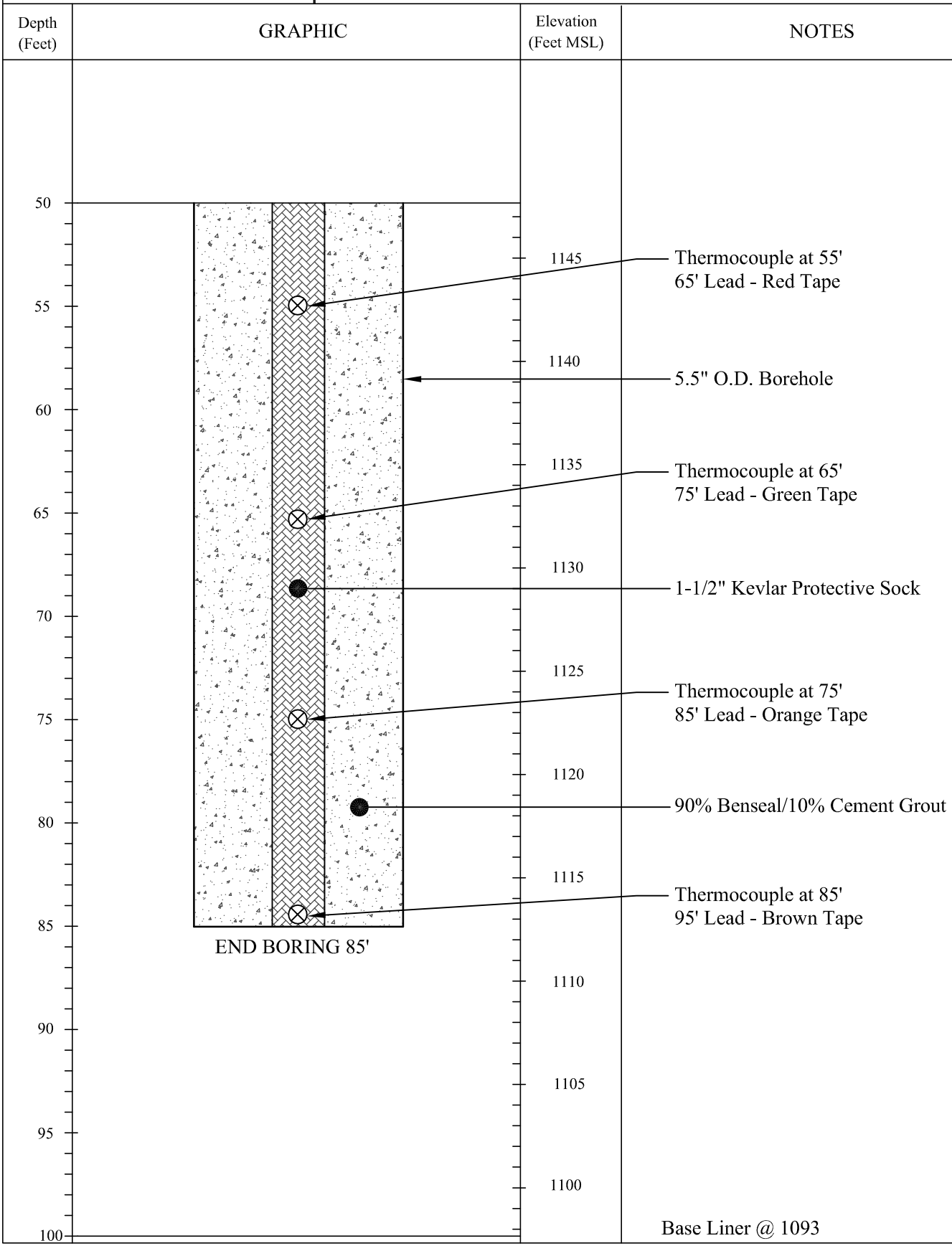


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-11

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/25/08
Drilled By:	Frontz Drilling	Date Completed:	07/28/08
Boring Method:	Sonic - Lost Point	Northing:	24812.72
Boring Diameter:	5.5"	Easting:	42943.32
Total Boring Depth:	85'	Surface Elevation:	1197.66

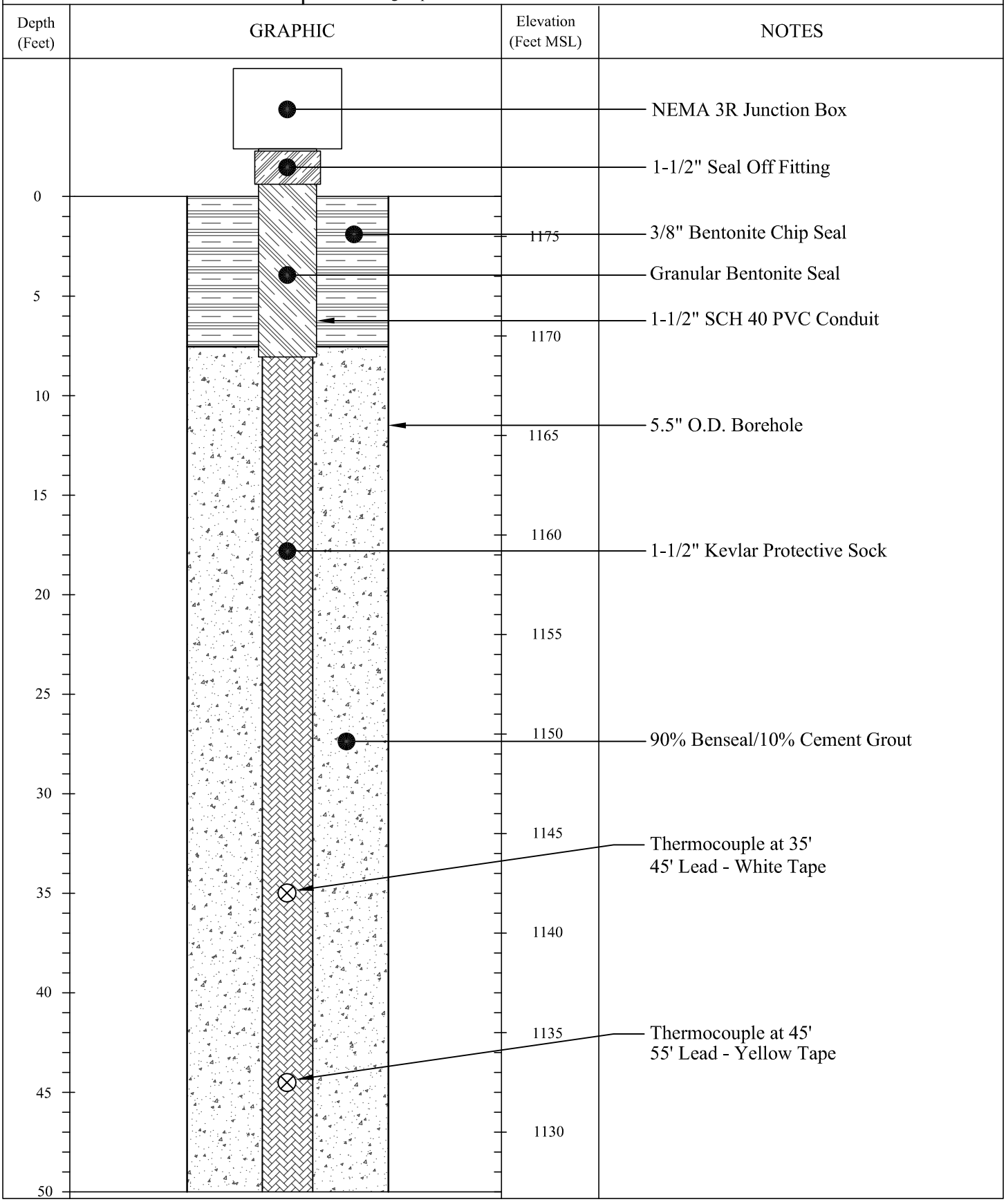


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-12

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/28/08
Drilled By:	Frontz Drilling	Date Completed:	07/28/08
Boring Method:	Sonic - Lost Point	Northing:	24778.11
Boring Diameter:	5.5"	Easting:	43123.14
Total Boring Depth:	75'	Surface Elevation:	1177.03

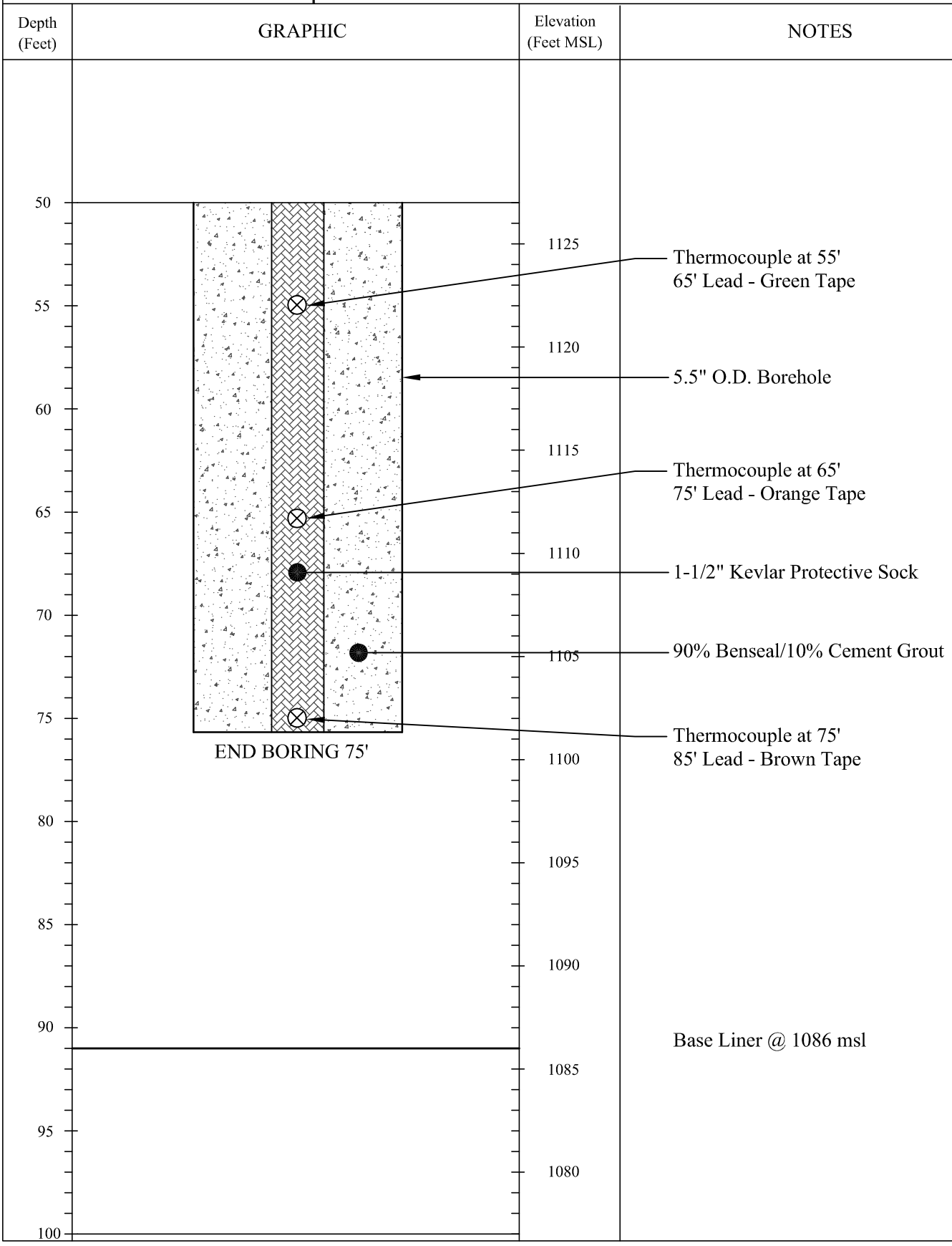


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-12

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/28/08
Drilled By:	Frontz Drilling	Date Completed:	07/28/08
Boring Method:	Sonic - Lost Point	Northing:	24778.11
Boring Diameter:	5.5"	Easting:	43123.14
Total Boring Depth:	75'	Surface Elevation:	1177.03

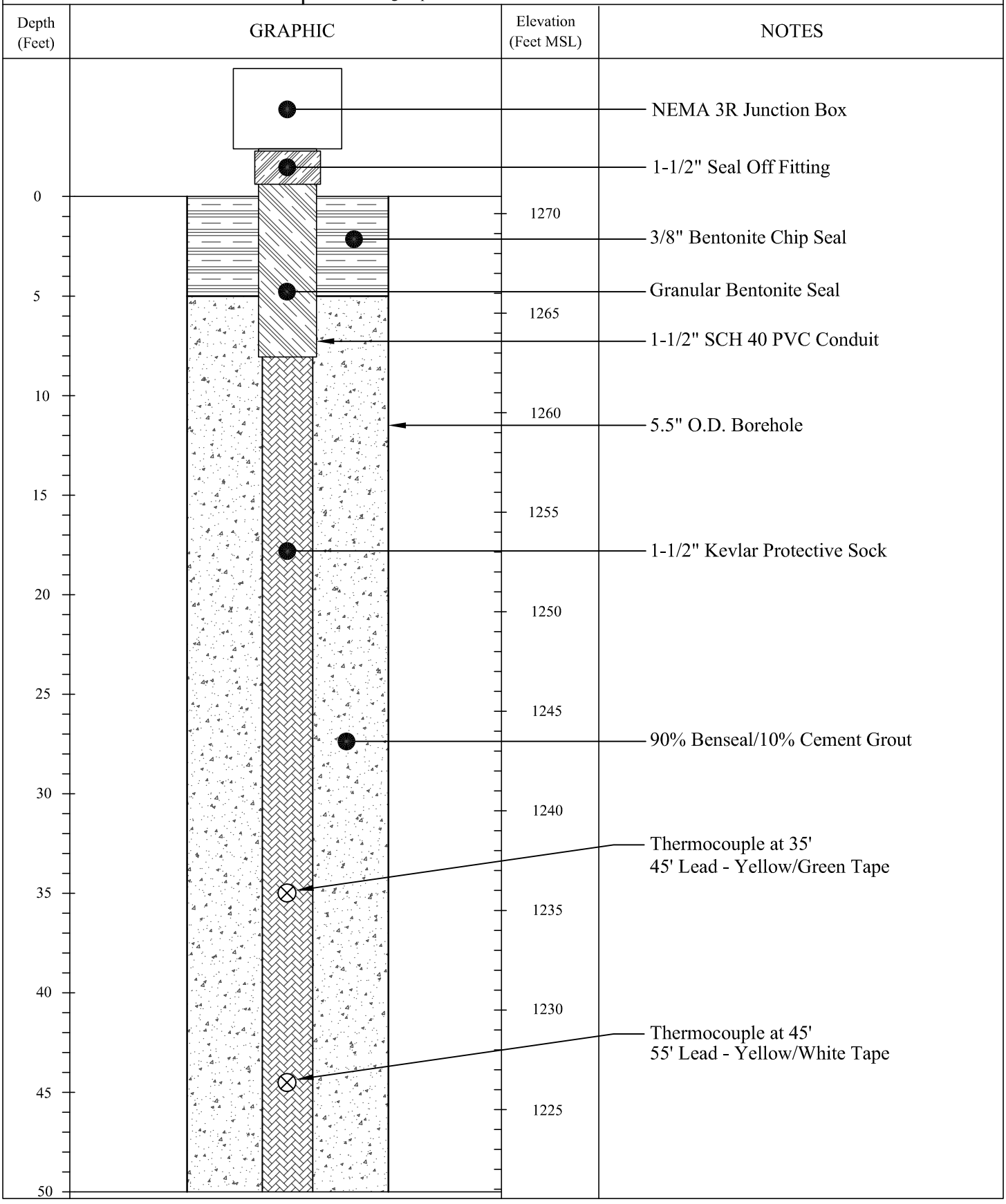


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-13

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/28/08
Drilled By:	Frontz Drilling	Date Completed:	07/29/08
Boring Method:	Sonic - Lost Point	Northing:	24289.56
Boring Diameter:	5.5"	Easting:	42675.33
Total Boring Depth:	195'	Surface Elevation:	1270.86

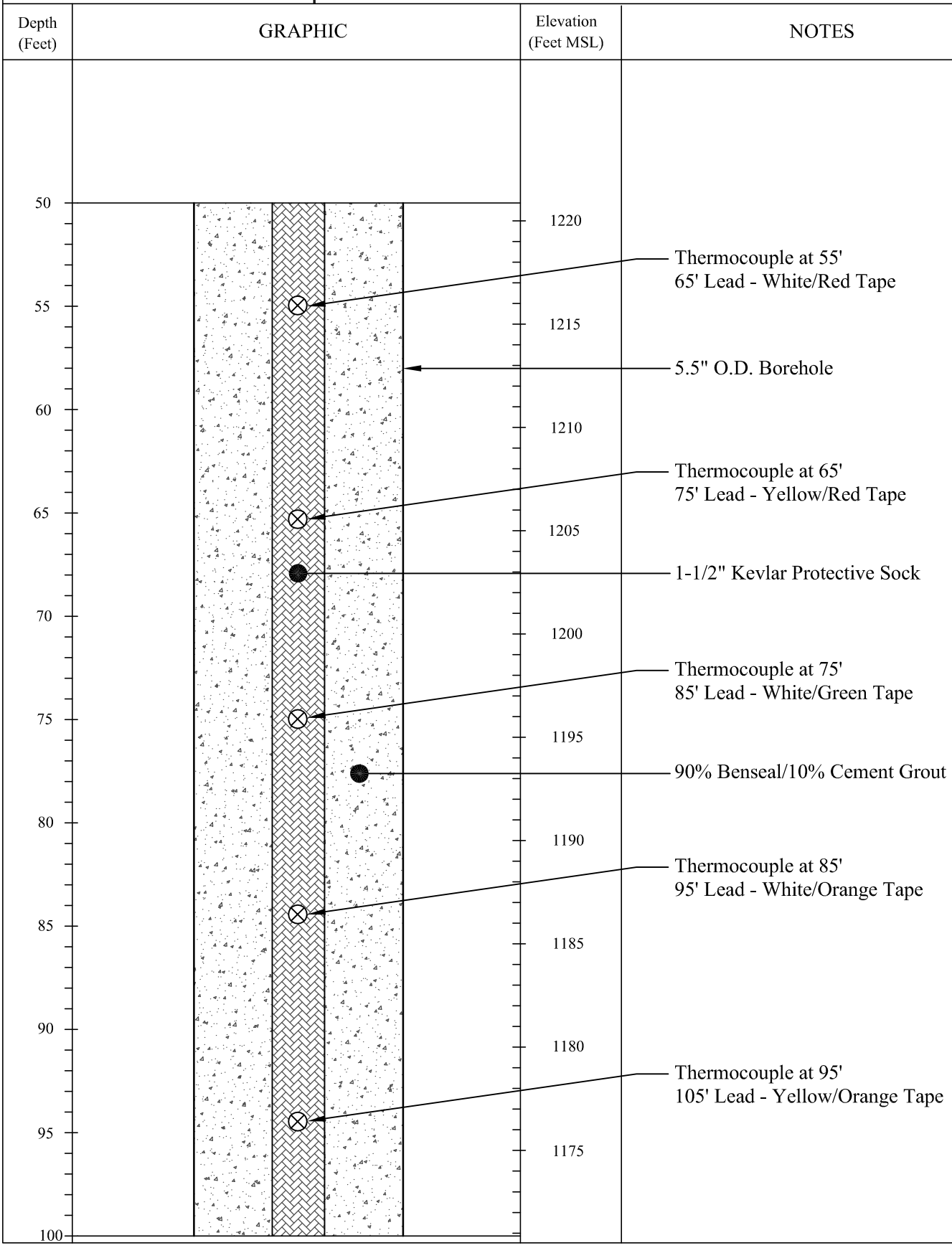


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-13

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/28/08
Drilled By:	Frontz Drilling	Date Completed:	07/29/08
Boring Method:	Sonic - Lost Point	Northing:	24289.56
Boring Diameter:	5.5"	Easting:	42675.33
Total Boring Depth:	195'	Surface Elevation:	1270.86

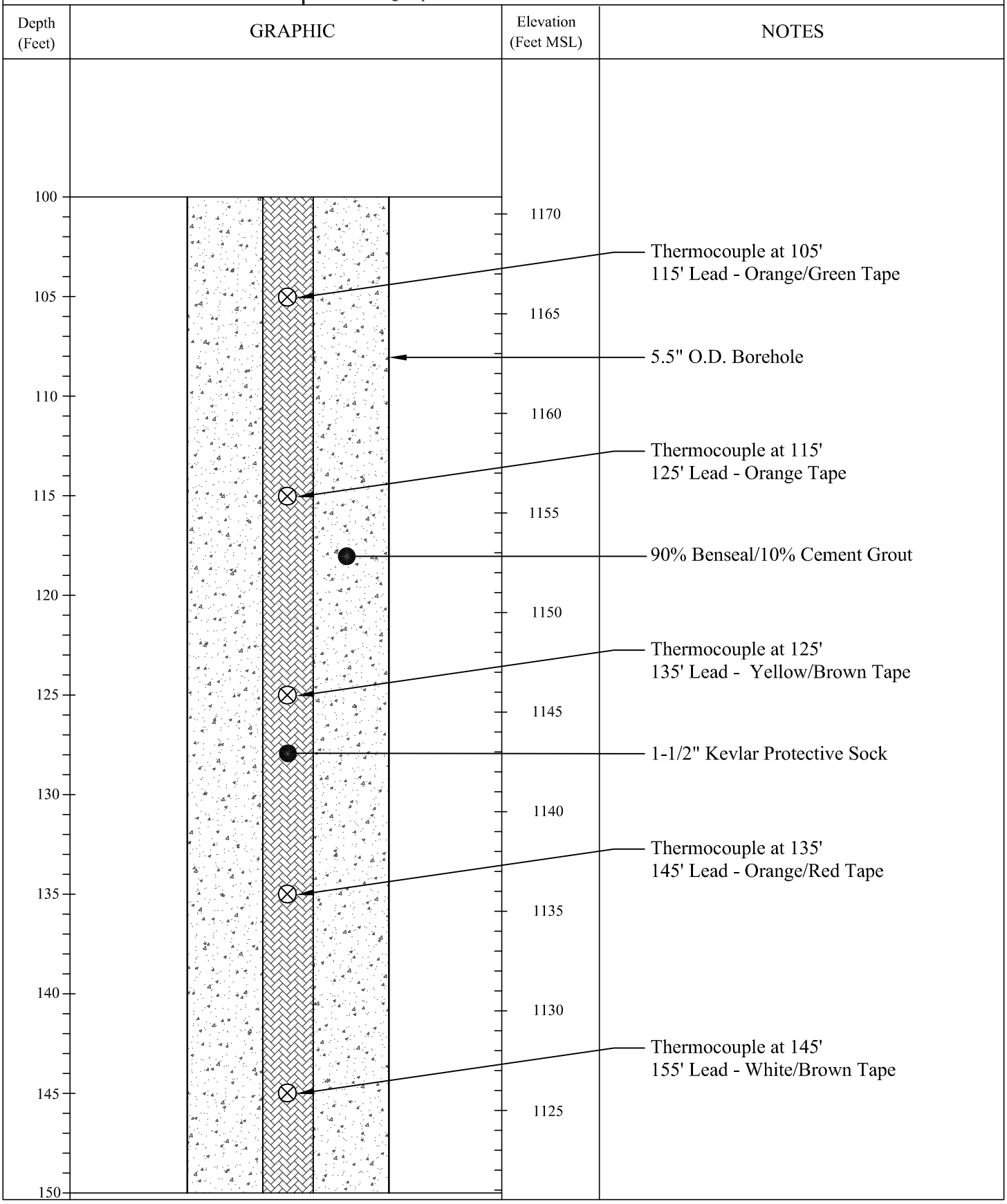


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-13

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/28/08
Drilled By:	Frontz Drilling	Date Completed:	07/29/08
Boring Method:	Sonic - Lost Point	Northing:	24289.56
Boring Diameter:	5.5"	Easting:	42675.33
Total Boring Depth:	195'	Surface Elevation:	1270.86

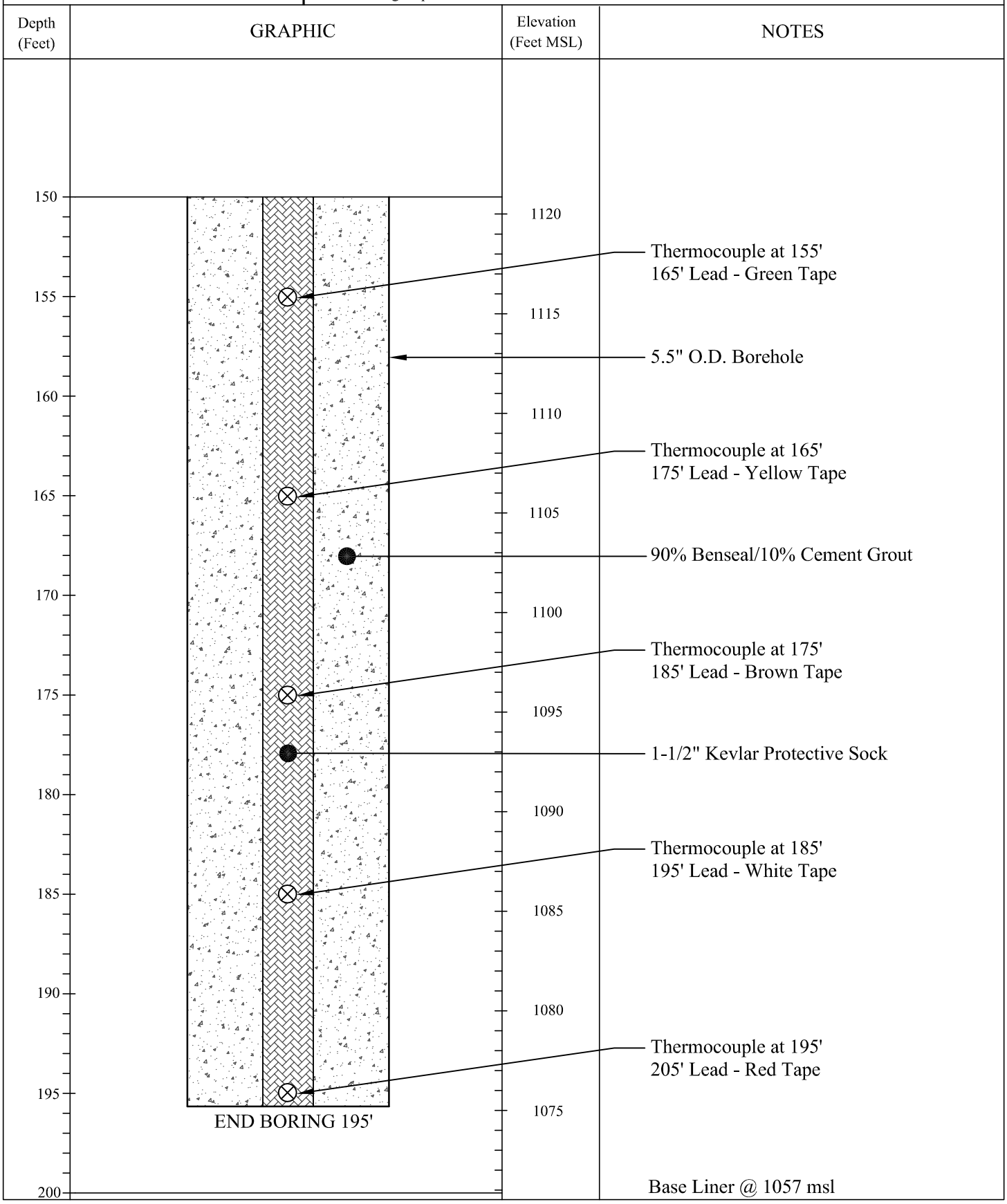


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-13

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/28/08
Drilled By:	Frontz Drilling	Date Completed:	07/29/08
Boring Method:	Sonic - Lost Point	Northing:	24289.56
Boring Diameter:	5.5"	Easting:	42675.33
Total Boring Depth:	195'	Surface Elevation:	1270.86

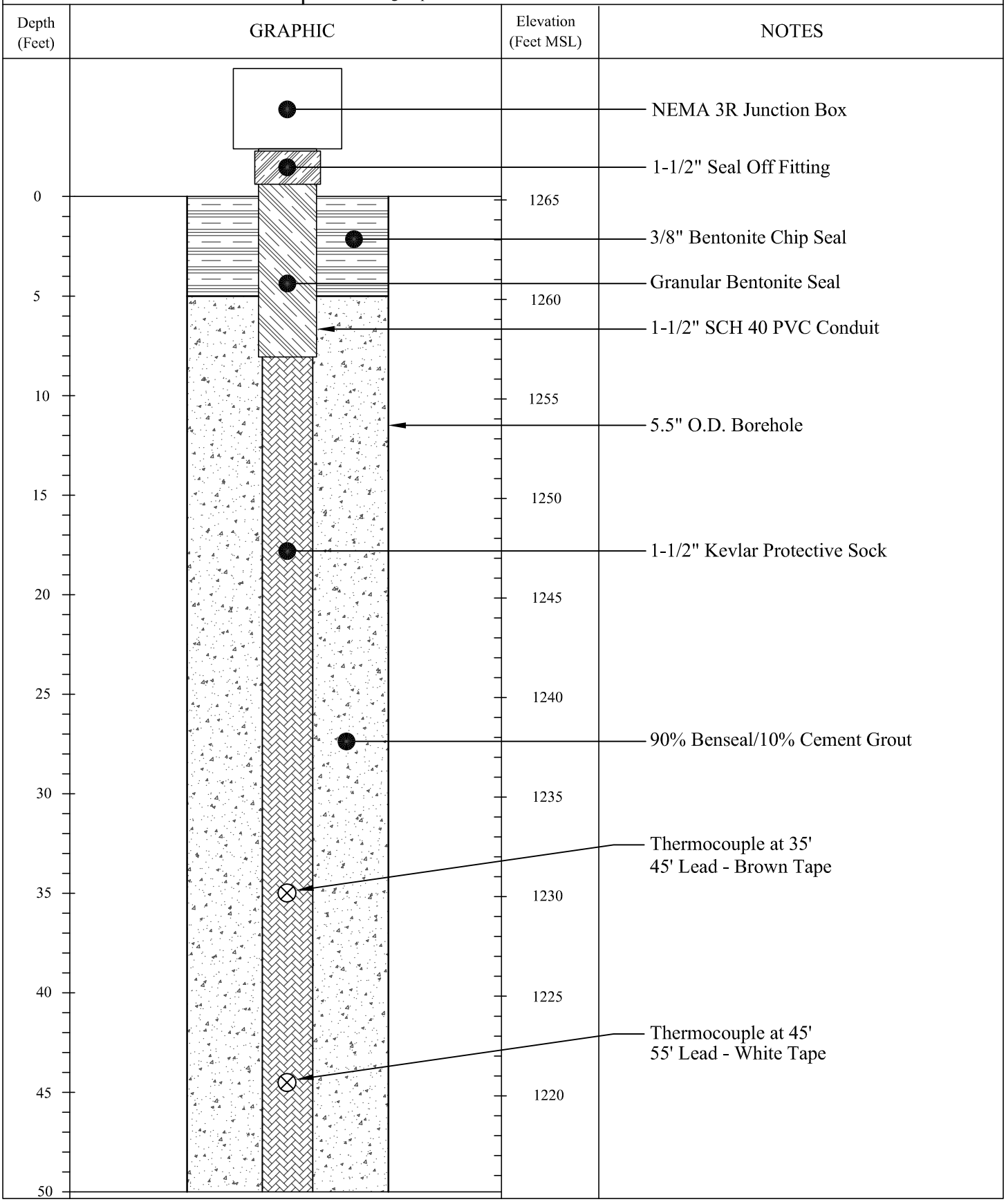


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-14

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/29/08
Drilled By:	Frontz Drilling	Date Completed:	07/30/08
Boring Method:	Sonic - Lost Point	Northing:	24283.13
Boring Diameter:	5.5"	Easting:	42499.91
Total Boring Depth:	195'	Surface Elevation:	1265.17

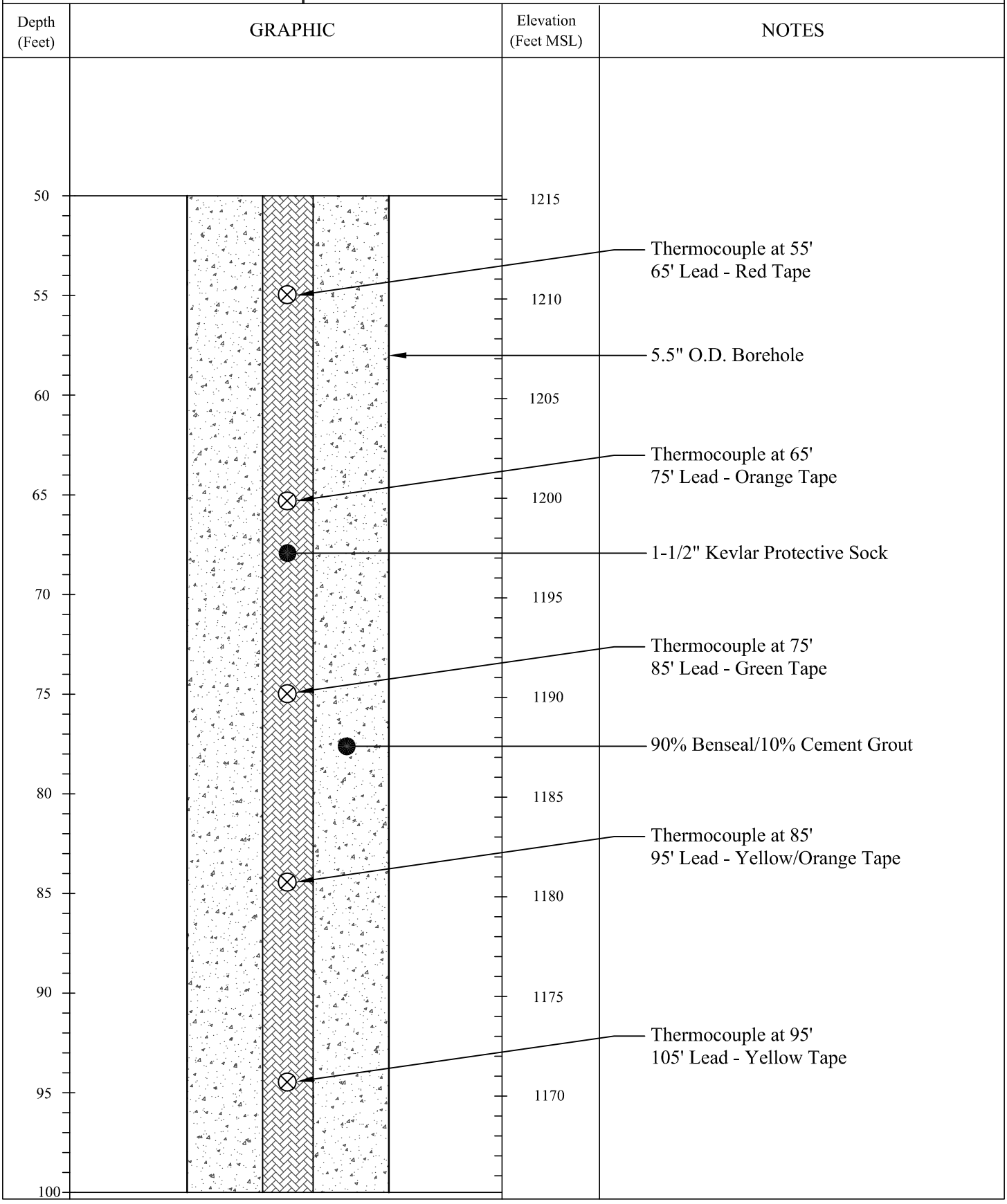


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-14

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/29/08
Drilled By:	Frontz Drilling	Date Completed:	07/30/08
Boring Method:	Sonic - Lost Point	Northing:	24283.13
Boring Diameter:	5.5"	Easting:	42499.91
Total Boring Depth:	195'	Surface Elevation:	1265.17

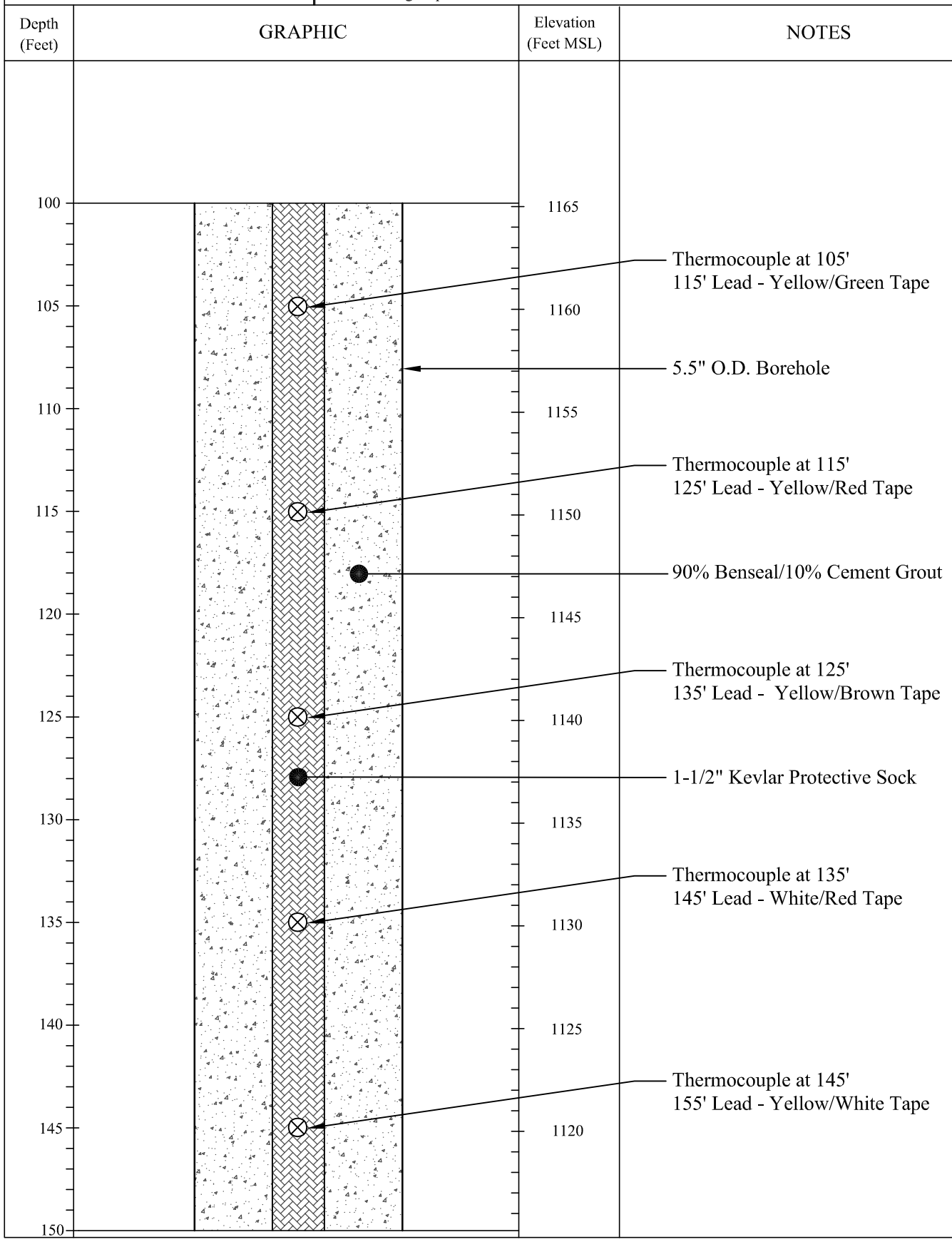


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-14

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/29/08
Drilled By:	Frontz Drilling	Date Completed:	07/30/08
Boring Method:	Sonic - Lost Point	Northing:	24283.13
Boring Diameter:	5.5"	Easting:	42499.91
Total Boring Depth:	195'	Surface Elevation:	1265.17

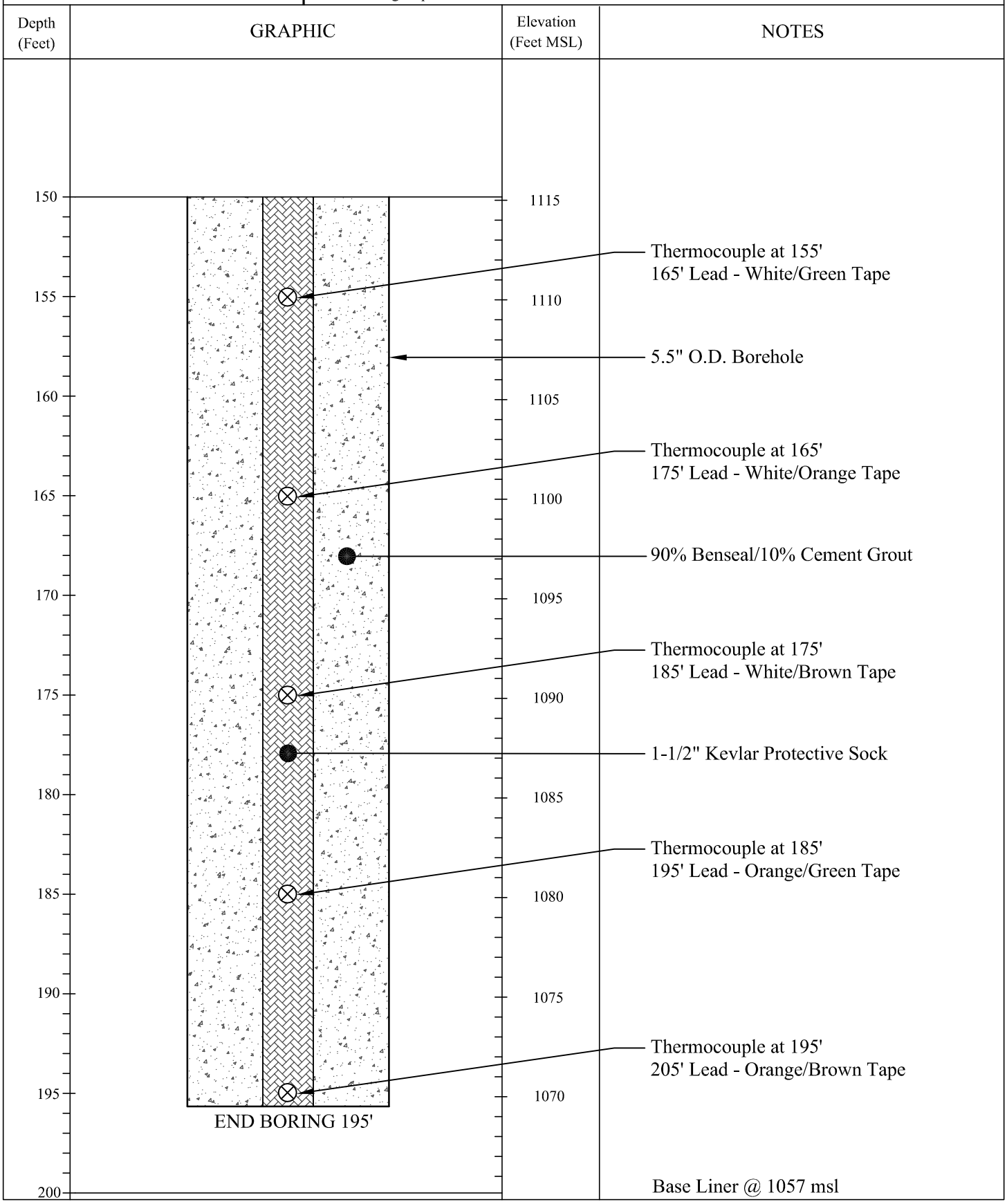


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-14

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/29/08
Drilled By:	Frontz Drilling	Date Completed:	07/30/08
Boring Method:	Sonic - Lost Point	Northing:	xxxxx
Boring Diameter:	5.5"	Easting:	xxxx
Total Boring Depth:	195'	Surface Elevation:	xxxx

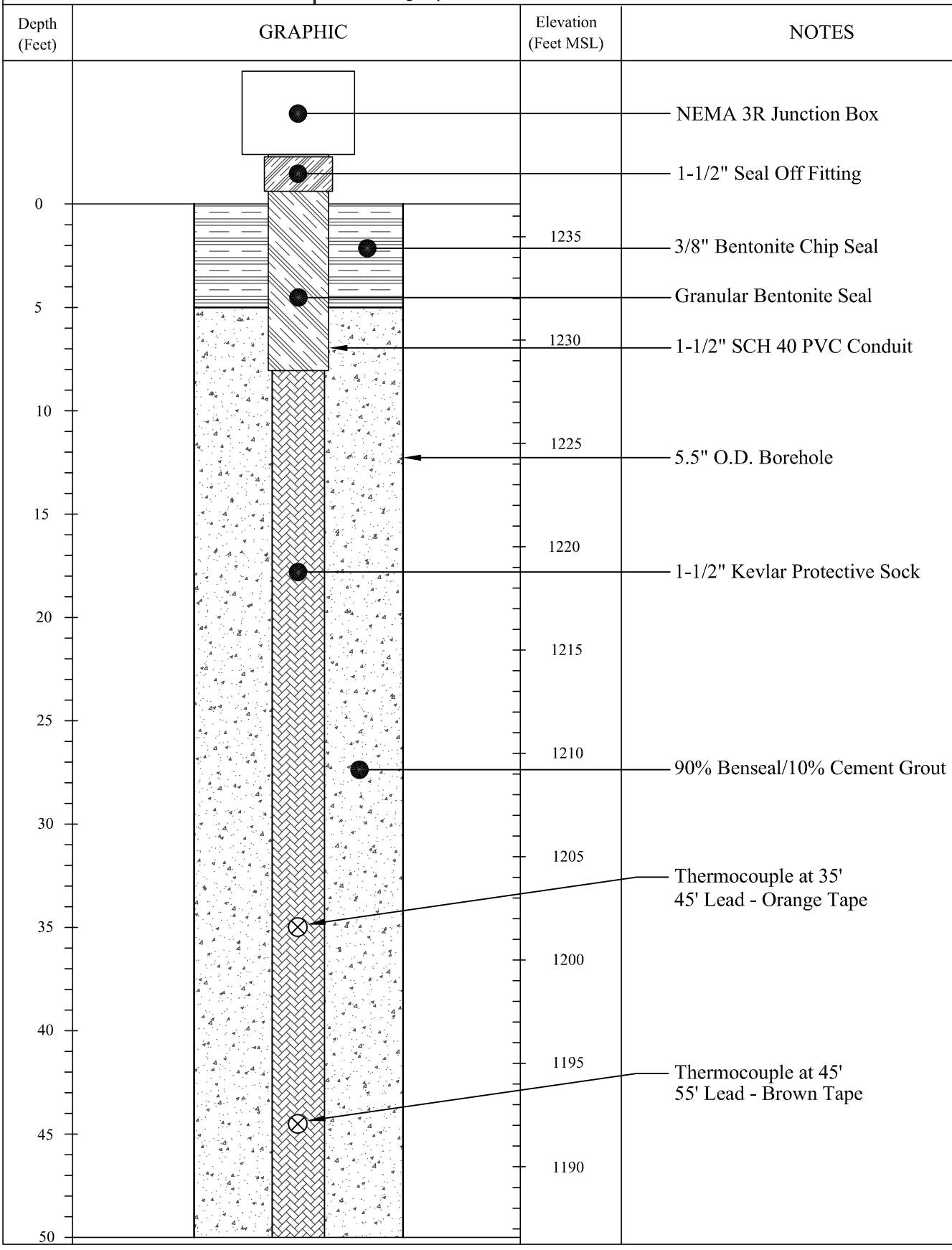


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-15

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	08/04/08
Drilled By:	Frontz Drilling	Date Completed:	08/05/08
Boring Method:	Sonic - Lost Point	Northing:	24300.36
Boring Diameter:	5.5"	Easting:	42320.69
Total Boring Depth:	155'	Surface Elevation:	1236.58

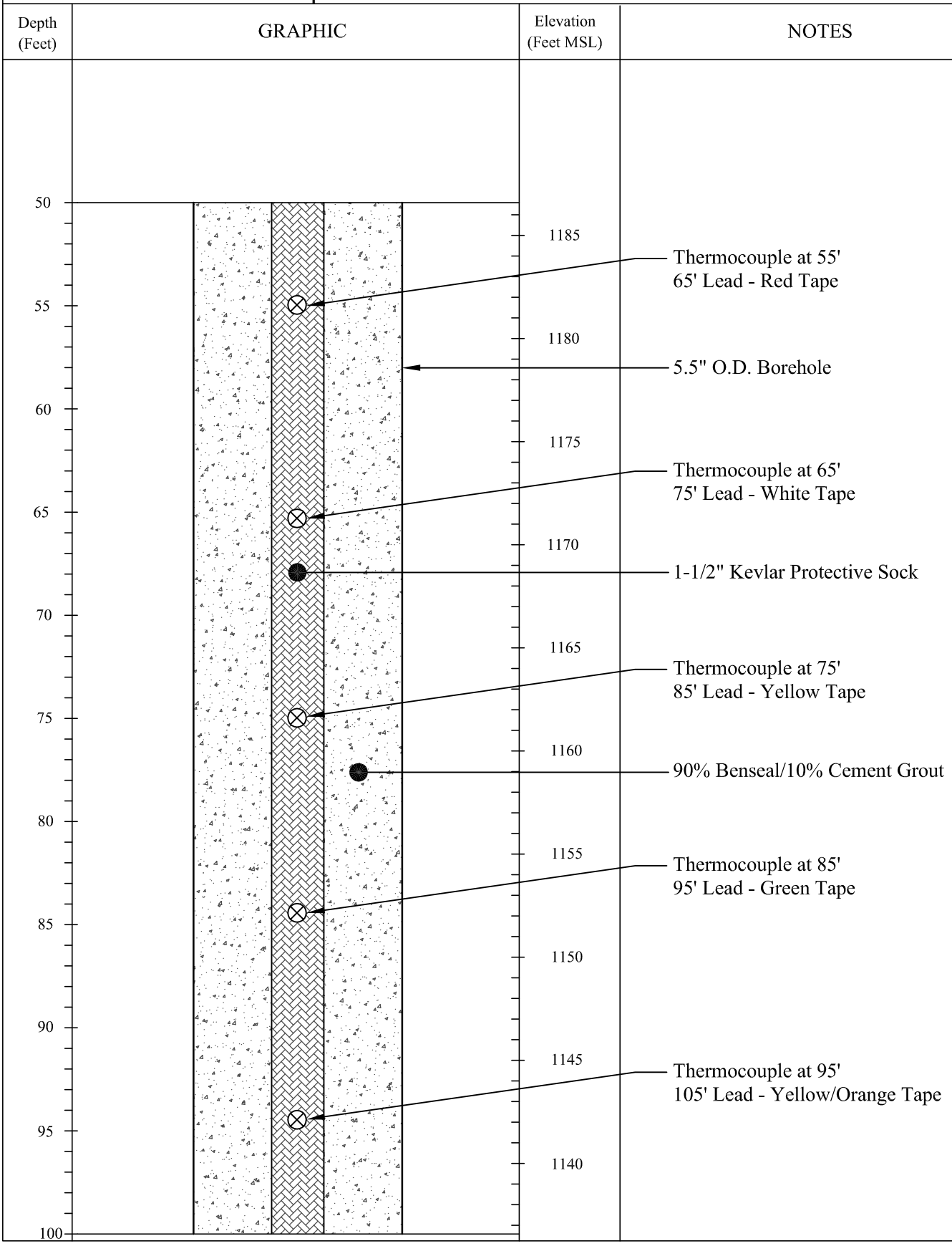


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-15

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	08/04/08
Drilled By:	Frontz Drilling	Date Completed:	08/05/08
Boring Method:	Sonic - Lost Point	Northing:	24300.36
Boring Diameter:	5.5"	Easting:	42320.69
Total Boring Depth:	155'	Surface Elevation:	1236.58

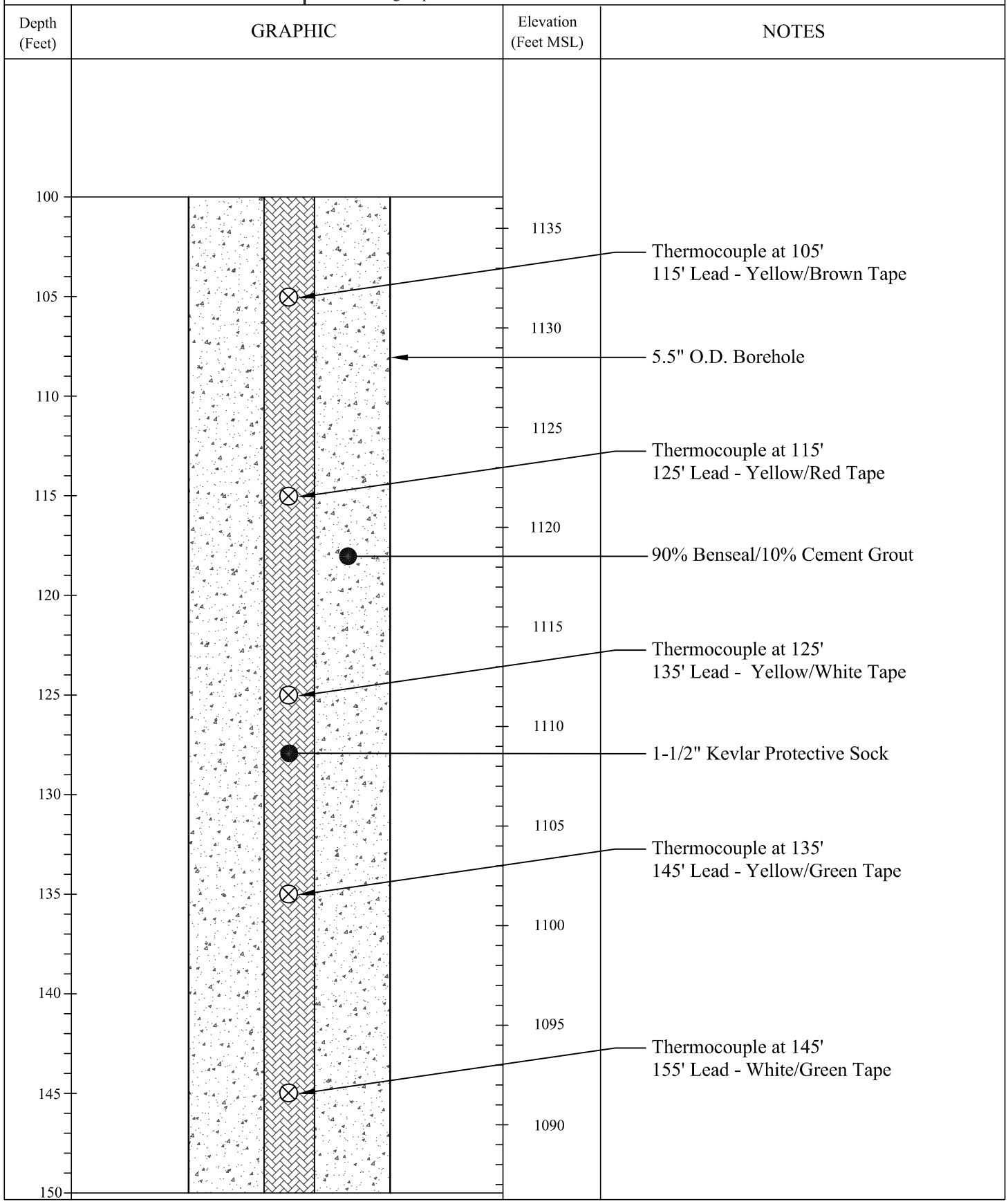


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-15

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	08/04/08
Drilled By:	Frontz Drilling	Date Completed:	08/05/08
Boring Method:	Sonic - Lost Point	Northing:	24300.36
Boring Diameter:	5.5"	Easting:	42320.69
Total Boring Depth:	155'	Surface Elevation:	1236.58



SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-15

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	08/04/08
Drilled By:	Frontz Drilling	Date Completed:	08/05/08
Boring Method:	Sonic - Lost Point	Northing:	24300.36
Boring Diameter:	5.5"	Easting:	42320.69
Total Boring Depth:	155'	Surface Elevation:	1236.58

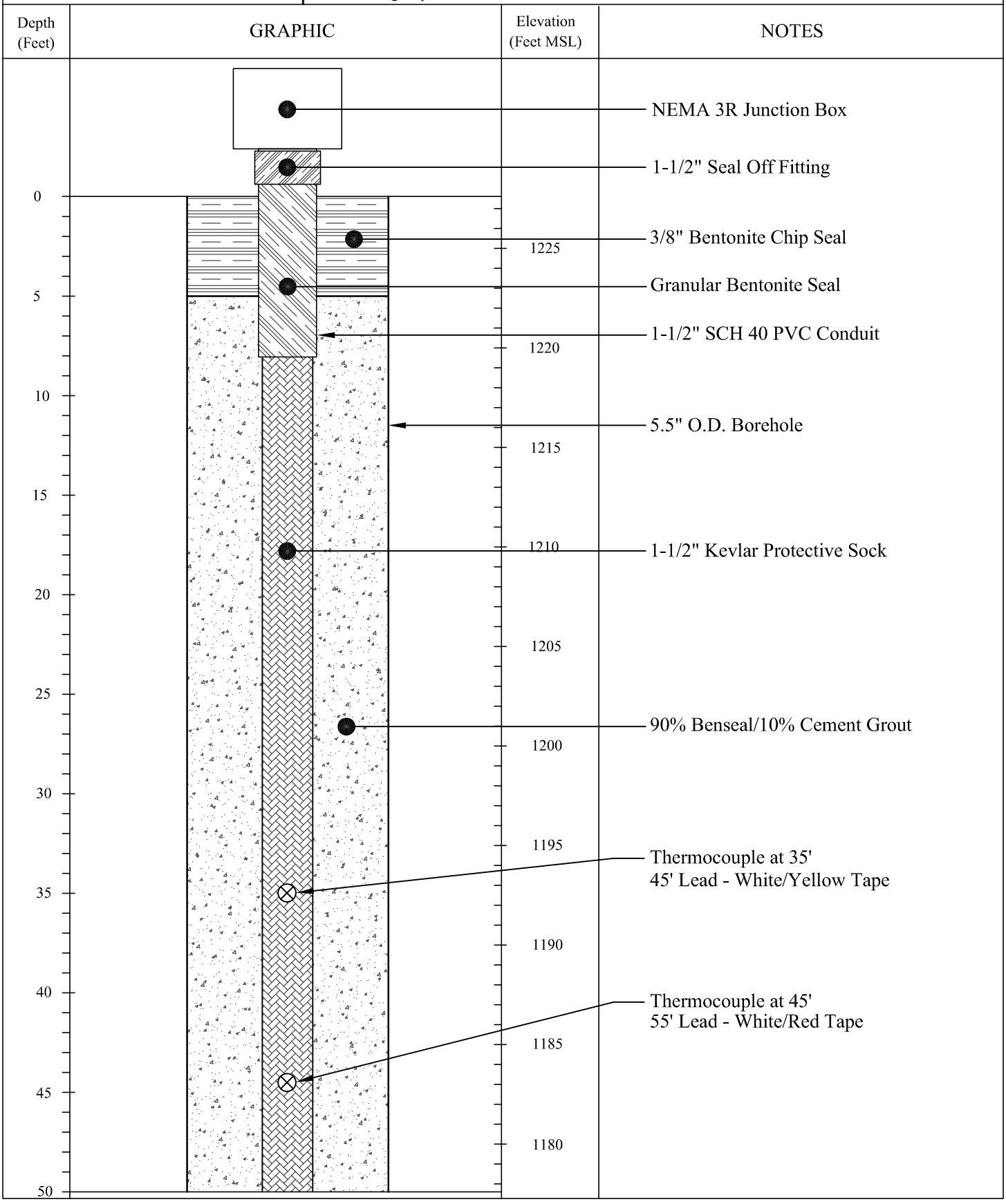
Depth (Feet)	GRAPHIC	Elevation (Feet MSL)	NOTES
150		1085	90% Benseal/10% Cement Grout
155	END BORING 155'	1080	5.5" O.D. Borehole 1-1/2" Kevlar Protective Sock
160		1075	Thermocouple at 155' 165' Lead - White/Orange Tape
165		1070	
170		1065	
175		1060	
180		1055	Base Liner @ 1058 msl
185		1050	
190		1045	
195		1040	
200			

SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-16

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	08/06/08
Drilled By:	Frontz Drilling	Date Completed:	08/06/08
Boring Method:	Sonic - Lost Point	Northing:	23998.48
Boring Diameter:	5.5"	Easting:	42323.78
Total Boring Depth:	145'	Surface Elevation:	1227.60

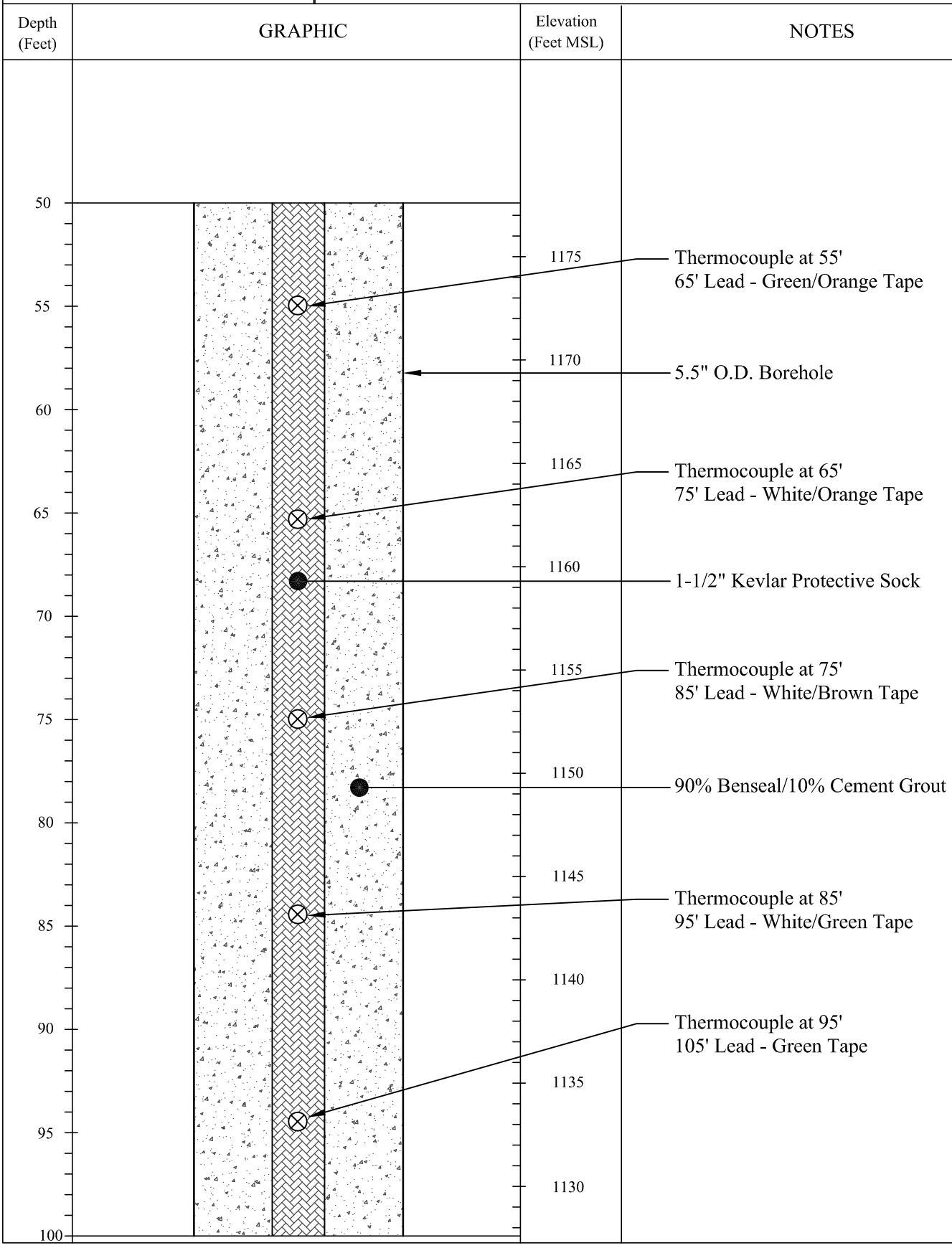


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-16

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	08/06/08
Drilled By:	Frontz Drilling	Date Completed:	08/06/08
Boring Method:	Sonic - Lost Point	Northing:	23998.48
Boring Diameter:	5.5"	Easting:	42323.78
Total Boring Depth:	145'	Surface Elevation:	1227.60

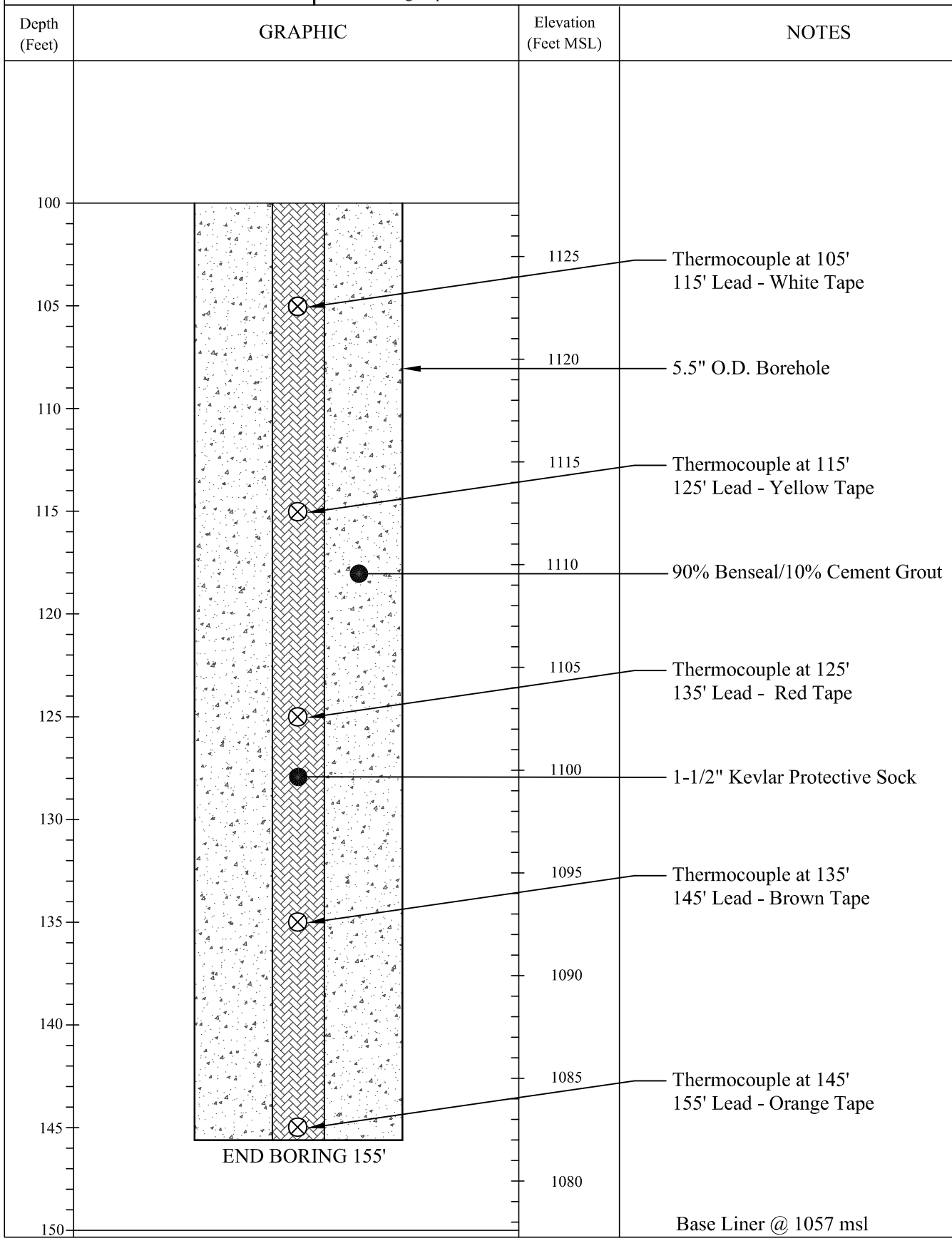


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-16

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	08/06/08
Drilled By:	Frontz Drilling	Date Completed:	08/06/08
Boring Method:	Sonic - Lost Point	Northing:	23998.48
Boring Diameter:	5.5"	Easting:	42323.78
Total Boring Depth:	145'	Surface Elevation:	1227.60

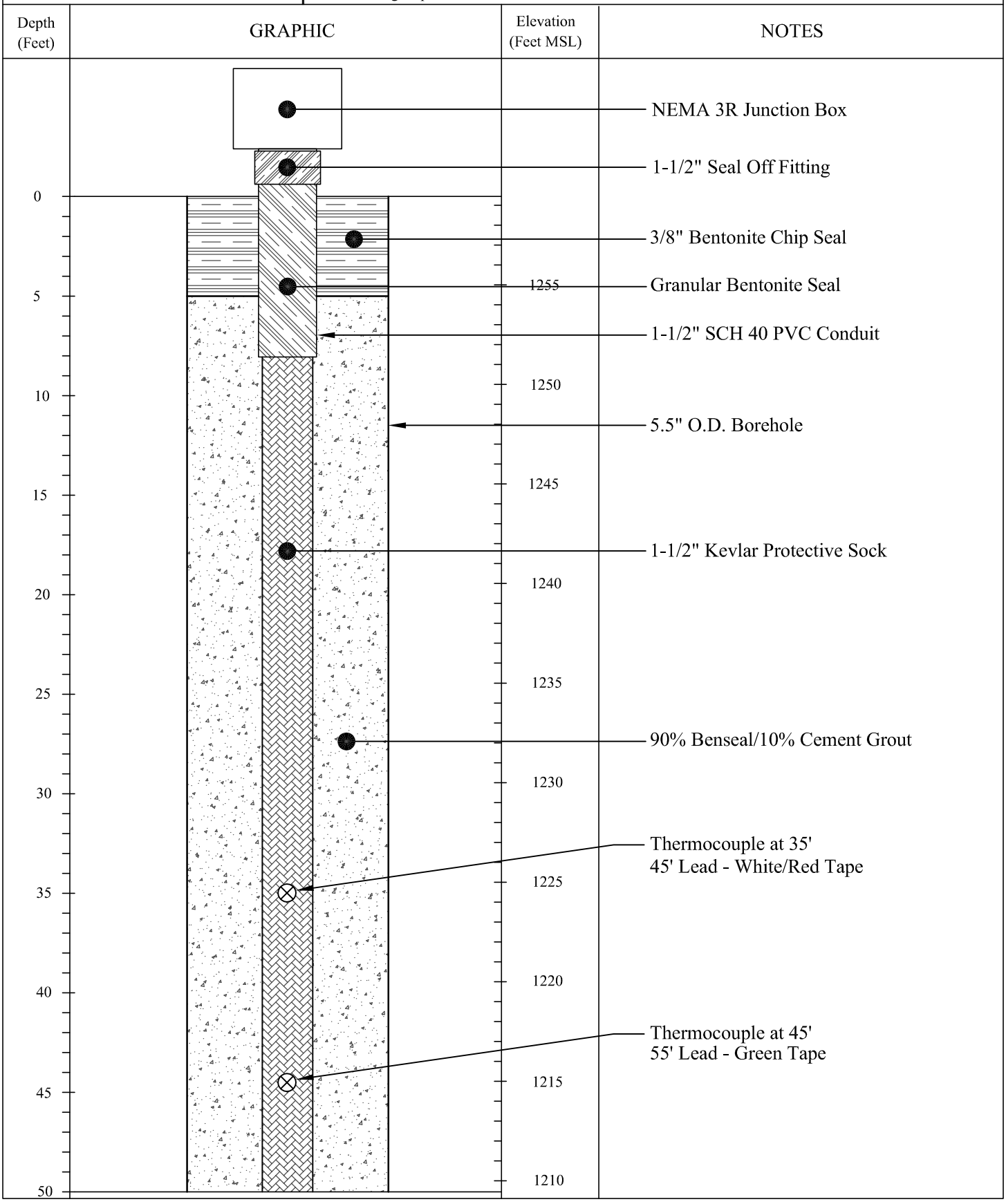


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-17

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	08/05/08
Drilled By:	Frontz Drilling	Date Completed:	08/06/08
Boring Method:	Sonic - Lost Point	Northing:	24014.59
Boring Diameter:	5.5"	Easting:	42471.46
Total Boring Depth:	185'	Surface Elevation:	1259.44

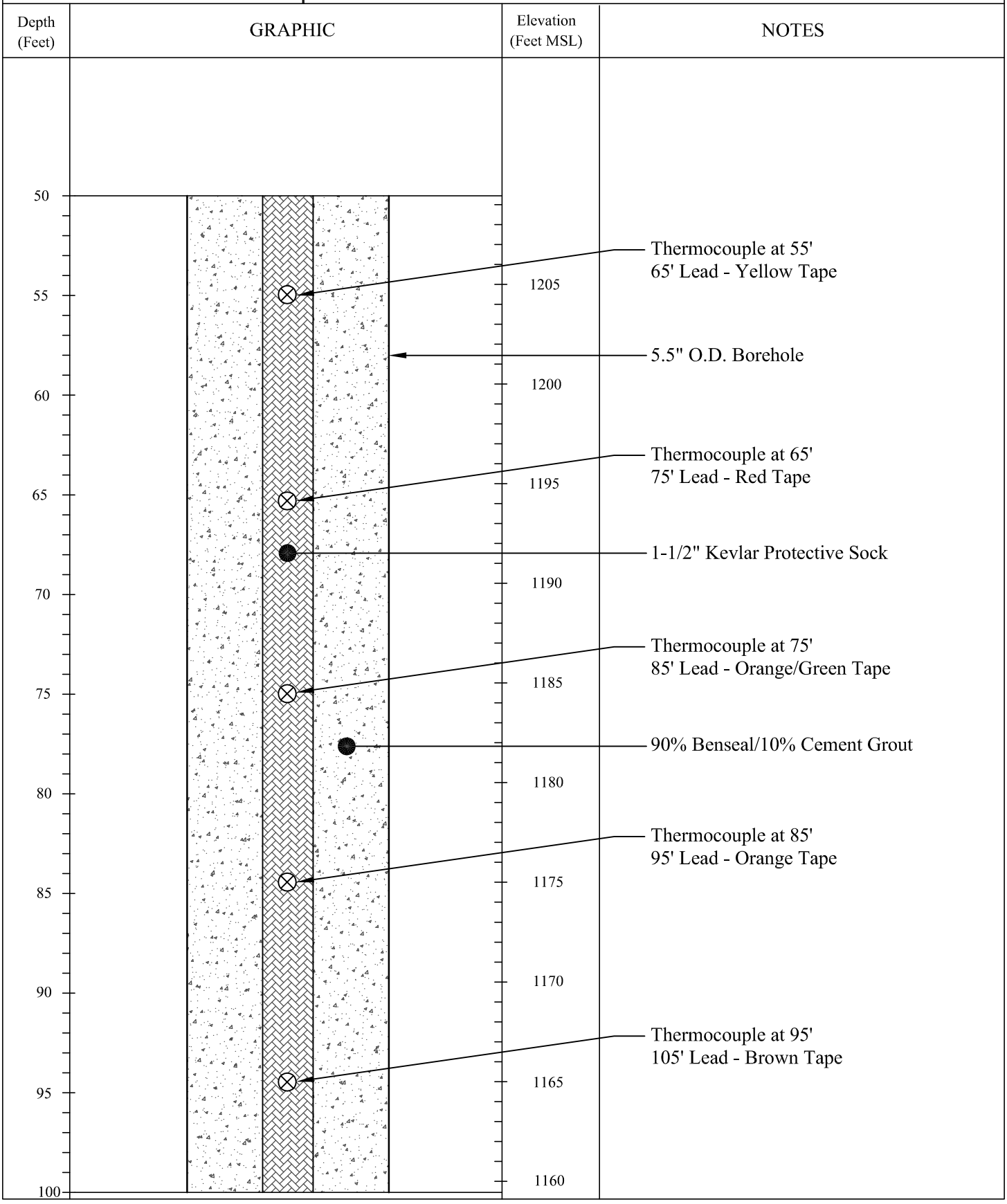


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-17

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	08/05/08
Drilled By:	Frontz Drilling	Date Completed:	08/06/08
Boring Method:	Sonic - Lost Point	Northing:	24014.59
Boring Diameter:	5.5"	Easting:	42471.46
Total Boring Depth:	185'	Surface Elevation:	1259.44

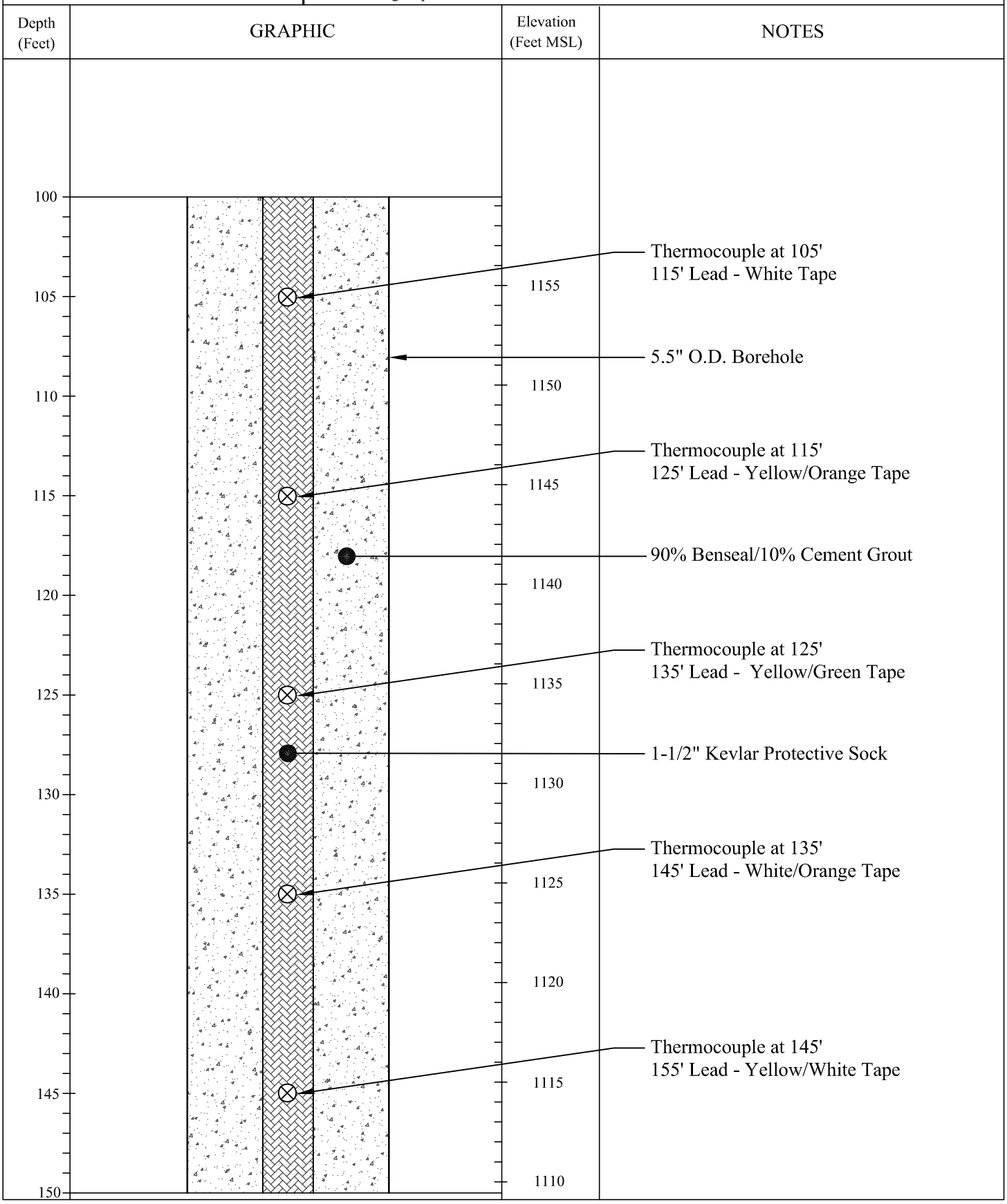


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-17

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	08/05/08
Drilled By:	Frontz Drilling	Date Completed:	08/06/08
Boring Method:	Sonic - Lost Point	Northing:	24014.59
Boring Diameter:	5.5"	Easting:	42471.46
Total Boring Depth:	185'	Surface Elevation:	1259.44

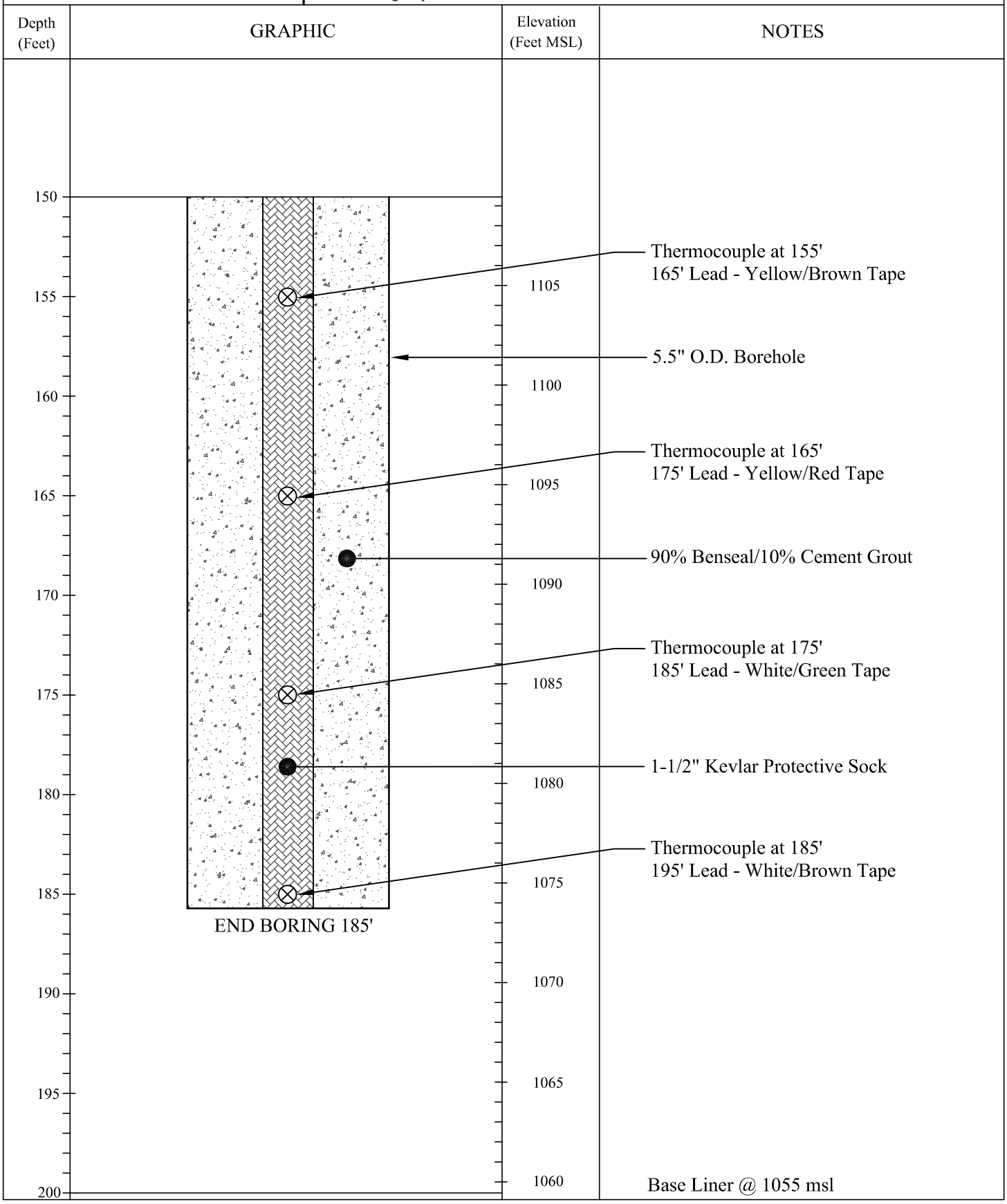


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-17

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	08/05/08
Drilled By:	Frontz Drilling	Date Completed:	08/06/08
Boring Method:	Sonic - Lost Point	Northing:	24014.59
Boring Diameter:	5.5"	Easting:	42471.46
Total Boring Depth:	185'	Surface Elevation:	1259.44

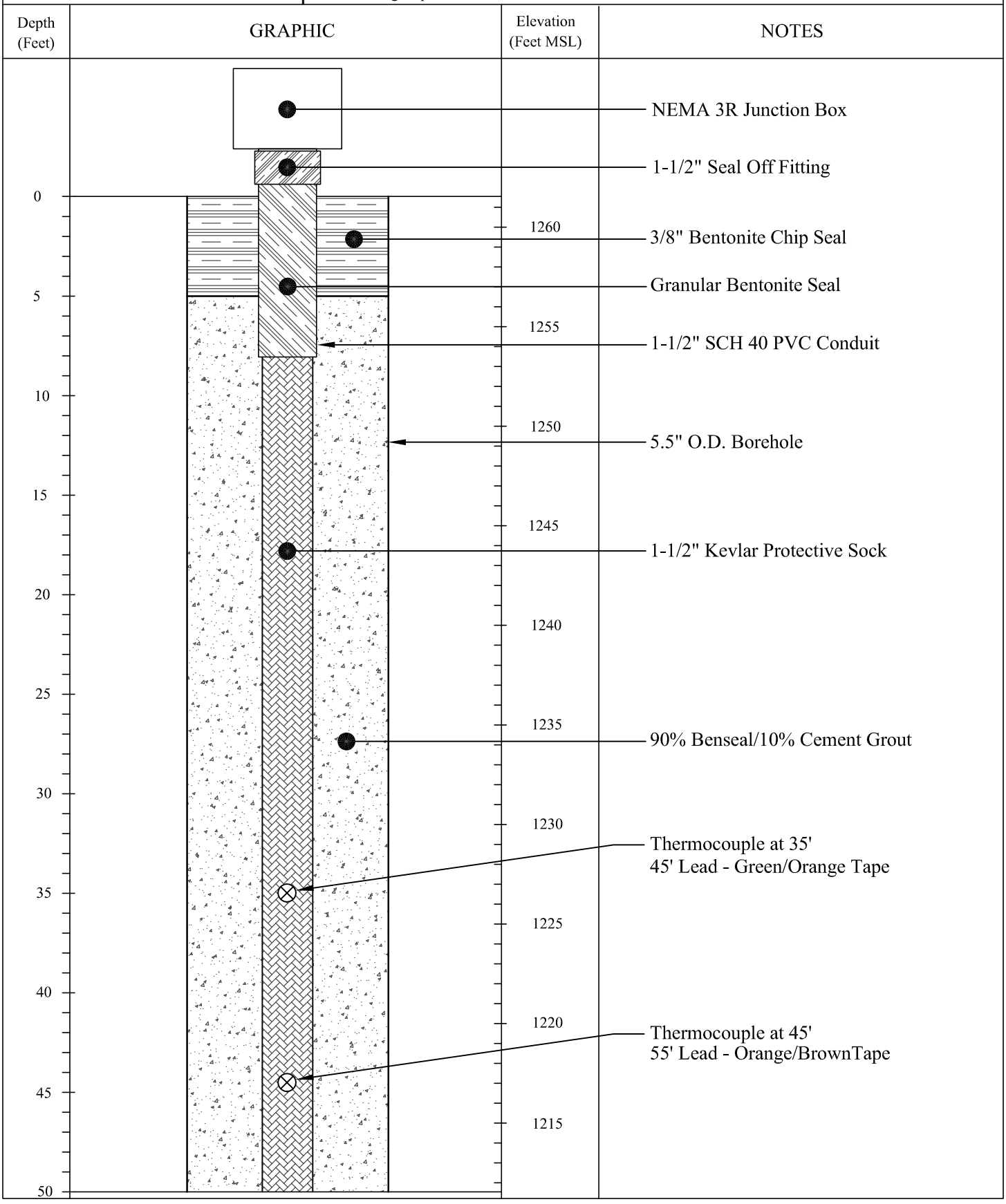


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-18

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/30/08
Drilled By:	Frontz Drilling	Date Completed:	08/04/08
Boring Method:	Sonic - Lost Point	Northing:	23998.46
Boring Diameter:	5.5"	Easting:	42575.23
Total Boring Depth:	185'	Surface Elevation:	1261.54

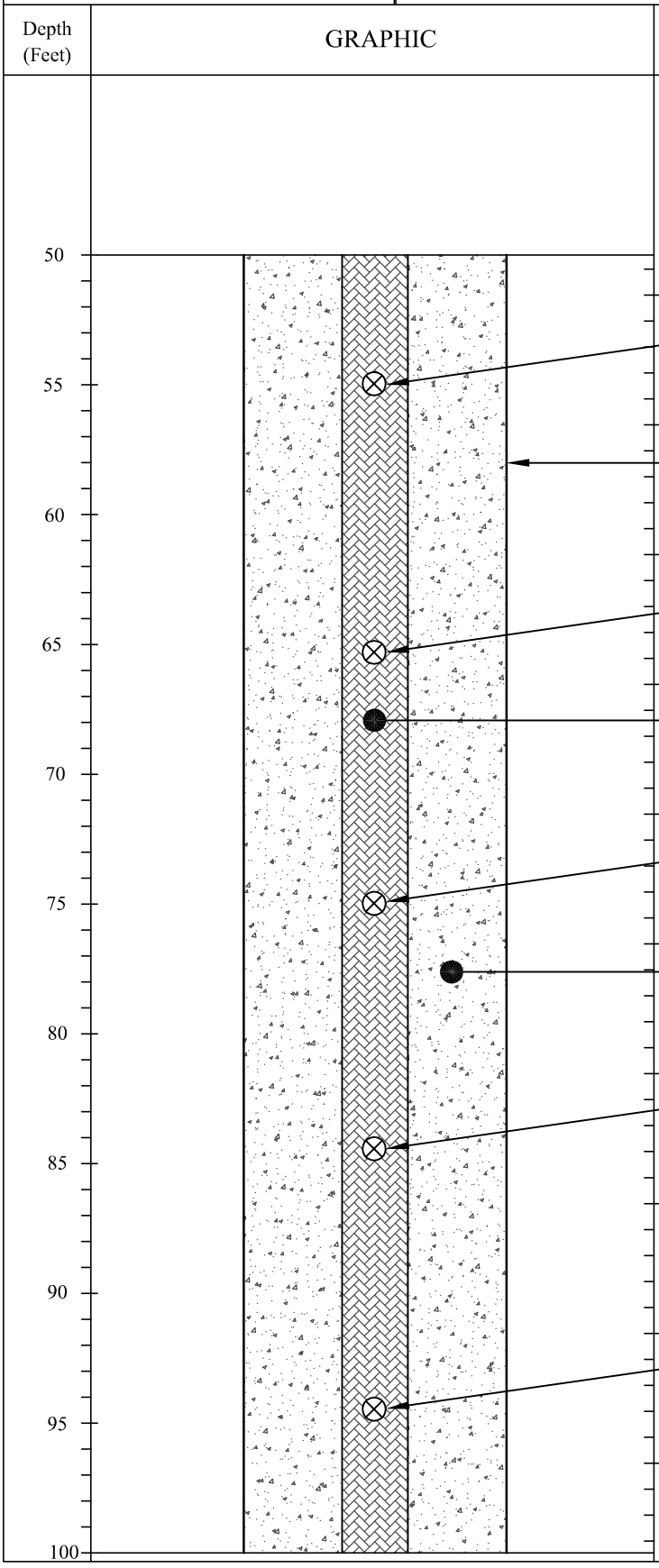


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-18

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/30/08
Drilled By:	Frontz Drilling	Date Completed:	08/04/08
Boring Method:	Sonic - Lost Point	Northing:	23998.46
Boring Diameter:	5.5"	Easting:	42575.23
Total Boring Depth:	185'	Surface Elevation:	1261.54

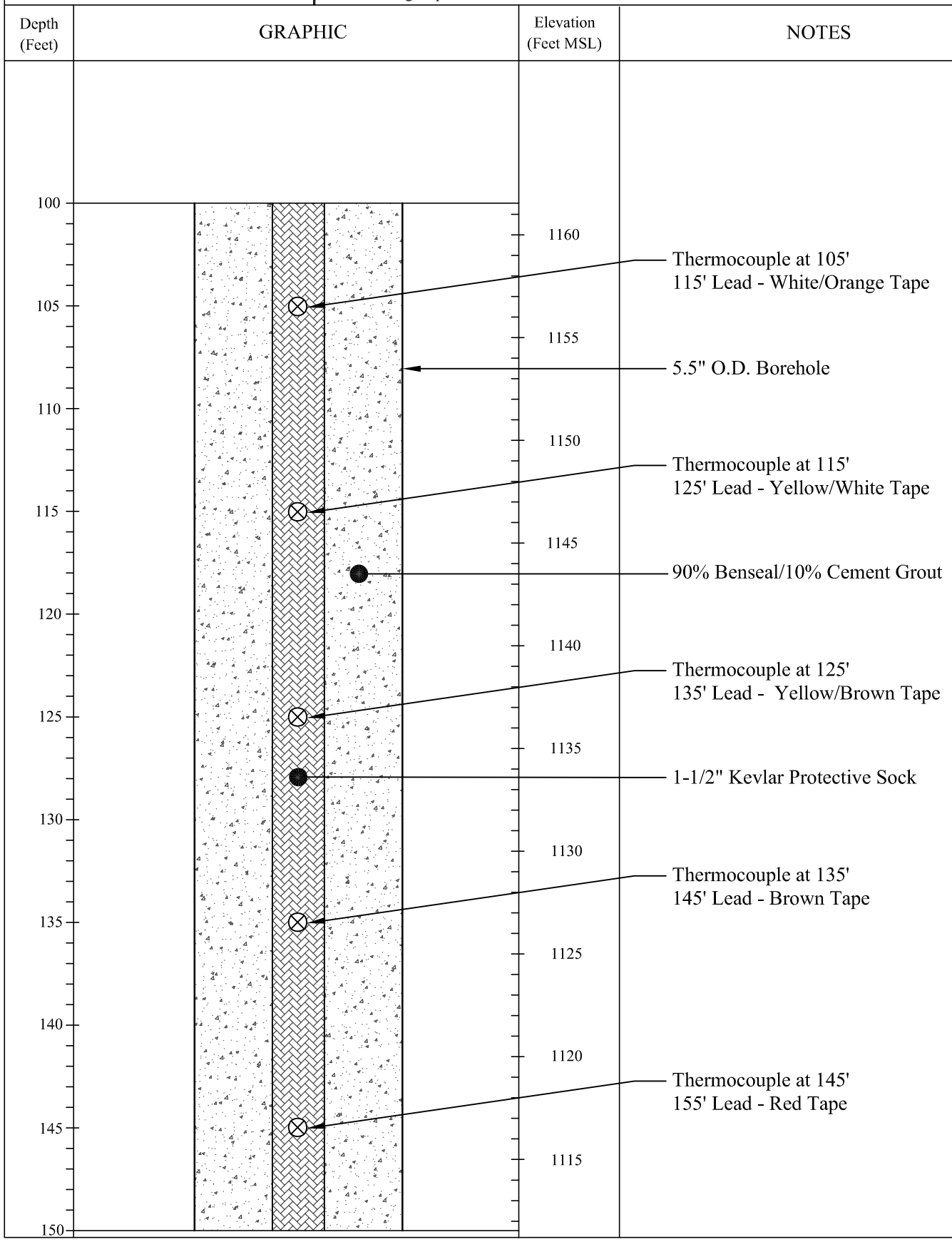


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-18

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/30/08
Drilled By:	Frontz Drilling	Date Completed:	08/04/08
Boring Method:	Sonic - Lost Point	Northing:	23998.46
Boring Diameter:	5.5"	Easting:	42575.23
Total Boring Depth:	185'	Surface Elevation:	1261.54

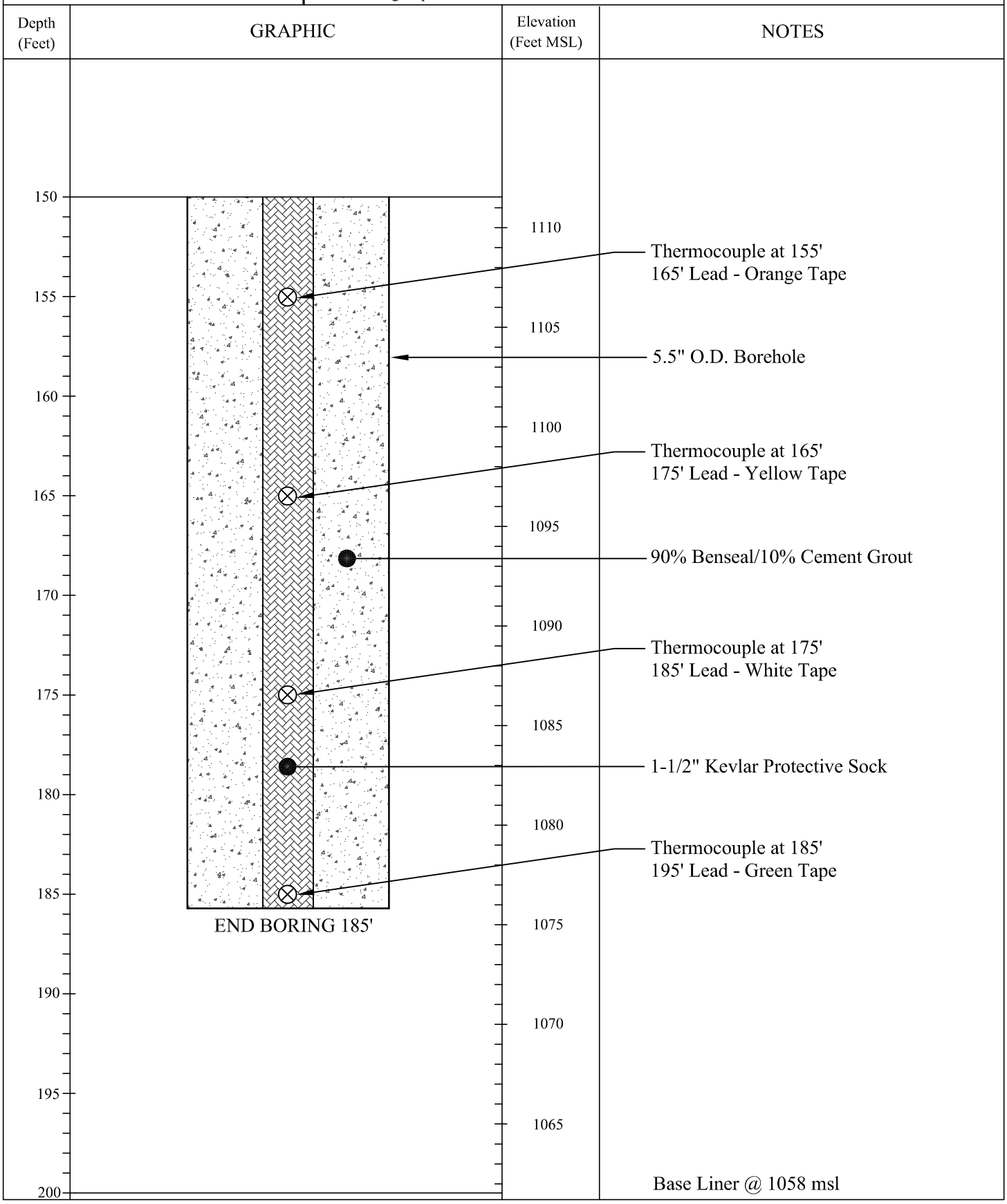


SCS ENGINEERS
CINCINNATI, OH

LOG OF BORING FBMP-18

Project Name: Countywide RDF
Project Location: E. Sparta, OH
SCS Project Number: 05206012.00

Logged By:	Alex Tassos	Date Started:	07/30/08
Drilled By:	Frontz Drilling	Date Completed:	08/04/08
Boring Method:	Sonic - Lost Point	Northing:	23998.46
Boring Diameter:	5.5"	Easting:	42575.23
Total Boring Depth:	185'	Surface Elevation:	1261.54



Attachment B

Daily Reports

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation		**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH		**Date: Thursday July 17, 2008**	**Arrived at Site: 7:00**
Contractor: Frontz Drilling		**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 5:00**
			Total Hours on Site: 8.5
Weather: Clear	**Temperature: Minimum: 67 Maximum: 90**		**Wind: North 0-10 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	10.0	Versa Sonic Drill Rig	FBMP-3R thermocouple string
Chad Whitman	10.0	Flatwater Fleet Support Truck	
		F-550 Support Truck	

OBSERVATIONS:

Drill rig set up at FBMP-3R. Conducted tailgate safety meeting. Drillers having problem with crane on support truck. Began drilling at 8:14. Target depth of 85'. Using 5.5 inch O.D. casing. Reached target depth by 10:30. Knocked out disposable drive point and ended up with 84.5' total depth. Frontz left at 10:45 to retrieve tremie pipe from shop in Wooster. Returned at 12:15. Mixed bentonite and cement for grout. Assembled thermocouple string and placed in borehole attached to 86' long fiberglass rod. Thermocouples installed at 83', 73', 63', 53', 43', 33', and 23' below grade. Tremied grout mixture into borehole while drill casing was still in the ground. Removed drill casing and completed grout top off by 14:15. Installed 5' bentonite chip plug at surface and hydrated. Frontz completed work at 14:25 and demobilized from borehole. Used 6 bags bentonite powder, ¼ bag cement for grout. Used 2 bags of bentonite chips for upper seal. Used a total of 1,800 gallons of water during drilling.

Moved drill rig to FBMP-1R. Set up rig and began drilling at 14:50. Target depth is 105'. Drilled to 105' by 4:50. Set drill head on drill casing and quit for day at 5:00.

FIELD PROBLEMS/Corrective Action:

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation	**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH	**Date: Friday July 18, 2008**	**Arrived at Site: 7:00**
Contractor: Frontz Drilling	**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 16:15**
		Total Hours on Site: 9.25
Weather: Clear	**Temperature: Minimum: 67 Maximum: 88**	**Wind: North 0-10 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	9.0	Versa Sonic Drill Rig – 9.0	FBMP-1R t/c string
Chad Whitman	9.0	Flatwater Fleet Support Truck – 9.0	FBMP-4R t/c string
		F-550 Support Truck – 9.0	

OBSERVATIONS:

Continue with FBMP-1R. Assembled thermocouple string attached to 106' fiberglass rod. Thermocouples installed at 105', 95', 85', 75', 65', 55', 45' and 35' below grade. Mixed bentonite/cement grout and tremied into borehole to 5' below grade. Removed 5.5" drill casing an d topped off grout. Placed 5' thick bentonite chip seal and hydrated. Completed backfill at 8:35 and broke down rig. Moved drill rig to FBMP-4R and started boring by 9:10. Target depth is 140'. Reached target depth at 13:30. Knocked out disposable drive point and ended up with total depth of 140'. Assembled thermocouple string attached to 142' fiberglass rod. Placed in borehole and grouted borehole with cement/bentonite mixture. Removed drill casing and topped off grout. Placed 5' bentonite seal at surface and hydrated. Completed backfill by 15:50 and broke down rig. Moved rig to FBMP-5R and set up for Monday drilling.

FIELD PROBLEMS/Corrective Action:

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation		**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH		**Date: Monday July 21, 2008**	**Arrived at Site: 7:00**
Contractor: Frontz Drilling		**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 17:00**
			Total Hours on Site: 10.0
Weather: Clear to light rain	**Temperature: Minimum: 68 Maximum: 88**		**Wind: North 0-10 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	10.0	Versa Sonic Drill Rig – 10.0	FBMP-5R t/c string
Chad Whitman	10.0	Flatwater Fleet Support Truck – 10.0	
		F-550 Support Truck – 10.0	

OBSERVATIONS:

Began drilling at FBMP-5R starting at 7:30 after tailgate safety meeting. Target depth is 110'. Reached 85' by 8:45 before needing a water refill. Resumed drilling at 9:00. Beaver is improving access bench to FBMP-6 and building bench for FBMP-9. Reached target depth at 9:40. Knocked out temporary drive point and achieved a total depth of 110'. Received thermocouple string from JMW at 10:15. Attached thermocouple string to 112' fiberglass rod and placed in borehole. Thermocuples installed at 110, 100', 90', 80', 70', 60', 50' and 40'. Began backfill of borehole with cement/bentonite grout and tremied into borehole. Removed drill casing and topped off grout. Placed 5' thick bentonite chip plug at surface and hydrated. Completed backfill at 12:00 and took lunch while Beaver completed pad for FMBP-6. Set up at FBMP-6 and began drilling at 13:05. Target depth is 145'. Reached target depth at 16:40. Knocked out disposable drive point. Placed drive head on drill casing and quit for day at 17:00. Picked up thermocouple string from JMW at 17:15 and returned to site.

FIELD PROBLEMS/Corrective Action:

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation	**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH	**Date: Tuesday July 22, 2008**	**Arrived at Site: 7:00**
Contractor: Frontz Drilling	**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 18:00**
		Total Hours on Site: 10.5
Weather: Light rain then partly cloudy	**Temperature: Minimum: 64 Maximum: 84**	**Wind: Northwest 0-10 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	10.25	Versa Sonic Drill Rig - 10.25	FBMP-5R t/c string
Chad Whitman	10.25	Flatwater Fleet Support Truck – 10.25	FBMP-2R t/c string
		F-550 Support Truck - 10.25	

OBSERVATIONS:

Continued with installation at FBMP-6 after safety meeting. Assembled thermocouple string attached to 147.5' fiberglass rod. Thermocouples installed at 145', 135', 125', 115', 105', 95', 85', 75', 65', 55', 45' and 35'. Mixed bentonite/cement grout and tremied into borehole after placement of thermocouples. Removed drill casing and topped off grout. Placed 5' bentonite seal at surface and hydrated. Completed backfill at 9:00 and broke down drill rig. Fueled equipment and moved drill rig to FBMP-2R. Checked location for utilities and verified drill depth. Target depth is 32'. Drilled to 35' to accommodate installation of thermocouple. Completed drilling by 9:50. Assembled thermocouple string and set 1 t/c at 32' below grade. Installed t/c in borehole and backfilled with bentonite/cement grout. Removed drill casing and topped of grout. Installed 5' bentonite plug at surface and hydrated. Completed backfill by 10:30 and broke down rig. Moved to FBMP-7 and started drilling at 11:15. Target depth is 185'. Reached target depth at 16:40. Knocked out disposable drive point and placed drive head on drill casing overnight. Frontz left site at 17:15. Installed explosion proof seal-offs and junction boxes on FBMP-1R, 2R, 3R, 4R, 5R and 6. Grouted seal-offs on FBMP-1R, 2R, 5R and 6. Installed mini plus terminals on thermocouple wires at FBMP-1R and 2R.

FIELD PROBLEMS/Corrective Action:

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation		**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH		**Date: Wednesday July 23, 2008**	**Arrived at Site: 7:00**
Contractor: Frontz Drilling		**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 17:30**
			Total Hours on Site: 10.5
Weather: Foggy then clear, windy, dusty	**Temperature: Minimum: 63 Maximum: 82**		**Wind: East 10-20 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	10.0	Versa Sonic Drill Rig - 10.0	FBMP-7 t/c string
Chad Whitman	10.0	Flatwater Fleet Support Truck – 10.0	FBMP-8 t/c string
		F-550 Support Truck – 10.0	

OBSERVATIONS:

Continued at FBMP-7 after safety meeting. Assembled thermocouple string and attached to 190' fiberglass rod. Placed t/c string in borehole and grouted with cement/bentonite mix. Thermocouples installed at 185', 175', 165', 155', 145', 135', 125', 115', 105' 95', 85', 75', 65', 55', 45' and 35' below grade. Removed drill casing and topped off grout. Added 5' bentonite plug at surface And hydrated. Completed backfill at 9:40 and broke down rig. Moved drill rig to FBMP-8 and set up. DEI surveyed location. Verified drill depth of 165'. Waste depth is 183'. Reached target depth at 12:40 and knocked out drive point. Total drill depth is 165'. Assembled thermocouple string and attached to 170' fiberglass rod. Placed in borehole at 13:15 and backfilled borehole with cement/bentonite grout. Thermocouples installed at 165', 155', 145', 135', 125', 115', 105', 95', 85', 75', 65', 55', 45' and 35'. Removed drill caing and topped off grout. Placed 5' bentonite surface seal and hydrated. Completed backfill at 15:18 Broke down drill rig and moved to FBMP-9. DEI surveyed location. Verified drill depth of 125'. Waste depth is 147'. Began drilling at 15:47. Reached 100' by 5:00 before quitting for day at 17:10.

FIELD PROBLEMS/Corrective Action:

FBMP-7 began burping leacahte through conduit around 14:00. Placed granular bentonite in conduit and grouted seal-off. Placed granular bentonite on spilled leachate. JMW will clean up tomorrow. Checked all location at 21:00 for problems. None found.

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation	**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH	**Date: Thursday July 24, 2008**	**Arrived at Site: 6:00**
Contractor: Frontz Drilling	**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site:**
		Total Hours on Site:
Weather: Clear	**Temperature: Minimum: 57 Maximum: 78**	**Wind: Southeast 0-10 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	6.0	Versa Sonic Drill Rig - 6.0	FBMP-9 t/c string
Chad Whitman	6.0	Flatwater Fleet Support Truck – 6.0	
		F-550 Support Truck – 6.0	

OBSERVATIONS:

Drillers arrived at 7:00. Conducted tailgate safety meeting. Support truck left for a load of water. Resumed drilling FBMP-9 at 7:34. Drive point is clogged and preventing advancement. Reached target depth at 12:10 after pulling drill rods and clearing clog. Assembled thermocouple sting and attached to 130' fiberglass rod. Installed thermocouples in borehole and backfilled with cement/ bentonite grout. Removed drill casing and topped off grout. Installed 5' bentonite plug at surface and hydrated. Completed backfill at 12:50 and broke down rig. Installed seal-off on conduit and grouted seal-off after filling conduit with granular bentonite.

Thermocoupes installed at 125', 115', 105', 95', 85', 75', 65', 55', 45' and 35'.

Frontz left site at 13:00 due to Dave falling off drill rig platform and needing to have his knee examined by doctor.

FIELD PROBLEMS/Corrective Action:

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation		**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH		**Date: Friday July 25, 2008**	**Arrived at Site: 7:05**
Contractor: Frontz Drilling		**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 16:05** **Total Hours on Site: 9.0**
Weather: Clear to partly cloudy	**Temperature: Minimum: 56 Maximum: 84**		**Wind: ENE 5-10 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	9.0	Versa Sonic Drill Rig - 9.0	FBMP-10 t/c string
Chad Whitman	9.0	Flatwater Fleet Support Truck – 9.0	
		F-550 Support Truck – 9.0	

OBSERVATIONS:

Moved drill rig to FBMP-10 and set up after safety meeting. Target depth is 125'. Began boring at 7:50. Reached target depth at 9:50. Knocked out drive point and assembled thermocouple sting attached to 130' fiberglass rod. Placed t/c string in borehole and grouted with cement/bentonite mix. Thermocouples installed at 125', 115', 105', 95', 85', 75', 65', 55', 45' and 35' below grade. Removed drill casing and topped off grout. Added 5' bentonite surface seal and hydrated. Placed granular bentonite in conduit and hydrated. Completed backfill at 11:28. Broke down rig and moved to FBMP-11. Target depth is 85'. Began drilling FBMP-11 at 12:34. At 3:05 disposable drive point came off at approximately 65' below grade. Frontz does not have any more drive points welded to spool pieces so drilling is done for the day. Left drill casing in borehole and attached drive head to casing before leaving for weekend. Frontz left at 15:15

FIELD PROBLEMS/Corrective Action:

No medical treatment was necessary from the fall yesterday. The contusion was iced overnight. JMW cleaned up leachate spill at FBMP-7 at 16:15.

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation	**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH	**Date: Monday July 28, 2008**	**Arrived at Site: 7:15**
Contractor: Frontz Drilling	**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 18:30**
		Total Hours on Site: 13.0
Weather: Clear to partly cloudy	**Temperature: Minimum: 61 Maximum: 85**	**Wind: North to NE 5-15 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	11.0	Versa Sonic Drill Rig - 11.0	FBMP-11 t/c string
Chad Whitman	11.0	Flatwater Fleet Support Truck – 11.0	FBMP-12 t/c string
		F-550 Support Truck – 11.0	

OBSERVATIONS:

Frontz arrived at 7:00. Conducted tailgate safety meeting before removing drill casing at FBMP-11 and replacing disposable drive point. Resumed drilling from 65' deep at 7:40. Reached target depth at 8:08 and knocked out drive point. Assembled t/c string attached to 90' fiberglass rod and placed in borehole. Thermcouples installed at 85', 75', 65', 55', 45', and 35'.

Grouted borehole with cement/bentonite mix before removing drill casing.

Topped off grout after completing casing removal and installed 5' hydrated bentonite surface seal. Completed backfill at 8:42 and broke down rig. Moved to FBMP-12 and set up. Target depth is 75'. Began drilling at 9:26. Completed drilling at 10:40.

Assembled t/c string attached to 80 fiberglass rod. Installed in borehole and backfilled with grout. Thermocouples installed at 75', 65', 55', 45' and 35'. Completed backfill including bentonite surface seal at 11:38 and broke down rig. Moved rig to FBMP-13 and set up. Began drilling at 12:35. Target depth is 195. Surface elevation is 1271.4 and liner is 1057. Lost disposable drive point at 60'. Replaced at 14:22 and reached target depth at 17:50. Knocked out drive point and placed drill head on casing overnight. Frontz left at 18:00.

Installed mini plugs on FBMP-7 t/c wires and collected initial readings. Installed seal-offs on FBMP-11 and FBMP-12.

FIELD PROBLEMS/Corrective Action:

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation		**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH		**Date: Tuesday July 29, 2008**	**Arrived at Site: 7:45**
Contractor: Frontz Drilling		**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 4:15**
			Total Hours on Site: 8.5
Weather: Clear	**Temperature: Minimum: 62 Maximum: 87**		**Wind: North 0-5 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	9.5	Versa Sonic Drill Rig - 9.5	FBMP-14 t/c string
Chad Whitman	9.5	Flatwater Fleet Support Truck – 9.5	
		F-550 Support Truck – 9.5	

OBSERVATIONS:

Frontz arrived at 7:15. Resumed installation at FBMP-13. Attached thermocouple string to 200' fiberglass rod and placed in borehole. Thermocouples installed at 195', 185', 175', 165', 155', 145', 135', 125', 115', 105', 95', 85', 75', 65', 55', 45' and 35'. Mixed grout and backfilled prior to removing drill casing. Topped off grout after removing casing and placed surface bentonite seal. Placed granular bentonite in conduit and installed explosion proof sealing fitting. Completed backfill and installation at 9:49.

Broke down rig and moved to FBMP-14. Began drilling FBMP-14 at 10:18. Surface elevation is 1265.5 and liner is 1057. Waste thickness is 208.5' thick. Target depth is 195'. Reached target depth at 16:15. Knocked out drive point and placed drive head on drill casing. Removed leaking hydraulic cylinder on drive head and took to shop for replacement in morning. Frontz left site at 16:45.

Installed mini plugs on thermocouple wires at FBMP-8 and collected initial readings. Grouted seal-offs at FBMP-13, 12, 11, 10, 9 And 3R. Installed junction boxes at FBMP-13, 12, 11, 9 and 8.

FIELD PROBLEMS/Corrective Action:

Several wires at FBMP-8 (135, 155', 175') are transmitting leachate and gas between the cable shielding and the 20 gauge conductors. Plan to seal with RTV silicone sealant tomorrow.

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation		**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH		**Date: Wednesday July 30, 2008**	**Arrived at Site: 7:00**
Contractor: Frontz Drilling		**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 17:30**
			Total Hours on Site: 12.0
Weather: Cloudy, light rain	**Temperature: Minimum: 70 Maximum: 85**		**Wind: Northeast 5-15 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	8.0	Versa Sonic Drill Rig - 8.0	FBMP-14 t/c string
Chad Whitman	8.0	Flatwater Fleet Support Truck – 8.0	
		F-550 Support Truck – 8.0	

OBSERVATIONS:

Frontz arrived at 7:00. Conducted tailgate safety meeting. Frontz replaced leaking hydraulic cylinder on drill head and ¼" winch cable which broke last night while knocking out drive point. Attached thermocouple string for FBMP-14 to 200' fiberglass rod and installed in borehole. Thermocouples installed at 195', 185', 175', 165', 155', 145', 135', 125', 115', 105', 95', 85', 75', 65', 55', 45' and 35'. Mixed grout and backfilled borehole before removing drill casing. Topped off grout and placed surface Bentonite seal and hydrated. Completed backfill at 10:36. Broke down rig and fueled before moving to FBMP-18. Began drilling FBMP-18 at 11:50 after lunch. Surface elevation is 1261.9, liner is 1057, drill depth is 185' and waste thickness is 205'. Spindle connecting drive head to drill casing is cracked and has halted drilling at 2:00. Frontz removed spindle and is locating a replacement. Delivery time is unsure.

Installed conduit, fittings and junction box at FBMP-14. Installed mini plug terminal on thermocouple wires at FBMP-13, 12, 11 and 9. Collected initial reading at FBMP-13, 12, 11, and 9. Grouted seal off fitting at FBMP-14. Applied RTV silicone to thermocouple wires at FBMP-8 to prevent leachate blowing through wires.

FIELD PROBLEMS/Corrective Action:

Gas blowing through thermocouple wires at FBMP-8 is preventing silicone from sealing. Applied superglue to wires to prevent gas/leachate from blowing through wires.

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation		**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH		**Date: Monday August 4, 2008**	**Arrived at Site: 7:15**
Contractor: Frontz Drilling		**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 18:45** **Total Hours on Site: 11.5**
Weather: Clear to partly cloudy	**Temperature: Minimum: 62** **Maximum: 83**		**Wind: North to east 0-10 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	11.5	Versa Sonic Drill Rig - 11.5	FBMP-18 t/c string
Chad Whitman	11.5	Flatwater Fleet Support Truck – 11.5	
		F-550 Support Truck – 11.5	

OBSERVATIONS:

Frontz arrived at 7:00. Installed new spindle on drive head and resumed drilling at FBMP-18 after safety meeting at 7:30. Raeched target depth of 185' at 11:00. Knocked out disposable drive point and confirmed drill depth of 185. Attached t/c string to 190' fiberglass rod and installed in borehole. Thermocouples installed at 185', 175', 165', 155', 145', 135', 125', 115', 105', 95', 85, 75', 65', 55', 45' and 35' below grade. Mixed bentonite/cement grout and tremied into borehole before removing drill casing. Topped off grout after removing casing and installed 5' bentonite surface seal and hydrated. Completed backfill at 12:20.

Moved drill rig to FBMP-15 and set up. Confirmed drill depth of 155'. Liner at 1059' and ground surface at 1236.74. Began drilling at 13:40. Lost disposable drive point at 75'. Replaced and reached target depth at 18:20. Knocked out disposable drive point and confirmed depth of 155'. Will install thermocouples in morning. Frontz left at 18:30.

Installed conduit and fittings at FBMP-18. Grouted seal off fitting and installed mini plug terminals on thermocouple wires.

FIELD PROBLEMS/Corrective Action:

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation		**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH		**Date: Tuesday August 5, 2008**	**Arrived at Site: 7:00**
Contractor: Frontz Drilling		**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site:**
			Total Hours on Site:
Weather: Cloudy, clear	**Temperature: Minimum: 65 Maximum: 80**		**Wind: Northeast 5-15 mph**
Contractor's Labor	**Hours**	**Contractor's Equipment & Hours Used**	**Material Received & Incorporated in Work**
Dave Schrecengost	9.0	Versa Sonic Drill Rig - 9.0	FBMP-15 t/c string
Chad Whitman	9.0	Flatwater Fleet Support Truck – 9.0	
		F-550 Support Truck – 9.0	

OBSERVATIONS:

Frontz arrived at 7:30 after picking up fuel for equipment. Prepared to install FBMP-15 thermocouple string after safety meeting.

Attached thermocouple string to 160' fiberglass rod and installed in borehole. Thermocouples installed at 155', 145', 135', 125, 115', 105', 95', 85', 75', 65', 55', 45' and 35'. Mixed grout and tremied into borehole. Removed drill casing and topped off grout. Placed 5' bentonite surface seal and hydrated. Placed granular bentonite in conduit and hydrated. Completed backfill at 9:52. Broke down rig and moved to FBMP-17. Set up and began drilling at 10:26. Confirmed drill depth of 145'.

Ground surface is at 1259.35 and base liner is at 1055. Hard object at 108'. 40 minutes to make 6". Lost disposable bit at 140'.

Replaced and resumed at 3:42. Reached target depth at 16:15. Attached thermocouple string to 190' fiberglass rod and attached 8' PVC conduit to end of Kevlar sock. Will install thermocouples in morning. Frontz left site at 16:30.

Installed conduit, fittings, seal off and junction box at FBMP-15. Grouted seal off fitting and attached mini plug terminals to thermocouple wires.

FIELD PROBLEMS/Corrective Action:

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation	**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH	**Date: Wednesday August 6, 2008**	**Arrived at Site: 6:50**
Contractor: Frontz Drilling	**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 18:10**
		Total Hours on Site: 11.25
Weather: Clear to partly cloudy	**Temperature: Minimum: 66 Maximum: 83**	**Wind: South to east 5-15 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	7.75	Versa Sonic Drill Rig - 7.75	FBMP-17 t/c string
Chad Whitman	7.75	Flatwater Fleet Support Truck – 7.75	FBMP-16 t/c string
		F-550 Support Truck – 7.75	

OBSERVATIONS:

Frontz arrived at 7:00. Conducted safety meeting. Confirmed borehole at FBMP-17 was still open to 155' before installing thermocouple string. Thermocouples installed at 155', 145', 135', 125', 115', 105', 95', 85', 75', 65', 55', 45' and 35'. Mixed grout and tremied into borehole before removing drill casing. Topped off grout, placed 5' bentonite surface seal, filled conduit with granular bentonite and hydrated both. Completed backfill at 9:05. Broke down rig and moved to FBMP-16. Surface elevation of bench is 1227.5 and liner is at 1058. Target depth is 145' and waste is 169' thick. Began boring at 9:31. Reached target depth at 12:05 and knocked out disposable bit. Attached thermocouple string to fiberglass rod and 1.5" conduit and installed in borehole. Thermocouples installed at 145', 135', 125', 115', 105', 95', 85', 75', 65', 55', 45' and 35'. Mixed grout and tremied in borehole. Removed drill casing and topped off grout. Installed 5' bentonite surface seal, filled conduit with granular bentonite and hydrated both. Completed backfill at 14:10. Broke down rig and moved to FBMP-19. Set up for drilling tomorrow. Frontz left site at 16:45

Installed conduit, seal offs, junction boxes, and grouted seal offs at FBMP-16 and 17. Installed 10 mini plugs on thermocouple wires at FBMP-17. Worked on cutting and sealing t/c wires for FBMP-19 and gathered supplies.

FIELD PROBLEMS/Corrective Action:

Ran out of mini plugs Missing 4 at FBMP-17 and all at FBMP-16. More ordered.

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

SCS ENGINEERS

DAILY SUMMARY/INSPECTION REPORT

Project Name: Countywide RDF Administrative Settlement Project – FBMP Installation		**Project No.: 05206012.00**	**Page: 1 of 1**
Location: Countywide RDF, E. Sparta, OH		**Date: Thursday August 7, 2008**	**Arrived at Site: 7:00**
Contractor: Frontz Drilling		**Field Personnel: Dave Schrecengost, Chad Whitman**	**Departed Site: 17:40**
			Total Hours on Site: 10.5
Weather: Clear	**Temperature: Minimum: 61 Maximum: 78**		**Wind: East 5-15 mph**

Contractor's Labor	Hours	Contractor's Equipment & Hours Used	Material Received & Incorporated in Work
Dave Schrecengost	7.75	Versa Sonic Drill Rig - 7.75	FBMP-19 t/c string
Chad Whitman	7.75	Flatwater Fleet Support Truck – 7.75	
		F-550 Support Truck – 7.75	

OBSERVATIONS:

Frontz arrived at 7:00. Conducted safety meeting before starting FBMP-19. Target depth is 155'. Surface elevation is 1235.84 and base liner is 1059. Began boring at 7:15. Reached target depth at 9:50. Thermocouple string is not ready at JMW. Went to JMW's shop to help assemble thermocouple string. Returned at 11:15 with thermocouples and attached to 163' fiberglass rod and to 1.5" conduit before installing in borehole. Thermocouple installed at 155', 145', 135', 125', 115', 105', 95', 85', 75', 65', 55', 45' and 35'. Mixed grout and tremied in borehole before removing drill casing. After removing first 20' section of drill casing, grout was ejected from borehole followed by leachate. Approximately 100 -200 gallons was released and flowed downslope along the synthetic cap before being stopped in the stormwater ditch near RW-1. AEG pipecrew installing a road crossing near RW-1 created an earthen dam to stop flow before leachate reached the limits of waste. Vac truck from JMW cleaned up leachate in stormwater ditch near RW-1 and AEG crew removed soil on drilling bench. FBMP-19 was abandoned and thermocouple string was removed before removing all but 20' of drill casing including the ring bit. Abandoned casing was filled with bentonite chips and capped with a threaded metal cap.

Installed mini plugs on remaining thermocouple wires at FBMP-17 and 16. Frontz deconed equipment and left site at 14:45.

FIELD PROBLEMS/Corrective Action:

Released leachate was cleaned from liner and ditch by JMW. Borehole abanodonment successful.

Prepared by: Alex Tassos	**Reviewed by: Bill Eberts**
Affiliation: SCS Engineers	**Affiliation: Earth Tech AECOM**

Attachment C

Photos

150.1

APPENDIX H

Summary of Worker Air Monitoring Activities, Arcadis, October 14, 2009

ARCADIS
Infrastructure, environment, buildings

ARCADIS
1100 Superior Avenue
Suite 1250
Cleveland
Ohio 44114
Tel 216.781.6177
Fax 216.781.6243
www.arcadis-us.com

Michael Beaudoin
Senior Program Manager
EARTH TECH – AECOM
36133 Schoolcraft Road
Livonia, MI 48150

ENVIRONMENT

Subject:
Summary of Isolation Break Air Monitoring Activities,
December 2008 through April 2009,
Countywide Recycling and Disposal Facility

Date:
October 14, 2009

Contact:
Brian Howman

Phone:
216.781.6177

Email:
brian.howman@arcadis-us.com

Our ref:
CL000569.0003

Dear Mr. Beaudoin:

ARCADIS conducted air monitoring to ensure the health and safety of workers during the Isolation Break excavation activities completed at the Countywide Recycling and Disposal Facility, 3619 Gracemont Street S.W., East Sparta, Ohio. The Isolation Break excavation air monitoring activities started on December 8, 2008 and were completed on April 17, 2009. Air monitoring activities were conducted by ARCADIS employees, Mr. Brian Howman, Mr. Kurt Merkle, and Ms. Tricia Trommer.

Air monitoring instruments utilized were the following: MiniRae 2000 Photoionization Detector (PID) with a 10.6 eV lamp for measuring volatile organic compounds; MSA Orion 4-Gas Meter (oxygen, hydrogen sulfide, carbon monoxide, and lower explosive limit); Biosystems ToxiPro Ammonia (NH_3) Gas Detector; and MSA Hand Pump with MSA Benzene detector tubes.

Each air monitoring instrument was calibrated or calibration checked daily prior to the startup of excavation activities. Instrument calibrations/calibration checks were completed per the manufacturers' specifications using the appropriate calibration span gas for each instrument.

Excavation Activities

During excavation activities the air monitoring instruments were used to monitor the workers breathing zone (approximately shoulder height to waist height) at various locations (upwind, downwind, and crosswind) around the excavation equipment at a distance beyond the working reach of the equipment. To ensure the health & safety of the equipment operators, each equipment operator was equipped with a personnel

MSA 4-Gas Meter in addition to the air monitoring conducted by ARCADIS. Maintenance records of the personnel MSA 4-Gas Meters worn by the equipment operators were maintained by Beaver Excavating.

Air Monitoring Action Levels

The Isolation Break Excavation Health & Safety Plan, dated November 14, 2008, established air monitoring action levels that were protective of site workers. The air monitoring action levels that would cause work activities to stop and a re-evaluation of the health and safety controls in place to protect workers' were the following:

- Lower Explosive Limit (LEL) for methane gas – 25 percent (%) or higher.
- Hydrogen sulfide (H_2S) – 10 parts per million (ppm) or higher.
- Oxygen (O_2) – 19.5% or lower.
- Carbon Monoxide (CO) – 25 ppm or higher.
- Ammonia (NH_3) – 25 ppm or higher.
- Volatile Organic Compounds (VOCs) – 1 ppm (sustained) or higher. If benzene is not present the VOC action level is 10 ppm (sustained) or higher.

Air Monitoring Results

Air monitoring readings, equipment numbers, location of readings, and general notes were recorded on the ARCADIS Daily Worker Air Monitoring Field Report. Copies of the ARCADIS Daily Worker Air Monitoring Field Reports are included as Attachment 1.

A summary of the air monitoring results for the Isolation Break excavation activities is as follows:

LEL – 0% to 5%. LEL readings of 0% to 18% were recorded during trenching activities for the lower leachate and landfill gas collection pipes along the south slope of the Isolation Break.

H2S – 0 ppm

Oxygen – 20.4 % to 21.0%

CO – 0 ppm. CO readings of 0 ppm to 8 ppm were recorded during trenching activities for the lower leachate and landfill gas collection pipes along the south slope of the Isolation Break.

NH3 – 0 ppm

VOCs – 0 ppm to 5.8 ppm.

Benzene Detector Tubes

Benzene detector tubes were collected if VOC readings were at or greater than 1 ppm (sustained). The benzene detector tube will indicate the presence of benzene at a concentration of 0.25 ppm. Twelve (12) benzene detector tubes were collected during Isolation Break excavation activities. Benzene was not detected by any of the benzene detector tubes collected during the Isolation Break excavation activities. A photograph of each benzene detector tube is included in Attachment 2.

Conclusion

The Isolation Break air monitoring did not detect any concentrations of LEL, oxygen, hydrogen sulfide, carbon monoxide, ammonia, VOCs, or benzene at or above the action levels established by the Isolation Break Excavation Health & Safety Plan, dated November 14, 2008.

Sincerely,

ARCADIS

Brian Howman
Staff Scientist/Project Health & Safety Officer

ARCADIS

Attachment 1

Isolation Break Field Notes

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 12/08/2023 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM N/A PM Clear, ~27°F

Project: CWRDF Isolation Break Temp.(°F): High N/A Low N/A Rain N/A

ARCADIS PHSO: Brian Hawman Wind Direction: from S

Equipment IDs: PID # B174058B 4 Gas Meter # B18537B Ammonia Gas Meter # B191573B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation start: 1302

Excavation closed: 1634

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
1318	LEL	0%	1	D6	4 ft	N of PW-361 western crest
	Oxy	20.8%				immediately upwind of excavation
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm			4 ft	
1348	LEL	0%	1	C1	4 ft	immediately downwind of excavation
	Oxy	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm			4 ft	
1418	LEL	0 ppm	1	D6	4 ft	immediately upwind of excavation
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1448	LEL	0%	1	C1	4 ft	immediately downwind of excavation
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1518	LEL	0%	1	C1	4 ft	immediately crosswind (W) of excavation
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1548	LEL	0%	1	D6	4 ft	immediately crosswind (W) of the excavation.
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				

Highest VOC Reading (breathing zone): 0.6 ppm Time: 1618

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hawman - ARCADIS

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 12/08/2008 Page 2 of 2

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1618	LEL	0 ppm	1	C2	4 ft	immediately crosswind of excavation
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1634						*excavations are being closed up for the day
						PID Avg reading 0.2 ppm Peaks 2.6 ppm Run Time 3hrs 56 min
						Ammonia Max: 0 ppm STEL: 0 ppm TWA: 0 ppm
						4 Gas Meter Peak LEL: 1% O_2: 20.1% H_2S: 0 ppm CO: 0 ppm
						STEL CO: 0 ppm H_2S: 0 ppm
						TWA CO: 0 ppm H_2S: 0 ppm

Highest VOC Reading (breathing zone): 0.6 ppm Time: 1618

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: _____

Brian Newman - ARCADIS

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II — Date: 12/9/2018 — Shift: Day — Page 1 of 4

Location: East Sparta, Ohio — Weather: AM Partly Cloudy Windy — PM windy & rainy

Project: CWRDF Isolation Break — Temp.(°F): High mid-low 40s Low mid/low 40's Rain yes

ARCADIS PHSO: Brian Heavner — Wind Direction: from SSW, ~14-18 mph

Equipment IDs: PID # B174003B — 4 Gas Meter # B185373B — Ammonia Gas Meter # B191573B

Quick Draw Hand Pump # N/A — Notes/Comments: N/A

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
0743	LEL	0%	1	C2	4 ft	Immediately upwind of excavation where Golder is located
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				Same As Above
0810	LEL	0%	1	C2	4 ft	
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
0830	LEL	0%	1	D5	4 ft	Same As Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
0900	LEL	0%	1	C2	4 ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
0930	LEL	0%	1	C2	4 ft	Crosswind at the northern excavation Western side of excavation
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1000	LEL	0%	1	D5 ~~C2~~	4 ft	Upwind of the southern excavation
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				

Highest VOC Reading (breathing zone): 0.5 ppm Time: 1430

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Heavner - ARCADIS

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1030	LEL	0%	1	D5	4 Ft	Immediately upwind of the southern excavation. Western side of excavation
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1100	LEL	0%	1	~~D5~~ C2	4 Ft	Crosswind of the northern excavation
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1130	LEL	0%	1	C2	4 Ft	Upwind of the northern excavation
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1300	Lunch					Morning Averages
						PID Avg 0.1 ppm Peak 1.1 ppm Run Time 4:27
						4 Gas Meter Peak: LEL: 1 ppm CO: 1 ppm H_2S: 0 ppm
						STEL: CO: 0 ppm H_2S: 0 ppm
						TWA: CO: 0 ppm H_2S: 0 ppm
						Ammonia meter STEL: 0 ppm TWA: 0 ppm

Highest VOC Reading (breathing zone): 0.5 ppm Time: 1430

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hewman – ARCADIS

6.3 m/sec

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 12/9/2005 Page 3 of 4

Time	Parameter	Reading	Location – Deck#	Grid #	Height of Reading	Notes
1230	—	—	—	—	—	Excavation activities restart after lunch
1240	LEL	0%	1	C3	4 ft	Upwind of northern excavation western side
	Oxygen	20.7%	↓	↓	↓	↓
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1310	LEL	0%	1	C3	4 ft	Same as above
	Oxygen	20.7%	↓	↓	↓	↓
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1335	LEL	0%	1	C3	4 ft	Immediately upwind of southern excavation western side.
	Oxygen	20.7%	↓	↓	↓	↓
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1400	LEL	0%	1	C3	4 ft	Upwind of northern excavation
	Oxygen	20.7%	↓	↓	↓	↓
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1430	LEL	0%	1	C3	4 ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1500	LEL	0%	1	C3	4 ft	Same as above *Rain fall is effecting the PID readings - they increased as soon as the heavy rains started.
	Oxygen	20.7%	↓	↓	↓	↓
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.3 ppm *				
1530	LEL	0%	1	C3	4 ft	Same as above
	Oxygen	20.7%	↓	↓	↓	↓
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.4 ppm *				
1600	LEL	0%	1	C3	4 ft	Same as above
	Oxygen	20.7%	↓	↓	↓	↓

Highest VOC Reading (breathing zone): 0.5 ppm Time: 1430

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Brian Hayman – ARCADIS

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 12/9/2008 Page 4 of 4

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
1600	H_2S	0 ppm	1	C3	4 ft	Same as above
	CO	0 ppm	↓	↓	↓	↓
	NH_3	0 ppm				
	PID	2.3 ppm *				
1630	LEL	0%	1	C3	4 ft	Same as above
	Oxygen	20.7%	↓	↓	↓	↓
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	3.3 ppm *				
						Summary of average readings from 12:40 to 1630
						Ammonia Meter: STEL: 0 ppm; TWA: 0 ppm
						PID N/A *
						4 Gas Meter: Peak: LEL: 0%; CO: 0 ppm; H_2S: 0 ppm
						STEL: CO: 0 ppm; H_2S: 0 ppm
						TWA: CO: 0 ppm; H_2S: 0 ppm

Highest VOC Reading (breathing zone): 0.5 ppm Time: 1430

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hausman - ARCADIS

E3 E4

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 12/10/2008 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM Rainy/windy mid 30's PM low 30's

Project: CWRDF Isolation Break Temp.(°F): High mid/high 30's Low low 30's Rain yes

ARCADIS PHSO: Brian Hamman Wind Direction: out of north

Equipment IDs: PID # B174955TB 4 Gas Meter # B185575TB Ammonia Gas Meter # B191575TB

Quick Draw Hand Pump # N/A Notes/Comments: N/A

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0720	LEL	0%	1	E3	4 ft	Cross wind of excavations. East side of excavations
	Oxygen	20.7				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3				
0758	LEL	0%	1	E4	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0				
0830	LEL	0%	1	E3	4 ft	Same as above
	Oxygen	20.7				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.7 ppm				
0855	LEL	0%	1	E3	4 ft	Same as above
	Oxygen	20.7				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
0930	LEL	0%	1	E4	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm				
1005	LEL	0%	1	E4	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				

Highest VOC Reading (breathing zone): 0.9 ppm Time: 0855, 1033, 1137, 1348, 1440, and 1540

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Brian Hamman - ARCADIS

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 12/10/2008 Page 2 of 3

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1033	LEL	0 ppm	1	E3	4 ft	Crossing of the excavation, East side of the excavation
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
1100	LEL	0%				Same as above. Next to Golder observer
	Oxygen	20.7%			4 ft	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.8	1	E4	4 ft	
1137	LEL	0% 20.7 ppm				Same as above
	Oxygen	0 ppm				
	H_2S	ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1200	Noon Lunch Break		1	E4	4 ft	Same as above
1250	LEL	0%				
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1320	LEL	0%	1	E3	4 ft	Same as above
	Oxygen	20.7				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1348	LEL	0%	1	E4	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.19 ppm				
1413	LEL	0%	1	E3	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1440	LEL	0%	1	E2	4 ft	Same as above
	Oxygen	20.7%				

Highest VOC Reading (breathing zone): 0.9 ppm Time: 0805, 1033, 1137, 1348, 1440, and 1540

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Heinrich - ARCADIS

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1440	H_2S	0 ppm	1	E3	4 ft	
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1510	LEL	0%	1	E3	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1540	LEL	0%	1	E3	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1610	LEL	0%	1	E3	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				

Highest VOC Reading (breathing zone): 0.9 ppm Time: 0855, 1033, 1137, 1348, 1440, and 1540

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hallmon - ARCADIS

Crew 2: E5 & 6
1A: E3, 3, 4

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 12/11/2008 Shift: Day Page 1 of 4

Location: East Sparta, Ohio Weather: AM ~30°F slight breeze PM low 30's slight breeze

Project: CWRDF Isolation Break Temp.(°F): High _____ Low ~28 Rain No

ARCADIS PHSO: Brian Hausman Wind Direction: AM: from N to NE

Equipment IDs: PID # B174038 4 Gas Meter # B185578 Ammonia Gas Meter # B19157B

Quick Draw Hand Pump # B17132B Notes/Comments: All readings are taking next to workers, primarily ~~in areas of the trenches~~ BH under excavator operators & under adjacent sewers and excavator operators

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0735	LEL	1%	1	E3	4ft	South of Crew 1 & N of Crew 2 - east side of excavation
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
0805	LEL	0%	1	E2	4ft	North side of Crew 1, east side of excavation
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
0835	LEL	0 ppm	1	E2	4ft	Same as above
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
0905	LEL	0%	1	E5	4ft	South of Crew 2 and east of excavation
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.4 ppm				
* 0928	Benzene	Non Detect	1	E5	4ft	Tube detection range 0.25-1 ppm
	Detector	N: 15 strokes				
	Tube					
0935	LEL	0%	1	E5	4ft	Same as 0905's reading
	Oxygen	20.4%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.6 ppm				
1005	LEL	0%	1	E4	4ft	South of Crew 1 and north of Crew 2 east side of excavation
	Oxygen	20.5%				
	H_2S	0 ppm				

Highest VOC Reading (breathing zone): 2.6 ppm Time: 1544

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 0928

Signature: Brian Hausman - ARCADIS

Time	Parameter	Reading	Location – Deck#	Grid #	Height of Reading	Notes
1005 cont.	CO	0 ppm	1	E4	4 ft	↓
	NH_3	0 ppm	↓	↓	↓	
	PID	1.9 ppm				
1035	LEL	0%	1	E4	4 ft	
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	2.1 ppm				
1105	LEL	0%	1	E4	4 ft	North of Crew 1, east side of excavation
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.4 ppm				
1135	LEL	0%	1	E4	4 ft	
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.3 ppm				
1200	Lunch					
						Morning Summary
						PID: Average Reading - 1.4 ppm
						Ammonia: TWA - 0 ppm STEL - 0 ppm
						4 Gas Meter: H_2S TWA - 0 ppm STEL - 0 ppm CO TWA - 0 ppm STEL - 0 ppm
						Discussion with Mike Ferguson - Beavers Site Foreman. There have been no alarms on any of the 4 Gas Meters worn be truck drivers, excavator operators, ground personnel, or dozer operators.
1246	LEL	1%	1	E4	4 ft	Immediately North of Crew 1 East side of excavation
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6	↓	↓	↓	

Highest VOC Reading (breathing zone): 2.8 ppm Time: 1544

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 0928

Signature: [signature] Brian Hausman-ARCADIS

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1314	LEL	0%	1	E6	4ft	North of Crew 2, East side of excavation
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.4 ppm				
1344	LEL	0%	1	E5	4ft	North of Crew 2, East side of excavation
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.3 ppm				
1415	LEL	0%	1	ESF3	4ft	North of Crew 1, East side of excavation
	Oxygen	20.4%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.5 ppm				
1445	LEL	0%	1	F3	4ft	Same as above
	Oxygen	20.4%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.4 ppm				
1512	LEL	0%	1	E5	4ft	South of Crew 2, East of excavation Downwind of both excavations
	Oxygen	20.4%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.2 ppm				
1544	LEL	0%	1	E6	4ft	Same as above
	Oxygen	20.4%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	2.8 ppm				
1613	LEL	0%	1	E6	4ft	Same as above
	Oxygen	20.4%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	2.1 ppm				
						Afternoon summary
						PID: Average – 1.8 ppm

Highest VOC Reading (breathing zone): 2.8 ppm Time: 1544

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 0928

Signature:

Brian Newman-ARCADIS

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 12/11/2008 Page 4 of 4

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
						Ammonia: TWA: 0ppm
						STEL: 0ppm
						4 Gas Meter
						H_2S: TWA: 0ppm
						STEL: 0ppm
						CO: TWA: 0ppm
						STEL: 0ppm

Highest VOC Reading (breathing zone): 2.8 ppm Time: 1544

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 0928

Signature: Brian Newman-ARCADIS

Crew 1 - F1, F2 and F5, G5
2 - F5 and 6

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 12/12/2008 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM High 20s to low 30s Snowing windy PM windy, High 20s to low 30s

Project: CWRDF Isolation Break Temp.(°F): High _____ Low _____ Rain _____

ARCADIS PHSO: Brian Howman Wind Direction: AM: south & the NW to W, approx 10-15mph

Equipment IDs: PID # B174253 4 Gas Meter # B185378 Ammonia Gas Meter # B191578

Quick Draw Hand Pump # B171323B Notes/Comments: _____

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0732	LEL	0 %	1	F5	4Ft	South & Crew 1 and North of Crew 2
	Oxygen	20.8%				Crews are approx 40 yards apart
	H_2S	0 ppm				East side of excavation is free
	CO	0 ppm				Crossing of both excavators & water
	NH_3	0 ppm				Other observers are located
	PID	0.0 ppm				
0800	LEL	0%	1	F5	4Ft	Same as above
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0832	LEL	0%	1	F6	4 Ft	North of Crew 2, East side of excavation
	Oxygen	20.5%				face, Crossing of excavation
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
0900	LEL	0%	1	F5	4Ft	Same as 0732 reading location
	Oxygen	20.5%				
	H_2S	0 ppm				Weston and Ohio EPA observers
	CO	0 ppm				onsite
	NH_3	0 ppm				
	PID	0.0 ppm				
0930	LEL	0%	1	F5	4Ft	Crossing at Crew 1, east side
	Oxygen	20.5%				of excavation
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1000	LEL	0%	1	F5	4Ft	Crossing at Crew 2, East side of
	Oxygen	20.5%				excavation
	H_2S	0 ppm				
	CO	0 ppm				Crew 2 excavator blew a hydraulic
	NH_3	0 ppm				line - leaking oil. Excavator shut down
	PID	0.9 ppm				

Highest VOC Reading (breathing zone): 1.4 ppm Time: 1445

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 1504

Signature: _____

Brian Howman - ARCADIS

W

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1130	LEL	0%	1	F4	4 ft	South of Crew 1, East side of excavation face
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1100	LEL	0%	1		4 ft	North of Crew 2 and South of Crew 1 and East side of excavation face
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
1130	LEL	0%	1		4 ft	North of Crew 1 and 2, East side of excavation face, Crossover of excavations
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				Morning Summary
1153	Lunch Break					PID: Average reading 0.8 ppm
						Ammonia: TWA: 0 ppm, STEL: 0 ppm
						4 Gas Meter: H_2S: TWA 0 ppm, STEL 0 ppm, CO: TWA 0 ppm, STEL 0 ppm
1250	LEL	0%	1	F4	4 ft	
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm				North of Crew 1, East side of excavation face
1325	LEL	0 ppm	1	F4	4 ft	
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1347	LEL	0%	1	F4	4 ft	Same as above
	Oxygen	20.6%				
	H_2S	0 ppm				

Highest VOC Reading (breathing zone): 1.4 ppm Time: 1445

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 1505

Signature: Brian Hickman - ARCADIS

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1347	CO	0 ppm	1	F4	4 ft	
	NH_3	0 ppm	↓	↓	↓	
	PID	1.5 ppm	↓	↓	↓	
1415	LEL	0%	1	F6	4 ft	South of Crew 2, East side of the excavation face
	Oxygen	20.5%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	1.2 ppm	↓	↓	↓	
1445	LEL	0%	1	F6	4 ft	South of Crew 2, East of the excavation face
	Oxygen	20.5%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	1.4 ppm	↓	↓	↓	
1504	Benzene Detector Tube	Non-Detect				
1526	Breeze shut down trash hauling operations for the day due to weather.					
						Afternoon summary
						PID: Average Reading: 0.1 ppm
						Ammonia TWA - 0 ppm
						STEL - 0 ppm
						4 Gas Meter
						H_2S: TWA - 0 ppm
						STEL - 0 ppm
						CO: TWA - 0 ppm
						STEL - 0 ppm

Highest VOC Reading (breathing zone): 1.4 ppm Time: 1445

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 1504

Signature:

Brian Newman - ARCADIS

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II — Date: 12/15/2008 — Shift: Day — Page 1 of 3

Location: East Sparta, Ohio — Weather: AM high 40's, windy PM windy, low 30's

Project: CWRDF Isolation Break — Temp.(°F): High high 40's Low low 30's Rain yes

ARCADIS PHSO: Brian Hausman — Wind Direction: From the SW to W, strong gusts

Equipment IDs: PID # B193943 — 4 Gas Meter # B190343 — Ammonia Gas Meter # B191593

Quick Draw Hand Pump # N/A — Notes/Comments:

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
0752	LEL	0%	1	G4	4 ft	North of Crew 1, East side of excavation face, Crosswind to excavations.
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
0820	LEL	0%	1	G5	4 ft	North of Crew 2 and South of Crew 1
	oxygen	20.9%				East side of excavation face.
	H_2S	0 ppm				Crosswind to excavations
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0850	LEL	0%	1	G5	4 ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0920	LEL	0%	1	G6	4 ft	South of Crew 2, East side of excavation face. Crosswind to excavations
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
0957	LEL	0%	1	G5	4 ft	Same as 0820 reading location
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1019	LEL	0%	1	G4	4 ft	Same as 0752 reading location
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1515

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hausman ARCADIS

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1150	LEL	0%	1	G-3	4ft	South of Crew 1, East side of excavation face. Crosswind of excavators
	Oxygen	20.7%				
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.3ppm				
1115	LEL	0%	2	G-5	4ft	North of Crew 2. East side of excavation face. Crosswind of excavators
	Oxygen	20.7%				
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.2ppm				
1150	LEL	0%	1	H4	4ft	South of Crew 1, East side of excavation face. Crosswind of excavators
	Oxygen	20.7%				
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.3ppm				
						Monthly Summary
						Ammonia: TWA 0ppm
						STEL - 0ppm
						4 Gas Meter-
						H_2S: TWA - 0ppm
						STEL - 0ppm
						CO: TWA - 0ppm
						STEL - 0ppm
						PID Average 0.3ppm
1244	LEL	0%	1	G-2	4ft	South of Crew 1. East side of excavation face
	Oxygen	20.7%				
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.1ppm				
1315	LEL	0%	1	G-3	4ft	Same as above
	Oxygen	20.7%				
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.1ppm				
1345	LEL	0%	1	G-3	4ft	Same as above
	Oxygen	20.7%				
	H_2S	0ppm				
	CO	0ppm				

Highest VOC Reading (breathing zone): 0.8ppm Time: 1515

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Newman - ARCADIS

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
1345	NH_3	0ppm	1	C-3	4ft	
	PID	0.1 ppm	1	↓	↓	
1415	LEL	0%	1	C-3	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.1ppm	↓	↓	↓	
1445	LEL	0%	1	C-5	4ft	South of Crew 2, East side of excavation face
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.1ppm	↓	↓	↓	
1515	LEL	0%	1	C-5	4ft	South of Crew 2, East side of excavation face
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.1ppm	↓	↓	↓	
1545	LEL	1%	1	C-5	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.1ppm	↓	↓	↓	
1615	LEL	1%	1	C-5	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.1ppm	↓	↓	↓	
1628	Beaver is done excavating trash for the day.					Afternoon summary Ammonia meter: TWA – 0ppm STEL – 0ppm 4 Gas Meter: H_2S: TWA – 0ppm STEL – 0ppm CO: TWA – 0ppm STEL – 0ppm PID: TWA – 0.1ppm

Highest VOC Reading (breathing zone): 0.8ppm Time: 1515

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Newman - ARCADIS

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 12/16/2008 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM Cloudy, slight breeze PM Cloudy & breezy

Project: CWRDF Isolation Break Temp.(°F): High ~31 Low ~25 Rain No

ARCADIS PHSO: Brian Heavner Wind Direction: from the N to NE

Equipment IDs: PID # B193948 4 Gas Meter # B190348 Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0746	LEL	0%	1	H4	4ft	South of Crew 1 and North of Crew 2
	Oxygen	20.3%				East Side of Excavation face
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0814	LEL	2%	1	H4	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
0847	LEL	5%	1	H2	4ft	South side of Crew 1. East side of excavation face
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
0912	LEL	5%	1	H3	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
0945	LEL	5%	1	H5	4ft	South of Crew 2. East side of excavation face. Upwind/Crosswind of the excavation area
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm BH				
~~1045~~	LEL	5%	1	H2	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				

Highest VOC Reading (breathing zone): ~~0.8~~ ppm BH Time: 0945 ~~1145 and 1520~~ BH

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Brian Heavner - ARCADIS

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1015	LEL	5%	1	H3	4ft	Same as above
	Oxygen	20.8				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1045	LEL	5%	1	H4	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
1115	LEL	5%	1	H4	4ft	Same as above
	Oxygen	20.8				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
1145	LEL	4%	1	H5	4ft	Same as above
	Oxygen	20.8				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
						Morning Ambient: TWA 0 ppm STEL 0 ppm
						4 Gas Mask – H_2S: TWA – 0 ppm STEL – 0 ppm CO TWA – 0 ppm STEL – 0 ppm
						PID: TWA – 0 ppm
1250	LEL	0%	1	I3	4ft	South Cap 1 and North & Cap 2 East side of excavation Spot
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
1300	LEL	0%	1	I3	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				

Highest VOC Reading (breathing zone): 0.8 ppm Time: 0945

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hewman - ARCADIS

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1320	CO	0 ppm	1	I3	4ft	
	NH_3	0 ppm	↓	↓	↓	
	PID	0 ppm				
1350	LEL	4%	1	I5	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm	↓	↓	↓	
1420	LEL	5%	1	I5	4ft	South of Crew 1 East side of excavation face
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm	↓	↓	↓	
1450	LEL	5%	1	I5	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm	↓	↓	↓	
1520	LEL	5%	1	I5	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm	↓	↓	↓	Afternoon summary
1530	Beaver stopping excavation activities for the day due to incoming weather (winter storm w/ freezing rain).					Ammonia meter: TWA - 0 ppm STEL - 0 ppm 4 Gas Meter H_2S: TWA - 0 ppm STEL - 0 ppm CO: TWA - 0 ppm STEL - 0 ppm PID TWA - 0 ppm

Highest VOC Reading (breathing zone): ~~0.1~~ 0.8 ppm BN Time: ~~1445 and 1520~~ 0945 BN

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hartman - ARCADIS

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 12/17/2008 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM Cloudy, breezy PM Cloudy, breezy

Project: CWRDF Isolation Break Temp.(°F): High low-mid 30's Low high 20's Rain No

ARCADIS PHSO: Brian Hawman Wind Direction: From the West

Equipment IDs: PID # 15195947B 4 Gas Meter # 15190547B Ammonia Gas Meter # 15191509B

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0756	LEL	0%	1	I5	4 ft	SE of Crew 2, Crossing to the excavator
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0826	LEL	2	1	I5	4 ft	Same as above
	Oxygen	20.8				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0854	LEL	2%	2	C2	4 ft	South of Crew 1, Crossing to the excavation area
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0923	LEL	4%	2	C2	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0950	LEL	4%	1	I5	4 ft	SE of Crew 2, Crossing to the excavator.
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1020	LEL	4%	1	I5	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				

Highest VOC Reading (breathing zone): 0.5 ppm Time: 0950

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hawman - ARCADIS

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
1050	LEL	4%	1	I5	4 ft	West of Crew 2. Upwind of excavation.
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1120	LEL	2%	1	I6	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
1150	LEL	2%	1	I6	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1200	Lunch					Morning summary Ammonia: TWA - 0 ppm
						4 Gas Meter: H_2S: TWA - 0 ppm STEL - 0 ppm CO: TWA - 0 ppm STEL - 0 ppm
				D2		PID TWA - 0.0 ppm
1300	LEL	2%	2	E2	4 ft	Upwind of Crew 1. West side of excavation area.
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1330	LEL	2%	2	D2	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1400	LEL	2%	2	D2	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.5 ppm Time: 0950

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Brian Howman - ARCADIS

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1430	LEL	0%	2	D5	4ft	North of Crew 2, Crossmember of excavation face
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm	↓	↓	↓	
1500	LEL	0%	2	C2	4ft	North of Crew 1, Crossmember of excavation face
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm	↓	↓	↓	
1530	LEL	0%	2	B3	4ft	Same as above.
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm	↓	↓	↓	
1600	LEL	0%	2	B3	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm	↓	↓	↓	
1630	LEL	0%	2	B3	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
Backfill is done excavating trash, putting cover on exposed liner.						Afternoon Summary Ammonia: TWA - 0 ppm STEL - 0 ppm 4 Gas Meter H_2S: TWA - 0 ppm STEL - 0 ppm CO: TWA - 0 ppm STEL - 0 ppm PID: TWA 0 ppm

Highest VOC Reading (breathing zone): 0.5 ppm Time: 0950

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Brian Newman - ARCADIS

Start Crew 2 - D5 & 4
Crew 1 - D3

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 12/18/2008 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM overcast PM overcast

Project: CWRDF Isolation Break Temp.(°F): High low 30's Low mid-high 30's Rain No

ARCADIS PHSO: Brian Hewman Wind Direction: Steady NW to W, slight breeze

Equipment IDs: PID # B193948 4 Gas Meter # B185098 Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A Notes/Comments: N/A

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0748	LEL	0%	2	D3	4ft	North of Crew 1. Upwind of excavation.
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
0816	LEL	0%	2	D3	4ft	Same as above
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
0846	LEL	0%	2	D3	4ft	Same as above
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
0916	LEL	0%	2	D1	4ft	North of Crew 2 and South of Crew 1. East side of excavation. Face Upwind. Increased Gradient observed & recorded
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
0955	LEL	0%	2 N/A	N/A	4ft	At Isolation Break Disposal Area. Crosswind to active disposal activities.
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1030	LEL	0%	2 N/A	N/A	4ft	At Isolation Break Disposal Area. Downwind to active disposal activities.
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1345

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hewman - ARCADIS

N

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
1050	LEL	0%	2	D4	4 ft	South of Crew 2. East side of excavation face.
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1120	LEL	0%	2	D3	4 ft	North of Crew 2. East side of excavation
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1150	LEL	0%	2	D3	4 ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
						Morning Summary
						Ammonia: TWA 0 ppm
						STEL 0 ppm
						4 Gas Meter
						H_2S: TWA 0 ppm
						STEL 0 ppm
						CO: TWA 0 ppm
						STEL 0 ppm
						PID TWA 0 ppm
1245	LEL	0%	2	D5	4 ft	South of Crew 2. East side of excavation face. Crosswind to excavator. With Golder observer
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1315	LEL	0%	2	D5	4 ft	Same as above.
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1345	LEL	0%	2	D4	4 ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1345

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Howman - ARCADIS

Crew 1 E2

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 12/18/2008 Page 3 of 3

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1446	LEL	0%	2	~~E2~~	4ft	North of Crew 1, East side of
	Oxygen	20.7%	1	D2		excavation face, Crossing
	H_2S	0 ppm				of the excavator.
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1448	LEL	0%	2	D2	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1516	LEL	0%	2	D2	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1548	LEL	0%	2	E2	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1615	LEL	0%	2	E2	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1625	Blower stops excavating trash and starts spreading soil cover on exposed trash					Afternoon summary Ammonia: TWA - 0 ppm STEL - 0 ppm 4 Gas Meter H_2S: TWA - 0 ppm STEL - 0 ppm CO: TWA - 0 ppm STEL - 0 ppm PID TWA 0.1 ppm STEL

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1345

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Brian Heinmiller - ARCADIS

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 12/19/2008 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM (cold, Rain) Slight breeze PM Cloudy, very windy, No rain

Project: CWRDF Isolation Break Temp.(°F): High low 30's Low middle 30's Rain Yes

ARCADIS PHSO: Brian Newman Wind Direction: AM: From NE PM: From west at 16 mph, gusts at 25 mph

Equipment IDs: PID # B193948 4 Gas Meter # B185098 Ammonia Gas Meter # B191548

Quick Draw Hand Pump # N/A Notes/Comments: Begin started excavation activities at 0700 due to darkness, traffic patterns, and icy ground surface did not start air monitoring activities immediately

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0802	LEL	0%	2	E3	4 ft	North of Crew 2 and South of Crew 2. East side of excavation
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0830	LEL	1%	2	E3	4 ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0900	LEL	1%	2	E3	4 ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0930	LEL	1%	2	E3	4 ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1000	LEL	1%	2	E2	4 ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1030	LEL	0%	2	E4	4 ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.0 ppm Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Newman - ARCADIS

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 12/19/2008 Page 2 of 3

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1100	LEL	1%	2	E5	4ft	Same as above
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1130	LEL	1%	2	E5	4ft	Same as above
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1200	Lunch Break					Morning summary Ammonia: TWA - 0 ppm STEL - 0 ppm 4 Gas Meter H_2S: TWA - 0 ppm STEL - 0 ppm CO TWA - 0 ppm STEL - 0 ppm PID: TWA 0 ppm
1246	LEL	0%	2		4ft	
	Oxygen	20.8%	↓		↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓		↓	
1315	LEL	0%	2	E5	4ft	South of Crew 2. Crossing of excavation activities
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1345	LEL	0%	2	E3	4ft	North of Crew 2. Crossing of excavation activities
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1415	LEL	0%	2	F2	4ft	West of Crew 1. Upwind of excavation activities.
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	

Highest VOC Reading (breathing zone): 0.0 ppm Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Haverman - ARCADIS

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1445	LEL	0%	2	E2	4ft	West & Crew 1 Upwind of active excavation – area.
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1515	LEL	0%	2	F2	2-4ft	Some is clear
	Oxygen	20.8	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1530	Beaver has finished excavating for the day. Placing daily soil cover on exposed trash					Afternoon summary Ammonia TWA - 0 ppm STEL - 0 ppm 4 Gas Meter H_2S: TWA - 0 ppm STEL - 0 ppm CO: TWA - 0 ppm STEL - 0 ppm PID: TWA - 0.0 ppm STEL - 0.0 ppm

Highest VOC Reading (breathing zone): 0.0 ppm Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hewman - ARCADIS

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II — Date: 12/20/2008 — Shift: Day — Page 1 of 3

Location: East Sparta, Ohio — Weather: AM Cloudy/Cold — PM Cloudy and cold

Project: CWRDF Isolation Break — Temp.(°F): High mid-high 20's — Low low 20's — Rain No

ARCADIS PHSO: Brian Newman — Wind Direction: From East

Equipment IDs: PID # B193943 — 4 Gas Meter # B185093 — Ammonia Gas Meter # B191593

Quick Draw Hand Pump # _____ — Notes/Comments: Beaver started excavation activities at 0730, due to poor lighting Golder and I did not enter the active work area until 0745.

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0756	LEL	0%	2	E25	4ft	South & Crew 2 approx 40ft.
	Oxygen	20.9%	↓	↓	↓	East side of excavation face
	H_2S	0ppm				Crosswind to excavation activities
	CO	0ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
0829	LEL	1%	2	E2	4ft	East & Crew 1 approx 50ft
	Oxygen	20.8%				& South side of excavation face
	H_2S	0ppm				upwind to excavation
	CO	0ppm				
	NH_3	0ppm				
	PID	0.1 ppm	↓	↓	↓	
0904	LEL	2%	2	E2	4 ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0ppm				
	PID	0.0ppm	↓	↓	↓	
0938	LEL	4%	2	E4	4ft	North & Crew 1 approx 60ft and South
	Oxygen	20.7%	↓	↓	↓	& Crew 2 approx 40ft.
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.4 ppm	↓	↓	↓	
1005	LEL	2%	2	E5	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.8 ppm	↓	↓	↓	
1035	LEL	2%	2	E5	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.7 ppm	↓	↓	↓	

Highest VOC Reading (breathing zone): 0.9 ppm — Time: 1132 and 1320

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect — Time: 1313

Signature: _____

Brian Newman - ARCADIS

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
1100	LEL	2%	2	E2	4ft	East of Crew 1, Upwind of excavation area. Approx. 60ft from excavator
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1132	LEL	2%	2	E2	4ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
						Monitoring Summary
						Ammonia TWA - 0 ppm
						STEL - 0 ppm
						4 Gas Meter
						H_2S: TWA 0 ppm
						STEL 0 ppm
						CO: TWA 0 ppm
						PID: TWA 0.2 ppm
1219	LEL	1%	2	E5	4ft	East (upwind) of Crew 2
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1250	LEL		2	E5	4ft	Same as above
	Oxygen					
	H_2S					
	CO					
	NH_3					
	PID					
1313	(Collected) Benzene tube from immediately downwind of Crew 1 excavator. PID STEL reading taken during tube collection was 1.9 ppm. Result of Benzene tube was Non-Detect.					
1320	LEL	2%	2	E2	4ft	South (crosswind) of Crew 1
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.7 ppm				
1350	LEL	2%	2	E2	4ft	East (upwind) of Crew 1
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1132 and 1320

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 1313

Signature: Stefan Heinmen - ARCADIS

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1420	LEL	0%	2	E5	4ft	East (upwind) of Crew 2
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.0ppm				
1430	Beaver is done excavating trash for the day.					Afternoon summary: Ammonia: TWA 0ppm
						4 Gas Meter: H_2S: TWA - 0ppm
						CO: TWA - 0ppm
						PID: TWA: 0.1ppm

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1132 and 1320

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 1313

Signature: Brian Hewmon - ARCADIS

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II — Date: 1/5/2009 — Shift: Day — Page 1 of 3

Location: East Sparta, Ohio — Weather: AM N/A PM 34°F

Project: CWRDF Isolation Break — Temp.(°F): High N/A Low N/A Rain N/A

ARCADIS PHSO: Brian Hamman — Wind Direction: Approximately W

Equipment IDs: PID # B17400B — 4 Gas Meter # B18537B — Ammonia Gas Meter # B19157B

Quick Draw Hand Pump # N/A — Notes/Comments: Excavation Start 705 AM

Excavation Closed 1630

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0700	LEL	0%	2	G-4	4 ft	Beginning Crew 1 & 2. East side of excavation face. Crossing
	Oxygen	20.1%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0830	LEL	0.1%	2	G-4	4 ft	North side Crew 1 approx 50 ft Crossward to the excavation face.
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0900	LEL	1%	2	F-6	4 ft	North side Crew 2 approx 40 ft Crossward to excavation face
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0930	LEL	1%	2	F-6	4 ft	South side Crew 2. Crossward to the working excavation face. Standing with Paul R. USEPA
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
0938						Call from Kurt Markle - ARCADIS, done with training.
1000	LEL	1%	2	G-4	4 ft	West side Crew 1. Upwind of excavation face.
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				Equipment became super sucks filled with, possibly plastic shavings.
1030	LEL	1%	2	G-4	4 ft	
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				

Highest VOC Reading (breathing zone): ~~128 PPM~~ 1.6 ppm Time: Afternoon 1230 hrs

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 1/5/2009 Page 2 of _____

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1105	LEL	1%	2	G4	4ft	Work of Crew 1. Crossing to washing
	Oxygen	20.8%				excavation face with Golder observer Silvie
	H_2S	0ppm				McGowan.
	CO	0ppm				
	NH_3	0ppm				
	PID	0.0 ppm				
1152	LEL	1%	2	G4	4ft	Same As Above
	Oxygen	20.8%				
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.2 ppm				
1200	Lunch Break					Morning Summary
1230	LEL	1%	2	G4	4ft	PID: TWA 0.1 ppm
	O_2	20.8%				
	H_2S	0.0 PPM				Ammonia: TWA 0ppm
	CO	0.0 PPM				
	NH_3	0 PPM				4 Gas Meter
	PID	1.6 PPM				H_2S: TWA 0ppm
1300	LEL	1%	2	G4	4ft	CO: TWA 0ppm
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0 PPM				
1330	LEL	1%	2	G4	4ft	
	O_2	20.8%				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1400	LEL	1%	2	G4	4ft	
	O_2	20.8%				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1430	LEL	1%				Standing South of Crew
	O_2	20.8%				1 and North of Crew 2.
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2 PPM				

Highest VOC Reading (breathing zone): ~~1.0~~ 1.6 PPM Time: ~~After lunch~~ 1230

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 1/5/09 Page 3 of ____

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1500	LEL	1%	2	G-4	4 ft	
	O_2	20.5%				
	H_2S	0				
	CO	0				
	NH_3	0				
	PID	0.1				
1530	LEL	1%	2	G-4	4 ft	
	O_2	20.5%				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.3 PPM				
1600	LEL	2%	2	G-4	4 ft	Standing South of Crew 1 and North of Crew 2.
	O_2	20.5				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0 PPM				
1630	LEL	1%	2	G-4	4 ft	
	O_2	20.5				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0 PPM				Afternoon Summary
						PID TWA 0.3 PPM
						Peak 12.8 PPM
						NH_3 0.0 PPM
						CO TWA 0.0 PPM
						H_2S TWA 0.0 PPM

Highest VOC Reading (breathing zone): ~~12.8~~ 1.6 PPM Time: ~~AM~~ 12:30

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II Date: 1/6/09 Shift: Day Page 1 of 4

Location: East Sparta, Ohio Weather: AM Cloudy PM Cloudy, Drizzle/Freezing Rain

Project: CWRDF Isolation Break Temp.(°F): High 34°F Low 16°F Rain Yes

ARCADIS PHSO: Kurt Merkle Wind Direction: NE 5-10 MPH

Equipment IDs: PID # B17400B 4 Gas Meter # B18537B Ammonia Gas Meter # B19157B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation started 0700

Excavation Closed 1627

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes

~ Readings Start on Page 2

~ 0.3ppm ~ 0800, 0900, 0930, 1600 ~

Highest VOC Reading (breathing zone): 1.5ppm Time: 1340

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J Merkle

Kurt Markle Arcadis Hrgh 34°F Low 16°F Wind From NE 5-10 MPH

Isolation Break *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 1/6/09 Page 2 of 4

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
0715	LEL	0 %	2	F 4	4ft	Weather 27°F
	O_2	20.8 %				Overcast
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				South of Crew 2
	PID	0 PPM				
0730	LEL	0 %	2	F 4		
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0 PPM				
0800	LEL	1 %	2	F 4		North of Crew 2
	O_2	20.8 %				South of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	.3 PPM				
0830	LEL	1 %	2	F 4		" " ?
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0 PPM				
900	LEL	0 %	2	F 4		
	O_2	20.8 %				North of Crew 1 + 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.3 PPM				
930	LEL	1 %	2	F 4		South of Crew 1
	O_2	20.8 %				North of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.3 PPM				
1000	LEL	1 %	2	F 4		" "
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2 PPM				
1030	LEL	0 %	2	F 4		
	O_2	20.8 %	1	1		
	H_2S	0 PPM				

~ 0.3 PPM 0800, 0900, 0930, 1000 ~

Highest VOC Reading (breathing zone): ~~1.5 PPM~~ Time: 1340

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J. Markle

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1030	CO	0 PPM	2	F4	4FT	
	NH_3	0 PPM				
	PID	0.0 PPM				
1100	LEL	1 %	2	F4		
	O_2	20.8 %				North of Crew 2
	H_2S	0 PPM				South of Crew 1
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.1 PPM				
1130	LEL	1 %	2	F4		
	O_2	20.8 %				South of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1200	LEL	0.0 %	2	F3		Morning Summary
	O_2	20.8 %				
	H_2S	0 PPM				PID TWA 0.0 PPM
	CO	0 PPM				STEL 0.0 PPM
	NH_3	0 PPM				
	PID	0.0 PPM				LEL% Peak 2%
1230	LEL	0 %	2	F3		
	O_2	20.8 %				CO TWA 0.0 PPM
	H_2S	0 PPM				H_2S TWA 0.0 PPM
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.1 PPM				
1300	LEL	1 %	2	F3		
	O_2	20.8 %				South of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1330	LEL	1 %	2	F3		
	O_2	20.8 %				South of Crew 1
	H_2S	0 PPM				North of Crew 2
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2 PPM				
1400	LEL	1 %	2	F3		
	O_2	20.8 %				North of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.1 PPM				

~~0.3ppm~~ 0800, 0900, 0930, 1001

Highest VOC Reading (breathing zone): ~~1.5ppm~~ Time: 1340

Highest Benzene Detector Tube Reading (breathing zone): NA Time: NA

Signature:

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 1/6/09 Page 4 of 4

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1430	LEL	1 %	2	F3	4 Ft	
	O_2	20.8 %				
	H_2S	0 PPM				North of Crew 2
	CO	0 PPM				South of Crew 1
	NH_3	0 PPM				
	PID	0.0 PPM				
1500	LEL	1 %	2	F3		
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1530	LEL	2 %	2	F3		Freezing Rain began
	O_2	20.7 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				South of Crew 2 on Slope.
1600	LEL	2 %	2	F3		
	O_2	20.7 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.3 PPM				
1630	LEL	0 %	2	F3		
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				Afternoon Summary
	PID	0.1 PPM				PID TWA 0.0 PPM
						STEL 0.0 PPM
						LEL % Peak 2 %
						CO TWA 0.0 PPM
						H_2S TWA 0.0 PPM

~ 0.3 ppm 0800, 0900, 0930, 1000

Highest VOC Reading (breathing zone): ~~1.5~~ ppm Time: 1340

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II Date: 1/8/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Merkle Wind Direction: * See Golders Report

Equipment IDs: PID # B193948 4 Gas Meter # B185378 Ammonia Gas Meter # 64316

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location – Deck#	& Grid #	Height of Reading	Notes
0715	LEL	1%	2	HU	4 FT	
	O_2	20.7%				South of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2				
0745	LEL	1%				East of Crew 1
	O_2	20.7%				North of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.3				
0800	LEL	0%				
	O_2	20.7%				South of Crew 1
	H_2S	0 PPM				North of Crew 3
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2				
0830	LEL	1%				South of Crew 3
	O_2	20.7%				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.8 PPM				
0900	LEL	1%				East of Crew 2
	O_2	20.7%				South of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	5.6 PPM				Dragger tube pulled @ 0910
0930	LEL	1%				0.0 ppm on tube for benzene
	O_2	20.7%				Directly east of Crew 3
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0.0 PPM				
	PID	0.7 PPM				

Highest VOC Reading (breathing zone): 5.6 Time: 0900

Highest Benzene Detector Tube Reading (breathing zone): 0.0 Time: 0910

Signature: Kurt J. Merkle

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1000	LEL	1 %	2	H4	4ft	North of Crew 2
	O_2	20.7 %				South of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.7 PPM				
1030	LEL	1 %				" "
	O_2	20.8%				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.6 PPM				
1100	LEL	1 %				East of Crew 2
	O_2	20.8 %				South of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.5 PPM				
1130	LEL	1 %				
	O_2	20.8 %				North of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.3 PPM				
1200	LEL	1 %				
	O_2	20.8 %				South of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.4 PPM				
1230	LEL	1 %				Morning Summary
	O_2	20.8 %				
	H_2S	0.0 PPM				VOC-PID TWA 0.2 ppm
	CO	0 PPM				STEL 0.0 ppm
	NH_3	0 PPM				Peak 5.6 ppm
	PID	0.3 PPM				
1300	LEL	1 %				Stel 0.0 PPM
	O_2	20.8 %				CO TWA 0.0 PPM
	H_2S	0 PPM				H_2S TWA 0.0 PPM
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2 PPM				

Highest VOC Reading (breathing zone): 5.6 Time: 0900

Highest Benzene Detector Tube Reading (breathing zone): 0.0 ppm Time: 0900

Signature:

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1330	LEL	0 %	2	H4	4ft	
	O_2	20.8 %				South of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2 PPM				
1400	LEL	1 %				" "
	O_2	20.7 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.7 PPM				
1430	LEL	1 %				West of Crew 1
	O_2	20.8 %				North of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.3 PPM				
1500	LEL	1 %				
	O_2	20.8 %				East of Crew 2
	H_2S	0 PPM				South of Crew 1
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2 PPM				
1530	LEL	1 %				South of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.1 PPM				
1600	LEL	1 %				
	O_2	20.7 %				North of Crew 2
	H_2S	0 PPM				South of Crew 1
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1650	LEL	1 %				Afternoon Summary
	O_2	20.8 %				VOC-PID TWA 0.3ppm
	H_2S	0 PPM				STEL 0.0 ppm
	CO	0 PPM				Peak 0.8 ppm
	NH_3	0 PPM				
	PID	0.0 PPM				

Highest VOC Reading (breathing zone): 5.6ppm Time: 0900

Highest Benzene Detector Tube Reading (breathing zone): 00ppm Time: 0910

Signature: Kristy Mahle

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 1/9/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Markle Wind Direction: * See Golders Report

Equipment IDs: PID # B193948 4 Gas Meter # _____ Ammonia Gas Meter # B 19159B

Quick Draw Hand Pump # N/A Notes/Comments: Digging began 0700

Digging ended 1635

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0715	LEL	1 %	2	H3	4ft	
	O_2	20.8 %				South of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.4 PPM				East of Crew 2
0730	LEL	1 %				South of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.7 PPM				
0800	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.3 PPM				
830	LEL	1 %				East of Crew 2
	O_2	~~20.9~~ 20.8 %				South of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.5 PPM				
0900	LEL	1 %				South of Crew 2
	O_2	20.8 %				
	H_2S & CO	0 PPM				
	NH_3	0 PPM				
	PID	0.8 PPM				
0930	LEL	1 %				East of Both work crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.8 PPM				

Highest VOC Reading (breathing zone): 0.8 PPM Time: 0900-1000

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt Markle

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 1/9/2009 Page 2 of 3

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1000	LEL	1 %	2	#3	4ft	East of Both work crews.
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.8 PPM				
1030	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.7 PPM				
1100	LEL	1 %				
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.6 PPM				
1130	LEL	1 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0				
	NH_3	0 PPM				
	PID	0.4 PPM				
1200	LEL	1 %				Morning Summary
	O_2	20.8 %				
	H_2S	0 PPM				PID TWA 0.1 PPM
	CO	0 PPM				Peak 0.8 PPM
	NH_3	0 PPM				
	PID	0.0 PPM				H_2S TWA 0 PPM
1230	LEL	1 %				CO TWA 0 PPM
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2 PPM				
1300	LEL	1 %				
	O_2	20.8 %				East of Crew 2
	H_2S	0 PPM				South of Crew 1
	NH_3	0 PPM				
	~~PID~~	0 PPM				
	CO	0.2 PPM				

Highest VOC Reading (breathing zone): 0.8PPM Time: 0900 - 1000

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J. Mueller

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 1/9/2009 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1330	LEL	1%	2 I3	4ft	East of both Crows
	O_2	20.8%			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	PID	0.4 PPM			
1400	LEL	1%			" "
	O_2	20.8%			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	PID	0.6 PPM			
1430	LEL	1%			" "
	O_2	20.8%			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	PID	0.3 PPM			
1500	LEL	1%			
	O_2	20.8%			South of both Crows
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	PID	0.2 PPM			
1530	LEL	1%			
	O_2	20.8%			" "
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	PID	0.0 PPM			
1600	LEL	2%			" "
	O_2	20.8%			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	PID	0.0 PPM			
1630	LEL	2%			
	O_2	20.8%			" "
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	PID	0.0 PPM			Afternoon Summary
					PID TWA 0.1 PPM
					Peak 0.6 PPM
					H_2S TWA 0 PPM
					CO TWA 0 PPM

Highest VOC Reading (breathing zone): 0.8 ppm Time: 0900–1000

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II Date: 1/12/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM " PM "

Project: CWRDF Isolation Break Temp.(°F): High " Low " Rain "

ARCADIS PHSO: Kurt Merkle Wind Direction: " See Golders Report

Equipment IDs: PID # B15394B 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: Trash excavation started @ 0800 Am

Ended @ 1630

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0700	LEL	0 %	3	C2	4ft	East of Both Work Crews
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
0730	LEL	0 %				" "
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
0800	LEL	1 %				
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.1 PPM				
0830	LEL	1 %				
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
0900	LEL	1 %				
	O_2	20.8 %				South of crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
0930	LEL	1 %				
	O_2	20.8 %				South of crew 1
	H_2S	0 PPM				North of crew 2
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.1 PPM				

Highest VOC Reading (breathing zone): 0.6PPM Time: 1300

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J Merkle

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	1 %	3	D2+3	4ft	South of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1030	LEL	1 %				" " "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.1 PPM				
1100	LEL	1 %				South of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1130	LEL	1 %				" " "
	O_2	20.7 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1200	LEL	1 %				East of Both Crews
	O_2	20.8 %				
	H_2S	0 PPM				Morning Summary
	CO	0 PPM				PID Peak 0.1 PPM TWA 0.0 PPM
	NH_3	0 PPM				H_2S TWA 0.0 PPM
	PID	0.0 PPM				CO TWA 0.0 PPM
1230	LEL	1 %				" " "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1300	LEL	1 %				South of Crew 1
	O_2	20.8 %				North of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.6 PPM				

Highest VOC Reading (breathing zone): 0.6 PPM Time: 1300

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1330	LEL	1 %	3	D5	4ft	South of Crew 1
	O_2	20.8 %				North of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1400	LEL	2 %				" "
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.1 PPM				
1430	LEL	1 %				East of Both Crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2 PPM				
1500	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1530	LEL	2 %				South of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.1 PPM				
1600	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.0 PPM				
1630	LEL	1 %				
	O_2	20.8 %				Afternoon Summary
	H_2S	0 PPM				
	CO	0 PPM				PID TWA 0.0 PPM
	NH_3	0 PPM				Peak 0.6
	PID	0.0 PPM				
						CO TWA 0.0 PPM
						H_2S TWA 0.0 PPM

Highest VOC Reading (breathing zone): 0.6 PPM Time: 1300

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 1/13/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM ~ PM ~

Project: CWRDF Isolation Break Temp.(°F): High ~4 Low ~ Rain ~

ARCADIS PHSO: Kurt McMillo Wind Direction: ~4 See Golders Report

Equipment IDs: PID # B1 9394 B 4 Gas Meter # B185c9B Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A Notes/Comments: Excavation started @ 0700

Excavation ended @ 1630

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
0715	LEL	1 %c	3	C2+3	4Ft	South of Both Crews
	O_2	20.8 %c				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0730	LEL	1 %c				" " " "
	O_2	20.8 %c				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
0800	LEL	1 %c				East of Crew 2
	O_2	20.8 %c				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
0830	LEL	1 %c				South of Crew 1
	O_2	20.8 %c				North of Crew 2
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	2.7 ppm				Pulled Benzene Tube
0900	LEL	1 %c				@ 0850 0.0 ppm
	O_2	20.8 %c				" " " "
	H_2S	0 ppm				" " " "
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.2 ppm				
0930	LEL	2 %c				" " " "
	O_2	20.8 %c				" " " "
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				

Highest VOC Reading (breathing zone): 5.0ppm Time: 1230

Highest Benzene Detector Tube Reading (breathing zone): 0.0 ppm Time: 0850

Signature: Kurt J McMillo

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 1/13/2009 Page 2 of 3

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1000	LEL	0 %	3	4A	East of both crews
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	PID	1.2 PPM			
1030	LEL	1 %			South of Crew 1
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	PID	0.7 PPM			
1100	LEL	1 %			
	O_2	20.8 %			North of Crew 2
	H_2S	0 PPM			South of Crew 1
	CO	0 PPM			
	NH_3	0 PPM			
	PID	0.9 PPM			
1130	LEL	1 %			
	O_2	20.8 %			East of Crew 2
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	PID	1.2 PPM			
1200	LEL	1 %			
	O_2	20.8 %			" "
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	PID	0.9 PPM			
1230	LEL	1 %			South of Crew 2
	O_2	20.8 %			
	H_2S	0 PPM			Morning Summary
	CO	0 PPM			PID VOC dusk 5.0 PPM
	NH_3	0 PPM			TWA 0.2 PPM
	PID	5.0 PPM			Stel 0.0 PPM
1300	LEL	1 %			CO TWA 0.0 PPM
	O_2	20.8 %			H_2S TWA 0.0 PPM
	H_2S	0 PPM			NH_3 TWA 0.0 PPM
	CO	0 PPM			
	NH_3	0 PPM			
	PID	0.3 PPM			

Highest VOC Reading (breathing zone): 5.0PPM Time: 1230

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0850

Signature:

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1330	LEL	1 %	3	D3-4	4ft	South of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.1 PPM				
1400	LEL	1 %				East of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2 PPM				
1430	LEL	1 %				South of Crew 1
	O_2	20.8 %				North of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.3 PPM				
1500	LEL	1 %				East of Both Crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.1 PPM				
1530	LEL	1 %				
	O_2	20.8 %				South of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.4 PPM				
1600	LEL	1 %				
	O_2	20.8 %				South of Both Crews
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	PID	0.2 PPM				
1630	LEL	1 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				Afternoon Summary
	NH_3	0 PPM				PID VOC Peak 5.0 ppm
	PID	0.0 PPM				TWA 0.0 PPM
						H_2S TWA 0 PPM
						CO TWA 0 PPM
						NH_3 TWA 0 PPM

Highest VOC Reading (breathing zone): 5 ppm Time: 1230

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0850

Signature: Kurt J Rudh

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 1/14/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM " PM "

Project: CWRDF Isolation Break Temp.(°F): High " Low " Rain "

ARCADIS PHSO: Kurt Markl Wind Direction: " See Golders Report

Equipment IDs: PID # B193948 4 Gas Meter # B185098 Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A Notes/Comments: Excavation started @ 0700

Excavation ended @ 1430

Time	Parameter	Reading		Location – Deck# &Grid #		Height of Reading	Notes
0700	LEL	1	%	3	D3H4	4ft	South of Crew 2
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	NOC	0.0	PPM				
0730	LEL	1	%				East of Crew 2
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0800	LEL	1	%				East of Both Crews
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0830	LEL	1	%				South of Crew 1 North of Crew 2
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0900	LEL	1	%				East of Crew 1
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0930	LEL	1	%				South of Crew 2
	O_2	20.7	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				

Highest VOC Reading (breathing zone): 0.3PPM Time: 1330

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt Markl

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 1/14/2009 Page 2 of 3

Time	Parameter	Reading		Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	2	%	3	D3x4	4ft	East of both crews
	O_2	20.7	%				
	H_2S	0	ppm				
	CO	0	ppm				
	NH_3	0	ppm				
	VOC	0.0	ppm				
1030	LEL	2	%				South of crew 2
	O_2	20.8	%				
	H_2S	0	ppm				
	CO	0	ppm				
	NH_3	0	ppm				
	VOC	0.0	ppm				
1100	LEL	1	%				Northeast of crew1
	O_2	20.8	%				
	H_2S	0	ppm				
	CO	0	ppm				
	NH_3	0	ppm				
	VOC	0.0	ppm				
1130	LEL	1	%				" "
	O_2	20.7	%				
	H_2S	0	ppm				
	CO	0	ppm				
	NH_3	0	ppm				
	VOC	0.4	ppm				
1200	LEL	1	%				East of both crews
	O_2	20.8	%				
	H_2S	0	ppm				Morning Summary
	CO	0	ppm				VOC's TWA 0.0PPM
	NH_3	0	ppm				H_2S TWA 0PPM Peak 0.0PPM
	VOC	0.0	ppm				CO TWA 0PPM
1230	LEL	1	%				South of crew 2
	O_2	20.8	%				
	H_2S	0	ppm				
	CO	0	ppm				
	NH_3	0	ppm				
	VOC	0.0	ppm				
1300	LEL	1	%				East of Crew1
	O_2	20.8	%				North of crew 2
	H_2S	0	ppm				
	CO	0	ppm				
	NH_3	0	ppm				
	VOC	0.1	ppm				

NH_3 TWA 0 PPM

Highest VOC Reading (breathing zone): 0.3 PPM Time: 1330

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J. Rudd

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 1/14/09 Page 3 of 3

Time	Parameter	Reading	Location - Deck# &Grid #	Height of Reading	Notes
1330	LEL	1 %	3	4ft	South of Crawl
	O_2	20.8 %	D3+4		North of Crawl
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
1400	LEL	1 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1436	LEL	1 %			Excavating ended due to weather @ 1430.
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1500	LEL	%			Afternoon Summary
	O_2	%			VOC's Peak 0.3 PPM
	H_2S	PPM			TWA 0.0 PPM
	CO	PPM			H_2S TWA 0.0 PPM
	NH_3	PPM			CO TWA 0.0 PPM
	VOC	PPM			NH_3 TWA 0.0 PPM
1530	LEL	%			
	O_2	%			
	H_2S	PPM			
	CO	PPM			
	NH_3	PPM			
	VOC	PPM			
1600	LEL	%			
	O_2	%			
	H_2S	PPM			
	CO	PPM			
	NH_3	PPM			
	VOC	PPM			
1630	LEL	%			
	O_2	%			
	H_2S	PPM			
	CO	PPM			
	NH_3	PPM			
	VOC	PPM			

KJM

Highest VOC Reading (breathing zone): 0.3 PPM Time: 1330

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kendall J. Mahler

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 1/15/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM " PM "

Project: CWRDF Isolation Break Temp.(°F): High " Low " Rain "

ARCADIS PHSO: Kurt J Merkle Wind Direction: " See Golders Report

Equipment IDs: PID # B1539YB 4 Gas Meter # B185098 Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation began @ 0700

Excavation done @ 1630

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0700	LEL	1 %	3	F3+4	4 Ft	South of both crews
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0730	LEL	1 %				" "
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
0800	LEL	1 %				" " "
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
0830	LEL	1 %				East of Crew 2
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.9 PPM				
0900	LEL	0 %				
	O_2	20.8 %				South of Crew 1
	H_2S	0 PPM				North of Crew 2
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				
0930	LEL	1 %				" " "
	O_2	20.7 %				" " "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				

Highest VOC Reading (breathing zone): 5.1 Time: 1300

Highest Benzene Detector Tube Reading (breathing zone): 0.0 Time: 1319

Signature: Kurt J Merkle

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1000	LEL	1 %	3 G-3+4	4ft	East of Crew 1
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.6 PPM			
1030	LEL	1 %			East of Crew 2
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
1100	LEL	2 %			South of Crew 1
	O_2	20.7 %			North of Crew 2
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.2 PPM			
1130	LEL	2 %			" "
	O_2	20.8 %			" "
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1200	LEL	1 %			East of Bath Crew 5
	O_2	20.8 %			Morning Summary
	H_2S	0 PPM			VOCs TWA 0.3 PPM
	CO	0 PPM			Peak 0.9 PPM
	NH_3	0 PPM			CO TWA 0.0PPM NH_3 TWA
	VOC	0.6 PPM			H_2S 0.0PPM 0.0 PPM
1230	LEL	1 %			South of Crew 1
	O_2	20.8 %			North of Crew 2
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.9 PPM			
1300	LEL	1 %			" "
	O_2	20.8 %			" "
	H_2S	0 PPM			
	CO	0 PPM			Benzene Tube Pull &
	NH_3	0 PPM			0.0 PPM @ 1319
	VOC	5.1 PPM			STEL of 1.0PPM

Highest VOC Reading (breathing zone): 5.1 PPM Time: 1300

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 1319

Signature:

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1330	LEL	1 %	3	4ft	East of Crew 2
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.9 PPM			
1400	LEL	1 %			South of both Crews
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1430	LEL	1 %			South of Crew1 North of Crew2
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
1500	LEL	1 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.4 PPM			
1530	LEL	1 %			East of Crew 2
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.6 PPM			
1600	LEL	1 %			North of Crew 2
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1630	LEL	1 %			East of Crew 2
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	~~LEL~~ VOC	0.4 PPM			Afternoon Summary VOC's TWA 0.1 PPM Peak 5.1 PPM CO TWA 0 PPM NH_3 TWA 0 PPM H_2S TWA 0 PPM

Highest VOC Reading (breathing zone): 5.1 PPM Time: 1300

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1319

Signature: Kurt J. Riddle

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 1/16/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Merkle Wind Direction: * See Goldars Report

Equipment IDs: PID # B193948 4 Gas Meter # B18509B Ammonia Gas Meter # BH159B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation started @ 0700

Excavation ended @ 1630

Time	Parameter	Reading		Location – Deck# &Grid #		Height of Reading	Notes
0700	LEL	1	%	3	H2+3	4FT	East of crew 1
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
0730	LEL	1	%				South of crew 2
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.2	PPM				
0800	LEL	0	%				South of Both crews
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.2	PPM				
0830	LEL	1	%				East of crew 2
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				
0900	LEL	1	%				North of crew 2
	O_2	20.8	%				South of crew 1
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.8	PPM				
0930	LEL	1	%				
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.7	PPM				

Highest VOC Reading (breathing zone): 0.9 PPM Time: 1600

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J Merkle

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1000	LEL	2 %	3 H.R.B3	4FT	South of Crow 2
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.8 PPM			
1030	LEL	1 %			North of Crow 2
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1100	LEL	2 %			South of Crow 1
	O_2	20.8 %			North of Crow 3
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
1130	LEL	1 %			East of Crow 1
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.4 PPM			
1200	LEL	1 %			Morning Summary
	O_2	20.8 %			VOC TWA 0.1 PPM
	H_2S	0 PPM			Peak 0.8 PPM
	CO	0 PPM			H_2S TWA 0 PPM NH_3 TWA 0 PPM
	NH_3	0 PPM			CO TWA 0 PPM
	VOC	0.8 PPM			
1230	LEL	1 %			Excavation temporary stopped
	O_2	20.8 %			- Beaver is uncovering a well in fill area.
	H_2S	0 PPM			-Readings from east of Excavation Area
	CO	0 PPM			
	NH_3	0 PPM			" "
	VOC	0.0 PPM			
1300	LEL	1 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 0.9 PPM Time: 1500

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 3/30/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM windy cold PM sunny warmer breezy

Project: CWRDF Isolation Break Temp.(°F): High mid 50's Low low 30's Rain No

ARCADIS PHSO: Brian Hawkman Wind Direction: from the west

Equipment IDs: PID # B/239418 4 Gas Meter # B/185098 Ammonia Gas Meter # B/191598

Quick Draw Hand Pump # N/A Notes/Comments: N/A

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0730	Begin mobilizing equipments to start excavating waste - haul road improvements, on board GPS units synched					
0835	Begin excavation					
0840	LEL	0%	8	B2	4 ft	Cross wind of excavator
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0910	LEL	1%	8	B2	4 ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0940	LEL	1%	8	B2	4 ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1011	LEL	1%	8	B2	4 ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1039	LEL	1%	8	C2	4 ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1110	LEL	1%	8	C2	4 ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				

Highest VOC Reading (breathing zone): 0.0 ppm Time: N/a

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1110 cont	NH_3	0 ppm	8	C2	4ft	SAA
	PID	0.0 ppm	↓	↓	↓	
1140	LEL	1%	8	C2	4ft	SAA
	Oxygen	20.8%	↓	↓	↓	↓
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	↓
1200	Lunch					Morning summary
						Ammonia meter - TWA 0 ppm
						4 Gas Meter: H_2S - TWA 0 ppm
						CO - TWA 0 ppm
						PID - TWA 0.0 ppm
1335	LEL	0%	8	C2	4ft	Crosswind to excavation
	Oxygen	20.8%	↓	↓		
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓		
1305	LEL	0%	8	C2	4ft	SAA
	Oxygen	20.8 ppm	↓	↓		
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓		
1340	LEL	0%	8	C2	4ft	SAA
	Oxygen	20.8%	↓	↓		
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓		
1410	LEL	0%	8	C2	4ft	SAA
	Oxygen	20.8%	↓	↓		
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓		
1439	LEL	0%	8	D2	4ft	SAA
	Oxygen	20.8%	↓	↓		
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓		

Highest VOC Reading (breathing zone): 0.0 ppm Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 3/30/2009 Page 3 of 3

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1505	LEL	0%	8	D2	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	↓
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1535	LEL	0%	8	D2	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	↓
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1558	LEL	0%	8	D2	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	↓
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1602	Beaver is done excavating for the day					
						Afternoon Summary
						Ammonia Meter TWA 0 ppm
						4 Gas Meter: H_2S TWA 0 ppm
						CO TWA 0 ppm
						PID: TWA 0.0 ppm

Highest VOC Reading (breathing zone): 0.0 ppm Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio II Date: 3/31/09 Shift: Day Page: 1 of 2

Location: East Sparta, Ohio Weather: AM p.cloudy, 30°F PM p.cloudy, 50's °F

Project: CWRDF Isolation Break Temp (°F): High ____ Low ____ Rain ____

ARCADIS PHSO: T. Trommer Wind Direction: ____

Equipment IDs: PID # B15450B 4 Gas Meter # BO-40348-006 Ammonia Gas Meter # n/A

Quick Draw Hand Pump # n/A Notes/Comments: ____

Time	Parameter	Reading	Location - Deck#	&Grid #	Height of Reading	Notes
0745	VOC	0 ppm	8	D2	3'	D2 grid.
	LEL	0%				
	O_2	20%				
	CO	0 ppm				
	H_2S	0 ppm				
0815	VOC	0 ppm	8	D2	3'	
	LEL	0%				
	O_2	20.1%				
	CO	0 ppm				
	H_2S	0 ppm				
0845	VOC	0 ppm	8	E2	3'	E2 grid
	LEL	0%				
	O_2	20.3%				
	CO	0 ppm				
	H_2S	0 ppm				
0915	VOC	0 ppm	8	E2	3'	
	LEL	0%				
	O_2	20.4%				
	CO	0 ppm				
	H_2S	0 ppm				
945	VOC	0 ppm	8	E2	3'	
	LEL	0%				
	O_2	20.6%				
	CO	0 ppm				
	H_2S	0 ppm				
1015	VOC	0 ppm	8	E2	3'	
	LEL	0%				
	O_2	20.6%				
	CO	0 ppm				
	H_2S	0 ppm				
1045	VOC	0 ppm	8	E2	3'	
	LEL	0%				
	O_2	20.6%				
	CO	0 ppm				
	H_2S	0 ppm				

Highest VOC Reading (breathing zone): none - 0.0ppm Time: —

Highest Benzene Detector Tube Reading (breathing zone): n/A Time: —

Signature: Tricia Trommer

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1115	VOC	0 ppm	8	F2	3'	
	LEL	0%				
	O_2	20.6%				
	CO	0 ppm				
	H_2S	0 ppm				
1250	VOC	0 ppm	8	F2	3'	
	LEL	0%				
	O_2	20.8%				
	CO	0 ppm				
	H_2S	0 ppm				
1320	VOC	0 ppm	8	F2	3'	
	LEL	0%				
	O_2	20.8%				
	CO	0 ppm				
	H_2S	0 ppm				
1350	VOC	0 ppm	8	F2	3'	
	LEL	0%				
	O_2	20.8%				
	CO	0 ppm				
	H_2S	0 ppm				
1420	VOC	0 ppm	8	G2	3'	G2 grid
	LEL	0%				
	O_2	20.8%				
	CO	0 ppm				
	H_2S	0 ppm				
1450	VOC	0 ppm	8	G2	3'	
	LEL	0%				
	O_2	21.0%				
	CO	1				
	H_2S	0				
	V T.T. 3/31/09					

Highest VOC Reading (breathing zone): none-all 0.0 ppm Time: —

Highest Benzene Detector Tube Reading (breathing zone): n/A Time: —

Signature: Patricia Trommer

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 4/2/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM clear, breezy PM clear, breezy

Project: CWRDF Isolation Break Temp.(°F): High low 60's Low mid 30's Rain N/A

ARCADIS PHSO: Brian Hawman Wind Direction: from the East

Equipment IDs: PID # B193943B 4 Gas Meter # B185098B Ammonia Gas Meter # B191598B

Quick Draw Hand Pump # N/A Notes/Comments: N/A

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0730	LEL	0%	8	G3	4 ft	South (crosswind) to the excavation
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
0800	LEL	0%	8	G3	4 ft	Same as Above (SAA)
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
0830	LEL	0%	8	G3	4 ft	
	Oxygen	20.8%	↓	↓	↓	SAA
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
0900	LEL	0%	8	H3	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
0930	LEL	0%	8	H3	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1000	LEL	0%	8	I3	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	

Highest VOC Reading (breathing zone): 0.0 ppm Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: B

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1030	LEL	0%	8	~~I3~~	4 ft.	SAA
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1100	LEL	0%	8	I3	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1130	LEL	0%	8	I3	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1200	Beaver Stops for lunch					Monitoring Summary Ammonia meter: TWA 0 ppm 4 Gas Meter: H_2S: TWA 0 ppm CO: TWA 0 ppm PID: TWA 0.0 ppm
1230	LEL	0%	8	J3	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1300	LEL	0%	8	K3	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1330	LEL	0%	8	K3	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1400	LEL	0%	8	K3	4 ft	SAA
	Oxygen	20.8%	↓	↓	↓	↓
	H_2S	0 ppm				

Highest VOC Reading (breathing zone): 0.0 ppm Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: _____

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 4/2/2009 Page 3 of 3

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1400	CO	0 ppm	8	K3	4'7"	SAA
	NH_3	0 ppm	↓	↓	↓	
	PID	0.0 ppm	↓	↓	↓	
1430	LEL	0%	8	K3	4'7"	SAA
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.0 ppm	↓	↓	↓	
1500	LEL	0%	8	K3	4'7"	SAA
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.0 ppm	↓	↓	↓	
1520	Beaver is done excavating for the day					Afternoon summary
						Ammonia meter: TWA 0 ppm
						4 Gas meter: H_2S: TWA 0 ppm
						CO: TWA 0 ppm
						PID: TWA 0.0 ppm

Highest VOC Reading (breathing zone): 0.0 ppm Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report**

Owner: Republic Waste Services of Ohio, II Date: 4/7/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM cold, snowing, windy PM cold, snowing, windy

Project: CWRDF Isolation Break Temp.(°F): High ____ Low ____ Rain No

ARCADIS PHSO: Brian Hoffman Wind Direction: N & West/Northwest

Equipment IDs: PID # B193948 4 Gas Meter # B185978 Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A Notes/Comments: ____

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0735	LEL	0%	Excavation	—	4ft	Removing the last depth of trash above liner and excavating the berm. Installing pipe from west towards the east
	Oxygen	20.8%	Berm			
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0805	LEL	0%	SAA	—	4ft	Same As Above (SAA)
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0835	LEL	0%	SAA	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0905	LEL	0%	SAA	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0935	LEL	0%	SAA	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1005	LEL	0%	SAA	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.2ppm Time: 1338

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1035	LEL	0%	SAA	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1105	LEL	0%	SAA	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1135	LEL	0%	SAA	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1200	Lunch Break					Morning Summary Ammonia meter: TWA 0 ppm 4 Gas Meter: H_2S: TWA 0 ppm CO TWA 0 ppm PID: TWA 0 ppm
1238	LEL	0%	SAA	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1308	LEL	0%	SAA	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1338	LEL	0%	SAA	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1405	LEL	0%	SAA	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				

Highest VOC Reading (breathing zone): 0.2ppm Time: 1338

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 4/7/2009 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1408	CO	0 ppm	SAA	—		
	NH_3	0 ppm				
	PID	0.0 ppm				
1438	LEL	0%	SAA	—	4 ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1508	LEL	0%	SAA	—	4 ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1538	LEL	0%	SAA	—	4 ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1600	Beginner is done excavating for the day					Afternoon summary
						Ammonia meter: TWA 0 ppm
						4 Gas Meter: H_2S: TWA 0 ppm
						CO: TWA 0 ppm
						PID: TWA 0.0 ppm

Highest VOC Reading (breathing zone): 0.2 ppm Time: 1338

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 4/8/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM cold, windy, sunny PM sunny, windy

Project: CWRDF Isolation Break Temp.(°F): High low 50's Low mid 30's Rain N/A

ARCADIS PHSO: Shawn Hawman Wind Direction: out of West

Equipment IDs: PID # 15193943 4 Gas Meter # 13855093 Ammonia Gas Meter # 15191593

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0730	Beaver is exposing the tie in to the lower [illegible]					Toe Drain
0735	LEL	0%	—	[illegible]	4ft	and installing lower gas collection piping on the north slope of Cell 5 in the Isolation Break
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0805	LEL	0%	—	[illegible]	4ft	Beaver is digging to expose tie-in point and expose pipe ends
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0835	LEL	0%	—	[illegible]	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0905	LEL	4%	—	[illegible]	4ft	workers in excavation, marking pipe connections
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
0935	LEL	0%	—	—	4ft	working on lower gas collection (under cap gas collection pipe)
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1005	LEL	0%	—	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.4 ppm Time: 1605

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1055	LEL	0%		4ft	SAA
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0.0 ppm			
1105	LEL	0%		4ft	SAA
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0.0 ppm			
1135	LEL	0%		4ft	SAA
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0.0 ppm			
1200	Beaver taking lunch break				Morning Summary
					Ammonia meter: TWA 0 ppm
					4 Gas meter: H_2S TWA 0 ppm
					CO: TWA 0 ppm
					PID: TWA 0.0 ppm
1235	LEL	0%		4ft	SAA
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0.0 ppm			
1305	LEL	0%		4ft	SAA
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0.0 ppm			
1335	LEL	0%		4ft	Excavation on the toe chain resumes
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0.0 ppm			
1405	LEL	0%		4ft	
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	0 ppm			

Highest VOC Reading (breathing zone): 0.4 ppm Time: 1605

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 4/8/2009 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1405	NH_3	0 ppm	—	—	4 ft	
	PID	0.0 ppm				
1435	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1505	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1535	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1605	LEL	0%	—	—	4 ft	
	Oxygen	20.9%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1635	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1646	Excavator is done excavating for the day					
						At the end of summary Ammonia meter TWA 0 ppm 4 Gas Meter: H_2S: TWA 0 ppm CO: TWA 0 ppm PID: TWA 0.0 ppm

Highest VOC Reading (breathing zone): 0.4 ppm Time: 1605

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 4/9/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM sunny, windy PM sunny, windy

Project: CWRDF Isolation Break Temp.(°F): High mid 50's Low 35 Rain No

ARCADIS PHSO: Brian Haarman Wind Direction: _____

Equipment IDs: PID # B1939YB 4 Gas Meter # B1850YB Ammonia Gas Meter # B1959YB

Quick Draw Hand Pump # N/A Notes/Comments: _____

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0745	LEL	0%	—	—	4 ft	Beaver is continuing excavation activities exposing the Loam and installing the toe drain
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0815	LEL	0%	—	—	4 ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
0845	LEL	0%	—	—	4 ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0915	LEL	0%	—	—	4 ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
0945	LEL	0%	—	—	4 ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1015	LEL	0%	—	—	4 ft	SAA
	Oxygen	20.9%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				

Highest VOC Reading (breathing zone): 0.4 ppm Time: 1045 & 1540

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: _____

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1045	LEL	0%	—	—	4ft	SAA
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1115	LEL	0 ppm	—	—	4ft	SAA
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1145	LEL	0%	—	—	4ft	SAA
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1200	Lunch Break					Morning summary Ammonia meter: TWA 0 ppm 4 Gas Meter: TWA 20 ppm H_2S TWA 0 ppm CO PID: TWA 0 ppm
1240	LEL	0	—	—	4ft	SAA
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1310	LEL	0%	—	—	4ft	SAA
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1340	LEL	0%	—	—	4ft	SAA
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1410	LEL	0%	—	—	4ft	SAA
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	1 ppm				

Highest VOC Reading (breathing zone): 0.4 ppm Time: 1045 & 1540

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1410	NH_3	0 ppm	—	—	4ft	SAA
	PID	0.2 ppm				
1440	LEL	0%	~	—	4ft	SAA
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1510	LEL	0%	—	—	4ft	SAA
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1540	LEL	0%	~	—	4ft	SAA
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1610	LEL	0%	~	—	4ft	SAA
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1630	Beaver is done excavating for the day					AM/Afternoon summary Ammonia meter: TWA 0 ppm 4 Gas Meter: H_2S: TWA 0 ppm CO: TWA 0 ppm PID: TWA 0.0 ppm

Highest VOC Reading (breathing zone): 0.4 ppm Time: 1045 & 1540

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report**

Owner: Republic Waste Services of Ohio, II Date: 4/13/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM cold, windy, overcast PM breezy, overcast

Project: CWRDF Isolation Break Temp.(°F): High high 50's Low mid 30's, Rain Yes, afternoon

ARCADIS PHSO: Brian Howman Wind Direction:

Equipment IDs: PID # B19394B 4 Gas Meter # B1 85099B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # B171325B Notes/Comments:

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0745	LEL	1%	—	—	4ft	Beaver is continuing with the excavation for and installation of the test drain in the Isolation Break
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0815	LEL	2%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
0845	LEL	2%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm				
0915	LEL	2%	—	—	4ft	Collect Benzene Detector Tube at 0934 N (Strokes) = 15 Result = Non-Detect
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	2.1 ppm				
0945	LEL	2%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	2.5 ppm				
1015	LEL	1%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	2.3 ppm				

Highest VOC Reading (breathing zone): 3.6 ppm Time: 1145

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 0934

Signature:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1045	LEL	1%	—	—	4ft	1050 Excavator Operator: (Rick Powers) his 4 Gas Meter is alarming. I check the meter and everything appears ok. Reset the meter by turning off then back on
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.7 ppm			~~4ft~~	
1115	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	3.4 ppm				
1145	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	3.6 ppm				
1200	Beeper breaks for lunch					Morning summary ammonia meter: TWA 0 ppm 4 Gas Meter: H_2S: TWA 0 ppm CO: TWA 0 ppm PID: TWA: 1 ppm
1245	LEL	1%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	1.7 ppm				
1315	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
1345	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
1415	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	1 ppm				

Highest VOC Reading (breathing zone): 3.6 ppm Time: 1145

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 0934

Signature:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1415	NH_3	0ppm	~	~	4ft	
	PID	0.3ppm				
1445	LEL	3%	~	~	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.7ppm				
1515	LEL	0%	~	~	4ft	
	Oxygen	20.8%				
	H_2S	0ppm				
	CO	0ppm				
	NH_3	0ppm				
	PID	0.9 ppm				Afternoon summary/
1520	Beaver is stopping for the day until excavation activities due to the rain and AECOM needs to repair liner along top of berm.					Ammonia meter: TWA 0ppm 4 Gas Meter: H_2S TWA 0ppm CO TWA 0ppm PID: TWA 0.3ppm

Highest VOC Reading (breathing zone): 3.6ppm Time: 1145

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 0934

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 4/14/2009 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM overcast, breezy PM N/A

Project: CWRDF Isolation Break Temp.(°F): High low 50's Low mid 30's Rain Yes

ARCADIS PHSO: Brian Hardman Wind Direction: _____

Equipment IDs: PID # B193948 4 Gas Meter # B185093 Ammonia Gas Meter # B191593

Quick Draw Hand Pump # N/A Notes/Comments: _____

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0745	LEL	0%	—	—	4ft	Beaver continuing with excavation and installation of toe drain piping
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
0815	LEL	0%	—	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm				
0845	LEL	0%	—	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
0915	LEL	1%	—	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
0945	LEL	0%	—	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1015	LEL	2%	—	—	4ft	SAA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1015

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: _____

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 4/14/2009 Page 2 of 2

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1045	LEL	0%	—	—	Ug	SOA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1115	LEL	0%	—	—	Ug	SOA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1145	LEL	0%	—	—	Ug	SOA
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1152	Everyone calls work for the day due to rain					Morning summary Ammonia meter: TWA 0 ppm 4 Gas Meter: H_2S: TWA 0 ppm CO: TWA 0 ppm PID: TWA 0.00 ppm

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1015

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 4/16/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM clear, sunny, windy PM clear, sunny, windy

Project: CWRDF Isolation Break Temp.(°F): High low 60's Low mid 30's Rain No

ARCADIS PHSO: Brian Hewman Wind Direction: NE

Equipment IDs: PID # TB193947B 4 Gas Meter # TB185097B Ammonia Gas Meter # TB191597B

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0736	LEL	0%	—	—	4 ft	Beaver is continuing excavation for and
	Oxygen	20.8%				installation of the toe drain piping.
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0806	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0836	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0906	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
0936	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1006	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1345

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 4/16/2009 Page 2 of _____

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
1036	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1106	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.7 ppm				
1136	LEL	0%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1200	Lunch Break					Morning summary Ammonia meter: TWA 0 ppm 4 Gas Meter: H_2S: TWA 0 ppm CO: TWA 0 ppm PID: TWA 0.3 ppm
1245	LEL	0%	—	—	4 ft	
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1315	LEL	0%	—	—	4 ft	
	Oxygen	21.1%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm				
1345	LEL	0%	—	—	4 ft	
	Oxygen	21.1%				
	H_2S	0% 0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
1415	LEL	0%	—	—	4 ft	
	Oxygen	20.9%				
	H_2S	0 ppm				
	CO	1 ppm				

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1345

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: JS

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1415	NH_3	0 ppm				
	PID	0.7 ppm				
1445	LEL	0%	—	—	4ft	
	Oxygen	21.1%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1515	LEL	0%	—	—	4ft	
	Oxygen	21.1%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1545	LEL	0%	—	—	4ft	
	Oxygen	21.1%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.7 ppm				
1615	LEL	0%	—	—	4ft	
	Oxygen	21.1%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1634	Beaver is done excavating for the day					AST Ammonia summary Ammonia meter: TWA 0 ppm Gas Meter: H_2S TWA 0 ppm CO: TWA 0 ppm PID: TWA 0.3 ppm

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1345

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 4/17/2009 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM sunny, windy PM sunny, windy

Project: CWRDF Isolation Break Temp.(°F): High low 60's Low low 30's Rain No

ARCADIS PHSO: Brian Hoffman Wind Direction:

Equipment IDs: PID # B193947B 4 Gas Meter # B185097B Ammonia Gas Meter # B191597B

Quick Draw Hand Pump # N/A Notes/Comments: out of NW @ 5 to 10 mph

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0745	LEL	1%	—	—	4ft	Brewer is continueing the excavation for and the installation of the TSF Drain piping
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
0815	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0845	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
0915	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0945	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1015	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				

Highest VOC Reading (breathing zone): 0.4 ppm Time: 0745

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 4/17/2008 Page 2 of 2

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1045	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5ppm				
1115	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1145	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1200	Beaver takes lunch break					Monthly Summary: Ammonia: TWA 0ppm 4 Gas Meter: H_2S: TWA 0ppm CO: 0ppm TWA PID: TWA 0.0 ppm
1240	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1310	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0ppm				
1340	LEL	0%	—	—	4ft	
	PID	0.0ppm				
	Oxygen	20.8%				
	H_2S	0ppm				
	CO	0 ppm				
	NH_3	0 ppm				
1405	Beaver is done excavating and installing the Test Double Pipe					Afternoon Summary: Ammonia meter: TWA 0ppm 4 Gas Meter: H_2S: TWA 0ppm CO: TWA 0 ppm PID: TWA 0.0 ppm

Highest VOC Reading (breathing zone): 0.4 ppm Time: 0745

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

ARCADIS

Attachment 2

Isolation Break Photo Log

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Isolation Break
City/State East Sparta, Ohio

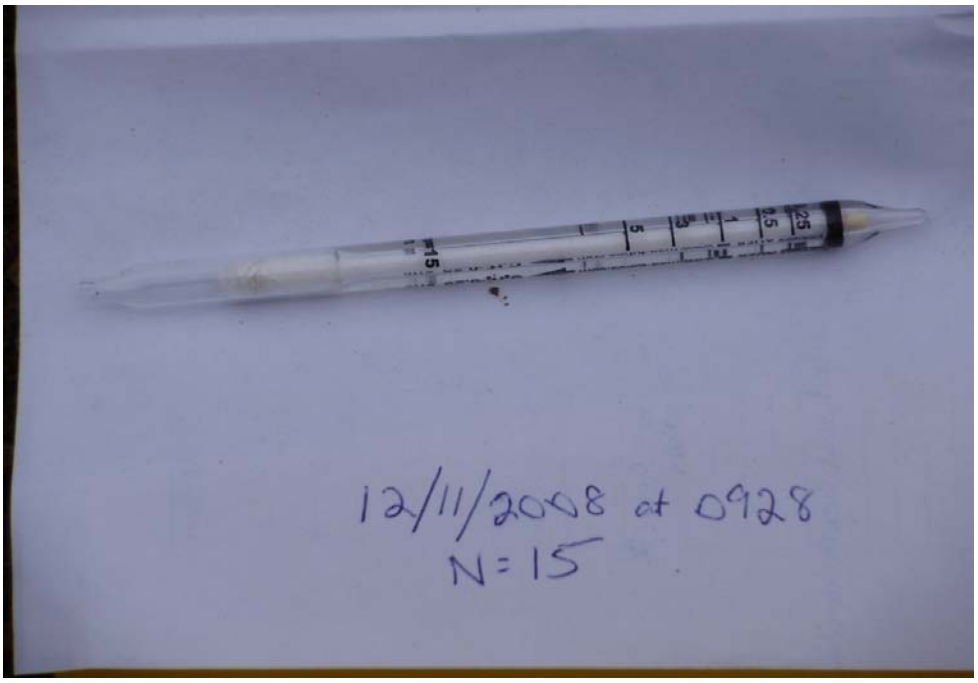


Photo No.: 1

Date: December 11, 2008

Collection Time - 0928
Strokes of the hand pump - 15
Benzene Result - Non Detect

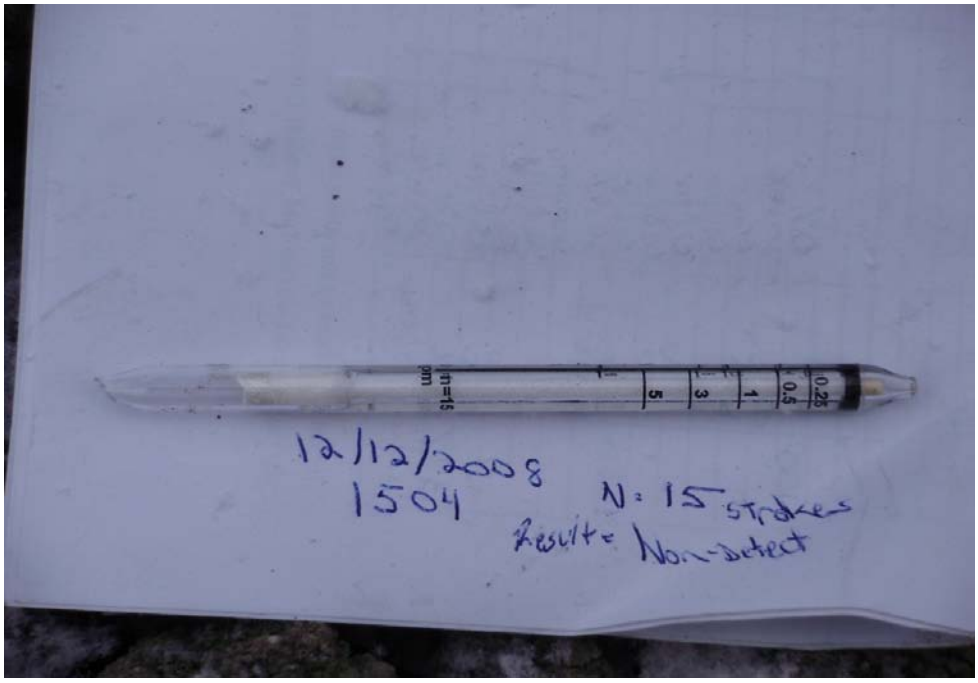


Photo No.: 2

Date: December 12, 2008

Collection Time - 1504
Strokes of the hand pump - 15
Benzene Result - Non Detect

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Isolation Break
City/State East Sparta, Ohio

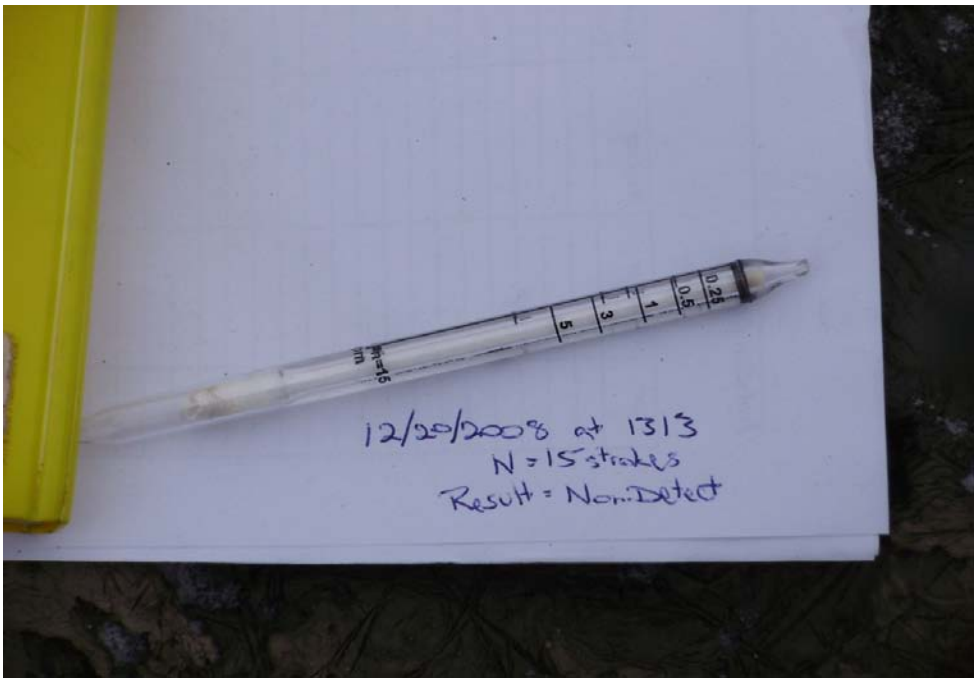


Photo No.: 3

Date: December 20, 2008

Collection Time - 1313
Strokes of the hand pump - 15
Benzene Result - Non Detect

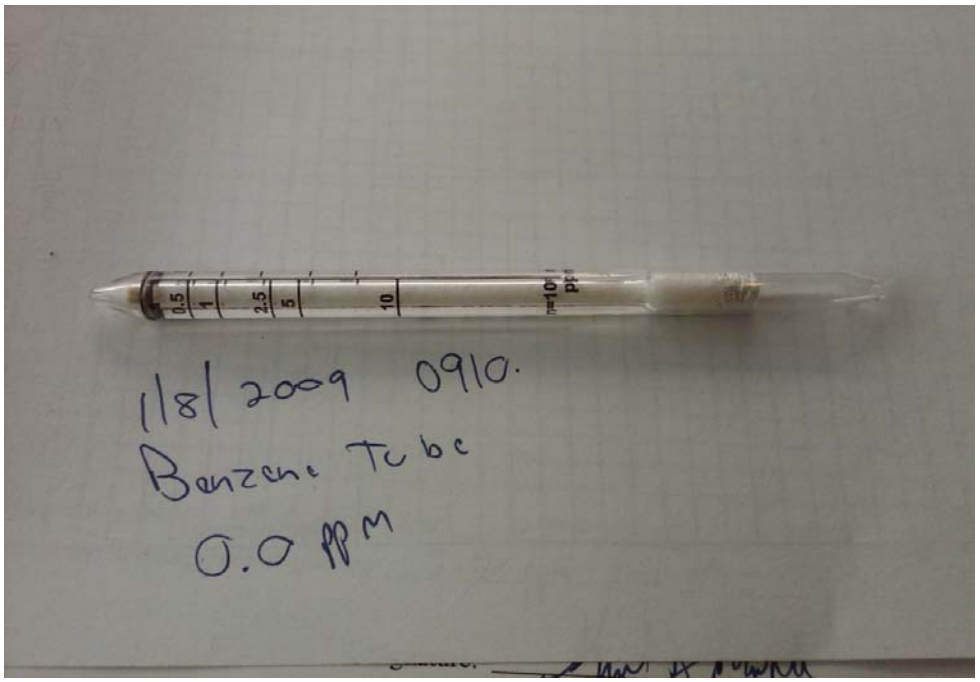


Photo No.: 4

Date: January 8, 2009

Collection Time - 0910
Strokes of the hand pump - 15
Benzene Result - Non Detect

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Isolation Break
City/State East Sparta, Ohio

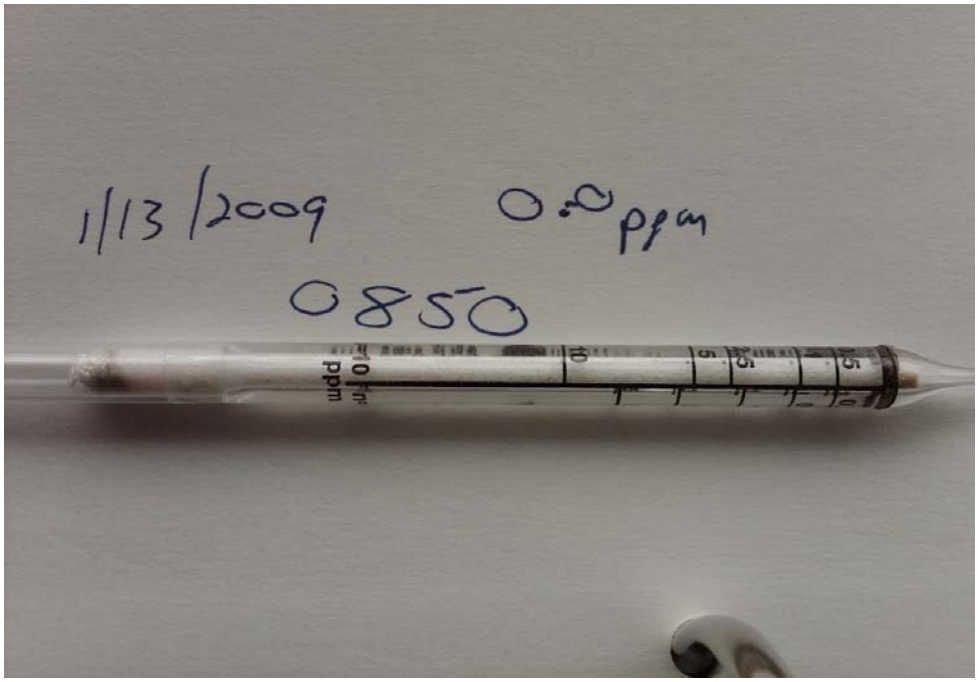


Photo No.: 5

Date: January 13, 2009

Collection Time - 0850
Strokes of the hand pump - 15
Benzene Result - Non Detect

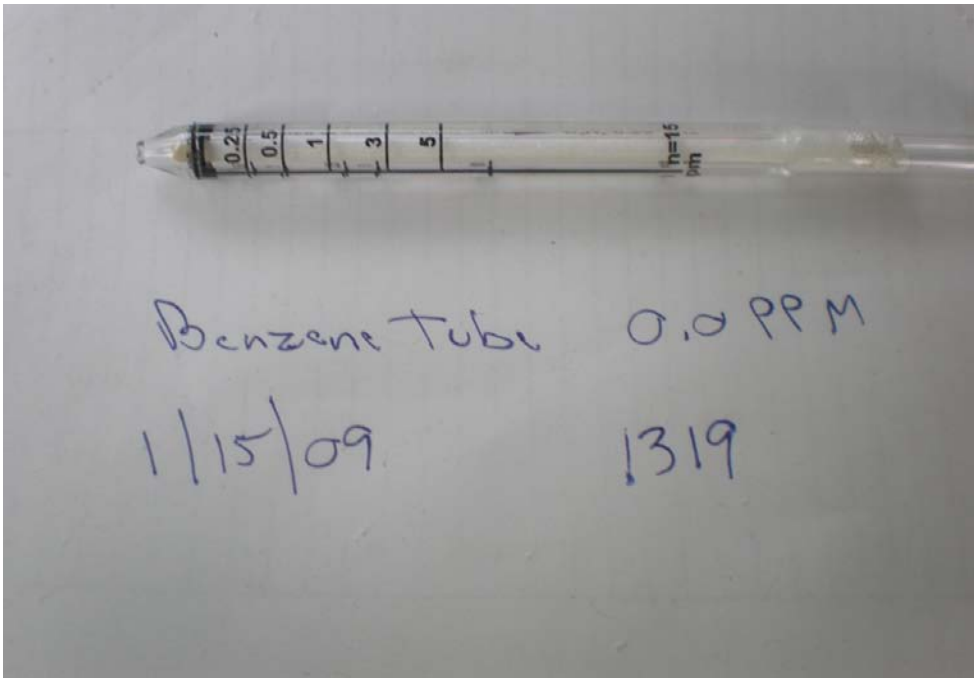


Photo No.: 6

Date: January 15, 2009

Collection Time - 1319
Strokes of the hand pump - 15
Benzene Result - Non Detect

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Isolation Break
City/State East Sparta, Ohio

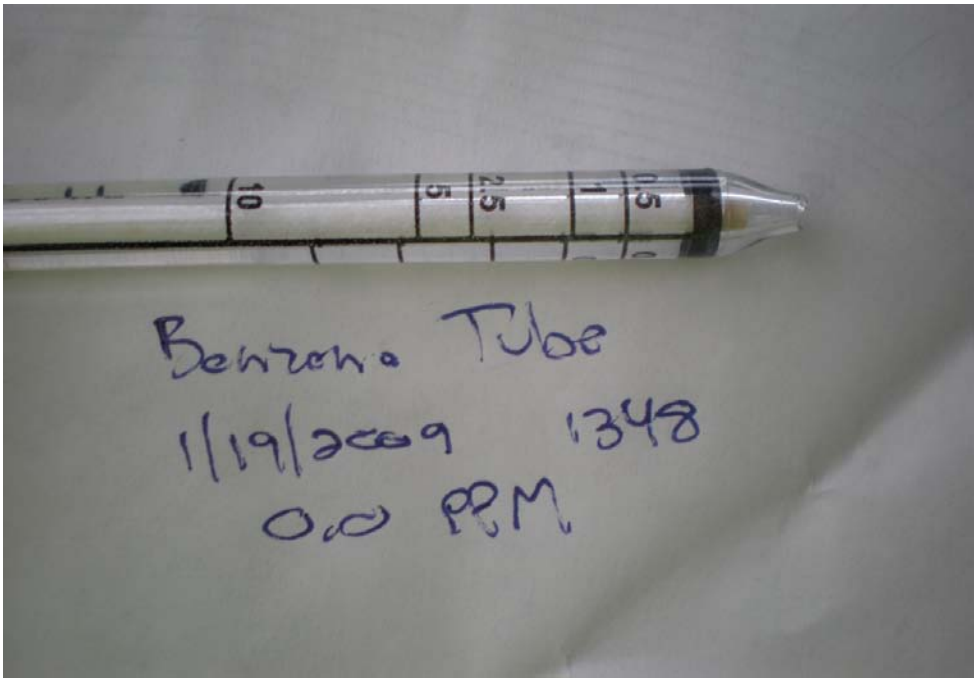


Photo No.: 7

Date: January 19, 2009

Collection Time - 1348
Strokes of the hand pump - 15
Benzene Result - Non Detect

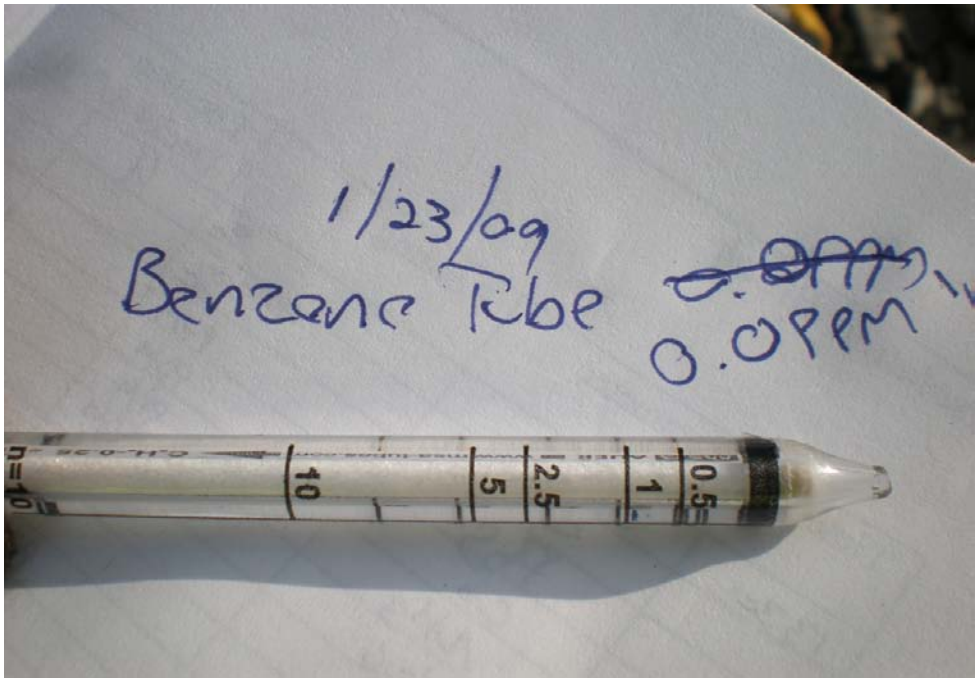


Photo No.: 8

Date: January 23, 2009

Collection Time - 1340
Strokes of the hand pump - 15
Benzene Result - Non Detect

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Isolation Break
City/State East Sparta, Ohio

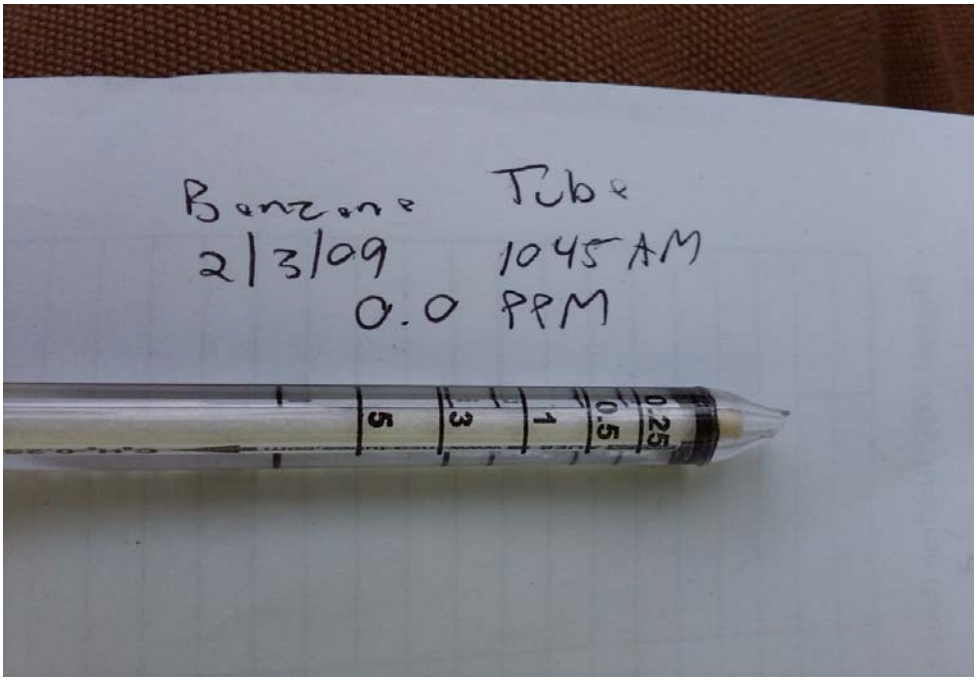


Photo No.: 9

Date: February 3, 2009

Collection Time - 1045
Strokes of the hand pump - 15
Benzene Result - Non Detect

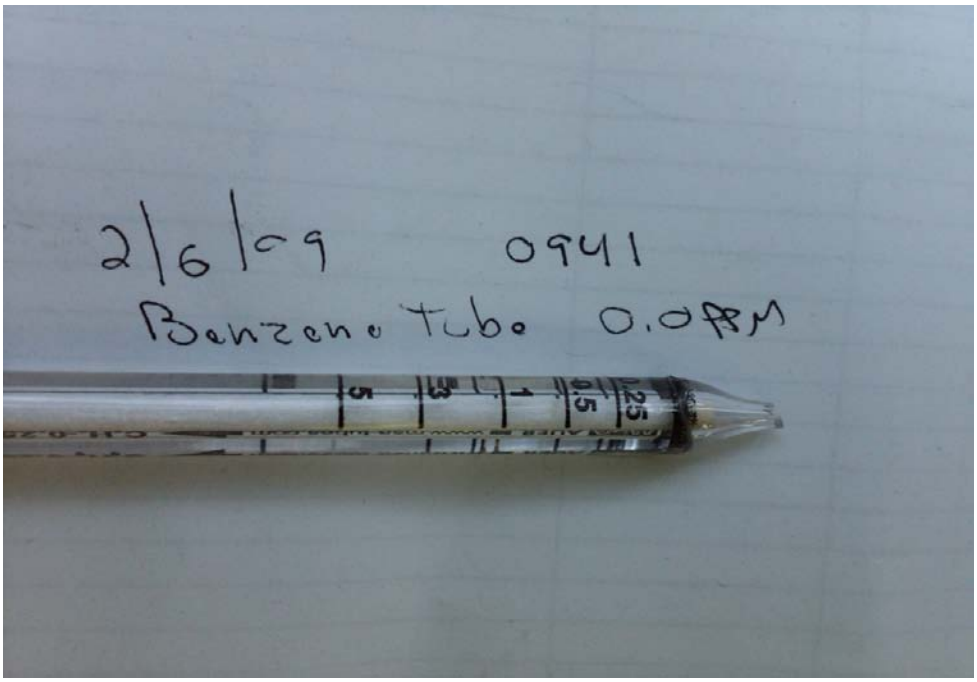


Photo No.: 10

Date: February 6, 2009

Collection Time - 0941
Strokes of the hand pump - 15
Benzene Result - Non Detect

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Isolation Break
City/State East Sparta, Ohio

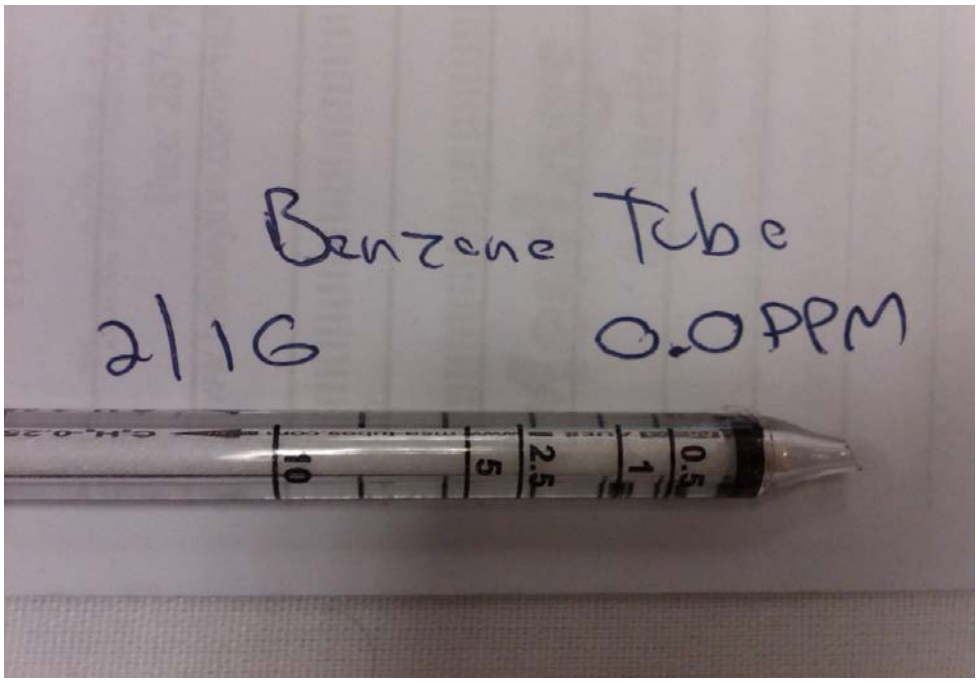


Photo No.: 11

Date: February 16, 2009

Collection Time - 1412
Strokes of the hand pump - 15
Benzene Result - Non Detect

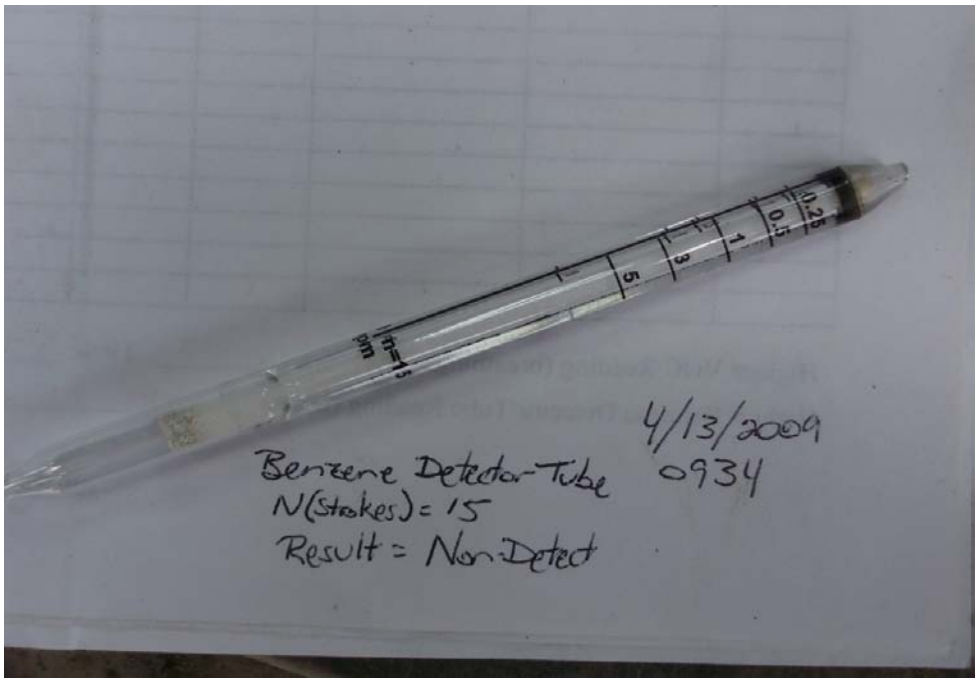


Photo No.: 12

Date: April 13, 2009

Collection Time - 0934
Strokes of the hand pump - 15
Benzene Result - Non Detect

Time	Parameter	Reading		Location – Deck# & Grid #		Height of Reading	Notes
1330	LEL	1	%	3	G4/5	4 FT	Readings from East of
	O_2	20.8	%				Excavation area, north
	H_2S	0	PPM				crews temporary stopped
	CO	0	PPM				hauling trash.
	NH_3	0	PPM				
	VOC	0.0	PPM				
1400	LEL	1	%				
	O_2	20.8	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.1	PPM				
1430	LEL	1	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
1500	LEL	1	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
1530	LEL	1	%				South of Crew 1
	O_2	20.8	%				North of Crew 2
	H_2S	0	PPM				- hauling trash again
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				
1600	LEL	1	%				" "
	O_2	20.8	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.9	PPM				
1630	LEL	1	%				" "
	O_2	20.8	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				
							Afternoon Summary
							VOC Peak 0.9 PPM
							TWA 0.0 PPM
							NH_3 TWA 0 PPM
							CO TWA 0 PPM
							H_2S TWA 0 PPM

Highest VOC Reading (breathing zone): 0.9 PPM Time: 1600

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kent J. Thuhle

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II Date: 1/19/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM " PM "

Project: CWRDF Isolation Break Temp.(°F): High " Low " Rain "

ARCADIS PHSO: Kurt Merkle Wind Direction: " See Gobbers Report

Equipment IDs: PID # B193948 4 Gas Meter # B185098 Ammonia Gas Meter # B191598

Quick Draw Hand Pump # B7132B Notes/Comments: Excavation Started 0800

Excavation end @ 1630

Time	Parameter	Reading		Location – Deck#	&Grid #	Height of Reading	Notes
0800	LEL	0	%	3	H5 to M	4A	East of Crow 1
	O_2	21.0	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.8	PPM				
0830	LEL	0	%				East of Crow 2
	O_2	21.0	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.9	PPM				
0900	LEL	0	%				South of Crow 1
	O_2	20.9	%				North of Crow 2
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.8	PPM				
0930	LEL	0	%				" "
	O_2	20.9	%				" "
	H_2S	0	PPM				
	~~APP~~ CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.7	PPM				
1000	LEL	0	%				South of Crow 2
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				
1030	LEL	0	%				East of Both Crows
	O_2	20.9	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.9	PPM				

Highest VOC Reading (breathing zone): 5.8 PPM Time: 1330

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1348

Signature: Kurt Merkle

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date 1/19/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1100	LEL	0 %	3	H5+G4	4 FT	South of crew 1
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				
1130	LEL	0 %				East of Crew 1
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1200	LEL	0 %				
	O_2	20.8 %				Morning Summary
	H_2S	0 PPM				VOC Peak 0.9 PPM
	CO	0 PPM				H_2S TWA 0.0 PPM
	NH_3	0 PPM				CO TWA 0.0 PPM
	VOC	0.3 PPM				NH_3 TWA 0.0 PPM
1230	LEL	0 %				South of crew 2
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.9 PPM				
1300	LEL	0 %				South of Crew 1
	O_2	20.9 %				East of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.9 PPM				
1330	LEL	0 %				" "
	O_2	20.9 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				Benzene tube pulled @ 1348
	VOC	5.8 PPM				0.0 PPM VOC STEL 1.2
1400	LEL	0 %				East of Crew 2
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	2.4 PPM				

Highest VOC Reading (breathing zone): 5.8 PPM Time: 1330

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1348

Signature:

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 1/19/2009 Page 3 of 5

Time	Parameter	Reading		Location – Deck# & Grid #		Height of Reading	Notes
1430	LEL	0	%	3	H5-G4	4ft	South F Crow 1
	O_2	20.9	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.7	PPM				
1500	LEL	0	%				South of Crow 1
	O_2	20.9	%				North of Crow 2
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.9	PPM				
1530	LEL	0	%				South of Crow 2
	O_2	20.9	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.8	PPM				
1600	LEL	0	%				East of Both Crews
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.4	PPM				
1630	LEL	0	%				Afternoon Summary
	O_2	20.9	%				VOC Peak 5.8 PPM
	H_2S	0	PPM				H_2S TWA 0 PPM
	CO	0	PPM				CO TWA 0.0 PPM - K.S.M
	NH_3	0	PPM				NH_3 TWA 0 PPM
	VOC	0.2	PPM				

Highest VOC Reading (breathing zone): 5.8 PPM Time: 1330

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1348

Signature: [signature]

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II Date: 1/20/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM ↓ PM ↓

Project: CWRDF Isolation Break Temp.(°F): High ↓ Low ↓ Rain ↓

ARCADIS PHSO: Kurt Merkle Wind Direction: ↓ See Golders Report

Equipment IDs: PID # B19394B 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # _____ Notes/Comments: Excavation began @ 700
Excavation ended @ 1630

Time	Parameter	Reading		Location – Deck# &Grid #		Height of Reading	Notes
0700	LEL	0	%	3	J2H3, H4	4 ft	East of Crawl
	O_2	20.9	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.1	PPM				
0730	LEL	0	%				South of Crawl
	O_2	20.9	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.2	PPM				
0800	LEL	0	%				
	O_2	20.9	%				South of Crawl 1
	H_2S	0	PPM				North of Crawl
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.2	PPM				
0830	LEL	0	%				" "
	O_2	20.8	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.2	PPM				
0900	LEL	0	%				East of Crawl
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
0930	LEL	0	%				" "
	O_2	20.9	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				

Highest VOC Reading (breathing zone): 0.9 Time: 1530

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt Merkle

Time	Parameter	Reading		Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	0	%	3	J2+3+H4	4ft	South of Crew 2
	O_2	20.9	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.4	PPM				
1030	LEL	0	%				East of Crew 1
	O_2	20.9	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
1100	LEL	0	%				
	O_2	20.9	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				
1130	LEL	0	%				South of Crew 2
	O_2	20.9	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
1200	LEL	0	%				East of Crew 1
	O_2	20.9	%				Morning Summary
	H_2S	0	PPM				VOC Peak 0.6 PPM
	CO	0	PPM				NH_3 TWA 0 PPM
	~~H_2S~~ NH_3	0	PPM				CO TWA 0 PPM
	VOC	0.2	PPM				H_2S TWA 0 PPM
1230	LEL	0	%				
	O_2	20.9	%				South of Crew 2
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
1300	LEL	0	%				
	O_2	20.8	%				South of Crew 1
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				

Highest VOC Reading (breathing zone): 0.9 Time: 1530

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 1/20/09 Page 3 of 5

Time	Parameter	Reading		Location – Deck# &Grid #		Height of Reading	Notes
1330	LEL	0	%	3	I2I3+H4	4 ft	North of crew 2
	O_2	20.9	%				South of crew 1
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				
1400	LEL	0	%				" "
	O_2	20.9	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.4	PPM				
1430	LEL	0	%				east of crew 2
	O_2	20.8	%				South of crew 1
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.5	PPM				
1500	LEL	0	%				" "
	O_2	20.8	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.7	PPM				
1530	LEL	0	%				east of both crews
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.9	PPM				
1600	LEL	0	%				" "
	O_2	20.9	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				
1630	LEL	0	%				South of crew 2
	O_2	20.9	%				
	H_2S	0	PPM				Afternoon Summary
	CO	0	PPM				VOC Peak 0.9 PPM
	NH_3	0	PPM				CO TWA 0 PPM
	VOC	0.7	PPM				H_2S TWA 0 PPM
							NH_3 TWA 0 PPM

Highest VOC Reading (breathing zone): 0.9 Time: 1530

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J. Thuhl

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II — Date: 1/21/2009 — Shift: Day — Page 1 of 3

Location: East Sparta, Ohio — Weather: AM " — PM "

Project: CWRDF Isolation Break — Temp.(°F): High " — Low " — Rain "

ARCADIS PHSO: Kurt Markle — Wind Direction: " See Geologists Report

Equipment IDs: PID # B193948 — 4 Gas Meter # B18509B — Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A — Notes/Comments: Excavation started @ 0700

Excavation Ended @ 1631

Time	Parameter	Reading		Location – Deck#	Location – Grid #	Height of Reading	Notes
0700	LEL	0	%	3	I3+4	4ft	East of Crew 2
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.1	PPM				
0730	LEL	0	%				South of Crew 1
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
0800	LEL	0	%				East of Crew 2
	O_2	20.8	%				West of Crew 1
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.5	PPM				
0830	LEL	0	%				" "
	O_2	20.8	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.2	PPM				
0900	LEL	0	%				" "
	O_2	20.8	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.4	PPM				
0930	LEL	0	%				South of Crew 2
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				

Highest VOC Reading (breathing zone): 0.8PPM — Time: 1430

Highest Benzene Detector Tube Reading (breathing zone): N/A — Time: N/A

Signature: Kurt J. Markle

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 1/21/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	0 %	3	I3+4	4FT	West of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1030	LEL	0 %				South of Crew 2
	O_2	20.8 %				East of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.5 PPM				
1100	LEL	0 %				East of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1130	LEL	0 %				West of Crew 2
	O_2	20.8 %				East of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				
1200	LEL	0 %				" "
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1230	LEL	0 %				South of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				Morning Summary
	CO	0 PPM				VOC Peak 0.7 PPM
	NH_3	0 PPM				NH_3 TWA 0 PPM
	VOC	0.3 PPM				CO TWA 0 PPM
1300	LEL	0 %				H_2S TWA 0 PPM
	O_2	20.8 %				South of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				

Highest VOC Reading (breathing zone): 0.8 PPM Time: 1430

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 1/21/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1330	LEL	0 %	3	I4	4ft	South of both Crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1400	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				
1430	LEL	0 %				East of Both Crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.8 PPM				
1500	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.5 PPM				
1530	LEL	0 %	4	C2		East of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	~~H_2S~~ CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1600	LEL	0 %				South of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
1630	LEL	0 %				North of Crew 2
	O_2	20.8 %				South of Crew 1
	H_2S	0 PPM				Afternoon Summary
	CO	0 PPM				VOC Peak 0.8 PPM
	NH_3	0 PPM				NH_3 TWA 0 PPM
	VOC	0.0 PPM				CO TWA 0 PPM
1640	VOC	0.3 PPM				H_2S TWA 0 PPM

Highest VOC Reading (breathing zone): 0.8PPM Time: 1430

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kristy Smith

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 11/22/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM " PM "

Project: CWRDF Isolation Break Temp.(°F): High " Low " Rain "

ARCADIS PHSO: Kurt Meakle Wind Direction: " See Gutters Report

Equipment IDs: PID # B193948 4 Gas Meter # ~~B194505~~ B105098 KM Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A Notes/Comments: Excavation Started @ 0700

Excavation Ended @ 1630

Time	Parameter	Reading		Location – Deck#	&Grid #	Height of Reading	Notes
0700	LEL	1	%	4	C2+3	4ft	South of Crawl
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
0730	LEL	0	%				South of Crawl
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.1	PPM				
0800	LEL	1	%				East of Crawl
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.4	PPM				
0830	LEL	1	%				West of Crawl 1
	O_2	20.8	%				South of Crawl 2
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
0900	LEL	1	%				" "
	O_2	20.8	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0930	LEL	1	%				East of Crawl
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.2	PPM				

Highest VOC Reading (breathing zone): 0.6PPM Time: 1300, 1530

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 1/22/09 Page 2 of 3

Time	Parameter	Reading		Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	0	%	4	C3+D3	4ft	North of Crawl
	O_2	20.8	%				West of Crawl
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.4	PPM				
1030	LEL	1	%				" "
	O_2	20.8	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
1100	LEL	0	%				South of Crawl
	O_2	20.8	%				East of Crawl
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				
1130	LEL	0	%				" "
	O_2	20.8	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.5	PPM				
1200	LEL	0	%				North of Crawl
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
1230	LEL	1	%				East of Crawl
	O_2	20.8	%				Morning Summary
	H_2S	0	PPM				VOC Peak 0.5 PPM
	CO	0	PPM				NH_3 TWA 0 PPM
	NH_3	0	PPM				CO TWA 0 PPM
	VOC	0.3	PPM				H_2S TWA 0 PPM
1300	LEL	1	%				South of Crawl
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				

Highest VOC Reading (breathing zone): 0.6 Time: 1300, 1530

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J. Shukle

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 1/22/09 Page 3 of 3

Time	Parameter	Reading		Location – Deck# &Grid #		Height of Reading	Notes
1330	LEL	0	%	4	D3+C4	4ft	East of Crew 2
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.4	PPM				
1400	LEL	0	%				East of Crew 2
	O_2	20.8	%				South of Crew 1
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
1430	LEL	1	%				East of Crew 1
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.5	PPM				
1500	LEL	1	%				North of Crew 1
	O_2	20.8	%				South of Crew 1
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
1530	LEL	1	%				
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				
1600	LEL	0	%				East of Crew 1
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.2	PPM				
1630	LEL	0	%				South of Crew 2
	O_2	20.8	%				Afternoon Summary
	H_2S	0	PPM				VOC Peak 0.6 PPM
	CO	0	PPM				NH_3 TWA 0 PPM
	NH_3	0	PPM				CO TWA 0 PPM
	VOC	0.4	PPM				H_2S TWA 0 PPM

Highest VOC Reading (breathing zone): 0.6 PPM Time: 1300, 1530

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kristy Smith

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report**

Owner: Republic Waste Services of Ohio, II Date: 11/23/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Markle Wind Direction: * See Golders Report

Equipment IDs: PID # B19394B 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation started @ 0700

Excavation ended @ 1630

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0700	LEL	0 %	4 D3+4	4FT	East of Crow 1
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.4 PPM			
0730	LEL	0 %			East of Crow 1
	O_2	20.8 %			West of Crow 2
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.1 PPM			
0800	LEL	0 %			" "
	O_2	20.8 %			" "
	H_2S	0 PPM			
	NH_3	0 PPM			
	VOC	0.2 PPM			
	CO	0 PPM			
0830	LEL	0 %			South of Crow 2
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			KM
0900	LEL	0 %			~~Northwest~~ of Crow 1
	O_2	20.8 %			Northeast
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
0930	LEL	0 %			South of both Crows
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.4 PPM			

Highest VOC Reading (breathing zone): 5.6 PPM Time: 1330

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 1340

Signature: Kurt J. Markle

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 1/23/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	1 %	4	D3+4	4ft	East of Crew 2
	O_2	20.8 %				South of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1130	LEL	0 %				" "
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				
1100	LEL	0 %				South of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.8 PPM				
1130	LEL	1 %				East of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	~~H_2S~~ NH_3	0 PPM				
	VOC	0.7 PPM				
1200	LEL	1 %				West of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				Morning Summary
	CO	0 PPM				VOC Peak 0.8 PPM
	NH_3	0 PPM				NH_3 TWA 0 PPM
	VOC	0.4 PPM				CO TWA 0 PPM
1230	LEL	1 %				H_2S TWA 0 PPM
	O_2	20.8 %				
	H_2S	0 PPM				East of both Crews
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.5 PPM				
1300	LEL	1 %				North of crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				

Highest VOC Reading (breathing zone): 5.6 PPM Time: 1330

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1340

Signature: [signature]

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 1/23/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1330	LEL	0 %	4	D3-4	4FT	East of Crew 2
	O_2	20.8 %				Southwest of Crew 1
	H_2S	0 PPM				Benzene Tube @ 1340
	CO	0 PPM				STEL 0.0 PPM
	NH_3	0 PPM				1.2 PPM
	VOC	5.6 PPM				
1400	LEL	0 %				" "
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	1.2 PPM				
1430	LEL	0 %				East of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	2.3 PPM				
1500	LEL	0 %				North of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	1.0 PPM				
1530	LEL	1 %				South of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.9 PPM				
1600	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	.8 PPM				
1630	LEL	1 %				East of both Crews
	O_2	20.8 %				Afternoon Summary
	H_2S	0 PPM				VOC Peak 5.6 PPM
	CO	0 PPM				NH_3 TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.4 PPM				H_2S TWA 0 PPM

Highest VOC Reading (breathing zone): 5.6 PPM Time: 1330

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1340

Signature: [signature]

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report**

Owner: Republic Waste Services of Ohio, II Date: 1/26/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM overcast cold PM overcast cold

Project: CWRDF Isolation Break Temp.(°F): High _____ Low _____ Rain N/A

ARCADIS PHSO: Brian Hawman Wind Direction: N/A

Equipment IDs: PID # I193918 4 Gas Meter # B185078 Ammonia Gas Meter # BI91598

Quick Draw Hand Pump # N/A Notes/Comments: N/A

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
0756	PID	0.2 ppm	4	F2	1/5ft	South St Crew 1 (crosswind)
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	LEL	0%				
0829	LEL	1%	4	F2	4ft	Same as above
	Oxygen	20.8				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0901	LEL	1%	4	F2	4ft	South (crosswind) of
	Oxygen	20.6%				Crew 2. 11 feet 40ft south
	H_2S	0 ppm				of Crew 2
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0913	LEL	2%	4	F2	4ft	Same as above
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1000	LEL	2%	4	F2	4ft	Same as above
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1020	LEL	1%	4	D2	4ft	Same as above
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.8ppm Time: 1510

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: _____

Brian Hawman - ARCADIS

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1100	LEL	2%	4	D2	4ft	South of Crew 1, crossmind of excavation face
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1130	LEL	1%	4	F3	4ft	North of Crew 2 and South of Crew 1. Crossmind of excavation faces.
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1155	Lunch Break					Morning Summary
						Ammonia: TWA - 0 ppm
						4 Gas Meter
						H_2S: TWA - 0 ppm
						CO: TWA - 0 ppm
						PID meter: TWA - 0.0 ppm
1240	LEL	1%	4	E4	4ft	North of Crew 2
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1310	LEL	1 ppm	4	E4	4ft	West of Crew 1 and East of Crew 2
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1340	LEL	1%	4	E4	4ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1410	LEL	1%	4	E4	4ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				

Highest VOC Reading (breathing zone): 0.5ppm Time: 1310

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Brian Hornman - ARCADIS

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1440	NH_3	0 ppm	4	E4	4 ft	Same as Above
cont.	PID	0.6 ppm	↓	↓	↓	
1440	LEL	1%	4	E4	4 ft	Same as Above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.6 ppm	↓	↓	↓	
1510	LEL	2%	4	E4	4 ft	Same as Above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.6 ppm	↓	↓	↓	
1540	LEL	2%	4	E4	4 ft	Same as Above
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.7 ppm	↓	↓	↓	
1610	LEL	1%	4	E4	4 ft	Same as Above
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.7 ppm	↓	↓	↓	
1630	Beaver dove	excavating				
						Afternoon summary
						Ammonia meter: TWA: 0 ppm
						4 Gas Meter
						H_2S: TWA 0 ppm
						CO: TWA 0 ppm
						PID meter: TWA: 0.7 ppm

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1510

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: _____

Brian Nowman - ARCADIS

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 1/27/2014 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM _____ PM _____

Project: CWRDF Isolation Break Temp.(°F): High _____ Low _____ Rain _____

ARCADIS PHSO: Brian Hausman Wind Direction: AM: from the NE to E.

Equipment IDs: PID # B1934E 4 Gas Meter # B1850915 Ammonia Gas Meter # B1915915

Quick Draw Hand Pump # N/A Notes/Comments: N/A

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0750	LEL	0%	4	F3	4ft	North & Crew 2 & East & Crew 1
	Oxygen	20.8%	↓		↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm	↓		↓	
0950	LEL	0%	4	F3	4ft	Same as above
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm	↓	↓	↓	
0530	LEL	0%	4	F3	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm	↓	↓	↓	
0930	LEL	0%	4	F3	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm	↓	↓	↓	
0850	LEL	0%	4	F3	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm	↓	↓	↓	
1022	LEL	0%	4	F3	4ft	Same as above
	Oxygen	20.6%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm	↓	↓	↓	

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1022

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hausman ARCADIS

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 1/27/2009 Page 2 of 2

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1050	LEL	1%	4	F3	4 ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1130	LEL	1%	4	F3	4 ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3 PID	0 ppm				
	PID	0.4 ppm	4	F3	4 ft	Same as above
1200	LEL	2%				
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
	Lunch Break					
						Morning Summary
						Ammonia meter: TWA - 0 ppm
						4 Gas Meter
						H_2S: TWA - 0 ppm
						CO: TWA - 0 ppm
						PID TWA 0.3 ppm
1240	LEL	1%	4	F3	4 ft	[illegible] Crew 2 & West
	Oxygen	20.7%				[illegible] Crew 1 Crossing [illegible]
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1310	LEL	1%	4	F3	4 ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1350	LEL	1%	4	F3	4 ft	Same as Above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				

Highest VOC Reading (breathing zone): 0.5 ppm Time: 1922

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature] Susan Newman - ARCADIS

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1430	LEL	2%	4	H4	4 ft	Same as Above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1450	LEL	2%	4	H4	4 ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1520	LEL	2%	4	H4	4 ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1545	Below is gloss excavating for the day					Afternoon Summary
						Ammonia meter: TWA - 0 ppm
						4 Gas Meter
						H_2S: TWA - 0 ppm
						CO: TWA - 0 ppm
						PID meter: TWA - 0.3 ppm

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1022

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Hausman - ARCADIS

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report**

Owner: Republic Waste Services of Ohio, II Date: 1/29/2024 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM super cold PM super cold

Project: CWRDF Isolation Break Temp.(°F): High cold ~27°F Low — Rain N/A

ARCADIS PHSO: Brian Newman Wind Direction: out of the West

Equipment IDs: PID # TB19394B 4 Gas Meter # TB18509B Ammonia Gas Meter # TB19159B

Quick Draw Hand Pump # N/A Notes/Comments: N/A

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0740	LEL	0%	4	H2	4 ft	West of Crew 1, East of Crew 2
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0810	LEL	0%	4	H2	4 ft	West of Crew 1 & East of Crew 2
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0840	LEL	0%	4	F3	4 ft	South of Crew 2 - Crossing to excavation area
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0910	LEL	1%	4	F3	4 ft	Same as Above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
0940	LEL	2%	4	H2	4 ft	West of Crew 1 & East of Crew 2
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1010	LEL	2%	4	H2	4 ft	Same as Above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1140

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Newman - ARCADIS

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
1040	LEL	2%	4	H2	4ft	West of Crew 1 & East of Crew 2
	Oxygen	20.8%				Downwind of Crew 2
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1110	LEL	2%	4	H2	4ft	Same as Above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.7 ppm				
1140	LEL	2%	4	H2	4ft	Same as Above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm				
1200	Lunch Break					Morning Summary
						Ammonia meter: TWA - 0 ppm
						4 Gas Meter
						H_2S: TWA - 0 ppm
						CO: TWA - 0 ppm
1240	LEL	1%	4	H2	4ft	PID: TWA - 0.2 ppm
	Oxygen	20.7%				West of Crew 1
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1310	LEL	1%	4	H2	4ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1340	LEL	2%	4	H3	4ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1140

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: B

Brian Hawkins - ARCADIS

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1410	LEL	1%	4	F4	4 ft	South of Crew 2
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1440	LEL	1%	4	F4	4 ft	Same as Above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1510	LEL	1%	4	H3	4 ft	East of Crew 1
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1540	LEL	1%	4	H3	4 ft	Same as Above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1610	LEL	1%	4	H3	4 ft	Same as Above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1630	Beaver is done excavating					
						Afternoon Summary
						Ammonia meter: TWA – 0 ppm
						4 Gas Meter
						H_2S: TWA – 0 ppm
						CO: TWA – 0 ppm
						PID: TWA – 0.1 ppm

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1140

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Howmen - ARCADIS

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 1/30/2018 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM overcast, windy, snowing PM windy, snowing

Project: CWRDF Isolation Break Temp.(°F): High mid 20's Low low 20's Rain N/A

ARCADIS PHSO: Brian Newman Wind Direction: west to East

Equipment IDs: PID # TB1935975 4 Gas Meter # TB1850975 Ammonia Gas Meter # TB1915975

Quick Draw Hand Pump # N/A Notes/Comments: N/A

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0740	LEL	1%	4	J4	4ft	South of Crew 1 crosswind to excavation face
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				- Crew 1 provided two air sticks
	NH_3	0 ppm				- no readings with air monitoring equipment
	PID	0.6 ppm				- took lesson to Wade, fire guard initial
0810	LEL	1%	4	J4	4ft	
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0840	LEL	1%	4	J4	4ft	West of Crew 1 upwind of excavation face
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
0910	LEL	1%	4	J4	4ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1040	LEL	1%	4	F4	4ft	South of Crew 2 Crosswind of excavation face
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1010	LEL	1%	4	F4	4ft	Same as Above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1340 and 1410

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Newman ARCADIS

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 1/30/2009 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1040	LEL	2%	4	I-4	4ft	West of Crew 1 Upwind of excavation face
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1110	LEL	1%	4	I-4	4ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1140	LEL	1%	4	I-4	4ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1200	Lunch Break					Morning Summary: Ammonia meter: TWA - 0 ppm
						4 Gas Meter: H_2S: TWA - 0 ppm
						CO: TWA - 0 ppm
						PID: TWA - 0.1 ppm
1240	LEL	1%	4	G-4	4ft	
	Oxygen	20.7				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1340	LEL	1%	4	G-4	4ft	
	Oxygen	20.6				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1410	LEL	2%	4	G-4	4ft	
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm				

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1340 and 1410

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Brian Newman - ARCADIS

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 1/30/2009 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1410	LEL	2%	4	H4	4ft	
	Oxygen	20.7				
	H_2S	0 ppm				
	CO	2 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1440	LEL	2%	4	G4	4ft	
	Oxygen	20.7				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1510	LEL	1%	4	H4	4ft	
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1540	LEL	1%	4	H4	4ft	
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1610	LEL	2%	4	G4	4ft	
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1630	Trench is done excavating					
						Afternoon summary
						Ammonia meter: TWA - 0 ppm
						4 Gas Meter
						H_2S: TWA - 0 ppm
						CO: TWA - 0 ppm
						PID: TWA - 0 ppm

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1340 and 1410

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature] Brian Newman - ARCADIS

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 2/2/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM — PM —

Project: CWRDF Isolation Break Temp.(°F): High — Low — Rain —

ARCADIS PHSO: Kurt Mechle Wind Direction: See Goldess Report

Equipment IDs: PID # B193+4B 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation started @ 0700

Excavation Ended @ 1630

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0700	LEL	0 %	4	H4	4FT	South of both Crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0730	LEL	0 %				" " "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
0800	LEL	0 %				" " "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
0830	LEL	0 %				" " "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
0900	LEL	0 %				East of Crew 2
	O_2	20.8 %				West of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
0930	LEL	0 %				" " "
	O_2	20.8 %				
	H_2S	0 PPM				" " "
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				

Highest VOC Reading (breathing zone): 0.8 PPM Time: 1430

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J Mechle

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 2/2/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	0 %	4	H4	4ft	South of both Crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1030	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1100	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1130	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1200	LEL	0 %				" "
	O_2	20.8 %				Morning Summary
	H_2S	0 PPM				VOC Peak 0.7 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				NH_3 TWA 0 PPM
	VOC	0.2 PPM				CO TWA 0 PPM
1230	LEL	0 %				
	O_2	20.8 %				East of Crew 1 Deck 5
	H_2S	0 PPM				
	CO	1 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				
1300	LEL	0 %				
	O_2	20.8 %				South of Crew 2 Deck 4
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				

Highest VOC Reading (breathing zone): 0.8 PPM Time: 1430

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kristy Mahle

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 2/2/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1330	LEL	0 %	4+5	H4+	4 Ft	East of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				
1400	LEL	0 %				South of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
1430	LEL	0 %				South of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.8 PPM				
1500	LEL	0 %				South of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1530	LEL	1 %				East of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
1600	LEL	1 %				West of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.5 PPM				
1630	LEL	0 %				East of Crew 1
	O_2	20.8 %				Afternoon Summary
	H_2S	0 PPM				VOC Peak 0.8 PPM
	CO	0 PPM				NH_3 TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.3 PPM				H_2S TWA 0 PPM

Highest VOC Reading (breathing zone): 0.8 PPM Time: 1430

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 2/3/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Markle Wind Direction: * See Golders Report

Equipment IDs: PID # B193948 4 Gas Meter # B185 B Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A Notes/Comments: Excavation began @ 0700

Excavation ended @ 1630

Time	Parameter	Reading		Location – Deck#	Location – &Grid #	Height of Reading	Notes
0700	LEL	0	%	5	CD+3	4ft	East of both crews
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
0736	LEL	0	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
0800	LEL	0	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.1	PPM				
0830	LEL	0	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.6	PPM				
0900	LEL	0	%				South of crew 1
	O_2	20.8	%				North of crew 2
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.4	PPM				
0930	LEL	1	%				" "
	O_2	20.8	%				" "
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				

Highest VOC Reading (breathing zone): 3.6 PPM Time: 1030

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1045

Signature: Kurt J Markle

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	0 %	5	D2-3	4ft	East of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	1.3 PPM				East of Crew 1
1030	LEL	0 %				Benzene Tube Pulled
	O_2	20.8 %				Result 0.0 PPM
	H_2S	0 PPM				@ 1045
	CO	0 PPM				STEL 1.2 PPM
	NH_3	0 PPM				
	VOC	3.6 PPM				
1100	LEL	0 %				East of Crew 1
	O_2	20.8 %				North of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				
1130	LEL	0 %				South of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1200	LEL	0 %				
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.9 PPM				
1230	LEL	0 %				East of both Crews
	O_2	20.8 %				Morning Summary
	H_2S	0 PPM				VOC Peak 3.6 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.5 PPM				NH_3 TWA 0 PPM
1300	LEL	0 %				North of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				

Highest VOC Reading (breathing zone): 3.6 PPM Time: 1030

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1045

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 2/3/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1330	LEL	1 %	5	C3+D2	4ft	North of crew 1 + 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				
1400	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1430	LEL	1 %				East of crew 1
	O_2	20.7 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				
1500	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.9 PPM				
1530	LEL	1 %				North of crew 2
	O_2	20.7 %				South of crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1600	LEL	0 %				East of both crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
1630	LEL	1 %				South of crew 2
	O_2	20.8 %				AM crews Summary
	H_2S	0 PPM				VOC Peak 0.9 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.6 PPM				NH_3 TWA 0 PPM

Highest VOC Reading (breathing zone): 3.6 PPM Time: 1030

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1045

Signature: _____

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 2/4/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM _____ PM _____

Project: CWRDF Isolation Break Temp.(°F): High _____ Low _____ Rain _____

ARCADIS PHSO: Kurt Merkle Wind Direction: See Folders Report

Equipment IDs: PID # B/9394B 4 Gas Meter # B/85098 Ammonia Gas Meter # B/9159B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation began @ 0700

Excavation ended @ 1630

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0700	LEL	0 %	5	C3+B3	4ft	South of both crews
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
0730	LEL	0 %				" "
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
0800	LEL	0 %				" "
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
0830	LEL	0 %				East of Crew 2
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
0900	LEL	0 %				East of crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
0930	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				

Highest VOC Reading (breathing zone): 0.9 PPM Time: 1400

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt Merkle

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Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 2/4/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	1 %	5	C3 + E3	4 FT	East of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1030	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.5 PPM				
1100	LEL	1 %				South of Crew 1
	O_2	20.9 %				East of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				
1130	LEL	0 %				" "
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.8 PPM				
1200	LEL	0 %				East of both crews
	O_2	20.8 %				Morning Summary
	H_2S	0 PPM				VOC Peak 0.8 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.6 PPM				NH_3 TWA 0 PPM
1235	LEL	1 %				
	O_2	20.8 %				East of both crews
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.8 PPM				
1300	LEL	1 %				South of Crew 1
	O_2	20.7 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				

Highest VOC Reading (breathing zone): 0.9 PPM Time: 1400

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 2/4/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1330	LEL	1 %	5	E2+3	4FT	South east of both
	O_2	20.7 %				Crews
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1400	LEL	2 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
1	NH_3	0 PPM				
	VOC	0.9 PPM				
1430	LEL	1 %				North of crawl
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.5 PPM				
1500	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				
1530	LEL	0 %				South of crawl
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.5 PPM				
1600	LEL	0 %				East of crawl
	O_2	20.8 %				3 drums found with soil
	H_2S	0 PPM				inside
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
1630	LEL	0 %				South of crawl
	O_2	20.7 %				Afternoon Summary
	H_2S	0 PPM				VOC Peak 0.9 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.3 PPM	↓	↓	↓	NH_3 TWA 0 PPM

Highest VOC Reading (breathing zone): 0.9 PPM Time: 1400

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J Rudd

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 2/5/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Markle Wind Direction: * See Golders Report

Equipment IDs: PID # B19394B 4 Gas Meter # B185 Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation Began @ 0700

Excavation Ended @

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0700	LEL	0 %	5	[illegible]	4ft	East of crawl
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	~~NH3~~ NH_3	0 PPM				
	VOC	0.0 PPM				
0730	LEL	0 %				East of crawl 2
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
0800	LEL	0 %				North of crawl
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
0830	LEL	0 %				" "
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
0900	LEL	0 %				" "
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0930	LEL	0 %				South of crawl 2
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 0.5 PPM Time: 1230, 1300

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 2/5/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	0 %	5	E3+E2	4FT	South of Crawl
	O_2	20.9 %				East of Crawl
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1030	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.5 PPM				
1100	LEL	0 %				East of Crawl
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1130	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1200	LEL	0 %				East of Both Crawls
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
1230	LEL	0 %				South of Crawl
	O_2	20.8 %				Morning Summary
	H_2S	0 PPM				VOC Peak 0.5 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.2 PPM				NH_3 TWA 0 PPM
1300	LEL	0 %				South of both Crawls
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.5 PPM				

Highest VOC Reading (breathing zone): 0.5PPM Time: 1030, 1300

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1330	LEL	0 %	5	E2+E3	4 ft	South of Crawl
	O_2	20.8 %				East of Crawl 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1400	LEL	0 %				North of crawl
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1430	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
1500	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1530	LEL	0 %				East of both Crawls
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1600	LEL	0 %				South of crawl
	O_2	20.8 %				East of crawl 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1630	LEL	1 %				East of both Crawls
	O_2	20.8 %				Afternoon Summary
	H_2S	0 PPM				VOC Peak 0.5 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.1 PPM				NH_3 TWA 0 PPM

Highest VOC Reading (breathing zone): 0.5 PPM Time: 1030, 1300

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 8/6/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain

ARCADIS PHSO: Kurt Markle Wind Direction: * See Goldens Report

Equipment IDs: PID # B19394B 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation began @ 0700

Excavation Ended @ 1605

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0700	LEL	0 %	5	F4+G2	4FT	South of Crew 1
	O_2	20.8 %				East of Crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
0730	LEL	0 %				East of both crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
0800	LEL	0 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
0830	LEL	1 %				
	O_2	20.8 %				North east of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
0900	LEL	1 %				East of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
0930	LEL	0 %				East of Crew 1
	O_2	20.8 %				Benzene tube Pull'd
	H_2S	0 PPM				@ 0941 0.0PPM
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	1.8 PPM				

Highest VOC Reading (breathing zone): 1.8 PPM Time: 0930

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0941

Signature:

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 2/6/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	1 %	5	G3+H4	4FT	East of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1030	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.5 PPM				
1100	LEL	1 %				Northeast both crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				
1130	LEL	1 %				" "
	O_2	20.5 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1200	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1230	LEL	1 %				East of Crew 2
	O_2	20.8 %				Morning Summary
	H_2S	0 PPM				VOC Peak 1.8 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.3 PPM				NH_3 TWA 0 PPM
1300	LEL	1 %				South of Crew 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.8 PPM				

Highest VOC Reading (breathing zone): 1.8 PPM Time: 0930

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0941

Signature:

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 2/6/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1330	LEL	1 %	5 G2u3H4	4ft	North of Crew 1
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.8 PPM			
1400	LEL	1 %			" "
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1430	LEL	1 %			North-east of both crews
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.9 PPM			
1500	LEL	0 %			
	O_2	>20.8 %			" "
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.6 PPM			
1530	LEL	1 %			South of Crew 2
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			
1600	LEL	1 %			East of Crew 2 South of Crew 1
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			
1630	LEL	1 %			East of Crew 1
	O_2	20.8 %			Afternoon Summary
	H_2S	0 PPM			VOC Peak 0.9 PPM
	CO	0 PPM			H_2S TWA 0 PPM
	NH_3	0 PPM			CO TWA 0 PPM
	VOC	0.4 PPM			NH_3 TWA 0 PPM

Highest VOC Reading (breathing zone): 1.8 PPM Time: 0930

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0941

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 2/9/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Markle Wind Direction: * See Golders Report

Equipment IDs: PID # B193948 4 Gas Meter # B185098 Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation began @ 0700

Excavation Ended @ 1600

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0700	LEL	0 %	5 H4	4ft	South of both cranes
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
0730	LEL	0 %			" "
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
0800	LEL	0 %			" "
	O_2	20.8 %			Work stopped due to fog.
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
0830	LEL	0 %			South of both cranes
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
0900	LEL	0 %			Work resumed!
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
0930	LEL	0 %			South of both cranes
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 0.1 PPM Time: 1330

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J. Markle

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 2/9/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	0 %	5	H4	4ft	East of both crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1030	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1100	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1130	LEL	0 %				South of crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3 VOC	0 PPM 0.0 PPM				
1200	LEL	0 %				South of Crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1230	LEL	0 %				East of crew 1
	O_2	20.8 %				Morning Summary
	H_2S	0 PPM				VOC Peak 81 PPM
	CO	0 PPM				H_2S TWA PPM
	NH_3	0 PPM				CO TWA PPM
	VOC	0.0 PPM				NH_3 TWA PPM
1300	LEL	0 %				East of crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 81 PPM Time: 1230

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 2/9/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1330	LEL	0 %	5+6	H4, B2	4ft	East of crew 2
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1400	LEL	0 %				South of crew 1 Deck 6
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1430	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1500	LEL	0 %				South of crew 2 Deck 5
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1530	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1600	LEL	0 %				East of crew 1 Deck 6
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1630	LEL	0 %				" "
	O_2	20.8 %				Afternoon Summary
	H_2S	0 PPM				VOC Peak 0.1 PPM
	NH_3	0 PPM				H_2S TWA 0 PPM
	CO	0 PPM				CO TWA 0 PPM
	VOC	0.0 PPM				NH_3 TWA 0 PPM

Highest VOC Reading (breathing zone): 0.1 Time: 1335

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report**

Owner: Republic Waste Services of Ohio, II Date: 2/16/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Merkle Wind Direction: * See Golders Report

Equipment IDs: PID # B193948 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation began @ 0700

Excavation Ended @ 1630

Time	Parameter	Reading		Location – Deck# &Grid #		Height of Reading	Notes
0700	LEL	0	%	5 + 6	I4+	4FT	South of Crew 2 DK. 5
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.2	PPM				
0730	LEL	0	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
0800	LEL	0	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0830	LEL	0	%				East of Crew 1 DK. 6
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
0900	LEL	0	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0930	LEL	0	%				East of Crew 2 DK. 5
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.4	PPM				

Highest VOC Reading (breathing zone): 5.6 PPM Time: 1400

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 1412

Signature: Kurt Merkle

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 2/16/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	0 %	5+6	I4+	4ft	South of Crew 1 DK 6
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1030	LEL	0.5 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	PPM				
	NH_3	0 PPM				
	CO	0 PPM				
	VOC	0.7 PPM				
1100	LEL	0 %				East of Crew 2 DK 5
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				
1130	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1200	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1230	LEL	0 %				South of Crew 2 DK 5
	O_2	20.8 %				Morning Summary
	H_2S	0 PPM				VOC Peak 0.7 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.6 PPM				NH_3 TWA 0 PPM
1300	LEL	0 %				East of Crew 1 DK 6
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				

Highest VOC Reading (breathing zone): 5.6 PPM Time: 1400

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1412

Signature: [signature]

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 2/16/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1330	LEL	0 %	5+6	I4+D3	4ft	East of Crawl DK 6
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.9 PPM				
1400	LEL	0 %				East of Crawl DK. 6
	O_2	20.8 %				
	H_2S	0 PPM				Benzene Tube Pulled @
	CO	0 PPM				0.0 PPM 1412
	NH_3	0 PPM				
	VOC	5.6 PPM				
1430	LEL	0 %				East of crawl DK 5
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				
1500	LEL	0 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1530	LEL	0 %				North of Crawl DK 6
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				" "
1600	LEL	1 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	NH_3	0 PPM				
	VOC /CO	0.3 PPM / 0 PPM				
1630	LEL	0 %				" "
	O_2	20.8 %				Afternoon Summary
	H_2S	0 PPM				VOC Peak 5.6 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.4 PPM				NH_3 TWA 0 PPM

Highest VOC Reading (breathing zone): 5.6 PPM Time: 1400

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1412

Signature: Kurt J. Mahl

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 2/17/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Merkle Wind Direction: * See Golders Report

Equipment IDs: PID # B193948 4 Gas Meter # B185098 Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A Notes/Comments: Excavation began @ 0700

Excavation ended @ 1645

Time	Parameter	Reading		Location – Deck# &Grid #		Height of Reading	Notes
0700	LEL	0	%	5+6	B+C4	4ft	East of Cell 2
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0730	LEL	0	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0800	LEL	0	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0830	LEL	1	%				East of Cell 1
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0900	LEL	0	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
0930	LEL	1	%				" "
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				

Highest VOC Reading (breathing zone): 0.2 ppm Time: 1130

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt Merkle

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 2/17/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1000	LEL	1 %	F+6 I4 + D3-4	4ft	South of crew 2
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1030	LEL	1 %			" " "
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1100	LEL	1 %			South of crew 1
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1130	LEL	1 %			" " "
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.2 PPM			
1200	LEL	1 %			East of crew 2
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1230	LEL	1 %			" " "
	O_2	20.8 %			Morning Summary
	H_2S	0 PPM			VOC Peak 0.2 PPM
	CO	0 PPM			H_2S TWA 0 PPM
	NH_3	0 PPM			CO TWA 0 PPM
	VOC	0.0 PPM			NH_3 TWA 0 PPM
1300	LEL	1 %			East of Crew 1 DK 6
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 0.2 PPM Time: 1130

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 2/17/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1330	LEL	0 %	5+6	J4 , D4	4F	
	O_2	20.8 %				South of crew 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1400	LEL	0 %				11 41
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1430	LEL	1 %				East of Crew 2 DKS
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1500	LEL	0 %				
	O_2	20.8 %				11 11
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1530	LEL	1 %				11 41
	O_2	20.8 %				
	CO	0 PPM				
	NH_3	0 PPM				
	H_2S	0 PPM				
	VOC	0.0 PPM				
1600	LEL	1 %				
	O_2	20.8 %				East of Crew 1 DKG
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1630	LEL	0 %				11 41
	O_2	20.8 %				Afternoon Summary
	H_2S	PPM				VOC Peak 0.1 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.1 PPM				NH_3 TWA 0 PPM
						1630 15 Spot Smes taken by Crew 1

Highest VOC Reading (breathing zone): 0.2 PPM Time: 1130

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J. Rudd

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 2/20/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Merkle Wind Direction: * See Golders Report

Equipment IDs: PID # B193943 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: Excavation began @ 0700

Excavation ended @ 1630

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0700	LEL	1 %	5+6	J4 (M)	4FT	West of crawler DK5
	O_2	20.8 %		F3		
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0730	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
0800	LEL	1 %				South of crawler DK6
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0830	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0900	LEL	1 %				East of crawler 1
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0930	LEL	1 %				" "
	O_2	20.8 %				Deck 5 complete.
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 0.7 PPM Time: 1300, 1330

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 2/20/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	LEL	1 %	G	F3*4	4H	East of both Crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1030	LEL	1 %				" " "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1100	LEL	1 %				
	O_2	20.8 %				South of crew 1 + 2
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
1130	LEL	1 %				South of crew 2 DK 6
	O_2	20.8 %				Separsacks found
	H_2S	0 PPM				Ammonia Odor Meter @ ground level
	CO	0 PPM				Meter in breathing Zone 0.0PPM (PPM)
	NH_3	0 PPM				
	VOC	0.3 PPM				
1200	LEL	1 %				East of both Crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1230	LEL	1 %				Morning Summary
	O_2	20.8 %				VOC Peak 0.4 PPM
	H_2S	0 PPM				H_2S TWA 0 PPM
	CO	0 PPM				CO TWA 0 PPM
	NH_3	0 PPM				NH_3 TWA 0 PPM
	VOC	0.3 PPM				
1300	LEL	1 %				East of Crew 1
	O_2	20.5 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				

Highest VOC Reading (breathing zone): 0.7 PPM Time: 1300, 1330

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 2/20/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1330	LEL	1 %	6	G3 x F4	4 ft	East of both crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				
1400	LEL	1 %				South of both crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				
1430	LEL	1 %				" "
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1500	LEL	1 %				East of Crew 2
	O_2	20.8 %				South of Crew 1
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1535	LEL	1 %				" "
	O_2	20.8 %				" "
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.6 PPM				
1600	LEL	1 %				South of both crews
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				
1630	LEL	1 %				East of Crew 2
	O_2	20.8 %				Afternoon Summary
	H_2S	0 PPM				VOC Peak 0.7 PPM
	CO	0 PPM				H_2S TWA 0 PPM
	NH_3	0 PPM				CO TWA 0 PPM
	VOC	0.3 PPM				NH_3 TWA 0 PPM

Highest VOC Reading (breathing zone): 0.7 PPM Time: 1300, 1330

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 2/23/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM 17°F Partly Cloudy, windy PM same as A.M.

Project: CWRDF Isolation Break Temp.(°F): High 17° Low 17° Rain No

ARCADIS PHSO: Brian Hawkins Wind Direction: from W to NW

Equipment IDs: PID # B163943 4 Gas Meter # 1850973 Ammonia Gas Meter # B191593

Quick Draw Hand Pump # ~~____~~ Notes/Comments: Excavation started at 0700

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0917	LEL	0%	6	G3	4ft	By Crew 1
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0843	LEL	0%	6	G3	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0817	LEL	0%	6	G3	4ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0543	LEL	1%	6	E4	4ft	By Crew 2
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0917	LEL	1 ppm	6	G3	4ft	By Crew 1
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0943	LEL	1%	6	G3	4ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1512

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 2/23/2009 Page 2 of 3

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1017	LEL	1%	6	H3	4ft	By Crew 1
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1043	LEL	1%	6	H3	4ft	By Crew 1
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1117	LEL	1%	6	E4	4ft	By Crew 2
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1143	LEL	1%	6	E4	4ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1200	Lunch					Morning Summary Ammonia meter: TWA 0 ppm 4 Gas Meter H_2S: TWA 0 ppm CO: TWA 0 ppm PID: TWA 0.1 ppm
1242	LEL	1%	6	H3	4ft	By Crew 1
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1312	LEL	1%	6	H3	4ft	By Crew 1
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				

Highest VOC Reading (breathing zone): 0.4 ppm Time: 1512

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 3/23/2009 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1342	LEL	2%	6	E4	4 Sh	By Crew 2
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1412	LEL	1%	6	E4	4 Sh	By Crew 2
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1442	LEL	2%	6	G-4	4 Sh	By Crew 2
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.7 ppm				
1512	LEL	1%	6	H4	4 Sh	By Crew 1
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
1542	LEL	1%	6	G-4	4 Sh	By Crew 2
	Oxygen	20.6%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1600	Beaver Stop excavating for the day.					Afternoon Summary Ammonia meter: TWA 0 ppm 4 Gas Meter H_2S: TWA 0 ppm CO: TWA 0 ppm PID TWA 0.1 ppm

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1512

Highest Benzene Detector Tube Reading (breathing zone): NA Time: NA

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 2/24/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM clear, no wind PM clear, no wind

Project: CWRDF Isolation Break Temp.(°F): High 27 Low 10 Rain —

ARCADIS PHSO: Brian Hawman Wind Direction: N/A

Equipment IDs: PID # B193945 4 Gas Meter # B185098 Ammonia Gas Meter # B191598

Quick Draw Hand Pump # — Notes/Comments: Excavation activities began at 7am

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0720	LEL	0%	6	I4	4ft	By Crew 1
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0730	LEL	0%	6	I4	4ft	Same as Above
	Oxygen	20.9%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0830	LEL	0%	6	H4	4ft	Same as Above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0830	LEL	0%	6	H4	4ft	By Crew 2. Crew 1 has moved to west end to start on deck 7
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0920	LEL	0	6	I4	4ft	By Crew 2
	Oxygen	20.7				
	H_2S	0				
	CO	0				
	NH_3	0				
	PID	0.0				
0950	LEL	0%	7	A4	4ft	By Crew 1
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.3 ppm Time: 1150

Highest Benzene Detector Tube Reading (breathing zone): — Time: —

Signature:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1010	—					Crew 2 has uncovered some sort of black, dry, compacted material - gives off an ammonia odor but meter is not detect
1020	LEL	0%	6	I4	4ft	By Crew 2
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1050	LEL	0%	6	I4	4ft	Same as Above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1120	LEL	0%	6	I4	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1150	LEL	0%	6	I4	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1200	Lunch					Morning summary Ammonia meter: TWA 0 ppm
						4 Gas meter: H_2S - TWA 0 ppm CO - TWA - 0 ppm
						PID: TWA 0.0 ppm
1240	LEL	0%	6	J4	4ft	By Crew 2. Crew 2 uncovered approximately 15 drums. Drums contained black dry material No readings with PID or Ammonia meter. USEPA requested that material be disposed with the rest of the excavated trash.
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.3 ppm Time: 1150

Highest Benzene Detector Tube Reading (breathing zone): — Time: —

Signature: [signature]

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 2/24/2014 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1320	LEL	0%	6	J4	4ft	By Crew 2
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1350	LEL	0%	6	J4	4ft	By Crew 2
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1420	LEL	0%	6	J4	4ft	Sump is clear
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1450	LEL	0%	6	J4	4ft	Sump is clear
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1520	LEL	0%	6	K4	4ft	Sump is clear
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1550	LEL	0%	6	K4	4ft	Sump is clear
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
						Ammonia meter: TWA 0 ppm
						4 Gas Meter: H_2S - TWA 0 ppm CO - TWA 0 ppm
						PID TWA 0.0 ppm

Highest VOC Reading (breathing zone): 0.3 ppm Time: 1150

Highest Benzene Detector Tube Reading (breathing zone): — Time: —

Signature: [signature]

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report**

Owner: Republic Waste Services of Ohio, II Date: 2/25/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM Clear PM Clear

Project: CWRDF Isolation Break Temp.(°F): High 43 Low 24 Rain No

ARCADIS PHSO: Brian Hohmann Wind Direction: from SW

Equipment IDs: PID # TB19394TB 4 Gas Meter # B1850938 Ammonia Gas Meter # TB191598

Quick Draw Hand Pump # N/A Notes/Comments: none

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0717	LEL	0%	6	K4	4ft	By Crew 2
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0747	LEL	0%	6	K4	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0817	LEL	0%	6	K4	4ft	Same as above
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0847	LEL	0%	7	D4	4ft	By Crew 1
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0917	LEL	0%	7	D4	4ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0947	LEL	0%	6	K4	4ft	By crew 2
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.7ppm Time: 1410

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: B

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1017	LEL	0%	7	E3	4ft	By Crew 1
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1047	LEL	0%	7	E4	4ft	By Crew 1
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1117	LEL	0%	7	E4	4ft	By Crew 1
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				Crew 2 is completed Dec 6, only one excavator will continue excavation of waste materials
	NH_3	0 ppm				
	PID	0.0 ppm				
1147	LEL	0%	7	E4	4ft	Crew 1
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				Morning summary
1200	Lunch break					Ammonia meter: TWA 0 ppm
						4 Gas Meter: CO TWA 0 ppm
						H_2S TWA 0 ppm
						PID: TWA 0.0 ppm
1240	LEL	0%	7	E4	4ft	- uncovered area with super sacks
	Oxygen	20.8%				- no readings with ammonia meter, 4 Gas meter, or PID. Golder has material taken to disposal area with rest of the excavated trash
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1310	LEL	0%	7	F4	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1340	LEL	0%	7	F4	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				

Highest VOC Reading (breathing zone): 0.7 ppm Time: 1410

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 2/25/2009 Page 3 of 3

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
1340	CO	0 ppm	7	F4	4 ft	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.5 ppm	↓	↓	↓	
1410	LEL	0%	7	F4	4 ft	
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.7 ppm	↓	↓	↓	
1440	LEL	0%	7	F4	4 ft	
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.0 ppm	↓	↓	↓	
1510	LEL	0%	7	F4	4 ft	
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.0 ppm	↓	↓	↓	
1540	LEL	0%	7	F4	4 ft	
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.0 ppm	↓	↓	↓	
1610	LEL	0%	7	F4	4 ft	
	Oxygen	20.8%	↓	↓	↓	
	H_2S	0 ppm	↓	↓	↓	
	CO	0 ppm	↓	↓	↓	
	NH_3	0 ppm	↓	↓	↓	
	PID	0.0 ppm	↓	↓	↓	
1630	Excavation done for the day					Afternoon summary Ammonia meter: TWA 0 ppm 4 Gas Meter: H_2S TWA 0 ppm CO TWA 0 ppm PID TWA 0.1 ppm

Highest VOC Reading (breathing zone): 0.7 ppm Time: 1410

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 3/2/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM p.cloudy PM p.cloudy to clear

Project: CWRDF Isolation Break Temp.(°F): High 20 Low 11 Rain No

ARCADIS PHSO: Tricia Trommer Wind Direction: SW

Equipment IDs: PID # B19394B 4 Gas Meter # B185098 Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: 1 crew.

Cell 7

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0730	LEL	~~LEL~~ 0%	5C (TT)	E3.E4	4 ft	By crew.
	Oxygen	20.8%	7			
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
0805	LEL	2				By Crew
	Oxygen	20.8%	5C (TT)	E3.E4	4 ft	
	H_2S	0%	7			
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
0830	LEL	2%				By Crew
	Oxygen	20.5%	5C (TT)	E3.E4	4 ft	
	H_2S	0 ppm	7			
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
	LEL	0%	5C (TT)	E3.E4	4 ft	
900	Oxygen	20.5%	7			By Crew
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
930	LEL	1%	5C (TT)	E3.E4	4 ft	By crew
	Oxygen	20.7%	7			
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
1004	LEL	2%	5C (TT)	~~E3.E4~~	4ft	By crew
	Oxygen	20.6%	7	G3		
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				

Highest VOC Reading (breathing zone): 0.3 Time: 1130 & 1535

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Tricia Trommer

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 3/2/09 Shift: Day Page 2 of 3

Location: East Sparta, Ohio Weather: AM p.cloudy PM p.cloudy to clear

Project: CWRDF Isolation Break Temp.(°F): High 20 Low 11 Rain no

ARCADIS PHSO: Tricia Trommer Wind Direction: SW

Equipment IDs: PID # B19394B 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # n/A Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1030	LEL	2%	B7	G3	4 ft	Cell B4
	Oxygen	20.5%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
1100 T.T.	LEL	2%			4 ft	
	Oxygen	20.5%	T	G3		
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm (0.2)				
1130	LEL	1%	T	G3	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm			4 ft	
	LEL	0%			4 ft	
1200	Oxygen	20.8%	T	G3		1208 lunch - morning Summary:
	H_2S	0 ppm				Ammonia meter: TWA 0 ppm
	CO	0 ppm				4 gas meter - CO TWA 0 ppm
	NH_3	0 ppm				H_2S TWA - 0 ppm
	PID	0.0 ppm				PID: 0.3 ppm
1306	LEL	0%			4 ft	
	Oxygen	20.8%	B4 7	G3		
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				
1336	LEL	0%			4 ft	
	Oxygen	20.8%	B4 7	G3		
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0 ppm				

Highest VOC Reading (breathing zone): 0.3 Time: 1130 & 1535

Highest Benzene Detector Tube Reading (breathing zone): n/A Time: n/A

Signature: Tricia Trommer

Trommer

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 3/2/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1405	LEL	1 %	5B 7	4 ft.	
	Oxygen	20.8 %			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0 ppm			
1435	LEL	0 %	5B 7	4 ft	
	Oxygen	20.8 %			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0 ppm			
1505	LEL	0 %	5B 7	4 ft	
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0 ppm			
1535	LEL	1 %	5B 7	4 ft	
	Oxygen	20.8 %			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	.3 ppm			
	LEL	0%	5B 7	4 ft	
1605	Oxygen	20.5 ppm			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0 ppm			
	LEL			4 ft.	
	Oxygen				
	H_2S				
	CO				
	NH_3				
	PID				
					Afternoon Summary Ammonia meter. TWA 0 ppm
					4 gas meter: H_2S TWA 0 ppm CO TWA 0 ppm
					PID TWA .3 ppm

Highest VOC Reading (breathing zone): 0.3 Time: 1130 & 1535

Highest Benzene Detector Tube Reading (breathing zone): n/A Time: n/A

Signature: Tricia Trommer

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II | Date: 3/3/2009 | Shift: Day | Page 1 of 2

Location: East Sparta, Ohio | Weather: AM cold & windy PM

Project: CWRDF Isolation Break | Temp (°F): High 20 Low 10 Rain N/A

ARCADIS PHSO: Brian Hawman | Wind Direction: NtoNW

Equipment IDs: PID # B19394B | 4 Gas Meter # B18509B | Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # —— | Notes/Comments: Excavation activities began at 0700 and finished at 1230.

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0717	LEL	0%	7	J4	4ft	Downwind of excavator
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0747	LEL	0%	7	J4	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0817	LEL	0%	7	J4	4 ft	Crosswind to excavator
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0847	LEL	1%	7	J4	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
0917	LEL	1%	7	J4	4 ft	Same as above
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0947	LEL	0%	7	J4	4 ft	Downwind of excavator
	Oxygen	20.7%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.4 ppm Time: 1047

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1047	LEL	1%	7	J4	4ft	Crosswind to excavator
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm	↓	J4	↓	
1047	LEL	1%	7	J4	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm	↓	↓	↓	
1117	LEL	0%	7	K4	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1147	LEL	0%	7	K4	4ft	Same as above
	Oxygen	20.7%	↓	↓	↓	
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm	↓	↓	↓	
1200	Lunch break					Morning summary, Ammonia meter TWA 0 ppm
						4 Gas Meter: H_2S TWA 0 ppm
						CO TWA 0 ppm
						PID TWA 0.0 ppm
1230	Beagle is getting gone down and removing the haul road on the north slope					

Highest VOC Reading (breathing zone): 0.4 ppm Time: 1047

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II — Date: 3/4/09 — Shift: Day — Page 1 of 2

Location: East Sparta, Ohio — Weather: AM * PM *

Project: CWRDF Isolation Break — Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Merkle — Wind Direction: * See Folders Report

Equipment IDs: PID # B19394B — 4 Gas Meter # B18509B — Ammonia Gas Meter # B15159B

Quick Draw Hand Pump # N/A — Notes/Comments:

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
0730	LEL	0 %	8	N/A	4ft	West End of Flare just East.
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0800	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0830	LEL	0 %				" "
	O_2	21 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0900	LEL	0 %				" "
	O_2	21 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0930	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1000	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 0.0 Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: Kurt J. Merkle

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/4/09 Page 2 of 2

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1030	LEL	0 %	8	N/A	4ft	West end of Iso break. Just East of Flare.
	O_2	21.1 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1100	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1130	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1200	LEL	0 %				" "
	O_2	21.1 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1500	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1530	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1600	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 0.0 Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 3/4/09 Shift: Day Page 1 of 1

Location: East Sparta, Ohio Weather: AM " PM "

Project: CWRDF Isolation Break Temp.(°F): High " Low " Rain "

ARCADIS PHSO: Kurt Markle Wind Direction: See Golders Report

Equipment IDs: PID # B19394B 4 Gas Meter # B18509B Ammonia Gas Meter # B151598

Quick Draw Hand Pump # NA Notes/Comments:

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
1300	LEL	0 %	8	N/A	4ft	East side of Isolation Break digging out tie in.
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1330	LEL	0 %				" "
	O_2	21.1 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1400	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1430	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 0.0 Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: NA

Signature: Kurt J Markle

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II — Date: 3/5/09 — Shift: Day — Page 1 of 1

Location: East Sparta, Ohio — Weather: AM * — PM *

Project: CWRDF Isolation Break — Temp (°F): High * — Low * — Rain *

ARCADIS PHSO: Kurt Mahle — Wind Direction: * See Golders Report

Equipment IDs: PID # B193948 — 4 Gas Meter # B185098 — Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A — Notes/Comments:

Time	Parameter	Reading	Location – Deck#	& Grid #	Height of Reading	Notes
1430	LEL	0 %	8	N/A	4FT	Too drain tie ins 6" Pipe
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1500	LEL	0 %				
	O_2	20.9 %				
	H_2S	0 PPM				
~~1500~~	~~LEL~~ NH_3	0 PPM				
	VOC	0.0 PPM				
	[illegible]					
	[illegible]					
	[illegible]					
1630	LEL	0 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 0.0 — Time: ~

Highest Benzene Detector Tube Reading (breathing zone): N/A — Time: N/A

Signature: [signature]

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II — Date: 3/6/09 — Shift: Day — Page 1 of 1

Location: East Sparta, Ohio — Weather: AM " — PM "

Project: CWRDF Isolation Break — Temp.(°F): High " — Low " — Rain "

ARCADIS PHSO: Kurt Merkle — Wind Direction: " See Goldwing Report

Equipment IDs: PID # B19394B — 4 Gas Meter # B18509B — Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # NA — Notes/Comments:

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
0800	LEL	0 %	8	—	4FT	West end of Iso
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1015	LEL	0 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1400	LEL	0 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 0.0 — Time: —

Highest Benzene Detector Tube Reading (breathing zone): N/A — Time: N/A

Signature: Kurt Merkle

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II Date: 3/9/09 Shift: Day Page 1 of ___

Location: East Sparta, Ohio Weather: AM ^ PM ^

Project: CWRDF Isolation Break Temp.(°F): High ^ Low ^ Rain ^

ARCADIS PHSO: Kurt Markle Wind Direction: ^ See Gokers Report

Equipment IDs: PID # B19394B 4 Gas Meter # B15509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: ___

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1130	LEL	0 %	—	4 ft	West side of South Slope
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1330	LEL	0 %			" "
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 0.0 Time: 1130 & 1330

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II — Date: 3/16/09 — Shift: Day — Page 1 of 1

Location: East Sparta, Ohio — Weather: AM x — PM x

Project: CWRDF Isolation Break — Temp.(°F): High x — Low x — Rain x

ARCADIS PHSO: Kurt Mahle — Wind Direction: * See Caldwell Report

Equipment IDs: PID # PJ19394B — 4 Gas Meter # B18509B — Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A — Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0830	LEL	0 %	—		4ft	West End of Iso Break
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 0.0 PPM Time: 0830

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 3/24/2004 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM N/A PM Clear, breezy

Project: CWRDF Isolation Break Temp (°F): High 55 Low 45 Rain N/A

ARCADIS PHSO: Brian Hawman Wind Direction: From the East

Equipment IDs: PID # B193948 4 Gas Meter # B185098 Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A Notes/Comments: Did not start air monitoring until after lunch

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
	Leachate/LFG Collector Trench				
1230	LEL	2%	STP 2+50	Waist level	in trench
	Oxygen	20.9			
	H_2S	0ppm			
	CO	1ppm			
1300	LEL	0%			
	Oxygen	20.8%	STP 2+50	Waist level	in trench
	H_2S	0ppm			
	CO	0ppm			
	PID	0.7ppm			
1315	No workers in the trench				
1326	LEL	3%	Same as above		Workers enter to install piping
	Oxygen	20.8			
	H_2S	0ppm			
	CO	1ppm			
1332	Workers out of excavation		STP 3+00	4ft (Waist	level in trench)
1425	LEL	2%			
	O_2	20.8%			
	H_2S	0ppm			
	CO	2ppm			
	NH_3	0ppm			
1436	Workers ext the trench		STP 3+00	Waist level	in trench
1455	LEL	3%			
	O_2	20.8%			
	H_2S	0ppm			
	CO	1ppm			
	NH_3	0ppm			
	PID	0.5ppm			
1510	Workers out of the excavation		3+50	Waist level	in trench
1527	LEL	7%			
	O_2	20.8%			
	H_2S	0ppm			
	CO	4ppm			
	NH_3	0ppm			
	PID	0.4ppm			

Highest VOC Reading (breathing zone): 0.7ppm Time: 1300

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/24/2009 Page 2 of 2

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
~~1352~~	LEL	8%	STA 3+50		
1552	O_2	20.8%			
	H_2S	0 ppm			
	CO	4 ppm			
	NH_3	0 ppm			
	PID	0.3 ppm			
~~1458~~	LEL	6%	STA 3+50		
1608	O_2	20.8%			
	H_2S	0 ppm			
	CO	2 ppm			
	NH_3	0 ppm			
	PID	0.2 ppm			
~~1415~~	Beaver is out of the trench				Afternoon summary
1615					PID TWA 0.3 ppm
					Ammonia meter: 0.0 ppm TWA
					4 Gas Meter: H_2S TWA 0 ppm
					CO TWA 0 ppm

Highest VOC Reading (breathing zone): 0.7 ppm Time: 1300

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report**

Owner: Republic Waste Services of Ohio, II Date: 3/27/2009 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM foggy PM clear, breezy

Project: CWRDF Isolation Break Temp.(°F): High high 50's Low mid 30's Rain No

ARCADIS PHSO: Brian Howman Wind Direction: out of the east

Equipment IDs: PID # B193948 4 Gas Meter # B185098 Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0739	Two Beaver crews working at the Lower Leachate/LFG		from each end	toward the middle.	(West crew & east crew)
			Collection trench		
0853	LEL	13%	STA 3+50	Waist height in trench	west crew - back out of the trench at 0857
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0.4 ppm			
0902	LEL	4 - 18%	STA 3+50	Waist height in trench	West crew - back out of trench at 0921
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	1 ppm			
	NH_3	0 ppm			
	PID	0.2 ppm			
0929	LEL	7%	STA 8+00	top of trench - no workers currently in trench.	
	Oxygen	20.8%			East Crew
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	PID	0.8 ppm			
0958	LEL	2%	STA 7+34.14	Waist level in trench	Workers out of trench at 1002
	Oxygen	20.8%			East Crew
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
1020	LEL	9%	STA 4+00	Waist level in trench	West East Crew - out of trench at 1040
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	3 ppm			
	NH_3	0 ppm			
1100	LEL	0%	STA 7+00	Waist high in trench	East Crew - out of trench at 1109
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1406

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 5/27/2009 Page 2 of 2

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1134	LEL	16%	STA 4+50	Waist height in trench	West Crew - out of trench at 1149
	Oxygen	20.8%			
	H_2S	0ppm			
	CO	0ppm			
	NH_3	0ppm			
	PID	0.7ppm			
1200	Lunch				
1230	Beaver is back from lunch				
1245	LEL	8%	STA 5+00	Waist high in trench	West crew out of trench at 1311
	Oxygen	20.8%			
	H_2S	0ppm			
	CO	8%			
	NH_3	0ppm			
1318	LEL	0%	STA 6+50	Waist high in trench	East Crew
	Oxygen	20.8%			
	H_2S	0ppm			
	CO	6ppm			
	NH_3	0ppm			
1334	LEL	0%	STA 5+50	Waist high	East Crew
	Oxygen	20.8%			
	H_2S	0ppm			
	CO	5ppm			
	NH_3	0ppm			
1406	LEL	5%	STA 5+50	Waist high in trench	West crew
	Oxygen	20.8%			
	H_2S	0ppm			
	CO	7ppm			
	NH_3	0ppm			
	PID	0.9ppm			
	Two workers in the trench				
1510	LEL	1%	STA 5+50	Waist high in trench	West Crew - out of the trench at 1531
	Oxygen	20.8%			
	H_2S	0ppm			East Crew is done - assisting west crew
	CO	4ppm			
	NH_3	0ppm			
1545	LEL	18%	STA 5+50	Waist high in trench	West Crew - out of trench at 1609
	Oxygen	20.8%			
	H_2S	0ppm			
	CO	5ppm			
	NH_3	0ppm			
1614	LEL	5%	STA 5+50	Waist high in trench	West Crew - out of trench at 1621
	Oxygen	20.8%			
	H_2S	0ppm			
	CO	3ppm			
	NH_3	0ppm			

1649 Beaver has filled in the trenches

Highest VOC Reading (breathing zone): 0.9ppm Time: 1406

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

ARCADIS
1100 Superior Avenue
Suite 1250
Cleveland
Ohio 44114
Tel 216.781.6177
Fax 216.781.6243
www.arcadis-us.com

ENVIRONMENT

Michael Beaudoin
Senior Program Manager
EARTH TECH – AECOM
36133 Schoolcraft Road
Livonia, MI 48150

Subject:
Summary of Deep Trench Air Monitoring Activities, March 2009,
Countywide Recycling and Disposal Facility

Date:
October 14, 2009

Contact:
Brian Howman

Phone:
216.781.6177

Email:
brian.howman@arcadis-us.com

Our ref:
CL000569.0003

Dear Mr. Beaudoin:

ARCADIS conducted air monitoring to ensure the health and safety of workers during the Deep Trench excavation and pipe installation activities completed at the Countywide Recycling and Disposal Facility, 3619 Gracemont Street S.W., East Sparta, Ohio. The Deep Trench air monitoring activities started on March 4, 2009 and were completed on March 31, 2009. Air monitoring activities were conducted by ARCADIS employees, Mr. Brian Howman and Mr. Kurt Merkle.

Air monitoring instruments utilized were the following: MiniRae 2000 Photoionization Detector (PID) with a 10.6 eV lamp for measuring volatile organic compounds; MSA Orion 4-Gas Meter (oxygen, hydrogen sulfide, carbon monoxide, and lower explosive limit); Biosystems ToxiPro Ammonia (NH_3) Gas Detector; MSA Hand Pump with MSA Benzene detector tubes; and Dräger Hand Pump with Dräger Ammonia detector tubes.

Each air monitoring instrument was calibrated or calibration checked daily prior to the startup of excavation activities. Instrument calibrations/calibration checks were completed per the manufacturers' specifications using the appropriate calibration span gas for each instrument.

Excavation Activities

During excavation activities the air monitoring instruments were used to monitor the workers breathing zone (approximately shoulder height to waist height) at various locations (upwind, downwind, and crosswind) around the excavation equipment at a distance beyond the working reach of the equipment and within the trench (approximately shoulder height to knee height for a kneeling worker). To ensure the health & safety of the workers, each worker was equipped with a personnel MSA 4-Gas Meter in addition to the air monitoring conducted by ARCADIS. Maintenance

records of the personnel MSA 4-Gas Meters worn by the equipment operators were maintained by each workers employer.

Air Monitoring Action Levels

The Health & Safety Plan for Work Preformed Pursuant to USEPA Settlement Agreement, dated April 29, 2008, established air monitoring action levels that were protective of site workers. The air monitoring action levels that would cause work activities to stop and a re-evaluation of the health and safety controls in place to protect workers' were the following:

- Lower Explosive Limit (LEL) for methane gas – 25 percent (%) or higher.
- Hydrogen sulfide (H_2S) – 10 parts per million (ppm) or higher.
- Oxygen (O_2) – 19.5% or lower.
- Carbon Monoxide (CO) – 25 ppm or higher.
- Ammonia (NH_3) – 25 ppm or higher.
- Volatile Organic Compounds (VOCs) – 1 ppm (sustained) or higher. If benzene is not present the VOC action level is 10 ppm (sustained) or higher.

If air monitoring readings are above the established action levels, several protective measures can be implemented to protect workers. These protective measures include: setting up blowers/fans to move fresh air into and through the trench; and workers wearing supplied air equipment to provide safe breathing air. Both of these protective measures were utilized during work activities at the Deep Trench.

Air Monitoring Results

Air monitoring readings, equipment numbers, location of readings, and general notes were recorded on the ARCADIS Daily Worker Air Monitoring Field Report. Copies of the ARCADIS Daily Worker Air Monitoring Field Reports are included as Attachment 1.

A summary of the air monitoring results for the Deep Trench activities is as follows:

LEL – 0% to 30%.

H2S – 0 ppm

Oxygen – 20.8 % to 21.1%

CO – 0 ppm to 154 ppm.

NH3 – 0 ppm

VOCs – 0 ppm to 3.6 ppm.

Benzene Detector Tubes

Benzene detector tubes were collected if VOC readings were at or greater than 1 ppm (sustained). The benzene detector tube will indicate the presence of benzene at a concentration of 0.25 ppm. Thirteen (13) benzene detector tubes were collected during Deep Trench activities. Benzene was not detected by any of the benzene detector tubes collected during the Deep Trench activities. A photograph of each benzene detector tube is included in Attachment 2.

Ammonia Detector Tubes

An ammonia detector tube was collected to verify the readings of the ammonia meter. The ammonia detector tube will indicate the presence of ammonia at a concentration of 2 ppm. One (1) ammonia detector tube was collected during Deep Trench activities. Ammonia was not detected by the ammonia detector tube. A photograph of the ammonia detector tube is included in Attachment 2.

Conclusion

The air monitoring did not detect any concentrations of oxygen, hydrogen sulfide, ammonia, or benzene at or above the action levels established by the Health & Safety Plan for Work Preformed Pursuant to USEPA Settlement Agreement, dated April 29, 2008. The air monitoring detected concentrations of LEL, carbon monoxide, and VOCs at concentrations above the action levels. When concentrations were approaching the established action levels, the workers donned supplied air respiratory protection until exiting the work area or ARCADIS air monitoring indicated concentrations were below the established action levels.

Sincerely,

ARCADIS

Brian Howman
Staff Scientist/Project Health & Safety Officer

ARCADIS

Attachment 1

Deep Trench Field Notes

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio II Date: 3/4/09 Shift: Day Page 1 of 1

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp (°F): High * Low * Rain *

ARCADIS PHSO: Kurt Markle Wind Direction: * See Golders Report

Equipment IDs: PID # B19394B 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # NA Notes/Comments:

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
1300	LEL	0 %	8	N/A	4ft	East side of Isolation break, digging out tie in.
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1330	LEL	0 %				" "
	O_2	21.1 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1400	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1430	LEL	0 %				" "
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 0.0 Time: N/A

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: NA

Signature: Kurt J Markle

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 3/5/09 Shift: Day Page 1 of 4

Location: East Sparta, Ohio Weather: AM PM

Project: CWRDF Isolation Break Temp (°F): High Low Rain

ARCADIS PHSO: Kurt Markle Wind Direction:

Equipment IDs: PID # B193948 4 Gas Meter # B18509B Ammonia Gas Meter # B181598

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
10%					
<19.5					
10					
25					
25					
10 or 10					
0800	LEL	12 %	@N/A	4ft	Tie in for deep trench
	O_2	20.8 %			- elevated readings once liner removed
	H_2S	0 ppm			- work to be completed in Level B
	CO	154 ppm			
	NH_3	0 ppm			
	VOC	36 ppm			
0830	LEL	2 %			⊙ Benzene tube pulled @ 835 0.0 PPM
	O_2	20.8 %			
	H_2S	0 ppm			
	CO	13 ppm			
	NH_3	0 ppm			
	VOC	3.3 ppm			
0845	LEL	0 %			Level B for work in trench established
	O_2	20.8 %			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	VOC	0.0 ppm			
0900	LEL	2 %			
	O_2	20.8 %			
	H_2S	0 ppm			
	CO	20 ppm			
	NH_3	0 ppm			
	VOC	0.7 ppm			
0915	⊙ LEL	0 %			
	O_2	20.8 %			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	VOC	0.0 ppm			
0930					
	→ Next page				

Highest VOC Reading (breathing zone): 36 PPM Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0 Time: 835

Signature: Kurt Markle

~~Isolation Break~~ Deep trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/5/09 Page 2 of 4

Time	Parameter	Reading	Location - Deck# &Grid #	Height of Reading	Notes
0530	LEL	5 %	NA	4ft	Sta 0+50
	O_2	20.8 %			Tie in for deep
	H_2S	0 PPM			trench
	CO	65 PPM			
	NH_3	0 PPM			
	VOC	5.0 PPM			
0945	LEL	2 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	9 PPM			
	NH_3	0 PPM			
	VOC	1.1 PPM			
1000	LEL	1 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	5 PPM			
	NH_3	0 PPM			
	VOC	1.5 PPM			
1015	LEL	0 %	NA	4ft	Level B work
	O_2	20.8 %			reduced to Level D.
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			
1030	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	1.5 PPM			
1045	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 36 Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0 Time: 835

Signature: Kurt J. Kubik

~~Isolation Break~~ Deep trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/5/09 Page 3 of 4

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1100	LEL	0 %	N/A	4 FT	Deep trench tie in 3a 0+50
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1130	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1200	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
1230	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1300	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1330	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1400	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.6 PPM			

Highest VOC Reading (breathing zone): 36 PPM Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0835

Signature:

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/5/09 Page 4 of 4

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1530	LEL	0 %	N/A -	4ft	Sta 0+50
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1600	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1700	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1730	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1800	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1815	—	—	—	—	Work complete.

Highest VOC Reading (breathing zone): 36PPM Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0 Time: 0835

Signature: [signature]

~~Isolation Break~~ Deep Trench — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, II Date: 3/6/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM ^ PM ^

Project: CWRDF Isolation Break Temp.(°F): High ^ Low ^ Rain ^

ARCADIS PHSO: Kurt Markle Wind Direction: ^ See Goldsers Report

Equipment IDs: PID # B193948 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # NA Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0730	LEL	0 %	N/A		4ft	Stg 1400
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
0830	LEL	0 %				work in trench will be in level B.
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	4.5 PPM				
0900	LEL	0 %				Benzene tube pulled @ 0845 0.0 PPM
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	1.5 PPM				
0930	LEL	0 %				
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				
1000	LEL	0 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	9 PPM				
	NH_3	0 PPM				
	VOC	1.7 PPM				
1030	LEL	0 %				
	O_2	21.0 %				
	H_2S	0 PPM				
	CO	8 PPM				
	NH_3	0 PPM				
	VOC	0.4 PPM				

Highest VOC Reading (breathing zone): 4.5 PPM Time: 0830

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0845

Signature: Kurt Markle

~~Isolation Break~~ Deep Trench *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 3/6/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1100	LEL	0 %	N/A	4ft	8ft 1+00
	O_2	20.7 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	1.1 PPM			
1130	LEL	0 %			
	O_2	21 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.6 PPM			
1200	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1230	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
1300	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1330	LEL	0 %			Backfilling began Level 1B Work done.
	O_2	20.6 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1430	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 4.5PPM Time: 0830

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0845

Signature: [signature]

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/6/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1500	LEL	0 %			4ft	Sta 1+00
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1530	LEL	0 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1600	LEL	0 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1630	LEL	0 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1700	LEL	0 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 45PPM Time: 0830

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0845

Signature:

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 3/9/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM PM

Project: CWRDF Isolation Break Temp.(°F): High Low Rain

ARCADIS PHSO: Kurt Meckle Wind Direction: *See Gelbers Report

Equipment IDs: PID # B19394B 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0730	LEL	0 %	—	4ft	Sta 1+00 – 1+50
	O_2	21.0 %			Road Crossing
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
0800	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.1 PPM			
0830	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
0900	LEL	1 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.6 PPM			
0930	LEL	1 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1000	LEL	1 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	2.3 PPM			

Highest VOC Reading (breathing zone): 2.3 Time: 1015

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 1020

Signature: Kurt Meckle

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/9/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1030	LEL	1 %		4ft	Sta 1+00 - 1+50
	O_2	20.9 %			Road Crossing
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1100	LEL	1 %			
	O_2	20.5 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	1.7 PPM			
1200	LEL	1 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	9.5 PPM			
1300	LEL	%			Excl B work Complete @ 1330
	O_2	20.5 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	2.0 PPM			
1400	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1430	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.1 PPM			
1500	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.2 PPM			

Highest VOC Reading (breathing zone): 2.3 Time: 1015

Highest Benzene Detector Tube Reading (breathing zone): 0.0 Time: 1020

Signature: [signature]

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/9/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1530	LEL	0 %			4ft	Sta 1+00 ~ 1+50 Road Crossing
	O_2	20.9%				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1600	LEL	0 %				
	O_2	20.9%				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1630	LEL	0 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1700	LEL	0 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				

Highest VOC Reading (breathing zone): 2.3 PPM Time: 1015

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1030

Signature: [signature]

~~Isolation Berm~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Form

Owner: Republic Waste | Date: 3/16/09 | Shift: Day | Page: 1

Location: East Sparta, Ohio | Weather: AM [illegible] PM [illegible]

Project: CWRDF Isolation Berm | Temp.(°F): High [illegible] Low [illegible] Rain [illegible]

ARCADIS PHSO: Kurt Mehle | Wind Direction: See Golders Report

Equipment IDs: PID # B19394B | 4 Gas Meter # B18509B | Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A | Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0730	LEL	0 %		4ft	Road Crossing
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
0800	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 0.0 PPM Time: 0730, 0800

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

~~Isolation Break~~ Deep Trench ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 8/11/09 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp (°F): High * Low * Rain *

ARCADIS PHSO: Kurt Merkle Wind Direction: * See Golders Report

Equipment IDs: PID # B193948 4 Gas Meter # B185098 Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading		Location – Deck# &Grid #		Height of Reading	Notes
0900	LEL	0	%	—		4ft	Just North of Road Crossing Spot 1+50
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.3	PPM				
0930	LEL	0	%				
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.5	PPM				
1000	LEL	0	%				
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
1030	LEL	0	%				
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.0	PPM				
1100	LEL	0	%				
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	0.2	PPM				
1130	LEL	0	%				
	O_2	20.8	%				
	H_2S	0	PPM				
	CO	0	PPM				
	NH_3	0	PPM				
	VOC	[illegible]	PPM				

Highest VOC Reading (breathing zone): 2.7 PPM Time: 1300

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 1325

Signature: [signature]

~~Station Break~~ Deep Trench **ARCADIS Daily Work ... Monitoring Field Report (cont.)**

Date: 3/11/09 Page 2 of 2

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1200	LEL	0 %	—	4ft	Just North of Road Crossing Sta 1+50
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.2 PPM			
1230	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
1300	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			Benzene Tube Pulled @ 1325 0.0 PPM
	VOC	2.7 PPM			
1330	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			
1400	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1430	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			
1500	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			

Highest VOC Reading (breathing zone): 2.7 Time: 1300

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1325

Signature: [signature]

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II

Date: 3/12/09 Shift: Day Page 1 of 5

Location: East Sparta, Ohio

Weather: AM PM

Project: CWRDF Isolation Break

Temp (°F): High Low Rain

ARCADIS PHSO: Kurt Merkle

Wind Direction: See Golders Rep A

Equipment IDs: PID # B193948 4 Gas Meter # B185098 Ammonia Gas Meter # B191598

Quick Draw Hand Pump #: N/A

Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0745	LEL	0 %		4ft	
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.6 PPM			Liner being removed
0830	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	7.2 PPM			
	LEL	1 %			
0815	O_2	20.9 %			
	H_2S	0 PPM			Work will be completed in Area 1B
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	7.8 PPM			Benzene Tube pulled @ 0815 0.0 PPM
0830	LEL	1 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	6.2 PPM			
0845	LEL	1 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	1.0 PPM			
0900	LEL	1 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	1.2 PPM			

Highest VOC Reading (breathing zone): 7.8 PPM Time: ~~0900~~ 0830 KM

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0815

Signature: Kurt J Merkle

~~Isolation Break~~ Deep Trench **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 3/12/09 Page 2 of 5

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0915	LEL	2 %		~~GBZ~~	
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	1 PPM			
	NH_3	0 PPM			
	VOC	3.4 PPM			
930	LEL	3 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	2 PPM			
	NH_3	0 PPM			
	VOC	2.7 PPM			
945	LEL	3 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	4 PPM			
	NH_3	0 PPM			
	VOC	1.1 PPM			
1000	LEL	2 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	1 PPM			
	NH_3	0 PPM			
	VOC	3.2 PPM			
1015	LEL	3 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	6 PPM			
	NH_3	0 PPM			
	VOC	6.0 PPM			
1030	LEL	3 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	4 PPM			
	NH_3	0 PPM			
	VOC	9.7 PPM			
1045	LEL	4 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	5 PPM			
	NH_3	0 PPM			
	VOC	2.4 PPM			

Highest VOC Reading (breathing zone): ~~7.2~~ 7.8 PPM Time: ~~0830~~ 0830 KM

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0815

Signature:

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/12/09 Page 3 of 5

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1100	LEL	3 %			4 FT	
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	2 PPM				
	NH_3	0 PPM				
	VOC	0.9 PPM				
1115	LEL	2 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	1 PPM				
	NH_3	0 PPM				
	VOC	2.3 PPM				
1130	LEL	2 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	5 PPM				
	NH_3	0 PPM				
	VOC	6.1 PPM				
1200	LEL	4 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	8 PPM				
	NH_3	0 PPM				
	VOC	3.2 PPM				
1230	LEL	2 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	3 PPM				
	NH_3	0 PPM				
	VOC	7.2 PPM				
1245	LEL	2 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	2 PPM				
	NH_3	0 PPM				
	VOC	4.6 PPM				
1300	LEL	2 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	3 PPM				
	NH_3	0 PPM				
	VOC	3.1 PPM				

Highest VOC Reading (breathing zone): 7.2 PPM Time: ~~0830~~ 0830 KM

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0915

Signature: [signature]

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/2/05 Page 4 of 5

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1315	LEL	2 %			4ft	
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	3 PPM				
	NH_3	0 PPM				
	VOC	6.6 PPM				
1330	LEL	1 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	2 PPM				
	NH_3	0 PPM				
	VOC	0.7 PPM				
1345	LEL	3 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	5 PPM				
	NH_3	0 PPM				
	VOC	1.7 PPM				
1400	LEL	2 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	1 PPM				
	NH_3	0 PPM				
	VOC	2.3 PPM				
1415	LEL	2 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	2 PPM				
	NH_3	0 PPM				
	VOC	3.2 PPM				
1430	LEL	0 %				Crew is Work Complete
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	1.3 PPM				
1500	LEL	0 %				
	O_2	20.8 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.3 PPM				

Highest VOC Reading (breathing zone): 7.8 PPM Time: ~~0830~~ 0830 KM

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0815

Signature: [signature]

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/12/09 Page 5 of 5

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
1530	LEL	0 %			4ft	
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.1 PPM				
1600	LEL	0 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				Excavation Covered
1630	LEL	%				
	O_2	%				
	H_2S	PPM				
	CO	PPM				
	NH_3	PPM				
	VOC	PPM				
1700	LEL	%				
	O_2	%				
	H_2S	PPM				
	CO	PPM				
	NH_3	PPM				
	VOC	PPM				

Highest VOC Reading (breathing zone): 7.8 PPM Time: ~~0800~~ 0830

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0815

Signature: [signature]

~~Isolation Break~~ → Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 3/13/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp.(°F): High * Low * Rain *

ARCADIS PHSO: Kurt Markle Wind Direction: *

Equipment IDs: PID # B193948 4 Gas Meter # B185098 Ammonia Gas Meter # B191593

Quick Draw Hand Pump #: _____ Notes/Comments: _____

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
0800	LEL	3 %		4ft	100 ft West of
	O2	20.9%			Road fire in.
	H2S	0 PPM			
	CO	2 PPM			
	NH3	0 PPM			
	VOC	6.2 PPM			Benzene Tube @ 0820 0.0 PPM
0830	LEL	7 %			Level B ~~for~~ Initial
	O2	20.9 %			Entry to shoot
	H2S	0 PPM			elevations
	CO	11 PPM			
	NH3	0 PPM			
	VOC	3.7 PPM			
0900	LEL	7 %			
	O2	20.9 %			
	H2S	0 PPM			
	CO	7 PPM			
	NH3	0 PPM			
	VOC	6.1 PPM			
0930	LEL	3 %			
	O2	20.9 %			
	H2S	0 PPM			
	CO	4 PPM			
	NH3	0 PPM			
	VOC	2.0 PPM			
1000	LEL	2 %			
	O2	20.9 %			
	H2S	0 PPM			
	CO	0 PPM			
	NH3	0 PPM			
	VOC	4.3 PPM			
1030	LEL	3 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	7 PPM			
	NH3	0 PPM			
	VOC	3.8 PPM			

Highest VOC Reading (breathing zone): 6.2PPM Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0820

Signature: Kurt Markle

~~Isolation Break~~ Deep Trench **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 8/13/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1100	LEL	2 %		4ft	
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	1 PPM			
	NH_3	0 PPM			
	VOC	4.3 PPM			
1130	LEL	2 %			
	O_2	20.8%			
	H_2S	0 PPM			
	CO	7 PPM			
	NH_3	0 PPM			
	VOC	3.2 PPM			
1200	LEL	3 %			
	O_2	20.8%			
	H_2S	0 PPM			
	CO	3 PPM			
	NH_3	0 PPM			
	VOC	2.7 PPM			
1230	LEL	2 %			
	O_2	20.8%			
	H_2S	0 PPM			
	CO	1 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1300	LEL	1 %			
	O_2	20.5 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
1330	LEL	1 %			
	O_2	20.0 %			
	H_2S	0 PPM			
	CO	3 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1400	LEL	1 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	1 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			

Highest VOC Reading (breathing zone): 6.2PPM Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0820

Signature: [signature]

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/13/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1430	LEL	1 %		4ft	
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1500	LEL	1 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
1530	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	1 PPM			
	NH_3	0 PPM			
	VOC	0 PPM			
1600	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1630	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.1 PPM			
1700	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1730	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 0.2PPM Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0830

Signature:

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 3/16/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM A PM A

Project: CWRDF Isolation Break Temp.(°F): High A Low A Rain A

ARCADIS PHSO: Kurt Markle Wind Direction: *See Goldin Report

Equipment IDs: PID # B153948 4 Gas Meter # B165098 Ammonia Gas Meter # B191598

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0800	LEL	1 %	—	4 ft	
	O_2	21.0 %			
	H_2S	0 PPM			
	CO	7 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
0830	LEL	3 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	18 PPM			
	NH_3	0 PPM			
	VOC	0.9 PPM			
0900	LEL	3 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	20 PPM			
	NH_3	0 PPM			
	VOC	18.1 PPM			
0930	LEL	2 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	42 PPM			
	NH_3	0 PPM			
	VOC	12.2 PPM			
1000	LEL	3 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	27 PPM			
	NH_3	0 PPM			
	VOC	7.6 PPM			
1030	LEL	7 %			
	O_2	21.0 %			
	H_2S	0 PPM			
	CO	32 PPM			
	NH_3	0 PPM			
	VOC	10.1 PPM			

Highest VOC Reading (breathing zone): 18.1 PPM Time: 0900

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0915

Signature: Kurt J. Markle

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/16/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1100	LEL	5 %		4ft	
	O_2	21.0 %			
	H_2S	0 PPM			
	CO	78 PPM			
	NH_3	0 PPM			
	VOC	19.1 PPM			
1130	LEL	13 %			
	O_2	21.0 %			
	H_2S	0 PPM			
	CO	150 PPM			
	NH_3	0 PPM			
	VOC	13.0 PPM			
1200	LEL	30 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	29 PPM			
	NH_3	0 PPM			
	VOC	8.2 PPM			
1230	LEL	11 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	72 PPM			
	NH_3	0 PPM			
	VOC	9.9 PPM			
1300	LEL	6 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	13 PPM			
	NH_3	0 PPM			
	VOC	0.4 PPM			
1330	LEL	2 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	9 PPM			
	NH_3	0 PPM			
	VOC	12.1 PPM			
1400	LEL	3 %			
	O_2	21.0 %			
	CO	2 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
	H_2S	0 PPM			

Highest VOC Reading (breathing zone): 18.1 PPM Time: 0900

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0915

Signature:

~~Isolation Break~~ Deep Trench ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/16/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1430	LEL	3 %	—	4ft	
	O_2	21.0 %			
	H_2S	0 ppm			
	CO	17 ppm			
	NH_3	0 ppm			
	VOC	5.3 ppm			
1500	LEL	0 %			
	O_2	21.0 %			
	H_2S	0 PPM			
	CO	70 ppm			
	NH_3	0 ppm			
	VOC	8.8 ppm			
1530	LEL	2 %			
	O_2	21 %			
	H_2S	0 ppm			
	CO	111 ppm			In trench
	NH_3	0 ppm			
	VOC	3.5 ppm			
1600	LEL	2 %			
	O_2	21.0 %			
	H_2S	0 ppm			
	CO	27 ppm			
	NH_3	0 ppm			
	VOC	1.1 ppm			
1630	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 %			
	CO	7 ppm			
	NH_3	0 ppm			
	VOC	0.2 ppm			
1700	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 ppm			
	CO	11 ppm			
	NH_3	0 ppm			
	VOC	0.0 ppm			
1730	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	VOC	0.0 ppm			

Highest VOC Reading (breathing zone): 18.1 ppm Time: 0900

Highest Benzene Detector Tube Reading (breathing zone): 0 ppm Time: 0915

Signature:

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report*

Owner: Republic Waste Services of Ohio, I | Date: 3/17/09 | Shift: Day | Page 1 of 04

Location: East Sparta, Ohio | Weather: AM | PM

Project: CWRDF Isolation Break | Temp (°F): High | Low | Rain

ARCADIS PHSO: Kurt Merkle | Wind Direction: See Golders Report

Equipment IDs: PID # 803748 | 4 Gas Meter # 818578 | Ammonia Gas Meter # 819578

Quick Draw Hand Pump # N/A | Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0800	LEL	3 %	—	4ft	Work to be completed in Level B
	O2	21.0 %			
	H2S	0 PPM			
	CO	17 PPM			
	NH3	0 PPM			
	VOC	26.2 PPM			
0830	LEL	2 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	35 PPM			
	NH3	0 PPM			
	VOC	17.1 PPM			
0900	LEL	0 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	22 PPM			
	NH3	0 PPM			
	VOC	35 PPM			
0930	LEL	0 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	70 PPM			
	NH3	0 PPM			
1000	VOC	11 PPM			
	LEL	0 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	11 PPM			
	NH3	0 PPM			
	VOC	8.5 PPM			
1030	LEL	0 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	17 PPM			
	NH3	0 PPM			
	VOC	7.2 PPM			

Highest VOC Reading (breathing zone): 26.2 PPM Time: 0800 INITIAL OPENING

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0815

Signature: Kurt J. Merkle

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1100	LEL	1 %		4ft	
	O2	21.0 %			
	H2S	0 PPM			
	CO	42 PPM			
	NH3	0 PPM			
	VOC	1.7 PPM			
1130	LEL	3 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	16 PPM			
	NH3	0 PPM			
	VOC	11.4 PPM			
1200	LEL	0 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	28 PPM			
	NH3	0 PPM			
	VOC	6.8 PPM			
1230	LEL	1 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	37 PPM			
	NH3	0 PPM			
	VOC	7.1 PPM			
1300	LEL	4 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	18 PPM			
	NH3	0 PPM			
	VOC	4.2 PPM			
1330	LEL	0 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	22 PPM			
	NH3	0 PPM			
	VOC	15.1 PPM			
1400	LEL	1 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	14 PPM			
	NH3	0 PPM			
	VOC	7.2 PPM			

Highest VOC Reading (breathing zone): 26.2PPM Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0815

Signature: [signature]

~~Isolation Break~~ Deep Trench ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/17/09 Page 3 of 4

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1430	LEL	0 %		4 ft	
	O2	21.0 %			
	H2S	0 ppm			
	CO	17 ppm			
	MHg	0 ppm			
	VOC	1.8 ppm			
1500	LEL	0 %			
	O2	21 %			
	H2S	0 ppm			
	CO	15 ppm			
	MHg	0 ppm			
	VOC	1.4 ppm			
1530	LEL	1 %			
	O2	21 %			
	H2S	0 ppm			
	CO	37 ppm			
	MHg	0 ppm			
	VOC	0.6 ppm			
1600	LEL	1 %			
	O2	21 %			
	H2S	0 ppm			
	CO	7 ppm			
	MHg	0 ppm			
	VOC	0.9 ppm			
1630	LEL	0 %			
	O2	21 %			
	H2S	0 ppm			
	CO	14 ppm			
	MHg	0 ppm			
	VOC	0.4 ppm			
1700	LEL	0 %			
	O2	21 %			
	H2S	0 ppm			
	CO	14 ppm			
	MHg	0 ppm			
	VOC	0.5 ppm			
1730	LEL	0 %			
	O2	21 %			
	H2S	0 ppm			
	CO	3 ppm			
	MHg	0 ppm			
	VOC	0.5 ppm			

Highest VOC Reading (breathing zone): 26.2 PPM Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0815

Signature: Kristy Knowles

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/17/09 Page 4 of 4

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1800	LEL	0 %		4 ft	
	O_2	21.0 %			
	H_2S	0 PPM			
	CO	3 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			
1830	LEL	0 %			
	O_2	21.0 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.2 PPM			
1900	LEL	0 %			
	O_2	21.0 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1930	LEL	0 %			
	O_2	21.0 %			
	H_2S	0 PPM			
	CO	1 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 20.2 PPM Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0815

Signature:

~~Liner Evaluation~~ Deep Trench

AR Activity Work & Air Monitoring Field Report

Owner: Republic Waste Services of Ohio II

Date: 3/18/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio

Weather: AM A PM A

Project: CWRDF Isolation Break

Temp (°F): High A Low A Rain A

ARCADIS PHSO: Kurt McMe

Wind Direction: A See Golders Report

Equipment IDs: PID # B193948 4 Gas Meter # B155076 Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A

Notes/Comments: N/A

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0730	LEL	0 %		4ft	West of Roadside
	O_2	21.0 %			Tie in.
	H_2S	0 PPM			
	CO	3 PPM			
	NH_3	0 PPM			
	VOC	3.1 PPM			
0800	LEL	0 %			
	O_2	21.0 %			
	H_2S	0 PPM			
	CO	2 PPM			
	NH_3	0 PPM			
	VOC	5.5 PPM			
					0815 Benzen. Tube 0.0 PPM
0830	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	7 PPM			
	NH_3	0 PPM			
	VOC	1.0 PPM			
0900	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	8 PPM			
	NH_3	0 PPM			
0930	VOC	1.3 PPM			
L	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	4 PPM			
	NH_3	0 PPM			
	VOC	3.0 PPM			
1000	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO/NH_3	8/0 PPM			
	VOC	1.8 PPM			

Highest VOC Reading (breathing zone): 5.1, 5.8 PPM Time: 0800, 1400

Highest Benzene Detector Tube Reading (breathing zone): 0.0, 0.0 PPM Time: 0815, 1415

Signature:

~~Isolation Kwadi~~ Deep Trench — BRCADS Daily Worker Air Monitoring Field Report (cont.)

Date: 5/16/09 — Page 2 of 5

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1030	LEL	0 %		4'	
	O2	20.8 %			
	H2S	0 PPM			
	CO	6 PPM			
	NH3	0 PPM			
	VOC	2.4 PPM			
1100	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	10 PPM			
	NH3	0 PPM			
	VOC	2.5 PPM			
1130	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	7 PPM			
	NH3	0 PPM			
	VOC	1.6 PPM			
1200	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	8 PPM			
	NH3	0 PPM			
	VOC	1.2 PPM			
1230	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	7 PPM			
	NH3	0 PPM			
	VOC	0.5 PPM			
1300	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	6 PPM			
	NH3	0 PPM			
	VOC	0.8 PPM			
1330	LEL	0 %			
	O2	20.9 %			
	H2S	0 PPM			
	CO	7 PPM			
	NH3	0 PPM			
	VOC	1.8 PPM			

Highest VOC Reading (breathing zone): 51,578 PPM Time: 1400, 0800

Highest Benzene Detector Tube Reading (breathing zone): 00, 0.0 PPM Time: 1445, 0845

Signature:

~~Isolation Break~~ Deep Trench *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 3/18/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1400	LEL	0 %		4ft	
	O2	20.8 %			
	H2S	0 PPM			
	CO	7 PPM			
	NH3	0 PPM			
	VOC	5.1 PPM			Pulled Benzene Tube due to nitrous odors and high VOC reading
1430	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	9 PPM			
	NH3	0 PPM			
	VOC	4.8 PPM			
1500	LEL	0 %			
	O2	21.0 %			
	H2S	0 PPM			
	CO	9 PPM			
	NH3	0 PPM			
	VOC	0.2 PPM			
1530	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	5 PPM			
	NH3	0 PPM			
	VOC	0.3 PPM			
1600	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	2 PPM			
	NH3	0 PPM			
	VOC	0.1 PPM			
1630	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	3 PPM			
	NH3	0 PPM			
	VOC	0.0 PPM			
1700	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	0 PPM			
	NH3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 5.1, 5.8 PPM Time: 1400, 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0, 0.0 PPM Time: 1415, 0815

Signature:

~~Isolation Area~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio II Date: 3/19/09 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM PM

Project: CWRDF Isolation Break Temp (°F): High Low Rain

ARCADIS PID/O: Kurt Merkle Wind Direction: See Golders Report

Equipment IDs: PID # BI9394B 4 Gas Meter # BI8509B Ammonia Gas Meter # BI9159B

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location Deck# &Grid #	Height of Reading	Notes
0730	LEL	0 %		99	
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	8 PPM			
	NH_3	0 PPM			
	VOC	0.1 PPM			
0752	LEL	0 %			Liner Removed
	O_2	20.8 %			
	H_2S	0 PPM			Crust & Work
	CO	27 PPM			
	NH_3	0 PPM			
	VOC	7.8 PPM			
0852	LEL	0 %			
	O	20.8 %			
	H_2S	0 PPM			
	CO	11 PPM			
	NH_3	0 PPM			
	VOC	1.9 PPM			
0900	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	<4 PPM			
	NH_3	0 PPM			
	VOC	4.3 PPM			
0930	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	9 PPM			
	NH_3	0 PPM			
	VOC	2.8 PPM			
1000	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	17 PPM			
	NH_3	0 PPM			
	VOC	7.9 PPM			

Highest VOC Reading (breathing zone): 7.8PPM Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0815

Signature: Kurt Merkle

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/19/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1030	LEL	0 %	—	4 ft	
	O_2	20.8 %			
	H_2S	0 ppm			
	CO	5 ppm			
	NH_3	0 ppm			
	VOC	1.4 ppm			
1100	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 ppm			
	CO	3 ppm			
	NH_3	0 ppm			
	VOC	0.8 ppm			
1130	LEL	0 %			Cat. 1 B work complete
	O_2	20.9 %			
	H_2S	0 ppm			
	CO	0 ppm			
	NH_3	0 ppm			
	VOC	0.7 ppm			
1200	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 ppm			
	CO	4 ppm			
	NH_3	0 ppm			
	VOC	0.9 ppm			
1230	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 ppm			
	CO	8 ppm			
	NH_3	0 ppm			
	VOC	0.8			
1300	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 ppm			
	CO	5 ppm			
	NH_3	0 ppm			
	VOC	3.2 ppm			
1330	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 ppm			
	CO	3 ppm			
	NH_3	0 ppm			
	VOC	1.7 ppm			

Highest VOC Reading (breathing zone): 7.8 ppm Time: 0815

Highest Benzene Detector Tube Reading (breathing zone): 0.0 ppm Time: 0815

Signature:

~~Isolation Break~~ Deptranch

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/19/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1400	LEL	0 %		4'	
	O2	20.8 %			
	H2S	0 ppm			
	CO	2 ppm			
	NH3	0 ppm			
	VOC	0.9 ppm			
1436	LEL	0 %			
	O2	20.8 %			
	H2S	0 ppm			
	CO	3 ppm			
	NH3	0 ppm			
	VOC	1.8 ppm			
1500	LEL	0 %			
	O2	20.8 %			
	H2S	0 ppm			
	CO	2 ppm			
	NH3	0 ppm			
	VOC	1.1 ppm			
1530	LEL	0 %			
	O2	20.8 %			
	H2S	0 ppm			
	CO	3 ppm			
	NH3	0 ppm			
	VOC	0.7 ppm			
1600	LEL	0 %			
	O2	20.5 %			
	H2S	0 ppm			
	CO	4 ppm			
	NH3	0 ppm			
	VOC	0.5 ppm			
1630	LEL	0 %			
	O2	20.8 %			
	H2S	0 ppm			
	CO	1 ppm			
	NH3	0 ppm			
	VOC	0.2 ppm			
1700	LEL	0 %			
	O2	20.8 %			
	H2S	0 ppm			
	CO	0 ppm			
	NH3	0 ppm			
	VOC	0.0 ppm			
1730	VOC	0.0 ppm			
1800	VOC	0.0 ppm			
1815	VOC	0.0 ppm			

Highest VOC Reading (breathing zone): 7.8 ppm Time: 0800

Highest Benzene Detector Tube Reading (breathing zone): 0.0 ppm Time: 0815

Signature: [signature]

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 3/26/09 Shift: Day Page 1 of 3

Location: East Spana, Ohio Weather: AM * PM *

Project: CWRDF Isolation Break Temp (°F): High * Low * Rain *

ARCADIS PHSO: Kurt Mehle Wind Direction: * See Golders Report

Equipment IDs: PID # B19394B 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0730	LEL	0 %		4ft	
	O2	20.8 %			
	H2S	0 ppm			
	CO	4 ppm			
	NH3	0 ppm			
	VOC	0.1 ppm			
0800	LEL	0 %			Fabric being removed
	O2	20.8 %			
	H2S	0 ppm			
	CO	17 ppm			
	NH3	0 ppm			
	VOC	1.8 ppm			
0830	LEL	0 %			
	O2	20.8 %			
	H2S	0 ppm			Benzene Tube
	CO	7 ppm			Pulled at 0545
	NH3	0 ppm			0.0 ppm
	VOC	12.2 ppm			
0900	LEL	0 %			
	O2	20.8 %			
	H2S	0 ppm			
	CO	19 ppm			
	NH3	0 ppm			
	VOC	7.8 ppm			
0930	LEL	0 %			
	O2	20.8 %			
	H2S	0 ppm			
	CO	18 ppm			
	NH3	0 ppm			
	VOC	3.2 ppm			
1000	LEL	0 %			
	O2	20.8 %			
	H2S	0 ppm			
	CO	12 ppm			
	NH3	0 ppm			
	VOC	1.5 ppm			

Highest VOC Reading (breathing zone): 12.2 ppm Time: 0830

Highest Benzene Detector Tube Reading (breathing zone): 0.0 ppm Time: 0845

Signature: [signature]

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 3/20/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1030	LEL	0 %		4ft	
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	6 PPM			
	NH_3	0 PPM			
	VOC	1.7 PPM			
1100	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	4 PPM			
	NH_3	0 PPM			
	VOC	1.5 PPM			
1130	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	9 PPM			
	NH_3	0 PPM			
	VOC	3.2 PPM			
1200	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	7 PPM			
	NH_3	0 PPM			
	VOC	0.8 PPM			
1230	LEL	1 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	3 PPM			
	NH_3	0 PPM			
	VOC	1.3 PPM			
1300	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	9 PPM			
	NH_3	0 PPM			
	VOC	2.0 PPM			
1330	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	3 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			

Highest VOC Reading (breathing zone): 12.2PPM Time: 0830

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0845

Signature: [signature]

~~Isolation Break~~ Deep Trench

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 5/20/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1400	LEL	0 %		M.A	
	O2	20.8 %			Ammonia Tube Pulled
	H2S	0 PPM			@ 1410 0.0 PPM
	CO	5 PPM			
	NH3	2 PPM			
	VOC	2.2 PPM			
1430	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	7 PPM			
	NH3	0 PPM			
	VOC	1.1 PPM			
1500	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	3 PPM			
	NH3	0 PPM			
	VOC	0.7 PPM			
1530	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	0 PPM			
	NH3	0 PPM			
	VOC	0.1 PPM			
1600	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	0 PPM			
	NH3	0 PPM			
	VOC	0.0 PPM			
1630	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	0 PPM			
	NH3	0 PPM			
	VOC	0.0 PPM			
1700	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	0 PPM			
	NH3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 12.2 PPM Time: 0830

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0845

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 3/31/2015 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM overcast breezy PM breezy, clear

Project: CWRDF Isolation Break Temp.(°F): High high 50's Low 30° Rain No

ARCADIS PHSO: Brian Hartman Wind Direction: AM - out of NE to E, PM - out of SE

Equipment IDs: PID # B193A4 4 Gas Meter # B185C9B Ammonia Gas Meter # B191S9B

Quick Draw Hand Pump # JS171328 Notes/Comments: Replacement of 240 linear ft of Leachate Syst. in Leachate/LFG TH Deep Trench

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0750	Beaver/Dec/Alcon on monitoring the deep trench - Remain					liner
0757	LEL	2%				
	Oxygen	20.8%				* collect detector tube - Benzene at 0814
	H_2S	0 ppm				V = 15 strokes
	CO	14 ppm				Benzene tube is Non Detect
	NH_3	0 ppm				
	PID	8 ppm				
0825	LEL	4	—	—	4 ft	Northern end of 240 ft length to be replaced
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	4 ppm				
	NH_3	0 ppm				
	PID	8.8 ppm				
0900	LEL	5%	—	—	4 ft	Fans set up at the southern end of the trench to draw fresh air thru trench
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	14 ppm				
	NH_3	0 ppm				
	PID	4 ppm				
0930	LEL	2%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	21 ppm				
	NH_3	0 ppm				
	PID	9 ppm				
1002	LEL	1%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	8 ppm				
	NH_3	0 ppm				
	PID	6 ppm				
1030	LEL	3%	—	—	4 ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	20 ppm				
	NH_3	0 ppm				
	PID					

Highest VOC Reading (breathing zone): — Time: —

Highest Benzene Detector Tube Reading (breathing zone): Non Detect Time: 0814

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 3/31/2008 Page 2 of 2

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1100	LEL	2%		4 ft	
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	8 ppm			
	NH_3	0 ppm			
	PID	0.3 ppm			
1130	LEL	1%		4 ft	North end of excavation as new pipe is being installed
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	23 ppm			
	NH_3	0 ppm			
	PID	11 ppm			
1149	Lunch break				
1222	LEL	2%			
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	3 ppm			
	NH_3	0 ppm			
	PID	No Reading			
1300	LEL	0			South end of trench
	Oxygen	20.8			
	H_2S	0			
	CO	12 ppm			
	NH_3	0 ppm			
	PID	2.0 ppm			
1325	LEL	0%			
	Oxygen	20.8%			
	H_2S	0 ppm			
	CO	13 ppm			
	NH_3	0 ppm			
	PID	1.4 ppm			
1353	Bottom pipe in and workers leaving trench backfilling with #9's before putting in LFG pipe				
1531					
1631	LFG pipe is installed				
		No VOC Readings Sustained - Showing Instantaneous Highs			

Highest VOC Reading (breathing zone): 11 ppm Time: 1130

Highest Benzene Detector Tube Reading (breathing zone): Non Detect Time: 0814

Signature:

ARCADIS

Attachment 2

Deep Trench Photo Log

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Deep Trench
City/State East Sparta, Ohio

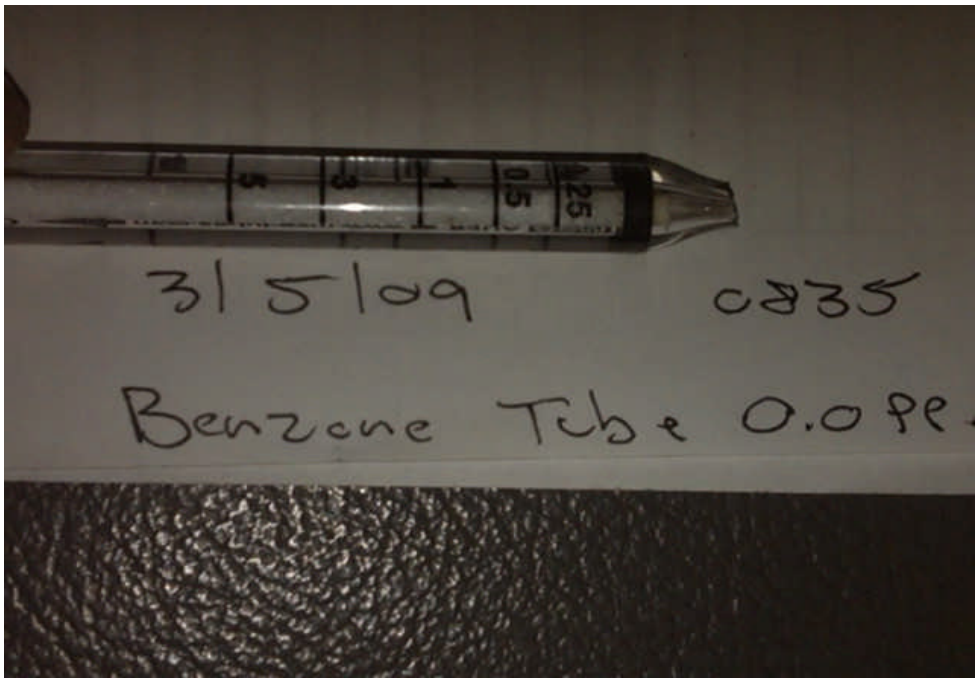


Photo No.: 1

Date: March 5, 2009

Collection Time - 0835
Strokes of the hand pump - 15
Benzene Result - Non Detect

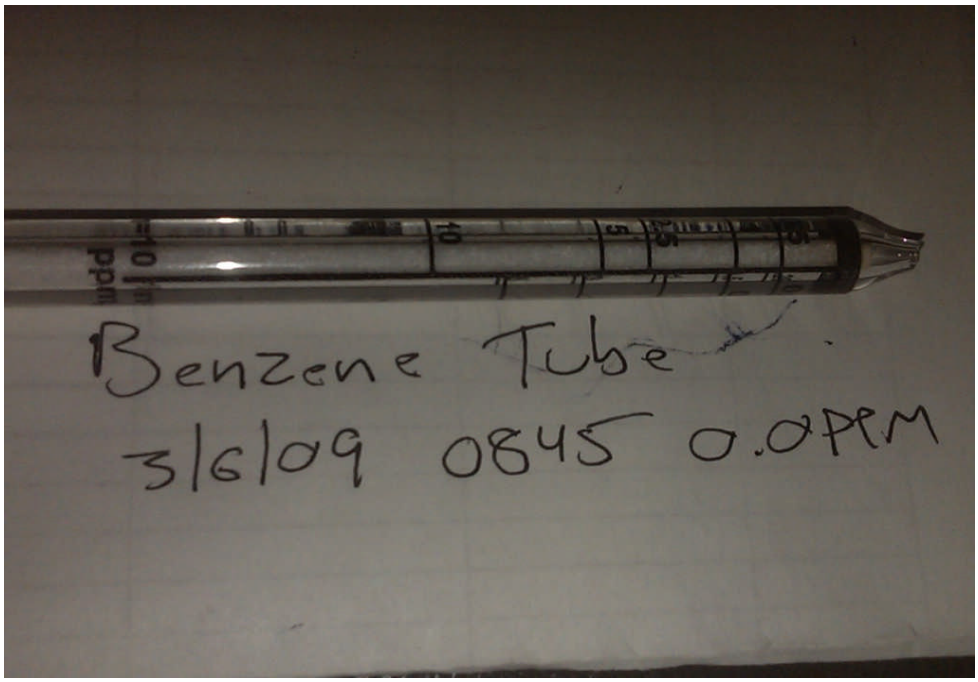


Photo No.: 2

Date: March 6, 2009

Collection Time - 0845
Strokes of the hand pump - 15
Benzene Result - Non Detect

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Deep Trench
City/State East Sparta, Ohio

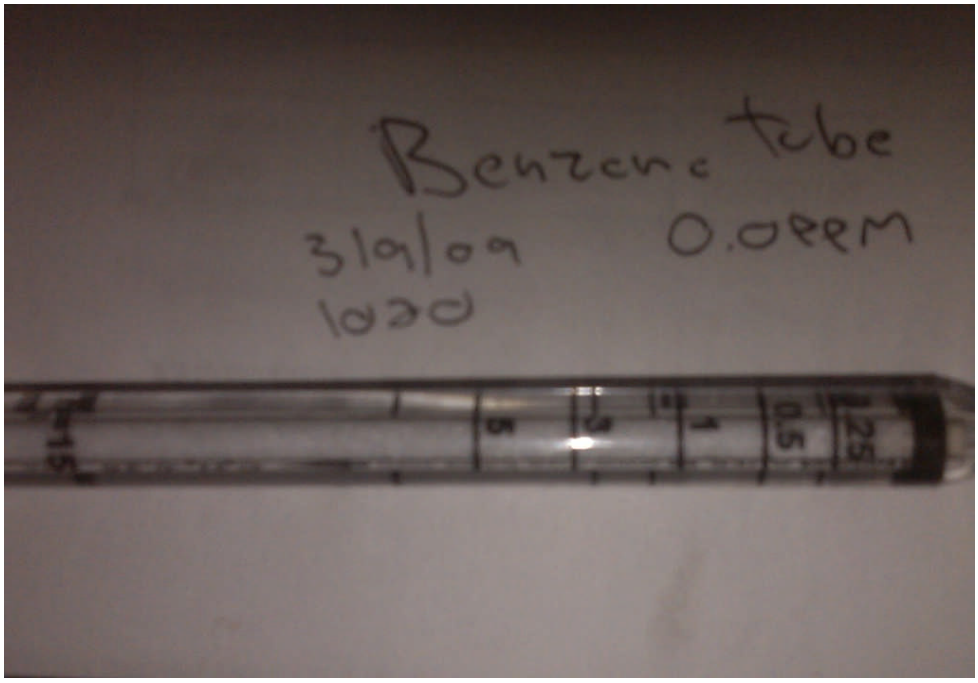


Photo No.: 3

Date: March 9, 2009

Collection Time - 1020
Strokes of the hand pump - 15
Benzene Result - Non Detect

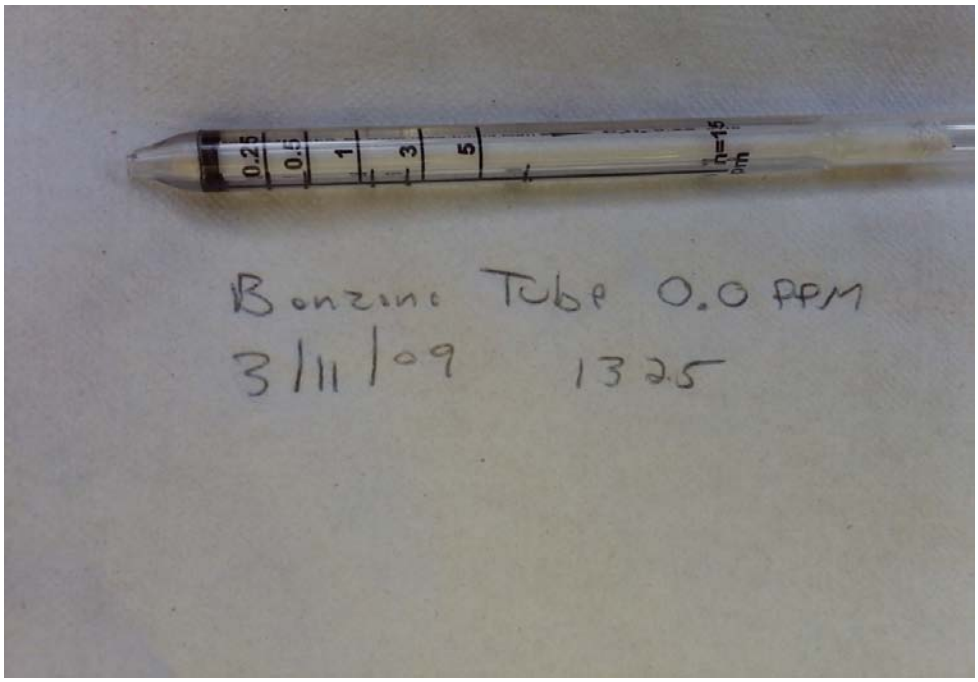


Photo No.: 4

Date: March 11, 2009

Collection Time - 1325
Strokes of the hand pump - 15
Benzene Result - Non Detect

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Deep Trench
City/State East Sparta, Ohio

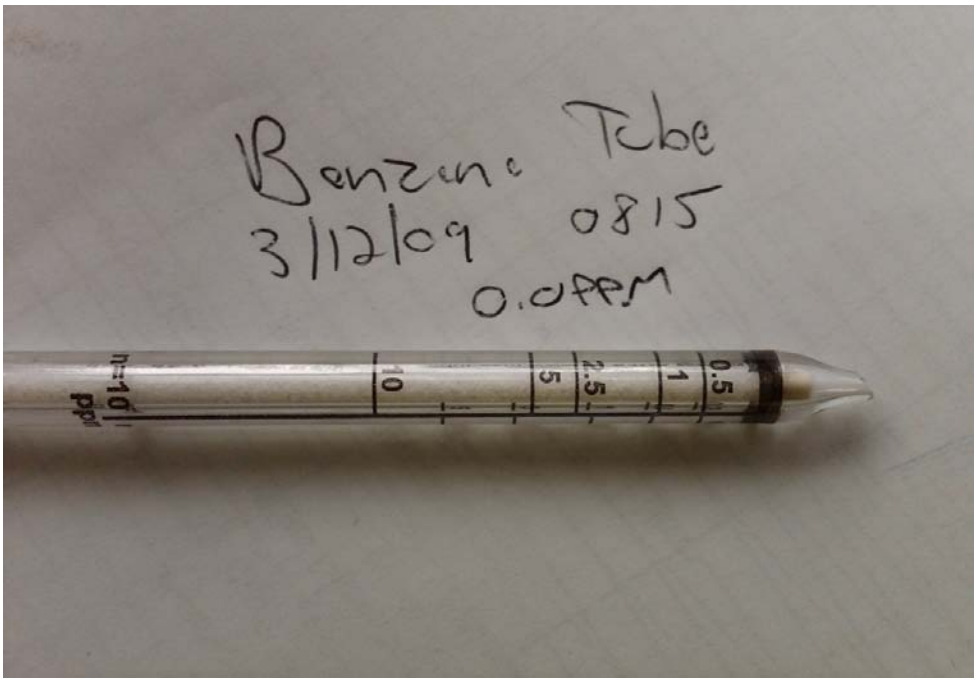


Photo No.: 5

Date: March 12, 2009

Collection Time - 0815
Strokes of the hand pump - 15
Benzene Result - Non Detect

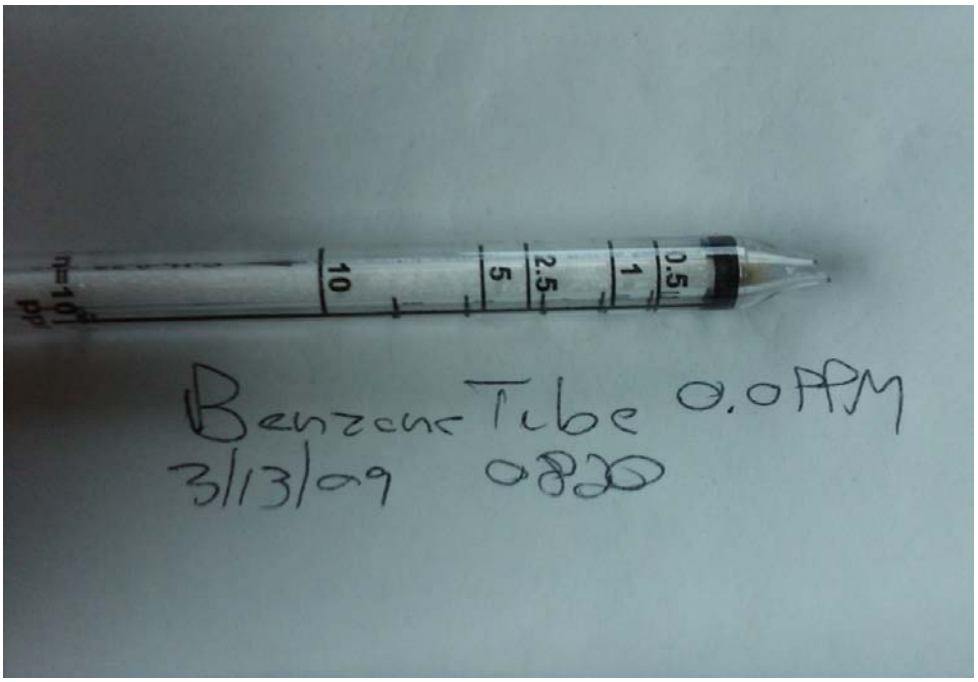


Photo No.: 6

Date: March 13, 2009

Collection Time - 0820
Strokes of the hand pump - 15
Benzene Result - Non Detect

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Deep Trench
City/State East Sparta, Ohio

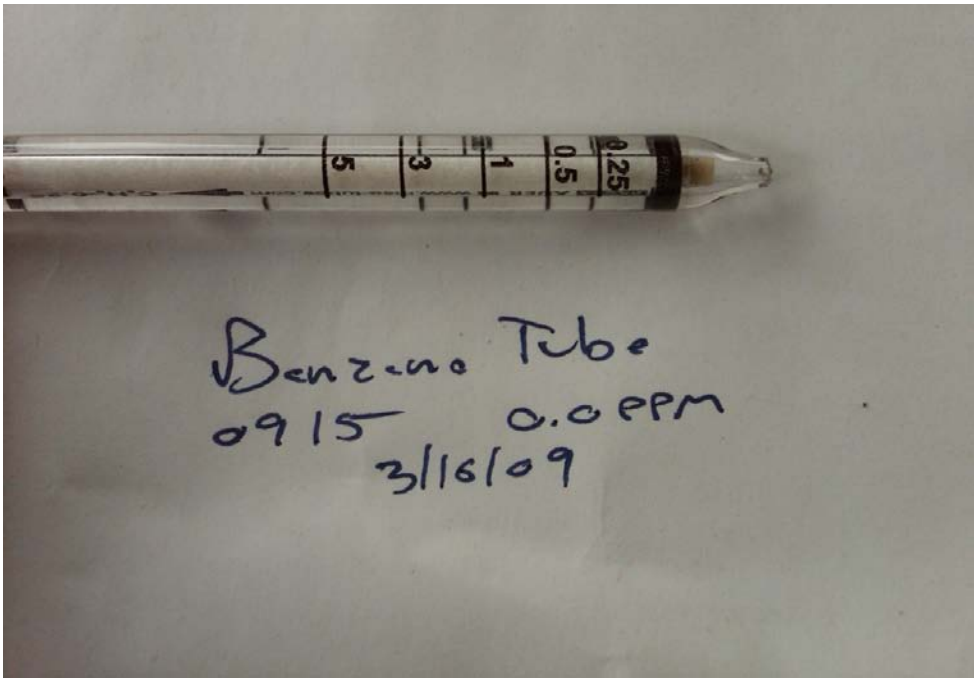


Photo No.: 7

Date: March 16, 2009

Collection Time - 0915
Strokes of the hand pump - 15
Benzene Result - Non Detect

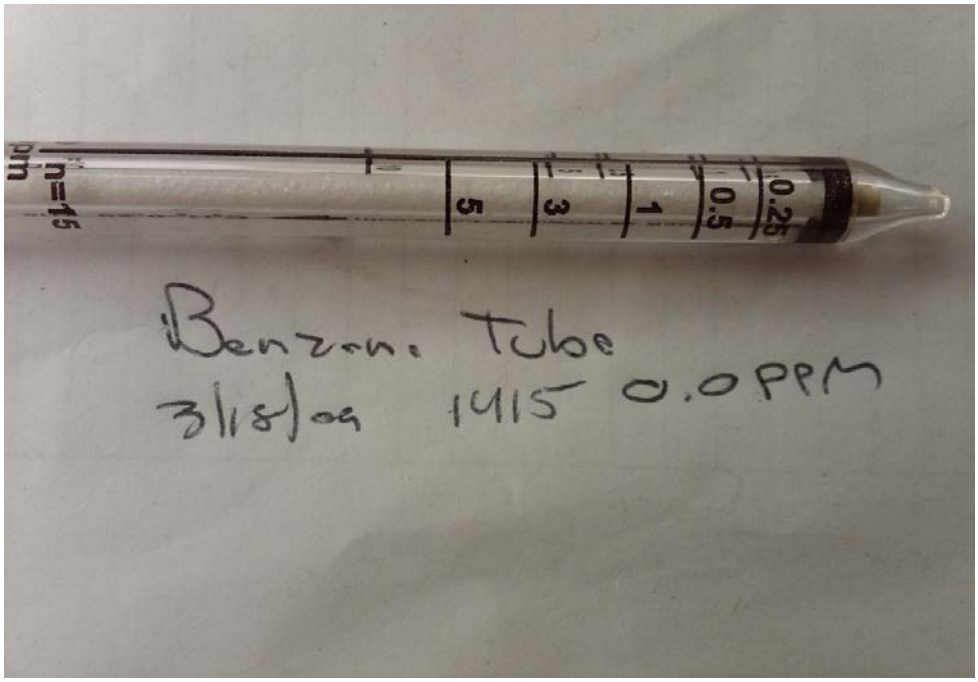


Photo No.: 8

Date: March 18, 2009

Collection Time - 1415
Strokes of the hand pump - 15
Benzene Result - Non Detect

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Deep Trench
City/State East Sparta, Ohio

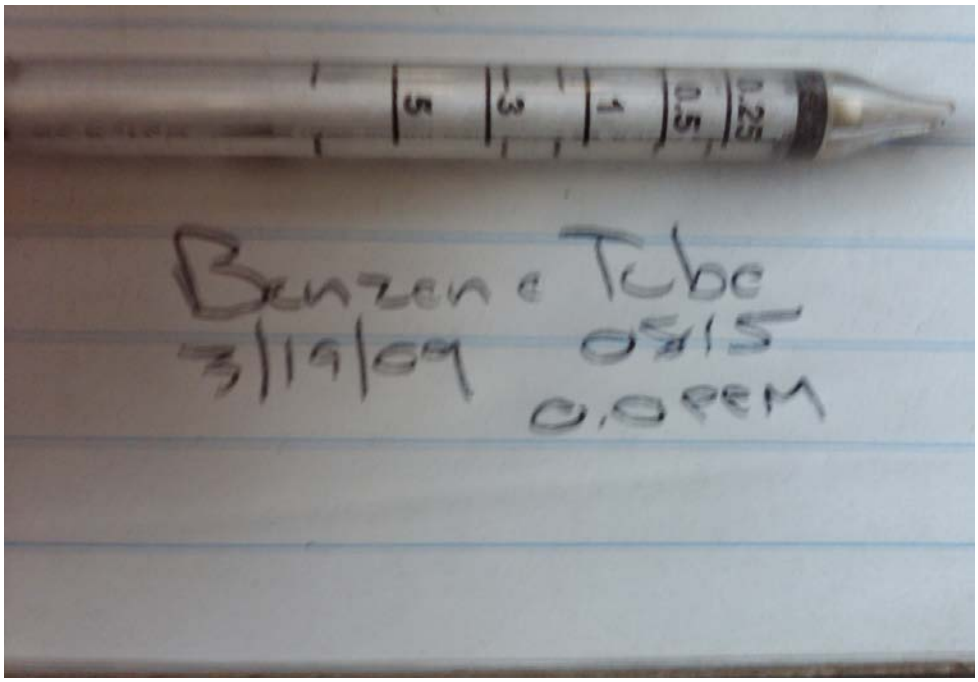


Photo No.: 9

Date: March 19, 2009

Collection Time - 0815
Strokes of the hand pump - 15
Benzene Result - Non Detect

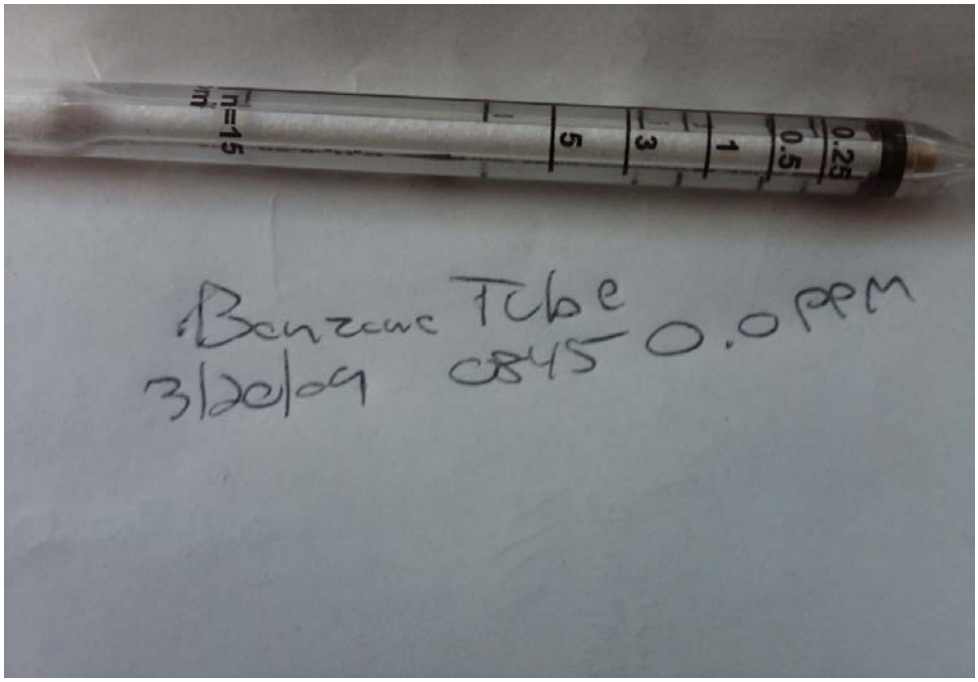


Photo No.: 10

Date: March 20, 2009

Collection Time - 0845
Strokes of the hand pump - 15
Benzene Result - Non Detect

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Deep Trench
City/State East Sparta, Ohio

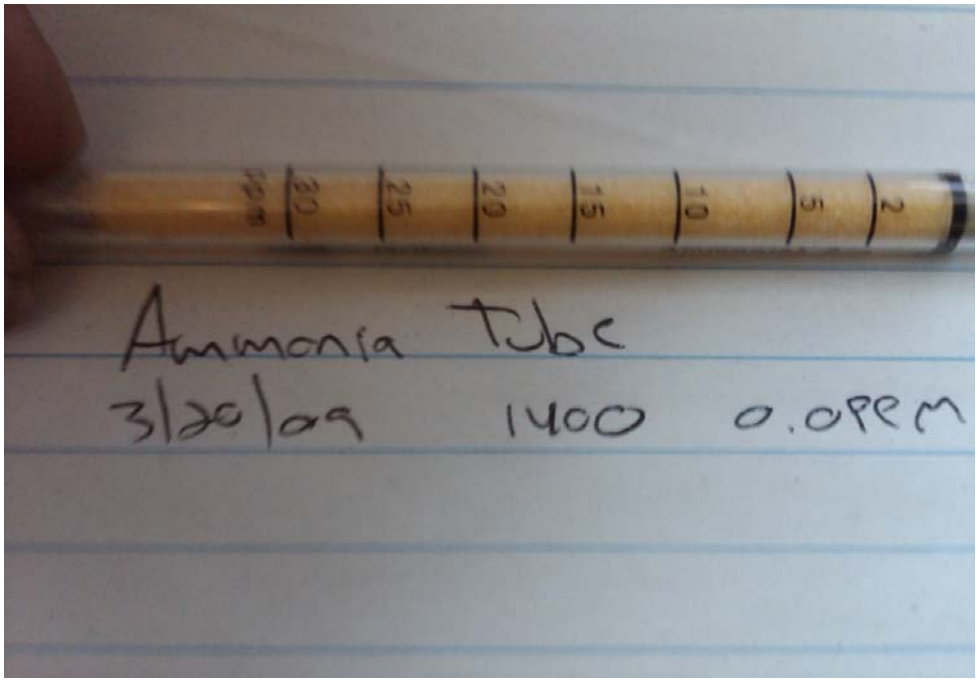


Photo No.: 11

Date: March 20, 2009

Collection Time - 1400
Ammonia Result - Non Detect

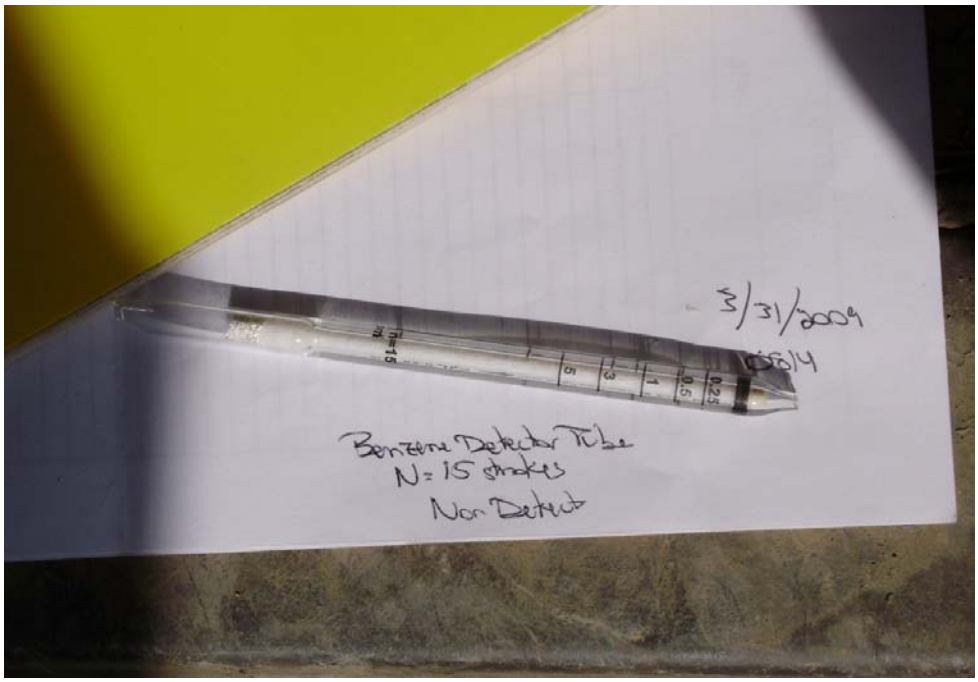


Photo No.: 12

Date: March 31, 2009

Collection Time - 0814
Strokes of the hand pump - 15
Benzene Result - Non Detect

]

ARCADIS
Infrastructure, environment, buildings

ARCADIS
1100 Superior Avenue
Suite 1250
Cleveland
Ohio 44114
Tel 216.781.6177
Fax 216.781.6243
www.arcadis-us.com

Michael Beaudoin
Senior Program Manager
EARTH TECH – AECOM
36133 Schoolcraft Road
Livonia, MI 48150

ENVIRONMENT

Subject:
Summary of Bowl Area Air Monitoring Activities, April 2009 - May 2009, Countywide Recycling and Disposal Facility

Date:
October 14, 2009

Contact:
Brian Howman

Phone:
216.781.6177

Email:
brian.howman@arcadis-us.com

Our ref:
CL000569.0003

Dear Mr. Beaudoin:

ARCADIS conducted air monitoring to ensure the health and safety of workers during the Bowl Area installation of gas wells and conveyance piping activities completed at the Countywide Recycling and Disposal Facility, 3619 Gracemont Street S.W., East Sparta, Ohio. The Bowl Area air monitoring activities started on April 22, 2009 and were completed on May 26, 2009. Air monitoring activities were conducted by ARCADIS employees, Mr. Brian Howman, Mr. Kurt Merkle, and Ms. Tricia Trommer.

Air monitoring instruments utilized were the following: MiniRae 2000 Photoionization Detector (PID) with a 10.6 eV lamp for measuring volatile organic compounds; MSA Orion 4-Gas Meter (oxygen, hydrogen sulfide, carbon monoxide, and lower explosive limit); Biosystems ToxiPro Ammonia (NH_3) Gas Detector; and MSA Hand Pump with MSA Benzene detector tubes.

Each air monitoring instrument was calibrated or calibration checked daily prior to the startup of excavation activities. Instrument calibrations/calibration checks were completed per the manufacturers' specifications using the appropriate calibration span gas for each instrument.

Excavation Activities

During excavation activities the air monitoring instruments were used to monitor the workers breathing zone (approximately shoulder height to waist height) at various locations (upwind, downwind, and crosswind) around the equipment (drilling rig and excavator) at a distance beyond the working reach of the equipment. Entry into the trenches by site workers was not necessary during the installation of the conveyance piping. To ensure the health & safety of the workers, each worker was equipped with

a personnel MSA 4-Gas Meter in addition to the air monitoring conducted by ARCADIS. Maintenance records of the personnel MSA 4-Gas Meters worn by the equipment operators were maintained by each workers employer.

Air Monitoring Action Levels

The Health & Safety Plan for Work Preformed Pursuant to USEPA Settlement Agreement, dated April 29, 2008, established air monitoring action levels that were protective of site workers. The air monitoring action levels that would cause work activities to stop and a re-evaluation of the health and safety controls in place to protect workers' were the following:

- Lower Explosive Limit (LEL) for methane gas – 25 percent (%) or higher.
- Hydrogen sulfide (H_2S) – 10 parts per million (ppm) or higher.
- Oxygen (O_2) – 19.5% or lower.
- Carbon Monoxide (CO) – 25 ppm or higher.
- Ammonia (NH_3) – 25 ppm or higher.
- Volatile Organic Compounds (VOCs) – 1 ppm (sustained) or higher. If benzene is not present the VOC action level is 10 ppm (sustained) or higher.

If air monitoring readings are above the established action levels, several protective measures can be implemented to protect workers. These protective measures include: setting up blowers/fans to move fresh air into and through the work area; and workers wearing supplied air equipment to provide safe breathing air. Both of these protective measures were utilized during work activities at the Bowl Area.

Air Monitoring Results

Air monitoring readings, equipment numbers, location of readings, and general notes were recorded on the ARCADIS Daily Worker Air Monitoring Field Report. Copies of the ARCADIS Daily Worker Air Monitoring Field Reports are included as Attachment 1.

A summary of the air monitoring results for the Deep Trench activities is as follows:

LEL – 0% to 5%.

H2S – 0 ppm

Oxygen – 20.6 % to 21.0%

CO – 0 ppm to 66 ppm.

NH3 – 0 ppm to 21 ppm

VOCs – 0 ppm to 11.7 ppm.

Benzene Detector Tubes

Benzene detector tubes were collected if VOC readings were at or greater than 1 ppm (sustained). The benzene detector tube will indicate the presence of benzene at a concentration of 0.25 ppm. Four (4) benzene detector tubes were collected during Bowl Area activities. Benzene was not detected by any of the benzene detector tubes collected during the Bowl Area activities. A photograph of each benzene detector tube is included in Attachment 2.

Conclusion

The air monitoring did not detect any elevated concentrations of LEL, oxygen, hydrogen sulfide, ammonia, or benzene at or above the action levels established by the Health & Safety Plan for Work Preformed Pursuant to USEPA Settlement Agreement, dated April 29, 2008. The air monitoring detected concentrations of carbon monoxide, and VOCs at concentrations above the action levels. When concentrations were approaching the established action levels, the workers donned supplied air respiratory protection until exiting the work area or ARCADIS air monitoring indicated concentrations were below the established action levels.

Sincerely,

ARCADIS

Brian Howman
Staff Scientist/Project Health & Safety Officer

ARCADIS

Attachment 1

Bowl Area Field Notes

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report**

Owner: Republic Waste Services of Ohio, II Date: 4/22/2019 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM windy, partly cloudy PM windy, partly cloudy

Project: CWRDF Isolation Break Temp.(°F): High mid 40's Low high 30's Rain Yes

ARCADIS PHSO: Brian Hoffman Wind Direction: from SW

Equipment IDs: PID # TB193943 4 Gas Meter # TB185098 Ammonia Gas Meter # TB191598

Quick Draw Hand Pump # N/A Notes/Comments: AEG drilling PW-134R

Time	Parameter	Reading	Location – Deck#	Location – Grid #	Height of Reading	Notes
0818	LEL	0%	—	—	4ft	AEG starting drilling
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0844	LEL	0%	~	~	4ft	Approx 40ft downwind of drilling location
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0911	LEL	0%	~	~	4ft	Approx 25ft crosswind to drilling location
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
0940	LEL	0%	—	~	4ft	Approx 25ft downwind of borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	5 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm				
1000	AEG's driller is getting sustained readings of 30ppm on Carbon Monoxide. AEG driller is going to supplied air					
1030	AEG resumes drilling					
1040	LEL	0%				
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	3 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1109	AEG has hit total depth of 735ft. Stopping drilling and installing 1ft thick gravel backplug for the well to sit on					
1115	LEL	1%	—	—	4ft	Approx 20feet upwind of the boring

Highest VOC Reading (breathing zone): 0.9 ppm Time: 0911

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1129	AEG is leaving for lunch break					Morning Summary: Ammonia meter TWA 0 ppm
						4 Gas Meter: H_2S: TWA 0 ppm
						CO: TWA ~~0 ppm~~ 1 ppm
1226	AEG making preparations to install well					PID: TWA 0.2 ppm
1310	AEG installing well					
1312	LEL	1%	—	-	4 ft.	Approx 5 feet downwind of borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	5 ppm				
	NH_3	0 ppm				
	PID	0.7 ppm				
1417	Gravel & bentonite seal installed. Borehole is soaked off. within 10 ft of surface.					
1430	AEG is decommissioning PW-134					

Highest VOC Reading (breathing zone): 0.9 ppm Time: 0911

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 4/23/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM slight breeze cold PM warm, windy

Project: CWRDF Isolation Break Temp.(°F): High ____ Low low 40's Rain No

ARCADIS PHSO: Brian Hawman Wind Direction: AM: out of west PM: out of west

Equipment IDs: PID # TB1933945 4 Gas Meter # TB1850913 Ammonia Gas Meter # TB1915913

Quick Draw Hand Pump # N/A Notes/Comments: PW-133R & PW-

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0732	LEL	0%	—	—	4 ft	Approx 15 feet downwind of borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
0758	LEL	0%	—	—	4ft	
	Oxygen	20.8				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0830	LEL	0%			4ft	Getting CO readings of 10ppm from immediately above drill with p.s. AEG driller's 4 Gas Meter readings are with normal ranges - no alarms have gone off.
	Oxygen	20.8				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0858	LEL	0%	—	—	4ft	Approx 15 ft crosswind to borehole - winds have shifted - now out of the NW
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0909	AEG has reached total depth on this gas well.					
	Installing gravel layer					
1020	Installing well					
1025	LEL	0%				
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	2 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm				
1050	Gas well PW-133R installed, AEG putting in gravel pack. AEG moving equipment to next gas well location (PW-158R)					
1203	AEG is taking lunch break					

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1025

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature: [signature]

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 9/23/2009 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1316	AEG- begins drilling PW-158R					
1324	LEL	0%			4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1403	LEL	0%	—	—	4ft	Approx. 30ft downwind of borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	BH ~~5~~ 5 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1438	LEL	0%	—	—	4ft	Approx 30ft crosswind to the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1512	LEL	0%	—	—	4ft	Approx 30ft crosswind to the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	3 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1547	LEL	0%	—	—	4ft	Approx. 30ft downwind of borehole Drillers 4 Gas Meter is reading within normal ranges, no alarms.
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	4 ppm				
	NH_3	0 ppm				
	PID	0.7 ppm				
1615	LEL	0%	—	—	4ft	Approx 30ft crosswind to the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	2 ppm				
	NH_3	0 ppm				
	PID	0.4 ppm				
1644	LEL	0%	—	—	4ft	AEG is installing the well. Getting some high instantaneous readings on CO but nothing sustained (50ppm to 55ppm)
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	3 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1715	LEL	0%	—	—	4ft	
	Oxygen	20.8%				

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1025

Highest Benzene Detector Tube Reading (breathing zone): — Time: —

Signature:

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 4/23/2004 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
	H_2S	0 ppm				
	CO	5 ppm				
	NH_3	0				
	PID	0.3 ppm				
1745	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	3 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.8 ppm Time: 1025

Highest Benzene Detector Tube Reading (breathing zone): — Time: —

Signature: [signature]

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 4/21/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM warm, windy PM warm, windy

Project: CWRDF Isolation Break Temp.(°F): High mid 70's Low low 50's Rain NR

ARCADIS PHSO: Brian Hamman Wind Direction: From the SE

Equipment IDs: PID # B193948 4 Gas Meter # B185501B Ammonia Gas Meter # B191597B

Quick Draw Hand Pump # B17132B Notes/Comments: PW-141R and PW-138R

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0730	LEL	0%	—	—	4ft	AEG has begun drilling PW-
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0818	LEL	0%	—	—	4ft	Approx 30ft downwind of borehole
	Oxygen	20.8%				Drillers cab is directly downwind of
	H_2S	0 ppm				drill cuttings (trash). Collect Benzene
	CO	0 ppm				detector tube: 0822 to 0835, N=15 strokes,
	NH_3	0 ppm				result - No Detect, PID STEL reading (15 min avg)
	PID	6.5 ppm				was 2.7ppm.
0840	AEG driller is getting sustained CO readings (20 to 25ppm) in the cab. Rearrange fans around the					
	borehole to try and blow gases away from					
	cab better					
0850	AEG driller is now getting sustained CO readings of 3 to 5 ppm.					
0905	AEG driller is getting sustained reading again over 25ppm. AEG is bringing another fan to set by					
	the borehole to assist in ventilating the area					
0918	Additional fans set up to move air/gasses away from drillers cab					
0921	CO reading at 3 to 5 ppm in drillers cab					
0935	LEL	0%	—	—	4ft	Approx 30 ft crosswind to the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1001	LEL	0%	—	—	4ft	Approx. 30 ft upwind of drill rig
	Oxygen	20.8%				winds have gotten stronger
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1030	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				

Highest VOC Reading (breathing zone): 6.5 ppm Time: 0818

Highest Benzene Detector Tube Reading (breathing zone): Non Detect Time: 0835

Signature:

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
	NH_3	0 ppm				
	PID	0.0 ppm				
1103	LEL	0%	—	—	4ft	Approx. 50 ft downwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1115	AECOM has reached target depth, begin well installation					
1130	LEL	0%				
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	12 ppm				
	NH_3	0 ppm				
	PID	2.3 ppm				
1145	Pipe is in the hole					
1255	Gravel, bentonite seal, soil installed in the borehole annulus					
1415	AECOM is starting PW-138R					
1425	LEL	0%				
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1455	LEL	0%	—	—	4ft	Extremely windy - winds have increased
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1508	LEL	0%	—	—	4ft	Approx 40 ft downwind of borehole and drill cuttings
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	4 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm				
1540	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1610	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				

Highest VOC Reading (breathing zone): 6.5 ppm Time: 0818

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 0835

Signature:

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 4/24/2006 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
CO	0 ppm		—	—	4 ft	
NH_3	0 ppm					
PID	0.0 ppm					
1615	AEG has reached total depth for PW-138R, ~~Monitoring~~					
1732	well material and gravel packs are installed					

Highest VOC Reading (breathing zone): 6.5 ppm Time: 0818

Highest Benzene Detector Tube Reading (breathing zone): Non-Detect Time: 0835

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 4/27/2009 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM sunny, windy PM sunny, windy

Project: CWRDF Isolation Break Temp.(°F): High high 80's Low high 60's Rain No

ARCADIS PHSO: Brian Hawman Wind Direction: from the south

Equipment IDs: PID # B19394B 4 Gas Meter # B185098 Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: Q1R and W1R2

Time	Parameter	Reading	Location – Deck#	Location – &Grid #	Height of Reading	Notes
0737	LEL	0%	—	—	4ft	Approx 40 ft upwind of drilling location
	Oxygen	20.9%				BH ~~PW~~ Q1R. Drilling has not ~~start~~ started yet.
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0749	REC has begun drilling					
0805	LEL	0%	—	—	4ft	Approx 45 feet downwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	2 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
0855	LEL	0%	—	—	4ft	Approx 30 ft crosswind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
0904	LEL	0%	—	—	4ft	Approx. 40 ft downwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	7 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
0936	LEL	0%	—	—	4ft	Approx. 30 ft crosswind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	1 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1000	LEL	0%	—	—	4ft	Approx. 20 ft upwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.7 ppm Time: 1510 and 1800

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 4/27/2009 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1015	AEG has reached total depth on Q2R. Beginning well installation.					
1115	LEL	0%				
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	2 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1145	Gravel pack bentonite seal installed. Q2R is completed					
1209	AEG takes lunch break					
1307	AEG is setting up on next location.	W1R2				
1328	AEG begins drilling					
1341	LEL	0%	—	—	4ft	Approx. 45 feet downwind of borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1408	LEL	0%				
	Oxygen	20.9%				
	H_2S	0 ppm				
	CO	4 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm	—	—	4ft	Approx. 15 ft downwind of the borehole
1438	LEL	0%	—	—	4ft	Approx. 30 ft downwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	4 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1510	LEL	0%	—	—	4ft	Same as above
	Oxygen	21.0%				
	H_2S	0 ppm				
	CO	4 ppm				
	NH_3	0 ppm				
1540	PID	0.7 ppm				
1540	LEL	0%	—	—		
	Oxygen	20.9%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1552	AEG hits total depth on W1R2					
1636	10 foot bentonite seal and gravel pack installed					
1715	AEG removing vacuum box and putting working grate down					
1748	AEG set up additional fans by the borehole to ventilate the top of the borehole while installing pipe					

Highest VOC Reading (breathing zone): 0.7 ppm Time: 1510 and 1800

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 4/27/2009 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1755	LEL	0%	—	—	4ft	Approx. 30 ft downwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	28 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1800	LEL	0%	—	—	4ft	Approx. 30 ft downwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	5 ppm				
	NH_3	0 ppm				
	PID	0.7 ppm				

Highest VOC Reading (breathing zone): 0.7 ppm Time: 1510 and 1800

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 4/29/2009 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM overcast breezy PM overcast breezy

Project: CWRDF Isolation Break Temp.(°F): High low 50's Low mid 40's Rain No

ARCADIS PHSO: Brian Hawman Wind Direction: out of the East

Equipment IDs: PID # B1A394B 4 Gas Meter # B1850913 Ammonia Gas Meter # B1915913

Quick Draw Hand Pump # N/A Notes/Comments: PW-108R

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0900	AEG is set up a beginning drilling at PW-108R					
0902	LEL	0	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0930	AEG driller is getting elevated LEL readings that are below alarm levels but the ARCADIS meter is not detecting any LEL. Contact Josh Caron (AEG) to bring up another 4 Gas Meter for his drillers					
0935	LEL	0%	—	—		
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	4 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0945	AEG brings replacement 4 Gas Meter.					
0950	Readings inside the driller's cab are normal					
1000	LEL	0%	—	—	4ft	Approx. 20 ft crosswind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	5 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1030	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	11 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
1044	AEG reaches total depth on PW-108R					
1113	AEG has installed the 10ft gravel bottom plug					
1204	AEG is prepping to install well					
1220	LEL	0%	—	—	4ft	
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	3 ppm				

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1030

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 4/29/2009 Page 2 of 2

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
	NH_3	0 ppm				
	PID	0.4 ppm				
1248	PW-108R is installed AEG drill crew taking lunch					
1330	AEG drill crew is moving equipment to next location					
1420	AEG drill crew informs me that they will not be drilling anymore today. They will be building benches.					

Highest VOC Reading (breathing zone): 0.9 ppm Time: 1030

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 4/30/2009 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM overcast PM

Project: CWRDF Isolation Break Temp.(°F): High mid 60's Low mid 50's Rain yes

ARCADIS PHSO: Brian Hexxman Wind Direction: out of the East

Equipment IDs: PID # 319394B 4 Gas Meter # 318509B Ammonia Gas Meter # 319159B

Quick Draw Hand Pump # N/A Notes/Comments: PW-115R

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
0900	AEG begins drilling PW-115R					
0908	LEL	0%	—	—	4 ft	Approx. 25 ft downwind of borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	3 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0930	AEG- driller is getting CO readings of 17 ppm in the cab. Setting up additional fans around the drilling to move air around the cab.					
0938	LEL	0%	—	—	4 ft	Approx 25 ft downwind of borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	4 ppm				
	NH_3	0 ppm				
	PID	0.8 ppm				
0950	AEG- driller is not getting any CO readings - everything is 0 ppm					
0958	LEL	0%	—	—	4 ft	Approx 30 ft downwind of borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	6 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1023	LEL	0%	—	—	4 ft	Approx 35 ft upwind of borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1055	LEL	0%	—	—	4 ft	Approx 40 ft upwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				* 4 Gas Meter in drillers cab is still reading 0 ppm for Carbon Monoxide
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1124	LEL	0%	—	—	4 ft	Approx 40 ft upwind of the borehole
	Oxygen	20.8%				

Highest VOC Reading (breathing zone): 0.8 ppm Time: 0938

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break **ARCADIS Daily Worker Air Monitoring Field Report (cont.)**

Date: 4/30/2009 Page 2 of 2

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1133	Total Depth for MW-105-R has been reached. TD @					
1244	Pipe installed and first bag of gravel pack installed					
1540	well is installed. AECOM is taking lunch breaks					

Highest VOC Reading (breathing zone): 0.8ppm Time: 0958

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 5/4/2009 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM overcast, breezy PM sunny, breezy

Project: CWRDF Isolation Break Temp.(°F): High low 70's Low high 50's Rain No

ARCADIS PHSO: Brian Hawman Wind Direction: AM: out of the East PM: out of the East

Equipment IDs: PID # B19394B 4 Gas Meter # B19509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1000	AEG begins	drilling				
	LEL	1%	—	—	4ft	Approx. 15 ft upwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
1005	LEL	1%	—	—	4 ft	AEG has only drilled approx. 2 ft, backing off and the driller will be going onto supplied air
	Oxygen	20.8%				
	H_2S	1 ppm				
	CO	66 ppm				
	NH_3	0 ppm				
	PID	0.1 ppm				
1051	AEG resumes	drilling on supplied air				
1110	LEL	0%	—	—	4 ft	Approx. 75 ft crosswind/downwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	6 ppm				
	NH_3	0 ppm				
	PID	0.5 ppm				
1140	LEL	0 ~~ppm~~ %	—	—	4 ft	Approx. 50 ft upwind of borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	3 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1145	AEG hits total depth of 38 feet					
1245	AEG has installed pipe. Driller and driller's helper are on supplied air					
1348	AEG is taking lunch break					
1430	AEG back from lunch					
1450	LEL	1%	—	—	4ft	Approx 10ft downwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	8 ppm				
	NH_3	0 ppm				

Highest VOC Reading (breathing zone): ~~0.7 ppm BH~~ 5.9 ppm Time: ~~1450 BH~~ 1005

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Time	Parameter	Reading	Location – Deck# & Grid #		Height of Reading	Notes
	PID	0.7 ppm				
1520	LEL	0%	—	—	4 ft	Approx. 15 ft crosswind of the borehole as gravel pack is being installed
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	10 ppm				
	NH_3	0 ppm				
	PID	0.3 ppm				
1535	LEL	0%	—	—	4 ft	Approx. 15 ft crosswind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	7 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				
1630	LEL	0%	—	—	4 ft	Well installed and annules sealed
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	4 ppm				
	NH_3	0 ppm				
	PID	0.2 ppm				

Highest VOC Reading (breathing zone): 0.9 ppm ~~0.7 ppm~~ BH Time: 1005 ~~1450~~ BH

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break ***ARCADIS Daily Worker Air Monitoring Field Report***

Owner: Republic Waste Services of Ohio, II Date: 5/5/2009 Shift: Day Page 1 of 2

Location: East Sparta, Ohio Weather: AM sunny, breezy PM partly cloudy, breezy

Project: CWRDF Isolation Break Temp.(°F): High low 70's Low mid 50's Rain No

ARCADIS PHSO: Brian Hawman Wind Direction: out of the East

Equipment IDs: PID # B19394B 4 Gas Meter # B18509B Ammonia Gas Meter # B19159B

Quick Draw Hand Pump # N/A Notes/Comments: C1R2 & B1R

Time	Parameter	Reading	Location – Deck#	&Grid #	Height of Reading	Notes
0730	LEL	0%	—	—	4ft	AEG has started drilling
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0800	LEL	0%	—	—	4ft	Approx 25 ft crosswind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				
0830	LEL	1%	—	—	4ft	Approx. 50 ft downwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	8 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
0840	AEG reaches target depth for setting the well					
0920	10 ft bottom gravel pack set, AEG will let the well set for a hour					
1025	Pipe set					
1102	C1R2 is completed					
1200	Wrap back					
1300	AEG back from lunch					
1441	AEG is drilling B1R					
1500	LEL	0%	—	—	4ft	Approx. 35 ft downwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	6 ppm				
	NH_3	0 ppm				
	PID	0.9 ppm				
1530	LEL	0%	—	—	4ft	Approx. 30 ft upwind of the borehole
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	0 ppm				
	NH_3	0 ppm				
	PID	0.0 ppm				

Highest VOC Reading (breathing zone): 0.9 ppm Time: 0830 and 1500

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 5/5/2009 Page 2 of 2

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1603	DEG has reached total depth		at B1R			
1717	well pipe is installed					
	LEL	0%	—	—	4ft	Approx. 10ft downwind/crosswind of the borehole.
	Oxygen	20.8%				
	H_2S	0 ppm				
	CO	4 ppm				
	NH_3	0 ppm				
	PID	0.6 ppm				
1808	B1R is completed					

Highest VOC Reading (breathing zone): 0.9 ppm Time: 0830 and 1500

Highest Benzene Detector Tube Reading (breathing zone): N/A Time: N/A

Signature:

ARCADIS

Daily Log

Project No.: 88 Acre Parcel Page 1 of 1

Site Location: Republic - County Wide Landfill

Prepared By: Kurt Merkle

Date	Time	Description of Activities
5/19/2009	0700-0715	Calibrated Meters
	0715-1230	Bowl gas collection pipe installation - H&S Oversight and Air monitoring
	1230-1300	Lunch
	1300-1800	5AB - Oversight and Air monitoring of leachate pipe excavation and repair
	1800-1815	Daily Log, Air Monitoring Logs
Total Hours		**Equipment onsite** - PID, 4 Gas meter, Ammonia Meter, Two Hand pumps
10.75		1 Truck
		Employee Signature:

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 5/19/09 Shift: Day Page: 1 of 3

Location: East Sparta, Ohio Weather: AM 42°F Clear PM

Project: CWRDF Isolation Break Temp (°F): High Low Rain

ARCADIS PESO: Kurt Merkle Wind Direction:

Equipment IDs: PID # 819394B 4 Gas Meter # 815509B Ammonia Gas Meter # N/A 590B

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location - Deck# & Grid #	Height of Reading	Notes
0930	LEL	0 %		4'	Gas collection line
	O_2	20.9 %			Northeast east
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1000	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	3 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1030	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	7 PPM			
	NH_3	0 PPM			
	VOC	0.2 PPM			
1045	LEL	0 %			RxN odor encountered
	O_2	20.9 %			
	H_2S	3 PPM			
	CO	15 PPM			
	NH_3	0 PPM			Benzene Tube pulled @ 1045 0.0 PPM
	VOC	9.7 PPM			
1100	LEL	0 %			workers kept upwind
	O_2	20.9 PPM			until readings lowered
	H_2S	0 PPM			
	CO	23 PPM			
	NH_3	0 PPM			
	VOC	11.7 PPM			
1105	LEL	1 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	32 PPM			
	NH_3	0 PPM			
	VOC	9.3 PPM			

Highest VOC Reading (breathing zone): 9.7 PPM Time: 1045

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 1045

Signature:

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1130	LEL %	0			4ft	
	O_2 %	20.9				
	H_2S PPM	0				
	CO PPM	22				
	NH_3 PPM	0				
	VOC PPM	3.4				
1145	LEL %	0				
	O_2 %	20.9				
	H_2S PPM	0				
	CO PPM	17				
	NH_3 PPM	0				
	VOC PPM	1.8				
1200	LEL %	0				
	O_2 %	20.9				
	H_2S PPM	0				
	CO PPM	26				
	NH_3 PPM	0				
	VOC PPM	0.7				
1230	LEL %	0				
	O_2 %	20.9				
	H_2S PPM	0				
	CO PPM	15				
	NH_3 PPM	0				
	VOC PPM	0.8				
1300	LEL %	0				
	O_2 %	20.9				
	H_2S PPM	0				
	CO PPM	20				
	NH_3 PPM	0				
	VOC PPM	0.4				
1330	LEL %	0				
	O_2 %	20.9				
	H_2S PPM	0				
	CO PPM	13				
	NH_3 PPM	0				
	VOC PPM	0.5				
1400	LEL %	0				
	O_2 %	20.9				
	H_2S PPM	0				
	CO PPM	7				
	NH_3 PPM	0				
	VOC PPM	0.2				

Highest VOC Reading (breathing zone): 9.7PPM Time: 1045

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 1045

Signature:

VOC's, H_2S, SIG

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 5/19/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #		Height of Reading	Notes
1430	LEL	0 %			4ft	
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	12 PPM				
	NH_3	0 PPM				
	VOC	0.8 PPM				
1500	LEL	0 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	10 PPM				
	NH_3	21 PPM				
	VOC	0.6 PPM				
1530	LEL	0 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	9 PPM				
	NH_3	0 PPM				
	VOC	0.2 PPM				
1600	LEL	0 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	13 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1630	LEL	0 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	2 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1700	LEL	0 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
1730	LEL	0 %				
	O_2	20.9 %				
	H_2S	0 PPM				
	CO	0 PPM				
	NH_3	0 PPM				
	VOC	0.0 PPM				
						Trench backfilled done @ 1800

Highest VOC Reading (breathing zone): 9.7 PPM Time: 1645

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: _____

Signature: _____

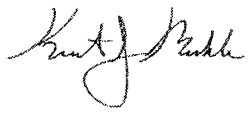
ARCADIS

Daily Log

Project No.: 88 Acre Parcel Page 1 of 1

Site Location: Republic - County Wide Landfill

Prepared By: Kurt Merkle

Date	Time	Description of Activities
5/20/2009	0700-0715	Calibrated Meters
	0715-1245	Bowl gas collection pipe installation - H&S Oversight and Air monitoring
	1245-1315	Lunch
	1315-1845	5AB - Oversight and Air monitoring of leachate pipe excavation and repair
	1845-1900	Daily Log, Air Monitoring Logs
Total Hours		**Equipment onsite** - PID, 4 Gas meter, Ammonia Meter, Two Hand pumps
11.50		1 Truck
		Employee Signature:
		

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio II Date: 5/20/09 Shift: Day Page: 1 of 3

Location: East Sparta, Ohio Weather: AM 42°F Clear PM

Project: CWRDF Isolation Break Temp (°F): High ____ Low ____ Rain ____

ARCADIS PHSO: Kurt Merkle Wind Direction: ____

Equipment IDs: PID # B153948 4 Gas Meter # B185509B Ammonia Gas Meter # B/P/59B

Quick Draw Hand Pump # N/A Notes/Comments: ____

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0830	LEL	0 %		4ft	
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
0900	LEL	0 %			Liner cut back on South side of boat, heavy odor Benzene Tube pulled @ 0915
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	4 PPM			
	NH_3	0 PPM			
	VOC	4.7 PPM			
0930	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	6 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1000	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	2 PPM			
	NH_3	0 PPM			
	VOC	1.5 PPM			
1030	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			
1100	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			

Highest VOC Reading (breathing zone): 4.7PPM Time: 0900

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0915

Signature: Kurt Merkle

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 5/20/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1130	LEL	0 %		4ft	
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	4 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1200	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	3.0 PPM			
1230	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	7 PPM			
	NH_3	0 PPM			
	VOC	0.4 PPM			
1300	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	2 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
1330	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	3 PPM			
	NH_3	0 PPM			
	VOC	0.1 PPM			
1400	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1430	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 4.7PPM Time: 0900

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0915

Signature:

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 8/20/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1500	LEL	0 %		4.5'	
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	2 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			
1530	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1600	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	2.1 PPM			
1630	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	6 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1700	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	3 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1730	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	11 PPM			
	NH_3	0 PPM			
	VOC	1.0 PPM			
1800	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	7 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 4.7 PPM Time: 0900

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 09/5

Signature:

ARCADIS

Daily Log

Project No.: 88 Acre Parcel Page 1 of 1

Site Location: Republic - County Wide Landfill

Prepared By: Kurt Merkle

Date	Time	Description of Activities
5/21/2009	0700-0715	Calibrated Meters
	0715-1245	Bowl gas collection pipe installation - H&S Oversight and Air monitoring
	1245-1315	Lunch
	1315-1845	5AB - Oversight and Air monitoring of leachate pipe excavation and repair
	1845-1900	Daily Log, Air Monitoring Logs
Total Hours		**Equipment onsite** - PID, 4 Gas meter, Ammonia Meter, Two Hand pumps
11.50		1 Truck
		Employee Signature:

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 5/21/07 Shift: Day Page 1 of 3

Location: East Sparta, Ohio Weather: AM PM

Project: CWRDF Isolation Break Temp (°F): High Low Rain

ARCADIS PHSO: Kurt Meckle Wind Direction:

Equipment IDs: PID # 583193945 4 Gas Meter # 583185098 Ammonia Gas Meter # 583191598

Quick Draw Hand Pump # N/A Notes/Comments:

Time	Parameter	Reading	Location - Deck# &Grid #	Height of Reading	Notes
0830	LEL	5 %		4ft	
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	16 PPM			
	NH_3	0 PPM			
	VOC	8.4 PPM			
0900	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	9 PPM			
	NH_3	0 PPM			
	VOC	5.1 PPM			
0930	LEL	0 %			
	O_2	20.8 %			
	CO	7 PPM			
	H_2S	0 PPM			
	NH_3	0 PPM			
	VOC	3.5 PPM			
1000	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	4 PPM			
	NH_3	0 PPM			
	VOC	2.2 PPM			
1030	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	5 PPM			
	NH_3	0 PPM			
	VOC	1.2 PPM			
1100	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	3 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			

Pull 1 Benzene Tube @ 0840 0.0 PPM

Highest VOC Reading (breathing zone): 8.4PPM Time: 0830

Highest Benzene Detector Tube Reading (breathing zone): 0.0PPM Time: 0840

Signature: Kurt J. Meckle

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 5/21/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1130	LEL	0 %		4ft	
	O2	20.8 %			
	H2S	0 PPM			
	CO	0 PPM			
	NH3	0 PPM			
	VOC	0.0 PPM			
1223	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	11 PPM			
	NH3	0 PPM			
	VOC	0.3 PPM			
1230	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	3 PPM			
	NH3	0 PPM			
	VOC	1.7 PPM			
1300	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	0 PPM			
	NH3	0 PPM			
	VOC	1.0 PPM			
1330	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	3 PPM			
	NH3	0 PPM			
	VOC	0.3 PPM			
1400	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	0 PPM			
	NH3	0 PPM			
	VOC	0.6 PPM			
1430	LEL	0 %			
	O2	20.8 %			
	H2S	0 PPM			
	CO	0 PPM			
	NH3	0 PPM			
	VOC	2.1 PPM			

Highest VOC Reading (breathing zone): 8.4 PPM Time: 0830

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0840

Signature: [signature]

Isolation Break — *ARCADIS Daily Worker Air Monitoring Field Report (cont.)*

Date: 5/21/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1500	LEL	0 %		4ft	
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	4 PPM			
	NH_3	0 PPM			
	VOC	0.5 PPM			
1530	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	6 PPM			
	NH_3	0 PPM			
	VOC	0.7 PPM			
1600	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	8 PPM			
	NH_3	0 PPM			
	VOC	0.4 PPM			
1630	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	3 PPM			
	NH_3	0 PPM			
	VOC	0.3 PPM			
1700	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.1 PPM			
1730	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1800	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): 8.4PPM Time: 0530

Highest Benzene Detector Tube Reading (breathing zone): 0.0 PPM Time: 0840

Signature: [signature]

ARCADIS

Daily Log

Project No.: 88 Acre Parcel Page 1 of 1

Site Location: Republic - County Wide Landfill

Prepared By: Kurt Merkle

Date	Time	Description of Activities
5/22/2009	0700-0715	Calibrated Meters
	0715-1000	Bowl gas collection pipe installation - H&S Oversight and Air monitoring
	1000-1015	Daily Log, Air Monitoring Logs
Total Hours		**Equipment onsite** - PID, 4 Gas meter, Ammonia Meter, Two Hand pumps
3.25		1 Truck
		Employee Signature:
		Kurt J Merkle

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II Date: 5/22/09 Shift: Day Page 1 of

Location: East Sparta, Ohio Weather: AM PM

Project: CWRDF Isolation Break Temp (°F): High Low Rain

ARCADIS PRSO: Kurt Markle Wind Direction:

Equipment IDs: PID # B/93948 4 Gas Meter # B/85098 Ammonia Gas Meter # B/91593

Quick Draw Hand Pump # NA Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
0732	LEL	0 %		4ft	
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
0800	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
0830	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.1 PPM			
0900	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.1 PPM			
0930	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.2 PPM			
1000	LEL	0 %			
	O_2	20.8 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): Time:

Highest Benzene Detector Tube Reading (breathing zone): Time:

Signature: Kurt Markle

Isolation Break — ***ARCADIS Daily Worker Air Monitoring Field Report (cont.)***

Date: 5/26/09 Page 2 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1030	LFL	0 %	Bowl/Cell 6A	4ft	(RG for KM)
	O_2	20.9 %	↓	↓	↓
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1100	LFL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.2 PPM			
1130	LFL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1200	LEL	0 %			
	O_2	20.9 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.1 PPM			
1230	LEL	0 %			
	O_2	20.7 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1300	LFL	0 %			
	O_2	20.7 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1330	LEL	0 %			
	O_2	20.6 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			

Highest VOC Reading (breathing zone): Samp. 3 Time: _____

Highest Benzene Detector Tube Reading (breathing zone): _____ Time: _____

Signature: _____

Isolation Break

ARCADIS Daily Worker Air Monitoring Field Report (cont.)

Date: 5/22/09 Page 3 of 3

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
1400	LEL	0 %			
	O_2	20.7 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1430	LEL	0 %			
	O_2	20.7 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.0 PPM			
1500	LEL	0 %			
	O_2	20.6 %			
	H_2S	0 PPM			
	CO	0 PPM			
	NH_3	0 PPM			
	VOC	0.1 PPM			
	LEL	%			
	O_2	%			
	H_2S	PPM			
	CO	PPM			
	NH_3	PPM			
	VOC	PPM			
	LEL	%			
	O_2	%			
	H_2S	PPM			
	CO	PPM			
	NH_3	PPM			
	VOC	PPM			
	LEL	%			
	O_2	%			
	H_2S	PPM			
	CO	PPM			
	NH_3	PPM			
	VOC	PPM			
	LEL	%			
	O_2	%			
	H_2S	PPM			
	CO	PPM			
	NH_3	PPM			
	VOC	PPM			

Backfilled 1515

Highest VOC Reading (breathing zone): 3.8 ppm instantaneous (< 1 min) 0.3 ppm sustained (> 1 min) Time: 1142

Highest Benzene Detector Tube Reading (breathing zone): N/A (TWA < 1 ppm) Time: N/A

Signature: [signature]

Isolation Break — ARCADIS Daily Worker Air Monitoring Field Report

Owner: Republic Waste Services of Ohio, II — Date: 5/26/09 — Shift: Day — Page 1 of 2

Location: East Sparta, Ohio — Weather: AM 59° F Cloudy PM 70's

Project: CWRDF Isolation Break — Temp (°F): High 59° Low 72 Rain NO

ARCADIS PHSO: Tricia Trommer — Wind Direction:

Equipment IDs: PID # B193948 — 4 Gas Meter # D06 — Ammonia Gas Meter # B191598

Quick Draw Hand Pump # n/A — Notes/Comments:

Time	Parameter	Reading	Location – Deck# &Grid #	Height of Reading	Notes
845	VOC	0 ppm		4 ft	
	Ammonia	0 ppm			
	LEL	0 %			
	CO	0 ppm			
	O_2	20.8 %			
	H_2S	0 ppm			
915	VOC	0 ppm		4 ft.	
	Ammonia	0 ppm			
	LEL	0%			
	CO	0 ppm			
	O_2	20.8 %			
	H_2S	0 ppm			
945	VOC	0 ppm		4 ft	
	Amm.	0 ppm			
	LEL	0 %			
	CO	0 ppm			
	O_2	20.8 %			
	H_2S	0 ppm			
1015	VOC	0 ppm		4 ft	
	Ammonia	0 ppm			
	LEL	0 %			
	CO	0 ppm			
	O_2	20.8 %			
	H_2S	0 ppm			
1045	VOC	0 ppm		4 ft	
	Ammonia	0 ppm			
	LEL	0 %			
	CO	1 ppm			
	O_2	20.8 %			
	H_2S	0 ppm			
1115	VOC	0 ppm		4 ft	
	Ammonia	0 ppm			
	LEL	0 %			
	CO	0 ppm			
	O_2	20.8 %			
	H_2S	0 ppm			

Highest VOC Reading (breathing zone): .2 Time: 14/15

Highest Benzene Detector Tube Reading (breathing zone): n/A Time:

Signature: Tricia Trommer

Time	Parameter	Reading	Location – Deck# & Grid #	Height of Reading	Notes
1245	VOC	0 ppm		4'	
	Ammonia	0 ppm			
	LEL	0 %			
	CO	1 ppm			
	O2	20.8 %			
	H_2S	0 ppm			
1315	VOC	0 ppm		4'	
	Amm.	0 ppm			
	LEL	1 %			
	CO	1 ppm			
	O_2	20.8 %			
	H_2S	0 ppm			
1345	VOC	0 ppm		4'	
	NH_3	0 ppm			
	LEL	1 ppm			
	CO	1 ppm			
	O_2	20.8 %			
	H_2S	0 ppm			
1415	VOC	.2 ppm		4'	~ 400'
	NH_3	0 ppm			
	LEL	0 %			
	CO	0 ppm			
	O_2	20.8 %			
	H_2S	0 ppm			
1445	VOC	0 ppm		4'	
	NH_3	0 ppm			
	LEL	0 %			
	CO	1 ppm			
	O_2	20.8 %			
	H_2S	0 ppm			
1515	VOC	0 ppm		4'	
	NH_3	0 ppm			
	LEL	0 %			
	CO	0 ppm			
	O_2	20.8 %			
	H_2S	0 ppm			

Highest VOC Reading (breathing zone): .2 Time: 1415

Highest Benzene Detector Tube Reading (breathing zone): n/A Time: n/A

Signature: T. Trommer

ARCADIS

Attachment 2

Bowl Area Photo Log

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Bowl
City/State East Sparta, Ohio

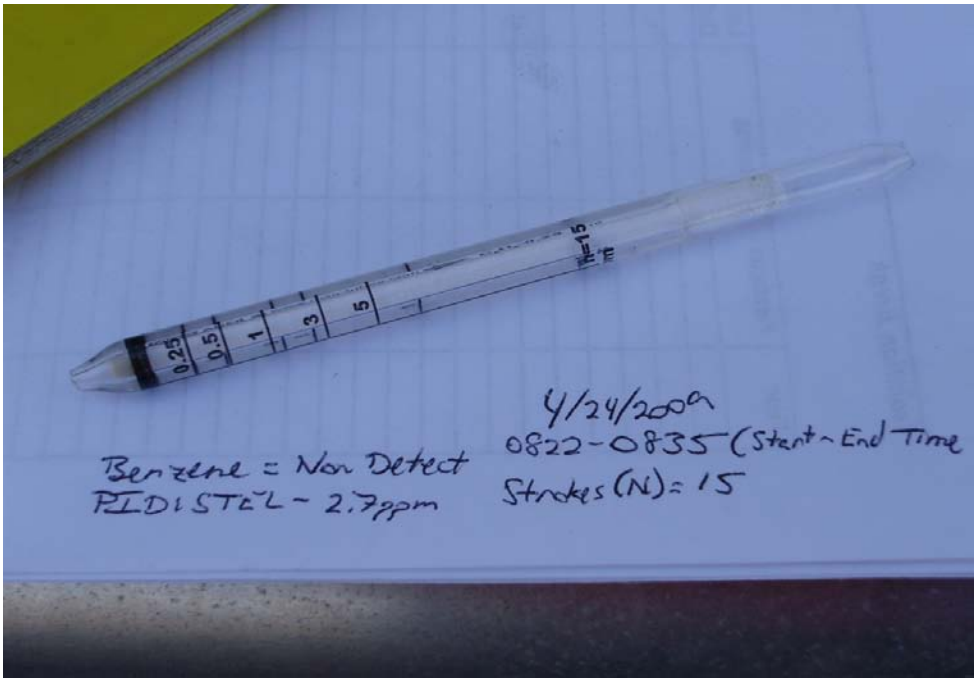


Photo No.: 1

Date: April 24, 2009

Collection Time - 0822
Strokes of the hand pump - 15
Benzene Result - Non Detect

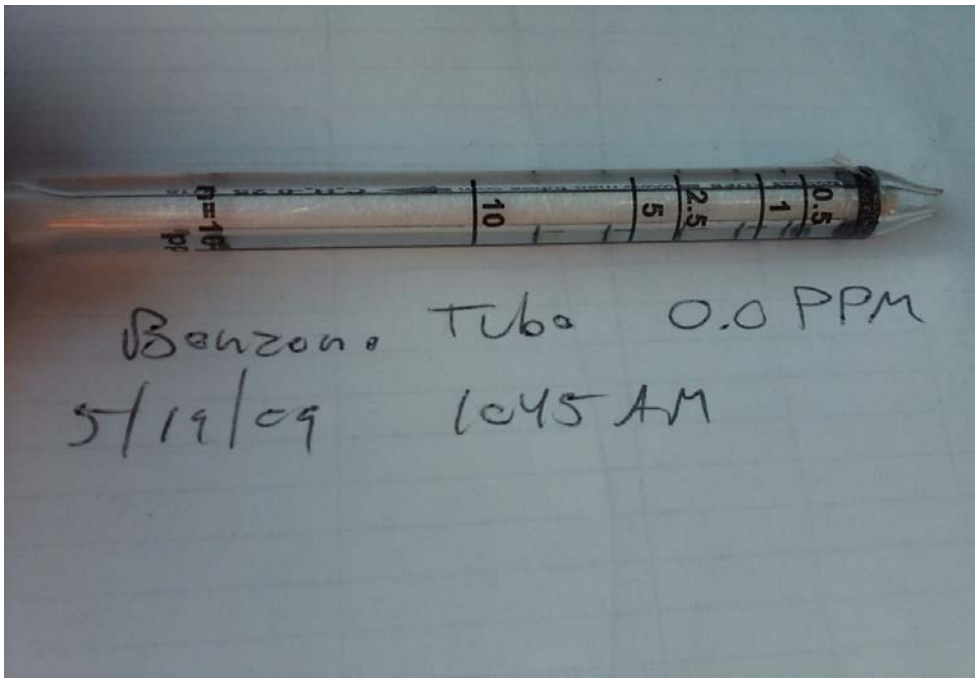


Photo No.: 2

Date: May 19, 2009

Collection Time - 1045
Strokes of the hand pump - 15
Benzene Result - Non Detect

ARCADIS

Project Number: CL000569.0003
Project Name: CWRDF Bowl
City/State East Sparta, Ohio

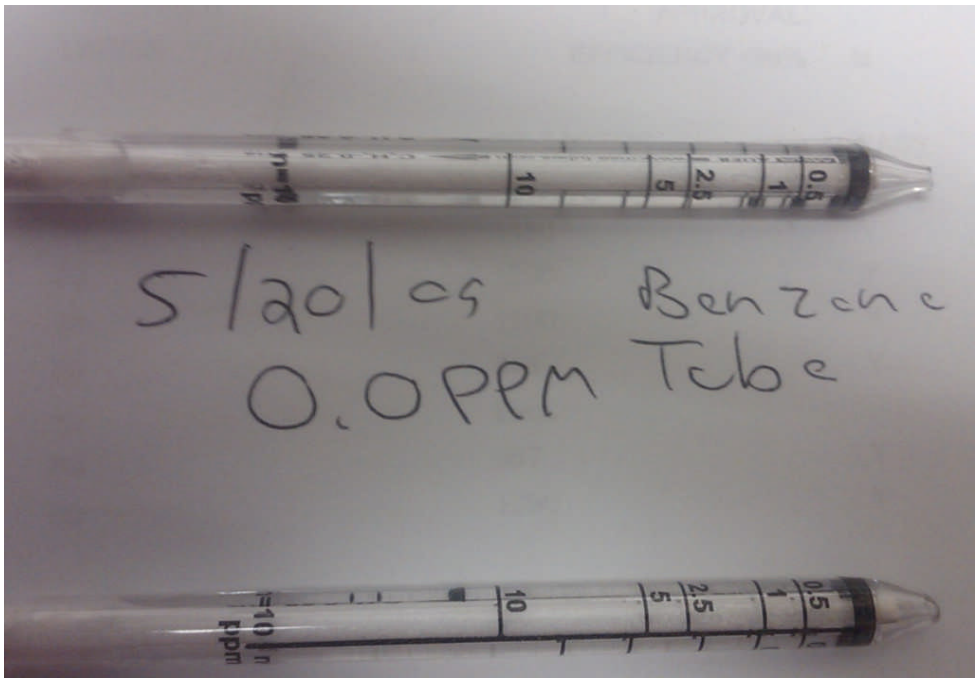


Photo No.: 3

Date: May 20, 2009

Collection Time - 0915
Strokes of the hand pump - 15
Benzene Result - Non Detect

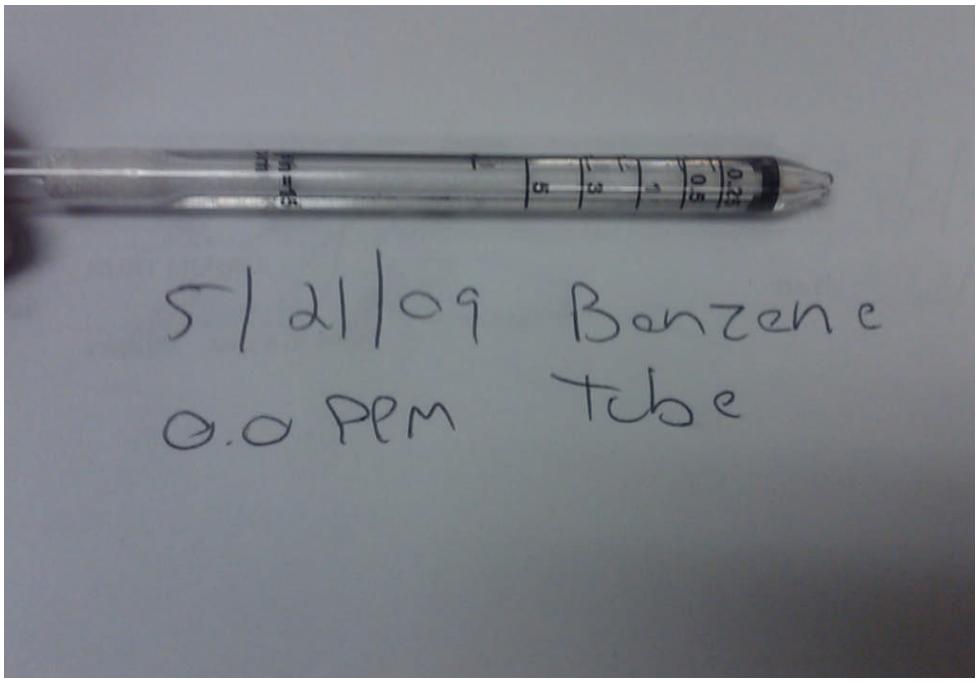


Photo No.: 4

Date: May 21, 2009

Collection Time - 0840
Strokes of the hand pump - 15
Benzene Result - Non Detect

APPENDIX I

Tables of Ambient Air Laboratory Data Obtained During Isolation Break Excavation

Table 1. Summary of TO-15 Results from SUMMA Samples Collected Downwind from Isolation Break

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Analyte	**Downwind 12/9/08**	**Downwind 12/12/08**	**Downwind 12/15/08**	**Downwind 12/18/08**	**Downwind 1/05/09**	**Downwind 1/08/09**	**Downwind 1/14/09**	**Downwind 1/20/09**	**Downwind 1/23/09**	**Downwind 1/26/09**	**Downwind 1/29/09**	**Downwind 2/04/09**	**Downwind 2/16/09**	**Downwind 2/25/09**	**Downwind 3/03/09**	**Downwind 3/30/09**	**Downwind 4/02/09**	**Downwind 4/08/09**	**Downwind 4/14/09**	**Downwind 4/17/09**	**Avg**
trans-1,3-Dichloropropene																					
1,2-Dichloro-1,1,2,2-tetrafluoroethane																					
Acetone	5.1	6.9	7.5	5.1	2.8	13	5.8	14	18	3.6	8.9	5.6	5.6	6.9	2.0	5.3	3.1	2.8	15	5.9	7.15
Ethylbenzene	0.46	1.0	0.1		0.13	1.2	0.46	0.68	0.15	0.090	0.670	0.210	0.31	0.24		0.24	0.28	0.13	0.38	1.7	0.47
Trichlorofluoromethane	0.25	0.22	0.23	0.24	0.18	0.21	0.20	0.29	0.22	0.21	0.21	0.23	0.21	0.22	0.27	0.19	0.31	0.17	0.25	0.27	0.23
n-Heptane	0.64	0.30	0.15		0.16	0.45	0.31	0.56	0.54	0.16	0.31	0.15	0.25	0.21	0.12	0.093	0.27	0.12	0.46	0.75	0.32
Hexachlorobutadiene																					
n-Hexane	0.22	0.17	0.12	0.14	0.17		0.20	0.40	0.54	0.31	0.17	0.17	0.15	0.19	0.16	0.084	0.28	0.13	0.35	1.1	0.27
2,2,4-Trimethylpentane	0.08	0.064			0.077	0.099	0.10	0.14	0.16	0.044	0.062	0.054	0.057	0.059			0.087		0.085	0.21	0.08
tert-Butyl alcohol	0.13	0.16	0.11	0.12	0.073	0.35	0.15	0.48	0.40	0.059	0.260	0.061	0.13	0.097	0.048	0.12	0.13	0.10	0.29	1.0	0.21
Methylene chloride	2.8	0.49	0.2	0.34	0.27	0.25	0.25	2.4	0.78	0.19	0.21	0.52	0.21	0.42	0.13	0.22	0.21	0.15	0.34	0.26	0.53
Benzene	0.39	0.50	0.21	0.32	0.30	0.89	0.52	0.84	0.94	2.0	0.44	0.26	0.32	0.66	0.23	0.15	2.2	0.63	1.4	12	1.26
Styrene	0.12	1.0				0.1					0.070									0.064	0.33
1,1,2,2-Tetrachloroethane			0.23	0.22																	0.23
Tetrachloroethene	0.14	0.066				0.069		0.065	0.13						1.3				0.22	0.055	0.30
Tetrahydrofuran	0.47	0.57		0.22		0.90	0.34	0.83	0.93	0.97	0.47	0.16	0.23	0.31		0.13	0.87	0.65	0.58	3.9	0.74
Toluene	2.9	2.4	0.63	0.19	0.86	3.9	1.3	3.3	1.8	0.65	2.1	0.85	1.3	0.78	0.20	0.54	1.0	0.44	1.5	4.5	1.45
1,2,4-Trichlorobenzene					0.085																0.09
1,1,1-Trichloroethane		0.073																	0.084		0.07
Trichloroethene	0.054	0.040	0.230	1.5					0.084						0.19				0.082	0.16	0.35
1,1,2-Trichloro-1,2,2-trifluoroethane	0.072	0.071	0.082	0.075	0.066	0.064	0.074	0.072	0.069	0.068	0.071	0.070	0.069	0.066	0.075	0.053	0.082	0.062	0.11	0.087	0.07
1,2,4-Trimethylbenzene	0.17	0.38			0.085	0.54	0.18	0.19			0.35	0.076	0.19	0.16		0.080	0.20		0.15	0.60	0.22
1,3,5-Trimethylbenzene		0.14				0.21	0.099	0.076			0.15		0.079				0.11		0.081	0.25	0.12
Vinyl chloride									0.11										0.12		0.11
o-Xylene	0.3	0.5	0.078		0.11	0.73	0.29	0.30			0.45	0.14	0.21	0.18		0.11	0.35		0.35	1.0	0.29
m-Xylene & p-Xylene	1.1	1.8	0.24		0.36	3.0	1.1	1.3	0.22	0.13	1.7	0.49	0.78	0.58		0.50	1.0	0.20	1.0	3.7	0.91
2-Butanone (MEK)	2.7	2.8	0.88	1.4	1.2	6.3	3.2	9.2	6.2	1.0	3.5	1.6	2.0	1.5	0.43	0.81	0.92	0.56	2.7	2.3	2.56
4-Methyl-2-pentanone (MIBK)	0.16	0.16	0.14		0.058	0.31	0.11	0.27	0.13		0.21	0.049	0.13	0.093			0.078	0.046	0.18	0.20	0.15
Bromomethane																					
4-Ethyltoluene	0.077	0.15	0.076			0.23	0.094	0.079			0.14						0.076		0.075	0.23	0.12
Carbon disulfide	0.044	0.045	0.097	0.077		0.033	0.063	0.10	0.08		0.055						0.033	0.055	0.033	0.047	0.06
Carbon tetrachloride	0.093	0.069	0.099	0.11	0.082	0.065	0.10	0.094	0.076	0.066	0.069	0.069	0.067	0.078	0.066	0.056	0.10	0.065	0.10	0.11	0.08
Chlorobenzene																					
Chloroethane			0.044						0.036								0.043		0.084	0.15	0.04
Chloroform	0.045			0.039																	0.04
Chloromethane	0.53	0.57	0.73	0.53	0.40	0.47	0.60	0.60	0.63	0.72	0.51	0.61	0.62	0.58	0.64	0.56	0.94	0.42	0.79	1.0	0.62
2-Chlorotoluene						0.25															0.25
Cyclohexane	0.14								0.44		0.067	0.53		0.065	0.072		0.11		0.23	0.35	0.20
1,2-Dichlorobenzene																			0.25		
1,3-Dichlorobenzene																			0.085		
1,4-Dichlorobenzene						0.088	0.066				0.084								0.12	0.11	0.08
Dichlorodifluoromethane	0.65	0.50	0.52	0.54	0.40	0.46	0.45	0.61	0.63	0.53	0.54		0.52	0.53	0.54	0.48	0.65	0.36	0.57	0.61	0.53
1,1-Dichloroethane									0.05										0.073		0.05
1,2-Dichloroethane									0.069												0.07
1,1-Dichloroethene																			0.057		
cis-1,2-Dichloroethene				0.11															0.34		0.11
Sum of TO-15 Compounds	19.84	21.14	12.72	11.27	7.87	34.21	16.06	36.88	33.42	10.80	21.77	11.90	13.43	13.92	6.47	9.72	13.43	7.09	28.52	42.61	***17.34***
																				Sum of Averages	***20.75***

Table 2. Summary of TO-15 TIC Results from SUMMA Samples Collected Downwind from Isolation Break

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
TICs	**Downwind 12/9/08**	**Downwind 12/12/08**	**Downwind 12/15/08**	**Downwind 12/18/08**	**Downwind 1/05/09**	**Downwind 1/08/09**	**Downwind 1/14/09**	**Downwind 1/20/09**	**Downwind 1/23/09**	**Downwind 1/26/09**	**Downwind 1/29/09**	**Downwind 2/04/09**	**Downwind 2/16/09**	**Downwind 2/25/09**	**Downwind 3/03/09**	**Downwind 3/30/09**	**Downwind 4/02/09**	**Downwind 4/08/09**	**Downwind 4/14/09**	**Downwind 4/17/09**	**Avg**
1-Propanol						6.9	2.7	8.7	12		4.5										*6.96*
1-Propene, 2-methyl-																					
2-butanol	3.2					5.1	3.4	8.2	14		5.6										*6.58*
4,7-dimethylundecane																					
Acetaldehyde									7.6		3.7										*5.65*
Butane								2.7	3.0	3.0											*2.90*
Butane, 2-methyl																					
butanol	2							4													*3.15*
Decane, 2,5,6-trimethyl-																					
Eicosane																					
ethanol	14	6.0		3.3	5.4	25.0	8.7	26	40		18	7.1	7.9	2.7					2.7		*12.83*
Heptane, 2,2-dimethyl-																					
Isobutane																					
isopropanol	3.4					6.1	3.5	8.4	14		6.1		2.8								*6.33*
Limonene																					
Methyl Alcohol			2.7	2.6		3.3		6.2				3.2									*3.60*
Pentane										2.6											*2.60*
Propane		2.8						4.3		4.7				3.6							*3.85*
propanol	6.9												2.1								*4.50*
Propene									6.2		2.5										*4.35*
Trisulfide, dipropyl																					
Undecane, 2,8-dimethyl-																					
Unknown																					
Unknown																					
Sum of TICs	29.50	8.80	2.70	5.90	5.40	46.40	18.30	68.80	96.80	10.30	40.40	10.30	12.80	6.30	0.00	0.00	0.00	0.00	2.70	0.00	*18.27*
Sum of TICs and TO-15 Compo	49.34	29.94	15.42	17.17	13.27	80.61	34.36	105.68	130.22	21.10	62.17	22.20	26.23	20.22	6.47	9.72	13.43	7.09	31.22	42.61	*36.92*

Table 3. Summary of VOC Information from TO-15 Analyses (Community and 300' Downwind)

Location	ID	Date	GPS Coordinates	Summa Type	Acetone	Ethylbenzene	Trichlorofluoromethane	n-Heptane	n-Hexane	2,2,4-Trimethylpentane	tert-Butyl alcohol	Methylene chloride	Benzene	Styrene	1,1,2,2-tetrachloroethane	Tetrachloroethene	Tetrahydrofuran	Toluene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-trifluoroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	o-Xylene	m-Xylene & p-Xylene	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromomethane	4-Ethyltoluene	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	2-Chlorotoluene	Cyclohexane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane	1,1-Dichloroethane	1,2-Dichloroethane	cis-1,2-Dichloroethene	TOTAL VOCs	TOTAL VOCs, Full TO-15, No 300'	*TOTAL VOCs, Only 300'*
					5.0	0.20	0.20	0.50	0.50	0.50	2.0	0.50	0.20	0.20	0.20	0.20	1.0	0.20	1.0	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	1.0	1.0	0.50	0.20	0.40	0.50	0.20	0.20	0.20	0.20	0.50	0.40	0.50	0.20	0.20	0.20	0.20	0.20	0.20	0.20			
Cell Tower	SU-IBC120908	12/9/2008	N: 40° 40' 12.756" W: 81° 25' 58.854"	8 Hour	5.2	ND	0.22	0.10	0.12	0.039	0.082	2.8	0.180	ND	ND	ND	ND	0.16	ND	ND	ND	0.069	ND	ND	ND	ND	ND	0.44	ND	ND	ND	ND	0.11	ND	ND	0.050	0.65	ND	ND	ND	ND	0.48	ND	ND	ND	**10.70**	10.70	
Campground	SU-IBG120908	12/9/2008	N: 40° 41' 17.336" W: 81° 25' 02.681"	8 Hour	6.6	ND	0.26	0.076	0.18	ND	0.091	5.2	0.140	ND	ND	ND	ND	0.15	ND	ND	ND	0.076	ND	ND	ND	ND	ND	0.60	ND	ND	ND	ND	0.11	ND	ND	0.048	0.64	ND	ND	ND	ND	0.49	ND	ND	ND	**14.66**	14.66	
School	SU-IBS120908	12/9/2008	N: 40° 39' 09.864" W: 81° 27' 12.261"	8 Hour	3.1	ND	0.23	0.059	0.13	ND	ND	3.3	0.190	ND	ND	ND	ND	0.21	ND	ND	ND	0.071	ND	ND	ND	ND	ND	0.22	ND	ND	ND	ND	0.11	ND	ND	0.063	0.66	ND	ND	ND	ND	0.49	ND	ND	ND	**8.83**	8.83	
Wetland	SU-IBW120908	12/9/2008	N: 40° 40' 39.860" W: 81° 24' 39.082"	8 Hour	4.2	ND	0.24	0.061	0.11	ND	0.56	3.3	0.160	ND	ND	ND	ND	0.16	ND	ND	ND	0.066	ND	ND	ND	ND	ND	0.25	0.11	ND	ND	ND	0.078	ND	ND	ND	0.65	ND	ND	ND	ND	0.5	ND	ND	ND	**10.45**	10.45	
DW~ 300"	*SU-IBD120908*	*12/9/2008*	*N: 40° 40' 50.5" W: 81° 25' 44.7"*	*8 Hour*	*5.1*	*0.46*	*0.25*	*0.64*	*0.22*	*0.080*	*0.13*	*2.8*	*0.390*	*0.12*	*ND*	*0.14*	*0.47*	*2.9*	*ND*	*ND*	*0.054*	*0.072*	*0.17*	*ND*	*ND*	*0.30*	*1.1*	*2.7*	*0.16*	*ND*	*0.077*	*0.044*	*0.093*	*ND*	*ND*	*0.045*	*0.53*	*ND*	*0.14*	*ND*	*ND*	*0.65*	*ND*	*ND*	*ND*	***19.84***		*19.84*
Cell Tower	SU-C121108	12/11/2008	N: 40° 40' 12.756" W: 81° 25' 58.854"	24 Hour Comm	3.2	0.11	0.23	0.12	0.14	ND	ND	0.29	0.270	ND	ND	ND	ND	0.49	ND	ND	ND	0.071	0.23	ND	ND	0.13	0.39	0.4	ND	ND	0.084	ND	0.073	ND	ND	ND	0.58	ND	ND	ND	ND	0.47	ND	ND	ND	**7.28**	7.28	
Campground	SU-G121108	12/11/2008	N: 40° 41' 17.336" W: 81° 25' 02.681"	24 Hour Comm	2.5	0.075	0.22	0.11	0.13	ND	ND	0.56	0.270	ND	ND	0.045	ND	0.44	ND	ND	ND	0.070	0.19	ND	ND	0.11	0.29	0.27	ND	ND	0.069	ND	0.026	ND	ND	ND	0.52	ND	0.18	ND	ND	0.49	ND	ND	ND	**6.61**	6.61	
School	SU-S121108	12/11/2008	N: 40° 39' 09.864" W: 81° 27' 12.261"	24 Hour Comm	9.4	0.30	0.22	0.21	0.31	0.10	0.083	0.40	3.500	ND	ND	ND	ND	0.60	ND	ND	ND	0.069	0.24	ND	ND	0.11	0.44	0.65	0.047	ND	0.086	0.094	0.070	ND	ND	ND	ND	0.56	ND	0.12	ND	ND	0.48	ND	ND	ND	**18.09**	18.09	
Wetland	SU-W121108	12/11/2008	N: 40° 40' 39.860" W: 81° 24' 39.082"	24 Hour Comm	1.8	0.10	0.23	0.11	0.18	0.053	ND	0.54	0.340	ND	ND	ND	ND	0.59	ND	ND	ND	0.075	ND	ND	ND	0.089	0.21	0.24	ND	ND	ND	ND	0.075	ND	ND	ND	0.58	ND	0.055	ND	ND	0.50	ND	ND	ND	**5.77**	5.77	
Cell Tower (Co-Located)	SU-COC121108	12/11/2008	N: 40° 40' 12.756" W: 81° 25' 58.854"	24 Hour Comm	1.9	0.11	0.25	0.11	0.16	0.044	ND	0.47	0.330	ND	ND	ND	ND	4.2	ND	ND	ND	0.074	0.12	ND	ND	0.11	0.28	0.32	ND	ND	ND	ND	0.071	ND	ND	ND	0.49	ND	ND	ND	ND	0.51	ND	ND	ND	**9.55**	9.55	
DW~ 300"	*SU-IBD121208*	*12/12/2008*	*N: 40° 40' 37.5" W: 81° 25' 38.5"*	*8 Hour*	*6.9*	*1.0*	*0.22*	*0.30*	*0.17*	*0.064*	*0.16*	*0.49*	*0.500*	*1.0*	*ND*	*0.066*	*0.57*	*2.4*	*ND*	*0.073*	*0.040*	*0.071*	*0.38*	*0.14*	*ND*	*0.50*	*1.8*	*2.8*	*0.16*	*ND*	*0.15*	*0.045*	*0.069*	*ND*	*ND*	*ND*	*0.57*	*ND*	*ND*	*ND*	*ND*	*0.50*	*ND*	*ND*	*ND*	***21.14***		*21.14*
Cell Tower	**SU-IBC121508**	12/15/2008	N: 40° 40' 12.756" W: 81° 25' 58.854"	8 Hour	2.5	ND	0.17	0.054	0.064	ND	0.070	0.12	0.120	ND	ND	0.11	ND	0.084	ND	ND	ND	0.067	ND	ND	ND	ND	ND	0.37	ND	ND	ND	ND	0.067	ND	ND	ND	0.48	ND	ND	ND	ND	0.46	ND	0.080	ND	**4.82**	4.82	
Campground	**SU-IBG121508**	12/15/2008	N: 40° 41' 17.336" W: 81° 25' 02.681"	8 Hour	7.5	ND	0.23	0.13	0.19	0.15	0.18	0.22	0.160	ND	ND	ND	ND	0.17	0.077	ND	ND	0.077	ND	ND	ND	ND	ND	1.2	0.26	ND	ND	0.062	0.094	ND	ND	ND	0.52	ND	ND	ND	ND	0.46	ND	ND	ND	**11.68**	11.68	
School	**SU-IBS121508**	12/15/2008	N: 40° 39' 09.864" W: 81° 27' 12.261"	8 Hour	3.6	ND	0.21	0.053	0.086	0.057	0.090	0.31	0.150	ND	ND	ND	ND	0.11	ND	ND	ND	0.074	ND	ND	ND	ND	ND	0.34	ND	ND	ND	0.042	0.080	ND	ND	ND	0.52	ND	ND	ND	ND	0.45	ND	ND	ND	**6.17**	6.17	
Wetland	**SU-IBW121508**	12/15/2008	N: 40° 40' 39.860" W: 81° 24' 39.082"	8 Hour	7.4	0.14	0.22	0.20	0.25	0.24	0.16	0.19	0.160	ND	ND	ND	ND	0.39	ND	ND	ND	0.071	0.080	ND	ND	0.11	0.26	1.6	0.23	ND	0.078	0.15	ND	ND	ND	ND	0.48	ND	ND	ND	ND	0.46	ND	ND	ND	**12.92**	12.92	
DW~ 300"	***SU-IBD121508***	*12/15/2008*	*N: 40° 40' 51.4" W: 81° 25' 40.6"*	*8 Hour*	*7.5*	*0.12*	*0.23*	*0.15*	*0.12*	*ND*	*0.11*	*0.2*	*0.210*	*ND*	*0.23*	*ND*	*ND*	*0.63*	*ND*	*ND*	*0.23*	*0.082*	*ND*	*ND*	*ND*	*0.078*	*0.24*	*0.88*	*0.14*	*ND*	*0.076*	*0.097*	*0.099*	*ND*	*0.044*	*ND*	*0.73*	*ND*	*ND*	*ND*	*ND*	*0.52*	*ND*	*ND*	*ND*	***12.72***		*12.72*
Cell Tower	SU-C121708	12/17/2008	N: 40° 40' 12.756" W: 81° 25' 58.854"	24 Hour Comm	3.2	0.097	0.23	0.089	0.14	ND	0.13	0.85	0.28	ND	ND	ND	ND	0.36	ND	ND	ND	0.077	0.36	0.097	ND	0.14	0.34	0.31	ND	ND	0.17	0.14	0.11	ND	ND	ND	0.48	ND	ND	ND	ND	0.49	ND	ND	ND	**8.09**	8.09	
Campground	SU-G121708	12/17/2008	N: 40° 41' 17.336" W: 81° 25' 02.681"	24 Hour Comm	7.3	0.078	0.25	0.084	0.16	ND	0.19	0.65	0.30	ND	0.067	ND	ND	0.38	ND	ND	0.039	0.084	0.16	ND	ND	0.086	0.22	0.84	0.061	ND	0.079	0.064	0.11	ND	ND	ND	0.52	ND	ND	ND	ND	0.52	ND	ND	ND	**12.24**	12.24	
School	SU-S121708	12/17/2008	N: 40° 39' 09.864" W: 81° 27' 12.261"	24 Hour Comm	5.0	0.084	0.23	0.070	0.15	ND	0.098	0.98	0.25	ND	ND	ND	ND	0.33	ND	ND	ND	0.078	0.31	0.075	ND	0.12	0.33	0.51	ND	ND	0.12	0.052	0.095	ND	ND	ND	0.45	ND	ND	ND	ND	0.48	ND	ND	ND	**9.81**	9.81	
Wetland	SU-W121708	12/17/2008	N: 40° 40' 39.860" W: 81° 24' 39.082"	24 Hour Comm	5.0	0.075	0.26	0.088	0.17	ND	0.12	1.3	0.29	ND	ND	ND	ND	0.37	ND	ND	ND	0.087	0.23	0.076	ND	0.095	0.24	0.69	0.051	ND	0.098	0.067	0.11	ND	ND	ND	0.59	ND	ND	ND	ND	0.90	ND	ND	ND	**10.91**	10.91	
School (Co-Located)	SU-COS121708	12/17/2008	N: 40° 39' 09.864" W: 81° 27' 12.261"	24 Hour Comm	2.5	ND	0.20	ND	ND	ND	ND	0.73	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.033	ND	ND	ND	ND	ND	ND	0.057	ND	ND	ND	0.078	0.15	ND	ND	0.048	0.48	ND	ND	ND	0.50	ND	ND	ND	**4.50**	4.50	
DW~ 300"	*SU-IBD121808*	*12/18/2008*	*N: 40° 40' 43.4" W: 81° 25' 52.2"*	*8 Hour*	*5.1*	*ND*	*0.24*	*ND*	*0.14*	*ND*	*0.12*	*0.34*	*0.32*	*ND*	*0.22*	*ND*	*0.22*	*0.19*	*ND*	*ND*	*1.5*	*0.075*	*ND*	*ND*	*ND*	*ND*	*ND*	*1.4*	*ND*	*ND*	*ND*	*0.077*	*0.11*	*ND*	*ND*	*ND*	*0.039*	*0.53*	*ND*	*ND*	*ND*	*0.54*	*ND*	*ND*	*ND*	*0.11*	***11.27***		*11.27*
DW~ 300"	*SU-IBD010509*	*1/5/2009*	*N: 40° 40' 40.5" W: 81° 25' 37.6"*	*8 Hour*	*2.8*	*0.13*	*0.18*	*0.160*	*0.17*	*0.077*	*0.073*	*0.27*	*0.30*	*ND*	*ND*	*ND*	*ND*	*0.86*	*0.085*	*ND*	*ND*	*0.066*	*0.085*	*ND*	*ND*	*0.11*	*0.36*	*1.2*	*0.058*	*ND*	*ND*	*ND*	*0.082*	*ND*	*ND*	*ND*	*0.40*	*ND*	*ND*	*ND*	*ND*	*0.40*	*ND*	*ND*	*ND*	***7.87***	7.87	*7.87*
Cell Tower	SU-IBC010809	1/8/2009	N: 40° 40' 12.756" W: 81° 25' 58.854"	8 Hour	2.4	ND	0.18	0.066	0.12	0.088	0.050	0.25	0.21	ND	ND	ND	ND	0.19	ND	ND	ND	0.071	ND	ND	ND	ND	ND	0.34	ND	ND	ND	ND	0.095	ND	ND	ND	0.70	ND	ND	ND	ND	0.39	ND	ND	ND	**5.15**	5.15	
Campground	SU-IBG010809	1/8/2009	N: 40° 41' 17.336" W: 81° 25' 02.681"	8 Hour	3.0	ND	0.17	0.076	0.097	0.072	0.038	0.43	0.20	ND	ND	ND	ND	0.18	ND	ND	ND	0.067	ND	ND	ND	ND	ND	0.39	ND	ND	ND	ND	0.088	ND	ND	ND	0.58	ND	ND	ND	ND	0.39	ND	ND	ND	**5.78**	5.78	
School	SU-IBS010809	1/8/2009	N: 40° 39' 09.864" W: 81° 27' 12.261"	8 Hour	3.4	ND	0.19	0.061	0.094	0.046	ND	0.21	0.22	ND	ND	ND	ND	0.16	ND	ND	ND	0.062	ND	ND	ND	ND	ND	0.30	ND	ND	ND	ND	0.065	ND	ND	ND	0.50	ND	ND	ND	ND	0.41	ND	ND	ND	**5.72**	5.72	
Wetland	SU-IBW010809	1/8/2009	N: 40° 40' 39.860" W: 81° 24' 39.082"	8 Hour	4.5	ND	0.20	0.083	0.12	ND	0.044	0.11	0.27	ND	ND	ND	ND	0.20	ND	ND	ND	0.070	ND	ND	ND	ND	ND	0.77	ND	ND	ND	ND	0.069	ND	ND	ND	0.49	ND	0.062	ND	ND	0.42	ND	ND	ND	**7.41**	7.41	
DW~ 300"	*SU-IBD010809*	*1/8/2009*	*N: 40° 40' 40.1" W: 81° 25' 36.4"*	*8 Hour*	*13.0*	*1.2*	*0.21*	*0.45*	*ND*	*0.099*	*0.35*	*0.25*	*0.89*	*0.14*	*ND*	*0.069*	*0.90*	*3.9*	*ND*	*ND*	*ND*	*0.064*	*0.54*	*0.21*	*ND*	*0.73*	*3.0*	*6.3*	*0.31*	*ND*	*0.23*	*0.033*	*0.065*	*ND*	*ND*	*ND*	*0.47*	*0.25*	*ND*	*ND*	*0.088*	*0.46*	*ND*	*ND*	*ND*	***34.21***		*34.21*
Cell Tower (BTEX)	SU-IBC011409	1/14/2009	N: 40° 40' 12.756" W: 81° 25' 58.854"	8 Hour		ND							0.23					0.16								ND	ND																			**0.39**		
Campground (BTEX)	SU-IBG011409	1/14/2009	N: 40° 41' 17.336" W: 81° 25' 02.681"	8 Hour		ND							0.22					0.17								ND	ND																			**0.39**		
School (BTEX)	SU-IBS011409	1/14/2009	N: 40° 39' 09.864" W: 81° 27' 12.261"	8 Hour		ND							0.24					0.082								ND	ND																			**0.32**		
Wetland (BTEX)	SU-IBW011409	1/14/2009	N: 40° 40' 39.860" W: 81° 24' 39.082"	8 Hour		ND							0.20					0.15								ND	ND																			**0.35**		
DW~ 300"	*SU-IBD011409*	*1/14/2009*	*N: 40° 40' 43.3" W: 81° 25' 52.6"*	*8 Hour*	*5.8*	*0.46*	*0.20*	*0.31*	*0.20*	*0.10*	*0.15*	*0.25*	*0.52*	*ND*	*ND*	*ND*	*0.34*	*1.3*	*ND*	*ND*	*ND*	*0.074*	*0.18*	*0.099*	*ND*	*0.29*	*1.1*	*3.2*	*0.11*	*ND*	*0.094*	*0.063*	*0.1*	*ND*	*ND*	*ND*	*0.60*	*ND*	*ND*	*ND*	*0.066*	*0.45*	*ND*	*ND*	*ND*	***16.06***		*16.06*
Cell Tower	SU-C011609	1/16/2009	N: 40° 40' 12.756" W: 81° 25' 58.854"	24 Hour Comm	2.7	0.072	0.20	0.065	0.16	ND	0.055	0.42	0.32	ND	ND	ND	ND	0.27	ND	ND	ND	0.075	ND	ND	ND	ND	ND	0.18	0.29	ND	ND	ND	0.048	0.082	ND	ND	ND	0.51	ND	ND	ND	ND	0.46	ND	ND	0.079	**5.99**	5.99	
Campground	SU-G011609	1/16/2009	N: 40° 41' 17.336" W: 81° 25' 02.681"	24 Hour Comm	4.3	0.074	0.21	0.076	0.19	0.04	0.130	0.26	0.34	ND	ND	ND	ND	0.35	ND	ND	ND	0.075	ND	ND	ND	ND	ND	0.72	ND	ND	ND	0.17	0.096	ND	ND	ND	0.51	ND	ND	ND	ND	0.48	ND	ND	ND	**8.02**	8.02	
School	SU-S011609	1/16/2009	N: 40° 39' 09.864" W: 81° 27' 12.261"	24 Hour Comm	ND	ND	0.22	ND	0.15	ND	ND	0.41	0.31	ND	ND	ND	ND	0.11	ND	ND	ND	0.074	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.076	0.098	ND	ND	0.049	0.57	ND	ND	ND	ND	0.47	ND	ND	ND	**2.54**	2.54	
Wetland	SU-W011609	1/16/2009	N: 40° 40' 39.860" W: 81° 24' 39.082"	24 Hour Comm	2.7	ND	0.21	0.066	0.17	ND	0.046	0.25	0.26	ND	ND	ND	ND	0.21	ND	ND	ND	0.074	ND	ND	ND	ND	ND	0.36	ND	ND	ND	0.042	0.083	ND	ND	ND	0.55	ND	ND	ND	ND	0.48	ND	ND	ND	**5.50**	5.50	
Campground (Co-Located)	SU-COG011609	1/16/2009	N: 40° 41' 17.336" W: 81° 25' 02.681"	24 Hour Comm	6.9	0.14	0.21	0.071	0.21	0.042	0.30	0.38	0.35	ND	ND	ND	ND	0.60	ND	ND	ND	0.075	0.11	ND	ND	0.22	0.31	1.4	0.077	ND	ND	5.1	0.096	ND	ND	ND	0.59	ND	ND	ND	ND	0.50	ND	ND	ND	**17.68**	17.68	
Cell Tower (BTEX)	SU-IBC012009	1/20/2009	N: 40° 40' 12.756" W: 81° 25' 58.854"	8 Hour		ND							0.35					0.27								ND	ND																			**0.62**		
Campground (BTEX)	SU-IBG012009	1/20/2009	N: 40° 41' 17.336" W: 81° 25' 02.681"	8 Hour		ND							0.34					0.29								ND	ND																			**0.63**		
School (BTEX)	SU-IBS012009	1/20/2009	N: 40° 39' 09.864" W: 81° 27' 12.261"	8 Hour		ND							0.37					0.38								ND	0.13																			**0.88**		
Wetland (BTEX)	SU-IBW012009	1/20/2009	N: 40° 40' 39.860" W: 81° 24' 39.082"	8 Hour		ND							0.36					0.31								ND	ND																			**0.67**		
DW~ 300"	*SU-IBD012009*	*1/20/2009*	*N: 40° 40' 40.1" W: 81° 25' 37.0"*	*8 Hour*	*14*	*0.68*	*0.29*	*0.56*	*0.40*	*0.14*	*0.48*	*2.4*	*0.84*	*ND*	*ND*	*0.065*	*0.83*	*3.3*	*ND*	*ND*	*ND*	*0.072*	*0.19*	*0.076*	*ND*	*0.30*	*1.3*	*9.2*	*0.27*	*ND*	*0.079*	*0.10*	*0.094*	*ND*	*ND*	*ND*	*0.60*	*ND*	*ND*	*ND*	*ND*	*0.61*	*ND*	*ND*	*ND*	***36.88***		*36.88*
Cell Tower	SU-C012209	1/22/2009	N: 40° 40' 12.756" W: 81° 25' 58.854"	24 Hour Comm	4.6	ND	0.21	0.073	0.13	ND	0.061	0.24	0.24	ND	ND	ND	ND	0.16	ND	ND	ND	0.067	ND	ND	ND	ND	ND	0.58	ND	ND	ND	0.090	ND	ND	ND	0.038	0.63	ND	ND	ND	ND	0.51	ND	ND	ND	**7.63**	7.63	
Campground	SU-G012209	1/22/2009	N: 40° 41' 17.336" W: 81° 25' 02.681"	24 Hour Comm	3.7	ND	0.21	0.093	0.14	ND	0.050	0.64	0.44	ND	ND	ND	ND	0.18	ND	ND	ND	0.069	ND	ND	ND	ND	ND	0.46	ND	0.18	ND	0.057	0.092	0.15	ND	0.040	0.76	ND	ND	ND	ND	0.52	ND	ND	ND	**7.78**	7.78	
School	SU-S012209	1/22/2009	N: 40° 39' 09.864" W: 81° 27' 12.261"	24 Hour Comm	4.5	0.13	0.21	0.19	0.31	0.13	0.058	0.42	0.59	ND	ND	ND	ND	0.66	ND	ND	ND	0.068	0.29	ND	ND	0.16	0.41	0.44	ND	ND	ND	0.035	0.085	ND	ND	ND	0.63	ND	0.049	ND	ND	0.51	ND	ND	ND	**9.88**	9.88	
Wetland	SU-W012209	1/22/2009	N: 40° 40' 39.860" W: 81° 24' 39.082"	24 Hour Comm	9.2	ND	0.21	0.23	0.42	0.043	0.19	0.32	0.35	ND	ND	ND	0.063	0.29	ND	ND	ND	0.069	0.099	ND	ND	ND	0.12	0.93	0.050	ND	ND	ND	0.092	ND	ND	ND	0.92	ND	0.10	ND	ND	0.52	ND	ND	ND	**14.22**	14.22	
Wetland (Co-Located)	SU-COW012209	1/22/2009	N: 40° 40' 39.860" W: 81° 24' 39.082"	24 Hour Comm	4.8	0.075	0.22	0.19	0.45	0.048	0.052	0.43	0.34	ND	ND	ND	ND	0.45	ND	ND	ND	0.070	0.19	ND	ND	0.11	0.28	0.51	ND	ND	0.070	ND	0.092	ND	ND	0.038	0.83	ND	0.088	ND	ND	0.52	ND	ND	ND	**9.85**	9.85	
DW~ 300"	*SU-IBD012309*	*1/23/2009*	*N: 40° 40' 50.8" W: 81° 25' 42.5"*	*8 Hour*	*18*	*0.15*	*0.22*	*0.54*	*0.54*	*0.16*	*0.40*	*0.78*	*0.94*	*ND*	*ND*	*0.13*	*0.93*	*1.8*	*ND*	*ND*	*0.084*	*0.069*	*ND*	*ND*	*0.11*	*ND*	*0.22*	*6.2*	*0.13*	*ND*	*ND*	*0.083*	*0.076*	*ND*	*0.036*	*ND*	*0.63*	*ND*	*0.44*	*ND*	*ND*	*0.63*	*0.050*	*0.069*	*ND*	***33.42***		*33.42*
Cell Tower (BTEX)	SU-IBC012609	1/26/2009	N: 40° 40' 12.756" W: 81° 25' 58.854"	8 Hour		ND							0.33					0.20								0.12	0.20																			**0.85**		
Campground (BTEX)	SU-IBG012609	1/26/2009	N: 40° 41' 17.336" W: 81° 25' 02.681"	8 Hour		ND							0.33					0.24								ND	ND																			**0.57**		
School (BTEX)	SU-IBS012609	1/26/2009	N: 40° 39' 09.864" W: 81° 27' 12.261"	8 Hour		ND							0.34					0.27								ND	0.12																			**0.73**		
Wetland (BTEX)	SU-IBW012609	1/26/2009	N: 40° 40' 39.860" W: 81° 24' 39.082"	8 Hour		ND							0.31					0.20								ND	ND																			**0.51**		
DW~ 300"	*SU-IBD012609*	*1/26/2009*	*N: 40° 40' 40.5" W: 81° 25' 35.6"*	*8 Hour*	*3.6*	*0.090*	*0.21*	*0.16*	*0.31*	*0.044*	*0.059*	*0.19*	*2.0*	*ND*	*ND*	*ND*	*0.97*	*0.65*	*ND*	*ND*	*ND*	*0.068*	*ND*	*ND*	*ND*	*ND*	*0.13*	*1.0*	*ND*	*ND*	*ND*	*ND*	*0.066*	*ND*	*ND*	*ND*	*0.72*	*ND*	*ND*	*ND*	*ND*	*0.53*	*ND*	*ND*	*ND*	***10.80***		*10.80*
DW~ 300"	*SU-IBD012909*	*1/29/2009*	*N: 40° 40' 48.7" W: 81° 25' 34.5"*	*8 Hour*	*8.9*	*0.67*	*0.21*	*0.31*	*0.17*	*0.062*	*0.26*	*0.21*	*0.44*	*0.070*	*ND*	*ND*	*0.47*	*2.1*	*ND*	*ND*	*ND*	*0.071*	*0.35*	*0.15*	*ND*	*0.5*	*1.7*	*3.5*	*0.21*	*ND*	*0.14*	*0.055*	*0.069*	*ND*	*ND*	*ND*	*0.51*	*ND*	*0.067*	*ND*	*0.084*	*0.54*	*ND*	*ND*	*ND*	***21.77***		*21.77*
Cell Tower	SU-C020309	2/3/2009	N: 40° 40' 12.756" W: 81° 25' 58.854"	24 Hour Comm	5.1	ND	0.20	0.095	0.13	ND	0.10	0.13	0.20	ND	ND	ND	ND	0.27	ND	ND	ND	0.070	ND	ND	ND	ND	0.15	0.64	ND	ND	ND	ND	0.070	ND	ND	ND	0.49	ND	ND	ND	ND	0.47	ND	ND	ND	**8.12**	8.12	
Campground	SU-G020309	2/3/2009	N: 40° 41' 17.336" W: 81° 25' 02.681"	24 Hour Comm	2.1	ND	0.21	0.068	0.10	ND	ND	0.20	0.21	ND	ND	ND	ND	0.16	ND	ND	ND	0.073	ND	ND	ND	ND	ND	0.24	ND	ND	ND	ND	0.071	ND	ND	ND	0.58	ND	ND	ND	ND	0.49	ND	ND	ND	**4.50**	4.50	
School	SU-S020309	2/3/2009	N: 40° 39' 09.864" W: 81° 27' 12.261"	24 Hour Comm	5.0	ND	0.21	0.11	0.11	ND	0.052	0.18	0.24	ND	ND	ND	ND	0.20	ND	ND	ND	0.075	0.088	ND	ND	ND	0.13	0.53	ND	ND	ND	ND	0.077	ND	ND	ND	0.61	ND	ND	ND	ND	0.51	ND	ND	ND	**8.12**	8.12	
Wetland	SU-W020309	2/3/2009	N: 40° 40' 39.860" W: 81° 24' 39.082"	24 Hour Comm	7.7	0.083	0.22	0.23	0.16	ND	0.510	0.18	0.24	ND	ND	ND	0.13	0.64	ND	ND	ND	0.074	0.15	ND	ND	0.083	0.22	1.4	0.12	ND	ND	0.18	0.072	ND	ND	ND	0.53	ND	ND	ND	ND	0.53	ND	ND	ND	**13.45**	13.45	
School (Co-Located)	SU-COS020309	2/3/2009	N: 40° 39' 09.864" W: 81° 27' 12.261"	24 Hour Comm	2.1	ND	0.20	0.070	0.15	ND	ND	0.49	0.21	ND	ND	ND	ND	0.16	ND	ND	ND	0.064	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.061	ND	ND	ND	0.52	ND	ND	ND	ND	0.44	ND	ND	ND	**4.47**	4.47	
DW~ 300"	*SU-IBD020409*	*2/4/2009*	*N: 40° 40' 40.6" W: 81° 25' 35.6"*	*8 Hour*	*5.6*	*0.21*	*0.23*	*0.15*	*0.17*	*0.054*	*0.061*	*0.52*	*0.26*	*ND*	*ND*	*ND*	*0.16*	*0.85*	*ND*	*ND*	*ND*	*0.070*	*0.076*	*ND*	*ND*	*0.14*	*0.49*	*1.6*	*0.049*	*ND*	*ND*	*ND*	*0.069*	*ND*	*ND*	*ND*	*0.61*	*ND*	*ND*	*ND*	*ND*	*0.53*	*ND*	*ND*	*ND*	***11.90***		*11.90*
Cell Tower	SU-C020909	2/9/2009	N: 40° 40' 12.756" W: 81° 25' 58.854"	24 Hour Comm	3.2	ND	0.21	0.11	0.20	ND	0.042	0.28	0.39	ND	ND	ND	ND	0.26	ND	ND	ND	0.074	0.075	ND	ND	ND	0.14	0.33	ND	ND	ND	ND	0.078	ND	ND	ND	0.61	ND	0.040	ND	ND	0.50	ND	ND	ND	**6.54**	6.54	
Campground	SU-G020909	2/9/2009	N: 40° 41' 17.336" W: 81° 25' 02.681"	24 Hour Comm	3.9	ND	0.19	0.12	0.19	ND	0.045	0.37	0.36	ND	ND	ND	ND	0.31	ND	ND	ND	0.064	0.16	ND	ND	0.071	0.19	0.47	ND	ND	0.069	0.032	0.068	ND	ND	ND	0.48	ND	ND	ND	0.082	0.43	ND	ND	ND	**7.60**	7.60	
School	SU-S020909	2/9/2009	N: 40° 39' 09.864" W: 81° 27' 12.261"	24 Hour Comm	39	0.18	0.21	0.76	0.41	0.095	2.1	1.6

APPENDIX J

Leachate Disposal

Richard A. Merolla
Service Director

Michael L. McGlinchy, P.E.
Public Utilities Bureau Manager

Brian M. Gresser, P.E.
Water Pollution Control Administrator

DONALD L. PLUSQUELLIC
Mayor

September 2, 2008

Mr. Todd Hamilton, P.E.
Countywide Recycling & Disposal Facility
3619 Gracemont Street, S.W.
East Sparta, OH 44626

Re: U.S. EPA's Off-Site Rule Acceptability Determination

Dear Mr. Hamilton:

As you know, the City of Akron (the "City") is currently accepting leachate generated by Countywide Recycling & Disposal Facility ("Countywide"). The leachate is accepted pursuant to a contract between the parties, which is dated November 9, 2007 (the "Contract"). Countywide subsequently asked the City to accept additional leachate that is regulated pursuant a U.S. EPA Administrative Settlement Agreement and Order on Consent for Removal Action (the "CERCLA Leachate"). Countywide has represented that the CERCLA Leachate is chemically and physically very similar to the same as the leachate that the City is currently accepting.

In order to accept the CERCLA Leachate, the City is required to obtain an approval from U.S. EPA. In response to a request made by the City, U.S. EPA provided the City with an Off-Site Rule Acceptability Determination for the Water Pollution Control Station (WPCS), dated August 18, 2008. A copy of this letter is enclosed.

Consistent with our recent discussions, the City and Countywide have agreed that the acceptance of the CERCLA Leachate shall be in accordance with the Contract. This includes the requirement that the CERCLA Leachate that Countywide delivers to the WPCS will be non-hazardous waste.

Please contact me to arrange for the delivery for this material, which will include special notation on the shipping manifests, so that the City can identify as CERCLA Leachate for tracking purposes.

Sincerely,

Brian M. Gresser, P.E., Administrator
Water Pollution Control Division

BMG/mld

Enclosure

c: Mike McGlinchy, George Bozeka, Terry Finn, Barry J. Christian, File

2460 Akron Peninsula Road • Akron, Ohio 44313 • (330) 928-1164 • FAX (330) 928-2285
www.ci.akron.oh.us

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 1 8 2008

REPLY TO THE ATTENTION OF:

LR-8J

Brian M. Gresser, P.E.
Administrator
Akron Water Pollution Control Division.
2460 Akron Peninsula Road
Akron, Ohio 44313

Re: Off-Site Rule Acceptability Determination
Akron Water Pollution Control Station

Dear Mr. Gresser:

This letter is in response to your letter of July 7, 2008 to Mr. William Damico regarding the Akron Water Pollution Control Station, located at 2460 Akron Peninsula Road, Akron, Ohio, request for CERCLA Off-Site Rule acceptability.

My staff reviewed the operations at the Akron Water Pollution Control Station for compliance with the acceptability criteria in 40 C.F.R. § 300.440 (b). During the review, my staff learned that Akron is a combined sewer operation and that certain events cause the facility to by-pass the second stage of treatment during what are termed "by-pass events." Furthermore, there is a unit in the facility that receives hauled waste (primarily leachate from landfills at this time) in a large storage tank for controlled release processing at the facility. This system is required to not release waters for treatment during "by-pass events." The remainder of the wastewaters processed at the facility arrive in what I will call "continuous flow" pipes.

Because of issues with the status of the long term control plan related to reducing or eliminating the need for "by-pass events," it is not possible to give the entire Akron Water Pollution Control Station an acceptable determination. However, the CERCLA Off-Site Rule provides the capability to designate different "receiving" units within a facility for different status determinations. My staff has determined that the storage tank unit can be approved as an acceptable receiving unit because of the capability to store waters in this unit and avoid processing and release without full treatment during "by-pass events." The "continuous flow" unit, however, will be designated as an unacceptable receiving unit because wastes that enter through this unit will not receive full treatment before being released to the environment during "by-pass events."

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This acceptability determination is based on the assumption that only wastes which comply with the permits issued to the Akron Water Pollution Control Station will be accepted. It is your responsibility to review any proposed waste streams for compliance with the permits for your facility.

Please note that this determination is based on the available information at the time of the review. Your status could be changed any time relevant information becomes available according to the procedures in 40 C.F.R. § 300.440 (d). Generators who need to use a currently acceptable facility should verify the current acceptability of any facilities they wish to use with the appropriate Regional Off-Site Rule Coordinator(s).

If you have questions, please contact Mr. Damico at (312) 353-8207, United States Environmental Protection Agency, Region 5 – LR-8J, 77 W. Jackson Boulevard, Chicago, Illinois 60604.

Sincerely,

Willie H. Harris

Willie H. Harris, P.E.
Chief, RCRA Branch
Land and Chemicals Division

cc: Sandy Cappotto, Ohio Environmental Protection Agency, Northeast District Office

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			34926

5. Generator's Name and Mailing Address
COUNTYWIDE LANDFILL
3619 GRACEMONT AVE SW EAST SPARTA, OHIO 44626
Generator's Phone: 330-874-3855

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: JMW TRUCKING SERVICES 330-484-2428 — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
CITY OF AKRON WATER POLLUTION CONTROLDIVISION
2460 AKRON PENNISULA ROAD, AKRON, OHIO 44313
Facility's Phone: 330-928-1164

U.S. EPA ID Number

GENERATOR

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	NON HAZARDOUS LEACHATE WATER	001	TT	5841	Gal
2.	SOLIDIFICATION				
3.					
4.					

13. Special Handling Instructions and Additional Information
CERCLA WASTE WATER

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: D. L. MALOTT JR | Signature: D L Malott | Month: 9 | Day: 12 | Year: 08

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) | Month | Day | Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name | Signature | Month | Day | Year

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			35364

GENERATOR

5. Generator's Name and Mailing Address

COUNTYWIDE LANDFILL
3619 GRACEMONT AVE SW EAST SPARTA, OHIO 44626
Generator's Phone: 330-874-3855

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: JMW TRUCKING SERVICES 330-484-2428 — U.S. EPA ID Number:

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address — U.S. EPA ID Number:

CITY OF AKRON WATER POLLUTION CONTROL DIVISION
2460 AKRON PENNISULA ROAD AKRON, OHIO 44313
Facility's Phone: 330-928-1164

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS LEACHATE WATER	001	TT	5,800	GAL	
2.	CERCLA waste water		ETANKS			
3.						
4.						

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Transporter 1: Don Moore	Don Moore	9	13	8
Transporter 2				

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number:

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month | Day | Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name | Signature | Month | Day | Year

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			34925

GENERATOR

5. Generator's Name and Mailing Address
COUNTYWIDE LANDFILL
3619 GRACEMONT AVE SW EAST SPARTA, OHIO 44626
330-874-3855
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
JMW TRUCKING SERVICES 330-484-2428
U.S. EPA ID Number

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CITY OF AKRON WATER POLLUTION CONTROLDIVISION
2460 AKRON PENNISULA ROAD, AKRON, OHIO 44313
330-928-1164
Facility's Phone:
U.S. EPA ID Number

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS LEACHATE WATER	001	TT	54172	Gal	549 DK
2.	S-W CORNER					
3.						
4.						

13. Special Handling Instructions and Additional Information
CERCLA WASTE WATER

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
D. L. MALOTT JR	D. L. Malott	9	12	08
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) | Month | Day | Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name | Signature | Month | Day | Year

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NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			29976

GENERATOR

5. Generator's Name and Mailing Address
COUNTYWIDE LANDFILL
3619 GRACEMONT AVE SW EAST SPARTA, OHIO 44626
Generator's Phone: 330-874-3855

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
JMW TRUCKING SERVICES 330-484-2428
U.S. EPA ID Number

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CITY OF AKRON WATER POLLUTION CONTROLDIVISION
2460 AKRON PENNISULA ROAD, AKRON, OHIO 44313
Facility's Phone: 330-928-1164
U.S. EPA ID Number

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS LEACHATE WATER	001	TT	5129	Gal	
2.	SW CORNER					
3.						
4.						

13. Special Handling Instructions and Additional Information
CERCULA WASTE WATER

INT'L

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: G TOTHOUS | Signature | Month: 9 | Day: 12 | Year: 08
Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name | Signature | Month | Day | Year

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NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | **4. Waste Tracking Number** 35362

GENERATOR

5. Generator's Name and Mailing Address
COUNTYWIDE LANDFILL
3619 GRACEMONT AVE SW EASTSPARTA,OHIO 44626
330-874-3855
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
JMW TRUCKING SERVICES 330-484-2428

U.S. EPA ID Number

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
CITY OF AKRON WATER POLLUTION CONTROL DIVISION
2460 AKRON PENNISULA ROAD AKRON,OHIO 44313
330-928-1164
Facility's Phone:

U.S. EPA ID Number

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	NON HAZARDOUS LEACHATE WATER	001	tt	6,400	gal
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information
CERCLA Waste water

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: DON MOORE | Signature: Don Moore | Month: 9 | Day: 27 | Year:

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) | U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) | Month | Day | Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name | Signature | Month | Day | Year

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			30062

5. Generator's Name and Mailing Address
COUNTYWIDE LANDFILL
3619 GRACEMONT AVE SW EAST SPARTA, OHIO 44626
Generator's Phone: 330-874-3855

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: JMW TRUCKING SERVICES 330-484-2428 — U.S. EPA ID Number:

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CITY OF AKRON WATER POLLUTION CONTROLDIVISION
2460 ARKON PENNISULA ROAD AKRON, OHIO 44313
Facility's Phone: 330-928-1164

U.S. EPA ID Number:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS LEACHATE WATER LOAD AT SOLIDIFICATION 2:00P	001	TT	5745	GAL	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
CERCLA WASTE WATER

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: SKINNER | Signature | Month: 9 | Day: 28 | Year

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number:
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) | Month | Day | Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name | Signature | Month | Day | Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

APPENDIX K

Letter from U.S. EPA Regarding Isolation Break

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

LM-8J

June 19, 2009

Republic Services of Ohio II, LLC
c/o Michael Beaudoin
3619 Gracemont Street S.W.
East Sparta, OH 44626

Re: Isolation Break - Countywide RDF, East Sparta, Ohio (Site ID# B5FC)

Dear Mr. Beaudoin:

Thank you for your cooperation in the construction of the isolation break between Cells 4B/5B/5C and Cell 7 at the Countywide Landfill. The United States Environmental Protection Agency (U.S. EPA) appreciates your attention to this effort as well as the resources dedicated to the project over the past several months to complete it on schedule and with no accidents.

The goal of this project was to isolate and contain the reaction impacting Cells 1-6 to within the 88 acre remediation area. U.S. EPA and/or our designated contractor were present on site to conduct oversight through the duration of the project. It was documented that all waste was excavated down to the bottom liner atop the berm separating Cells 4B/5B/5C from Cell 7, achieving a total separation of the waste contained in these respective cells. Further, the U.S. EPA documented that the bottom of the isolation break was constructed in a manner that would effect total separation of leachate and gas between Cells 4B/5B/5C and Cell 7. U.S. EPA documented the integrity of the bottom liner as well as all repairs made prior to construction of the roadway separating the Cells.

During this excavation, there was no evidence found of reaction, pyrolysis or fire in the waste or bottom liner separating the Cells. Approximately 70 cubic yards of secondary aluminum wastes (mostly reacted baghouse dust found in supersacks) were uncovered along the Cell 5 side slope and were disposed of within the 'bowl area' of the 88 acres.

Daily reports were completed in coordination with the construction quality assurance contractor and submitted each day throughout the project. Monthly progress reports where submitted on time throughout the duration of the project.

(over)

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Thank you very much for your cooperation on the isolation break project. Please feel free to contact me at (312) 886-7898 should you have any questions about this letter.

Sincerely,

Paul Ruesch
Environmental Engineer

cc: Kurt Princic, OEPA, Twinsburg, OH