



2017 Annual Monitoring Report

New Richmond Closed Landfill
1935 115th Street
New Richmond, Wisconsin

New Richmond Landfill Settling
PRP Group

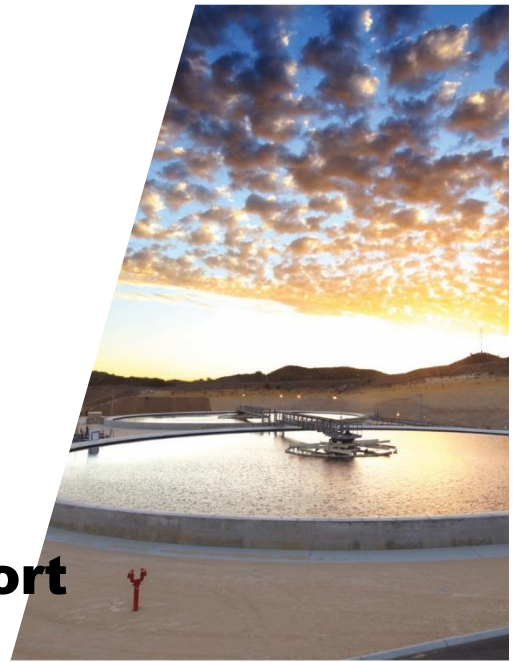




Table of Contents

- 1. Introduction..... 1
 - 1.1 History 1
 - 1.2 Site Geology 2
 - 1.3 Objectives 2
- 2. Groundwater Monitoring..... 3
 - 2.1 Water Level Monitoring 4
 - 2.2 Groundwater Sampling 4
- 3. Results/Evaluation..... 4
 - 3.1 Monitoring Well Results and Evaluation 5
 - 3.2 Residential Well Results 5
- 4. Landfill Gas and Soil Vapor Extraction System Operation, Maintenance and Monitoring 6
 - 4.1 LFG/SVE System Operational Summary..... 6
 - 4.2 SVE System Well Field Measurements 7
 - 4.3 LFG System Well Field Measurements 7
 - 4.4 Gas Probe Measurements 8
 - 4.5 Condensate Management..... 8
 - 4.6 VOC (TO-15) Monitoring..... 8
 - 4.6.1 Blower Discharge Monitoring..... 8
 - 4.6.2 Select SVE Well Monitoring..... 9
 - 4.7 Additional O&M Activities Conducted and Upcoming O&M Activities 9
- 5. Conclusions..... 10
- 6. Recommendations 10



Figure Index

Figure 1.1	Site Location
Figure 1.2	Site Plan
Figure 1.3	SVE/LFG Monitoring Locations
Figure 2.1	Groundwater Contours - November 2017
Figure 3.1	1,1,1-Trichloroethane - November 2017
Figure 3.2	1,1,1-TCA and 1,1-DCE Concentrations - MW-2R
Figure 3.3	1,1,1-TCA 1,1-DCE, and PCE Concentrations - MW-16
Figure 3.4	1,1,1-TCA, 1,1-DCE, and PCE Concentrations – MW-10
Figure 3.5	1,1,1-TCA, 1,1-DCE, and PCE Concentrations – MW-10A
Figure 3.6	1,1,1-TCA, 1,1-DCE, and PCE Concentrations – MW-17
Figure 3.7	1,1,1-TCA and 1,1-DCE Concentrations – MW-18
Figure 4.1	2017 LFG and SVE Well Data
Figure 4.2	Monthly Condensate Discharge Volumes to New Richmond WWTF
Figure 4.3	Select VOC Concentrations over Time – Blower Discharge
Figure 4.4	Historical Blower Discharge Removal of Select VOCs (Cumulative since September 2008)
Figure 4.5	1,1,1-TCA Concentration versus Time (SVE-2)
Figure 4.6	1,1,1-TCA Concentration versus Time (SVE-3)
Figure 4.7	1,1,1-TCA Concentration versus Time (SVE-4)
Figure 4.8	1,1,1-TCA Concentration versus Time (SVE-5)
Figure 4.9	1,1,1-TCA Concentration versus Time (SVE-6)
Figure 4.10	1,1,1-TCA Concentration versus Time (SVE-7)
Figure 4.11	1,1,1-TCA Concentration versus Time (SVE-8)
Figure 4.12	1,1,1-TCA Concentration versus Time (SVE-10)
Figure 4.13	1,1,1-TCA Concentration versus Time (SVE-12)
Figure 4.14	1,1,1-TCA Concentration versus Time (SVE-14)
Figure 4.15	1,1,1-TCA Concentration versus Time (SVE-15)
Figure 4.16	1,1,1-TCA Concentration versus Time (SVE-16)



Table Index

Table 2.1	Groundwater Elevation Summary
Table 2.2	Groundwater Monitoring Completed
Table 3.1	ES and PAL Exceedences
Table 3.2	VOC Results within the Plume Area
Table 4.1	SVE/LFG Gas Extraction System Summary
Table 4.2	SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
Table 4.3	Mass Loading Calculations – October 30, 2017
Table 4.4	SVE/LFG System – Total VOC Mass Removal
Table 4.5	SVE/LFG System – 1,1,1-Trichloroethane Mass Removal
Table 4.6	SVE/LFG System – 1,1-Dichloroethane Mass Removal
Table 4.7	SVE/LFG System – 1,1-Dichloroethene Mass Removal
Table 4.8	SVE/LFG System – Tetrachloroethene Mass Removal

Appendix Index

Appendix A	Historical Groundwater Elevation Summary
Appendix B	Data Quality Validation Memorandums and Laboratory Reports
Appendix C	Historical Groundwater Monitoring Analytical Results
Appendix D	Historical Residential Well Analytical Results
Appendix E	Historical SVE/LFG System Monitoring Data
Appendix F	Unscheduled LFG/SVE System Shutdowns



1. Introduction

GHD Services Inc. (GHD) has prepared this Annual Monitoring Report (Report) for the New Richmond Landfill (WDNR License #2492) in New Richmond, Wisconsin, on behalf of the New Richmond Landfill Settling Potential Responsible Parties (PRPs). This Report presents the results of the Soil Vapor Extraction (SVE)/Landfill Gas (LFG) extraction system and groundwater monitoring activities associated with Operable Unit 1 (OU1) – source remedy and Operable Unit 2 Aquifer Restoration (OU2-AR), respectively at the Site from January 2017 through December 2017 as required by the Operation, Maintenance, and Monitoring Plan.

1.1 History

The New Richmond Landfill (Site) is located at 1935 115th Street, at the southeast corner of the intersection of 115th Street and 195th Avenue, approximately two miles northwest of the City of New Richmond (Figure 1.1). The property for the landfill was purchased by the City of New Richmond from St. Croix County in November 1975 and licensed on October 1, 1976. The landfill was constructed, operated, and closed by the City in accordance with the Wisconsin Department of Natural Resources (WDNR) regulations. The landfill ceased collection of waste by August 1, 1982. Approximately 163,000 cubic yards (CY) of waste were disposed of at the Site in an area approximately 7.6 acres in size.

During groundwater monitoring of Site monitoring wells in 1999, several volatile organic compounds (VOCs) were detected at concentrations exceeding State of Wisconsin ch. NR 140 Enforcement Standards. Residential well monitoring was conducted at residences down-gradient of the Site in 2000, revealing chlorinated VOCs at concentrations exceeding enforcement standards. Activated carbon systems were subsequently installed at eleven residences.

A Remedial Investigation (RI) was performed between August 2003 and April 2006 by Short Elliott Hendrickson, Inc. (SEH) that included excavation of test pits, collection of surface water and sediment samples, installation of 21 monitoring wells, collection of groundwater samples from new and existing monitoring wells, installation of 15 landfill gas probes and the completion of a landfill gas extraction pilot test.

SEH completed a Feasibility Study (FS) in October 2006 outlining the remediation alternatives. Final approval of the FS Report and the Final Remedy Plan was provided by the WDNR in a letter dated September 7, 2007. The selected remedy for OU-1 was OU-1-C which included upgrading the landfill cover to be in compliance with the landfill closure plan, installing and operating a soil vapor extraction (SVE) system below the waste, and installing and operating a landfill gas extraction (LFG) system within the waste.

The selected remedy for OU-2 had two components, aquifer restoration and water supply. The selected aquifer restoration remedy is OU-2-AR-B which involves monitored natural attenuation (MNA). The water supply portion of the remedy was addressed separately. The current groundwater monitoring well and residential well locations are shown on the Site Plan (Figure 1.2).

The SVE/LFG system installation and cap upgrade was completed in 2008. The primary purpose of the SVE/LFG system is to reduce the VOCs present in the landfill and the vadose zone below the



landfill, thereby reducing the VOCs available to migrate to the groundwater. The SVE/LFG monitoring locations are shown on Figure 1.3.

1.2 Site Geology

The Site is underlain with glacial deposits consisting of sand and gravel with admixtures of silt and clay of the St. Croix moraine. Alluvial deposits consisting of sand and gravel occur in the Apple River Valley west of the Site.

The upper-most bedrock underlying the site is the Prairie du Chien group (OPDC) of dolomites and sandy dolomites. The OPDC consists of from youngest to oldest, the Shakopee Formation, New Richmond sandstone and Oneota Formation. The Shakopee Formation is characterized by dolomite with karst features and is composed of two members, the Willow River Member, and the New Richmond Member. The Willow River Member overlies the New Richmond Member and consists of gray to brown, medium grained, thin bedded dolomite. The New Richmond Member is a thin (6.5 to 16.5 feet thick) brown to gray, fine grained, dolomitic sandstone and siltstone. Sand and some clay infilling are common in the karst features found in the Shakopee Formation. The unit is not saturated at the Site.

The New Richmond sandstone occurs between the Shakopee and Oneota Formation. The New Richmond sandstone is approximately 20 feet thick in the New Richmond area.

The Oneota Formation forms the basal part of the OPDC and consists of gray thick bedded, crystalline dolomite with chert and oolite beds. The dolomite is generally massive and contains vertical and horizontal fractures.

The thickness of the OPDC at the Site ranges from approximately 50 to 55 feet, and is much thinner than what is reported in the City of New Richmond municipal wells (217 feet thick). The top of the OPDC is an erosional surface, attributing to the variable thickness in the area.

The Jordan sandstone underlies the OPDC and is the primary bedrock aquifer in this area of St. Croix County. The Jordan Formation is a weak to moderately cemented, tan to whitish colored, fine to coarse grained sandstone, with some thin beds of dolomite and shale laminae approximately 90 feet in thickness.

The depth to groundwater at the Site ranges from approximately 100 to 150 ft bgs. The water table is located near the contact of the OPDC-Jordan aquifer. The groundwater flows in a northwesterly direction toward the Apple River.

1.3 Objectives

The objectives of the OU1 source remedy monitoring program, which focuses on the landfill cap and the SVE/LFG system, is to ensure ongoing protection of human health and the environment by monitoring potential migration pathways. The OU1 remedy is intended to prohibit infiltration into the landfill, reduce leachate generation, prevent off-Site migration of combustible landfill gases and reduce the VOC mass within the waste, and reduce the VOC mass within the soil below the waste and above the water table in order to minimize VOCs leaching into the groundwater.



The scope of the OU1 source remedy monitoring program includes:

- Monitoring combustible gas percentage, oxygen percentage, well vacuum, flow rate and total VOC concentration as measured by a flame ionization detector (FID) at SVE wells.
- Monitoring combustible gas percentage, oxygen percentage, temperature, well vacuum, flow rate and total VOC concentration as measured by a FID at LFG wells.
- Monitoring combustible gas percentage, oxygen percentage, temperature, system pressure, flow rate and total VOC concentration as measured by a FID at the blower discharge.
- VOC monitoring by collecting summa canisters for laboratory analysis by EPA method TO-15 at select SVE wells and the blower discharge.
- Monitoring combustible gas percentage, oxygen percentage, and well vacuum at gas probes.

The objective of the OU2-AR, aquifer restoration, is to determine the effectiveness and protectiveness of the selected remedy for groundwater, MNA.

The scope of OU2-AR program includes:

- Monitoring flow direction and hydraulic gradient through the measurement and assessment of groundwater levels.
- Monitoring the natural attenuation of the plume through collection and chemical analysis of groundwater samples from monitoring wells.
- Monitoring long term improvement in groundwater quality through the collection and chemical analysis of groundwater samples from monitoring wells.
- Monitoring compliance with groundwater cleanup standards for the Site. The groundwater cleanup standards are State of Wisconsin ch. NR 140 Enforcement Standards.
- Monitoring potential impact on residential wells through collection and chemical analysis of water samples from targeted residential wells.

The OU1 and OU2 monitoring are conducted in accordance with the Operation, Maintenance and Monitoring (OM&M) Plan (April 2008) and subsequent revisions.

2. Groundwater Monitoring

Groundwater monitoring, including water level measurements and water sampling, was conducted in May 2017 and November 2017 according to the procedures in the Operation, Maintenance, and Monitoring Plan and associated revision in 2013. Groundwater monitoring was conducted using the monitoring well network of 34 wells, and selected residential wells.

The results from the May 2017 sampling round were submitted to the WDNR on June 21, 2017.

In a letter dated October 21, 2015, the WDNR responded to the PRPs' proposed recommendations in the 2014 Annual Monitoring Report. The WDNR conditionally approved the proposed



modifications to the SVE/LFG system described in Section 4.0. The conditional approval was based on the following:

- Increasing the monitoring at 2055 County Road C from annual to semi-annual.
- Increasing the monitoring at MW-10, MW-10A, MW-16, MW-16A, MW-17, and MW-17A from annual to semi-annual.

2.1 Water Level Monitoring

Table 2.1 presents the groundwater elevation data collected from the May 2017 and November 2017 sampling rounds. Water table contours based on the November 2017 measurements are presented on Figure 2.1. Water table contours from the 2017 measurements are similar to the historical water table contours. Historical groundwater elevations are presented in Appendix A.

Figure 2.1 shows that groundwater flows northwesterly toward the Apple River, consistent with historical groundwater elevation measurements collected since 2003. As the groundwater flows towards the Apple River, it encounters a geologic change as it goes from the OPDC at the landfill to unconsolidated alluvial sediments. The geologic change does not affect the groundwater flow pattern and only slightly diminishes the horizontal hydraulic gradient.

2.2 Groundwater Sampling

Samples from the three residential wells were collected in May 2017 according to the Operation, Maintenance, and Monitoring Plan. An additional sample was collected in November 2017 from 2055 County Road C.

The annual round of groundwater sampling was conducted in November 2017. A list of the wells sampled is presented in Table 2.2. Groundwater samples were analyzed for VOCs by EPA method 8260.

Groundwater sampling and analysis was conducted according to the Quality Assurance Project Plan (QAPP). All samples were shipped to TestAmerica Laboratories in North Canton, Ohio, for analysis. Copies of data quality validation memoranda and Laboratory Reports are included in Appendix B.

3. Results/Evaluation

The objectives of groundwater sampling at the New Richmond Landfill are to monitor for natural attenuation in the contaminant plume and the long term improvement in groundwater quality. Samples from all events were analyzed for VOCs to monitor the long term improvement in the aquifer.

Table 3.1 presents laboratory results for VOCs that have exceeded a Wisconsin Preventative Action Limit (PAL) from the sampling events discussed in this report. Table 3.1 also shows the results that exceed the WDNR enforcement standards. Appendix C presents the historical VOC results for monitoring wells for all parameters since monitoring began in 1999. Appendix D presents the historical residential well sampling results.



3.1 Monitoring Well Results and Evaluation

The primary VOCs found in the groundwater, based on concentration, are 1,1,1-trichloroethane (1,1,1-TCA) and its degradation product 1,1-dichloroethane (1,1-DCA); however, neither of these VOCs exceeded the Wisconsin Enforcement Standards (ES) of 200 µg/L and 850 µg/L, respectively. The highest concentrations of 1,1,1-TCA and 1,1-DCA were found at MW-18 and MW-17, respectively. The concentrations of 1,1,1-TCA and 1,1-DCA were 31 µg/L and 22 µg/L, respectively. Concentrations of both VOCs decrease with distance from the landfill. Figure 3.1 presents the 1,1,1-TCA concentrations at each well for the November 2017 sampling event.

None of the wells sampled in either sampling round had an exceedance of the ES. Table 3.2 presents the laboratory results for 1,1,1-TCA, tetrachloroethene, and their degradation products for the wells within the contaminant plume.

Since the SVE system started up in September 2008, there have been twenty groundwater monitoring events. The SVE system has removed approximately 1,338 pounds of VOCs from the vadose zone through the end of 2017. The laboratory results for the monitoring well closest to the landfill (MW-2R), shows that the VOCs removed by the SVE system have caused reduced concentrations in the groundwater. For instance, at MW-2R, the concentrations of 1,1,1-TCA and 1,1-dichloroethene (1,1-DCE) are significantly lower since the system started up. At wells farther from the landfill, the VOC concentrations have also started to decline since the SVE system began operation. Figures 3.2 through 3.7 show the 1,1-DCE, 1,1,1-TCA, and tetrachloroethene concentrations at the wells located inside of the groundwater plume. Figures 3.2, 3.3, 3.4, 3.5, and 3.6 show downward trends in the sample results from the wells farther from the landfill.

The first detection of VOCs at 2055 County Road C (old Thommes well) (approximately 7,000 feet down gradient) was in 2004. Thommes was provided with a new water supply well in 2009 and the old well was converted to a monitoring well. Starting in 2014, the old residential well on Thommes property was renamed MW-18. Figure 3.7 shows the sample results for 1,1,1-TCA and 1,1-DCE in MW-18 from October 2007 to November 2017.

As shown on Figure 3.7, the chemical concentrations in MW-18 have been increasing since sampling started in 2007. The highest concentration of 1,1,1-TCA was recorded in May of 2015. Since then, the concentration of 1,1,1-TCA has been on a downward trend. MW-18 is the farthest well from the landfill and is located on the down gradient edge of the groundwater plume. Since MW-18 is the farthest well from the SVE system and given the slow rate of groundwater movement, it has taken several years to show any improvement.

3.2 Residential Well Results

GHD collected samples in May 2017 from 2055 County Road C, 2056 County Road C, and 1070 192nd Ave. 2056 County Road C and 1070 192nd Ave samples had no VOC detections while the 2055 County Road C sample had a concentration of 1,1-DCE at 1.4 µg/L, a concentration of 1,1-DCA at 2.5 µg/L, and a concentration of 1,1,1-TCA at 2.2 µg/L.

Another sample was collected from 2055 County Road C in November 2017. The sample had a concentration of 1,1-DCE at 1.2 µg/L, a concentration of 1,1-DCA at 2.4 µg/L, and a concentration of 1,1,1-TCA at 2.1 µg/L. The ES for 1,1-DCE, 1,1-DCA, and 1,1,1-TCA are 7 µg/L, 850 µg/L, and



200 µg/L, respectively. The Preventative Action Limits (PAL) for 1,1-DCE, 1,1-DCA, and 1,1,1-TCA are 0.7 µg/L, 85 µg/L, and 40 µg/L, respectively. The 1,1-DCE concentration at 2055 County Road C is above the PAL but below the ES. As discussed further in Section 2.0, the sampling frequency was recently increased to semi-annual at 2055 County Road C. The residential wells located at 2056 County Road C and 1070 192nd Ave will continue to be sampled annually.

4. Landfill Gas and Soil Vapor Extraction System Operation, Maintenance and Monitoring

The following sections detail the OM&M performed for the LFG and SVE system installed at the Site during 2017 (January 1 through December 31, 2017).

On October 21, 2015, the WDNR conditionally approved the SVE/LFG modifications recommended in the 2014 Annual Monitoring Report. The approved modifications are summarized below:

- Operate only select SVE wells (SVE-4, SVE-6, SVE-7, SVE-12, SVE-13, and SVE-14) (at reduced flow rates) which are monitored on a monthly basis. All other SVE wells will be monitored semi-annually (April and October) and will be included in the operational schedule of the system if concentrations become elevated. Extraction from LFG wells will be modified to focus extraction in the vicinity of the GP-2 nest (LFG-4, LFG-6, and LFG-8). Gas probes were monitored monthly for a minimum of 3 months to verify that landfill gas migration was being controlled, and returned to quarterly thereafter, with the possibility for monthly monitoring of select probes.
- Change operation of the LFG/SVE system from continuous (24-hours per day) to operation during off-peak hours (5:00 p.m. to 9:00 a.m.).

Results of 2017 post modification monitoring events are discussed in the sections below.

4.1 LFG/SVE System Operational Summary

Routine inspections of the LFG/SVE system were performed monthly in accordance with the OM&M Plan for the Site. Table 4.1 provides select field monitoring data for the system during 2017. Field monitoring data presented includes combustible gas percentage, oxygen percentage, pressure, temperature, flow rate, and concentration of VOCs as measured using a FID. Select field monitoring data for the system discharge since system start up is presented in Appendix E.1. Figure 1.3 displays a Site plan showing the location of the blower building and the individual SVE wells, LFG wells, and gas probes.

During 2017, it was noted that the LFG/SVE system continued to achieve the desired results, including removal of VOCs in the sub landfill soils via the SVE system, and control of landfill gas migration via the LFG system. Details of the system operation will be discussed in the sections below.

During 2017 the LFG/SVE system experienced nine (9) unscheduled shutdowns. Details of the shutdowns are provided in Appendix F. The LFG/SVE system was operational for 3,951 out of 5,840 hours (68 percent) during 2017 (Based on the part-time system operation).



4.2 SVE System Well Field Measurements

SVE well measurements at the Site were taken using a Landtec GEM-500 gas extraction monitor and a Photovac Micro-FID. Measurements recorded at each well included combustible gas percentage, oxygen percentage, header pressure, flow rate, and VOC concentrations. Flow rate adjustments were made at the SVE wells throughout the reporting period to maintain system target flow rates.

Monitoring of select SVE wells (SVE-4, SVE-6, SVE-7, SVE-12, SVE-13, and SVE-14) was completed monthly during the reporting period. Semiannual monitoring of all Site SVE wells was completed in April and October. Table 4.1 provides select field monitoring data for the SVE wells during 2017. SVE well data collected since system start-up is presented in Appendix E.2. Additionally, Figure 4.1 presents a Site plan with the maximum VOC concentration by FID and flow rate range observed for the individual SVE wells while they were operating during 2017.

Combustible gas was only detected twice (SVE-9: 0.2% in April, and SVE-15: 0.1%) in any of the semi-annual monitored SVE wells (SVE-1, SVE-2, SVE-3, SVE-5, SVE-8, SVE-9, SVE-10, SVE-11, SVE-15, SVE-16, SVE-17, SVE-18, SVE-19). Additionally, combustible gas was not detected in wells SVE-6 and SVE-13 during 2017. Combustible gas was detected at six SVE wells (SVE-4, SVE-7, SVE-9, SVE-12, SVE-14, and SVE-15) ranging from 0.1 percent to 0.8 percent (SVE-7 and SVE-14) during 2017.

A flow rate was unable to be monitored at six (6) SVE wells (SVE-4, SVE-6, SVE-7, SVE-12, SVE-13, and SVE-14) during at least one of the monitoring events, however, each produced measureable flow at least one time during the reporting period.

GHD will continue to perform necessary repairs and maintenance work to ensure adequate capture of VOCs throughout the extraction system, including maintenance or cleaning of well components. Routine cleaning and maintenance of SVE well components are scheduled for the spring of 2018.

4.3 LFG System Well Field Measurements

LFG well measurements at the Site were taken using a Landtec GEM-500 gas extraction monitor and a Photovac Micro-FID. Measurements recorded at each well included combustible gas percentage, oxygen percentage, header pressure, temperature, flow rate, and VOC concentrations. Flow rate adjustments were made at the LFG wells as necessary throughout the 2017 reporting period to maintain system design flow rates.

Monitoring of the LFG wells was completed monthly during the reporting period. Table 4.1 provides select field monitoring data for the LFG wells during 2017. LFG well data collected since system start-up is presented in Appendix E.3. Additionally, Figure 4.1 presents a Site plan with the maximum VOC concentration by FID and flow rate range observed for the individual LFG wells during 2017.

During 2017, the LFG system was noted to be operating as designed and controlling landfill gas. Combustible gas was detected in at least one LFG well during each monitoring event in 2017. Well LFG-8 had the highest concentration of combustible gas (27.3 percent) detected in 2017 during the January 2017 monitoring event. The months of January, March, April, May, and October 2017 had



the most LFG wells (8) with combustible gas detected (all wells except LFG-9). Combustible gas was not detected at LFG-9 during 2017.

4.4 Gas Probe Measurements

Monitoring of Site gas probes occurred quarterly. Measurements recorded during gas probe monitoring include combustible gas percentage, oxygen percentage, and pressure. Gas probes were purged before final measurements were taken.

Combustible gas was not detected in any gas probe during 2017.

All seventeen (17) gas probes were noted to be at zero pressure or under vacuum influence from the landfill at least once during 2017, verifying that soil gas is being drawn towards the landfill by the LFG/SVE system. Table 4.1 provides select field monitoring data for the gas probes during 2017. LFG well data collected since system start-up is presented in Appendix E.4.

4.5 Condensate Management

Condensate generation at the Site has generally been observed to occur when the gas temperature drops below approximately 50-degrees Fahrenheit. During times of condensate generation, condensate is pumped from the blower building knock-out vessel to condensate storage tanks within the blower building. As the tanks near capacity, condensate is pumped from the tanks and transported to the City of New Richmond wastewater treatment facility (WWTF) by Mondors, Inc.

Condensate removal was performed five (5) times during 2017 with approximately 3,230 gallons of condensate disposed of at the City of New Richmond WWTF. A graph showing the volume of condensate disposed each month over the past two years is presented in Figure 4.2.

4.6 VOC (TO-15) Monitoring

On January 7, 2014, during a meeting with Patrick Collins of the WDNR, GHD proposed reducing the monitoring frequency of VOCs (by EPA method TO-15) at select SVE wells from semi-annual to annual. The request was approved. VOC monitoring at the LFG/SVE system blower continued to be performed on a quarterly basis.

4.6.1 Blower Discharge Monitoring

Quarterly monitoring of the blower discharge was performed in February, April, July, and October 2017. The discharge samples were collected via summa canister and shipped to TestAmerica Laboratories for analysis by EPA method TO-15. Results of the TO-15 sample analyses from system startup through the October 30, 2017 sampling event are included in Table 4.2. As seen in Table 4.2, the concentration of VOCs detected in the blower discharge has decreased significantly since system startup in September 2008. Figure 4.3 displays concentrations over time for several chlorinated solvents 1,1,1-TCA, 1,1-DCA, 1,1-DCE, cis-1,2-dichloroethene, chloroethane, tetrachloroethene, trichloroethene (TCE), and vinyl chloride (VC),) since system startup. As shown on Figure 4.3, VOC concentrations held steady throughout 2017.

Blower discharge mass loading calculations were performed for 2017 using the October 30, 2017 sample results and maximum flow rate recorded during 2017. Blower mass loading calculations are



presented in Table 4.3 for the October 30, 2017 monitoring event. As can be seen in Table 4.3, the blower discharge continues to remain well under WDNR emission thresholds (WDNR NR 445.07), hence, no off-gas treatment is required.

In addition, the total VOC mass removal since system startup is displayed in Table 4.4. Approximately 1,338 pounds of VOCs have been removed from the landfill and the underlying soil. Of the total VOCs removed, approximately 332 pounds have been in the form of 1,1,1-TCA, approximately 272 pounds have been in the form of 1,1-DCA, approximately 39.5 pounds have been in the form of 1,1-DCE, and approximately 50.2 pounds have been in the form of tetrachloroethene as shown on Tables 4.5, 4.6, 4.7, and 4.8 respectively. Figure 4.4 presents the cumulative totals of Total VOCs, 1,1,-TCA, 1,1-DCA 1,1-DCE, and tetrachloroethene removed since system startup.

Since system startup the total concentration of VOCs has decreased from approximately 200,000 $\mu\text{g}/\text{m}^3$ in September 2008 to approximately 2,300 $\mu\text{g}/\text{m}^3$ in October 2017.

4.6.2 Select SVE Well Monitoring

Annual monitoring of select SVE wells was performed on October 30, 2017. During the October 2017 monitoring round SVE wells SVE-3, SVE-4, SVE-6, SVE-10, and SVE-14 were monitored in order to further evaluate the distribution of VOCs in the soils underlying the landfill. The samples were collected via summa canister and shipped to TestAmerica Laboratories for analysis by EPA method TO-15. Results of the TO-15 sample analyses from system startup through the October 2017 sampling event are included in Table 4.2. As shown in Table 4.2, the VOC levels at the individual SVE wells have shown significant reductions since system start-up, and are at very low levels at the majority of the wells.

Figures 4.5 through 4.16 display 1,1,1-TCA concentrations since system start-up for wells SVE-2, SVE-3, SVE-4, SVE-5, SVE-6, SVE-7, SVE-8, SVE-10, SVE-12, SVE-14, SVE-15, and SVE-16, respectively. As shown on Figures 4.5 through 4.16, 1,1,1-TCA concentrations at individual SVE wells are very low in comparison to pre-start-up levels, and concentrations have continued to decrease. Based on the graphical results, continued operation of the system yields a much lower percentage of VOCs in the extracted vapors as time goes on.

4.7 Additional O&M Activities Conducted and Upcoming O&M Activities

A summary of additional operation and maintenance activities conducted and miscellaneous observations made at the Site are as follows:

- Pumped accumulated water out of well field vaults
- Performed quarterly system maintenance including greasing the motor and blower bearings

Upcoming O&M activities are as follows:

- Routine cleaning of SVE well pitot tubes.



5. Conclusions

Based on the 2017 sampling activities, the following conclusions are made:

- The groundwater flows northwesterly towards the Apple River, consistent with historical findings.
- 1,1,1-Trichloroethane and 1,1-dichloroethane are the primary groundwater contaminants based on highest concentration. These VOCs do not exceed the Wisconsin ch. NR 140 ESs but are highlighted because they illustrate the VOC plume.
- 1,1-Dichloroethene has not exceeded the Wisconsin ch. NR 140 ES (7 µg/L) at any of the wells during the last four years. In 2012, 1,1-Dichloroethene exceeded the Enforcement Standard at four wells.
- Tetrachloroethene exceeded the Wisconsin PAL (0.5 µg/L) at MW-10A in the November sampling round, but was below the ES (5 µg/L). In 2013, Tetrachloroethene also exceeded the Enforcement Standards in MW-10A and MW-16.
- VOC concentrations at monitoring wells located near the landfill (MW-2R and MW-9) along with down gradient wells (MW-16, MW-10A, MW-17, and MW-17A) are declining as a result of the SVE remedy and natural attenuation.
- Landfill associated VOCs were not detected in two of the three residential wells sampled. 1,1-Dichloroethene, 1,1-Dichloroethane, and 1,1,1-Trichloroethane were detected in the third residential well (Thommes New Well) below the ES, but above the PAL.
- The SVE/LFG system continues to remove VOCs from the landfill and underlying soils.
- Combustible gas was not detected at any gas probe during 2017 monitoring events.
- During gas probe monitoring in 2017 all gas probes were found to be at zero pressure or under vacuum during at least one monitoring event.

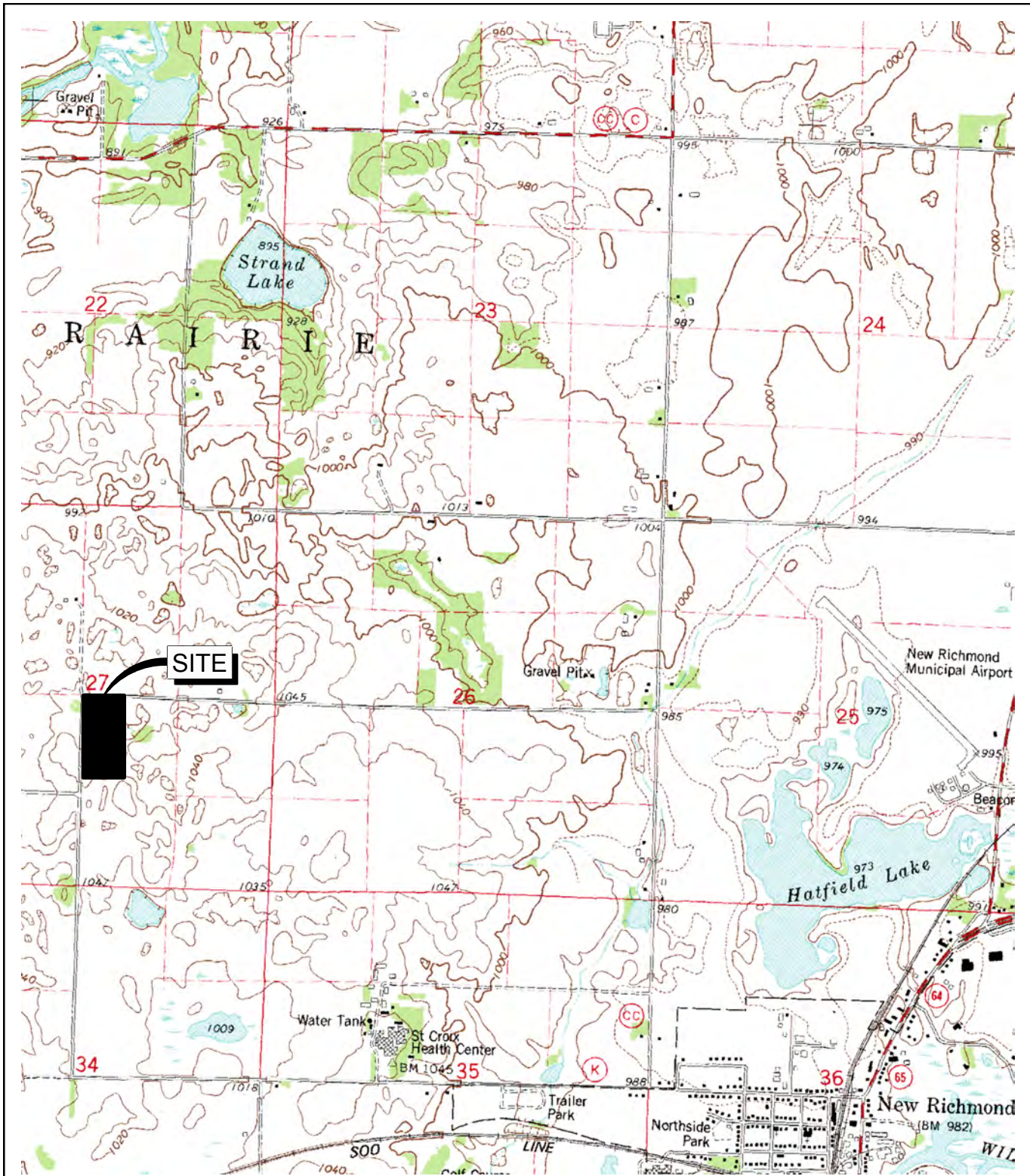
6. Recommendations

Based on the conclusions stated above, GHD recommends the following:

- Continue annual sampling of 2056 County Road C (TNT Metals) and 1070 192nd Ave (Hegge).
- Continue with semi-annual sampling of 2055 County Road C (Thommes).
- Modify the monitoring well sampling plan as follows:
 - Reduce the monitoring frequency at plume wells (MW-16, MW-17, MW-17A, MW-18, MW-19, and MW-19A) from semi-annual to annual based on consistent decreasing trends (or non-detections) at each well.
 - Eliminate sampling from wells MW-15A and MW-16A, as no VOCs have been detected at these wells in over 5 years.
 - Reduce the monitoring frequency of groundwater levels from semi-annual to annual, based on consistent groundwater elevations and flow direction since monitoring began



- Continue reduced operation of the LFG/SVE system as approved by the WDNR on October 21, 2015. This includes operation during off-peak hours (5:00 p.m. to 9:00 a.m.) and operating only select SVE wells (SVE-4, SVE-6, SVE-7, SVE-12, SVE-13, and SVE-14). Also continue focused extraction from LFG wells in the vicinity of the GP-2 nest (LFG-4, LFG-6, and LFG-8).
- Continue semi-annual monitoring (April and October) of all SVE wells and “turn on” these wells on an as needed basis as discussed in the 2014 Annual Monitoring Report (CRA, May 2015) and approved by the WDNR on October 21, 2015.



MAP SOURCE: USGS 7.5 MINUTE QUAD MAP

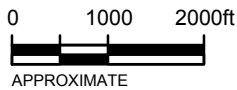


figure 1.1

SITE LOCATION
NEW RICHMOND LANDFILL (#2492)
New Richmond, Wisconsin

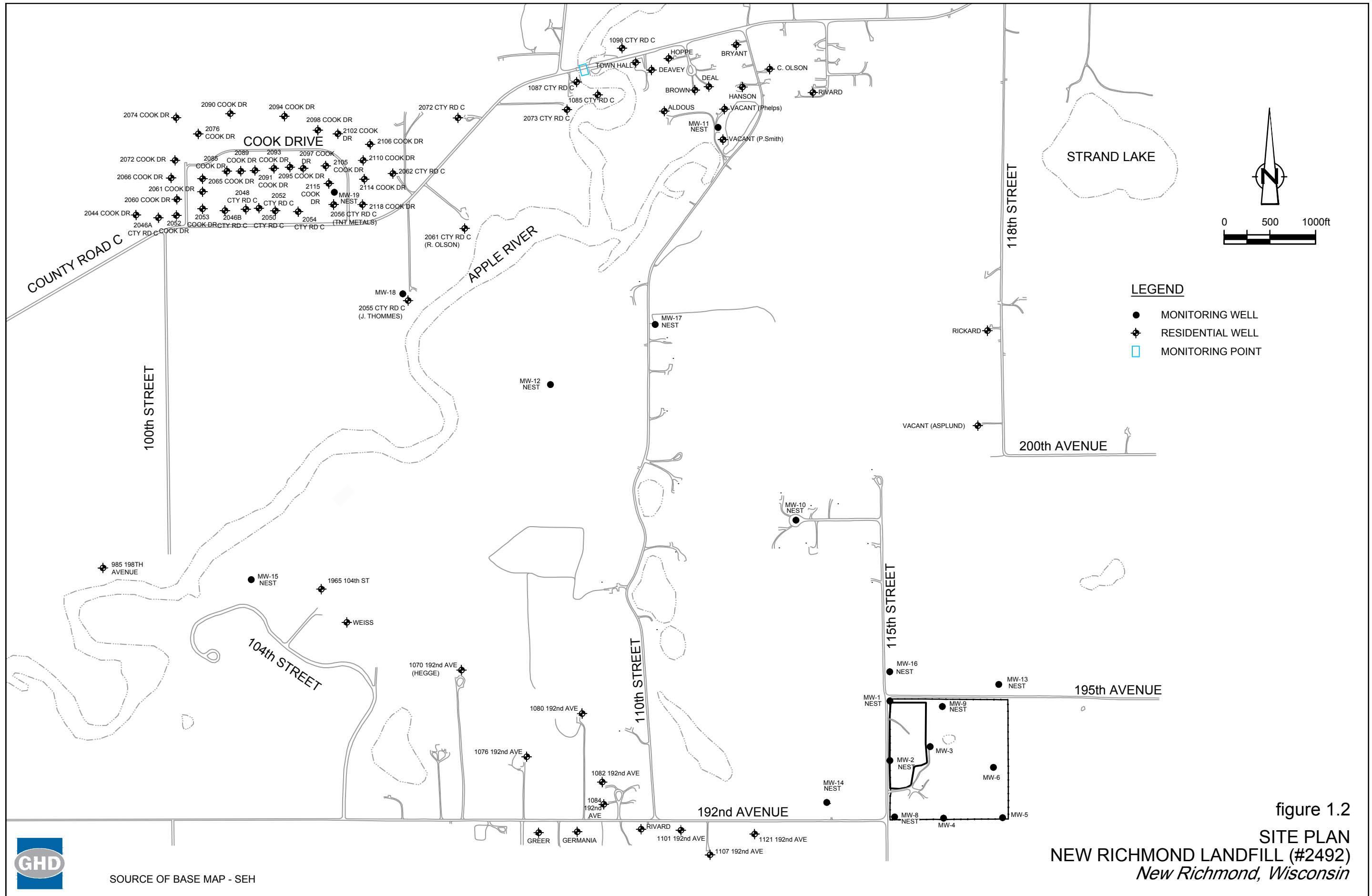
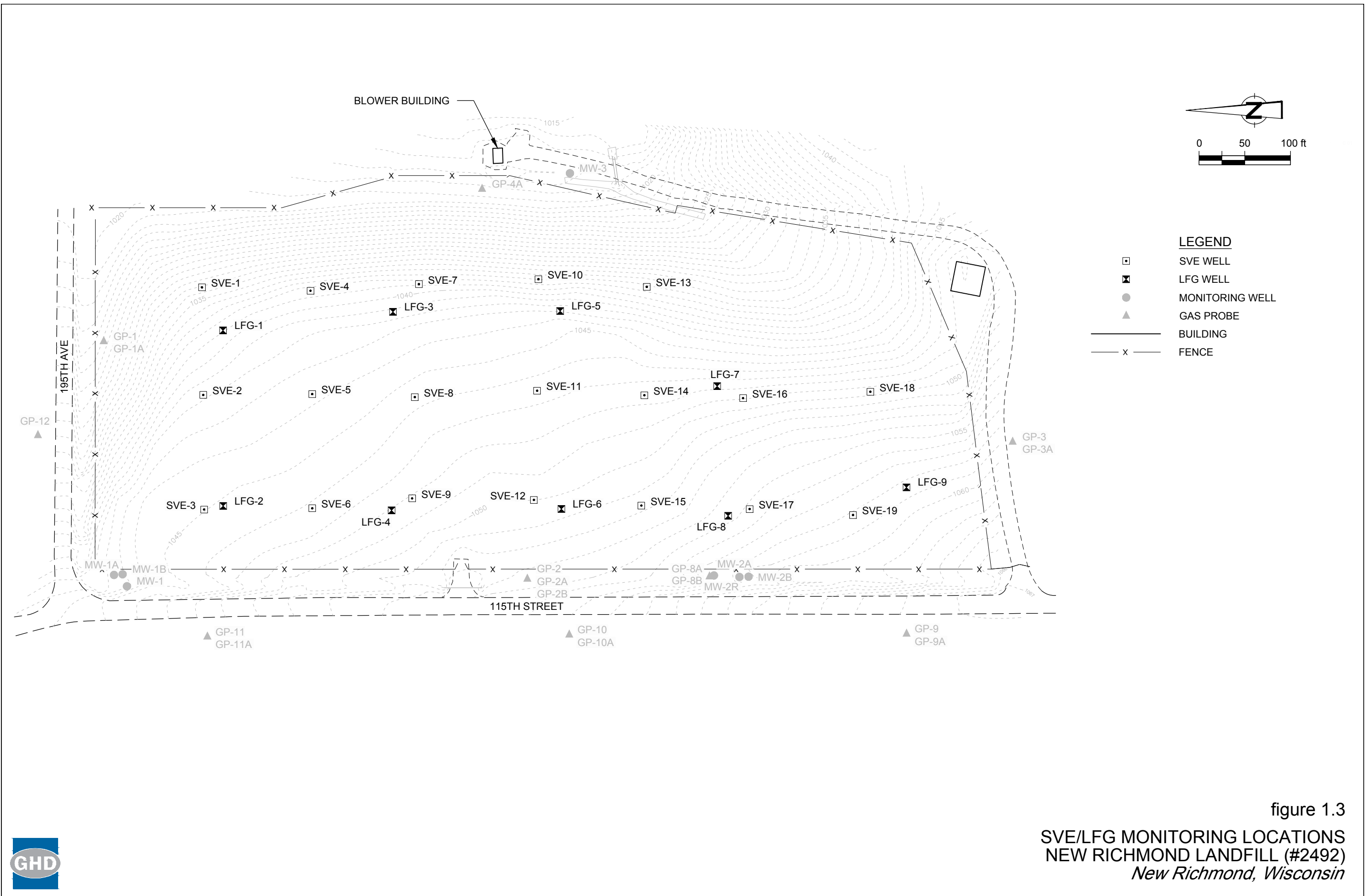


figure 1.2
 SITE PLAN
 NEW RICHMOND LANDFILL (#2492)
 New Richmond, Wisconsin



SOURCE OF BASE MAP - SEH



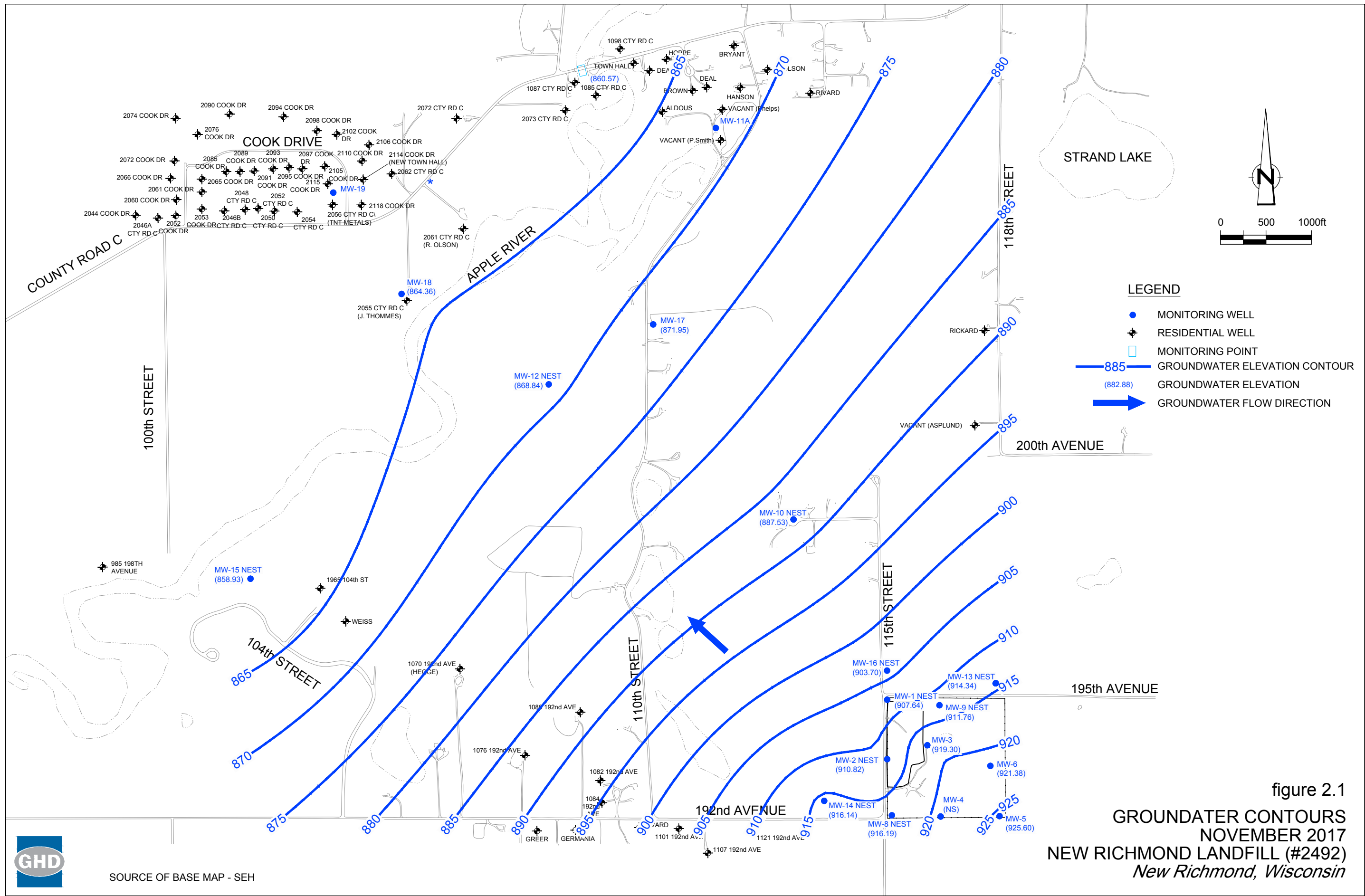


figure 2.1
 GROUNDATER CONTOURS
 NOVEMBER 2017
 NEW RICHMOND LANDFILL (#2492)
New Richmond, Wisconsin



SOURCE OF BASE MAP - SEH

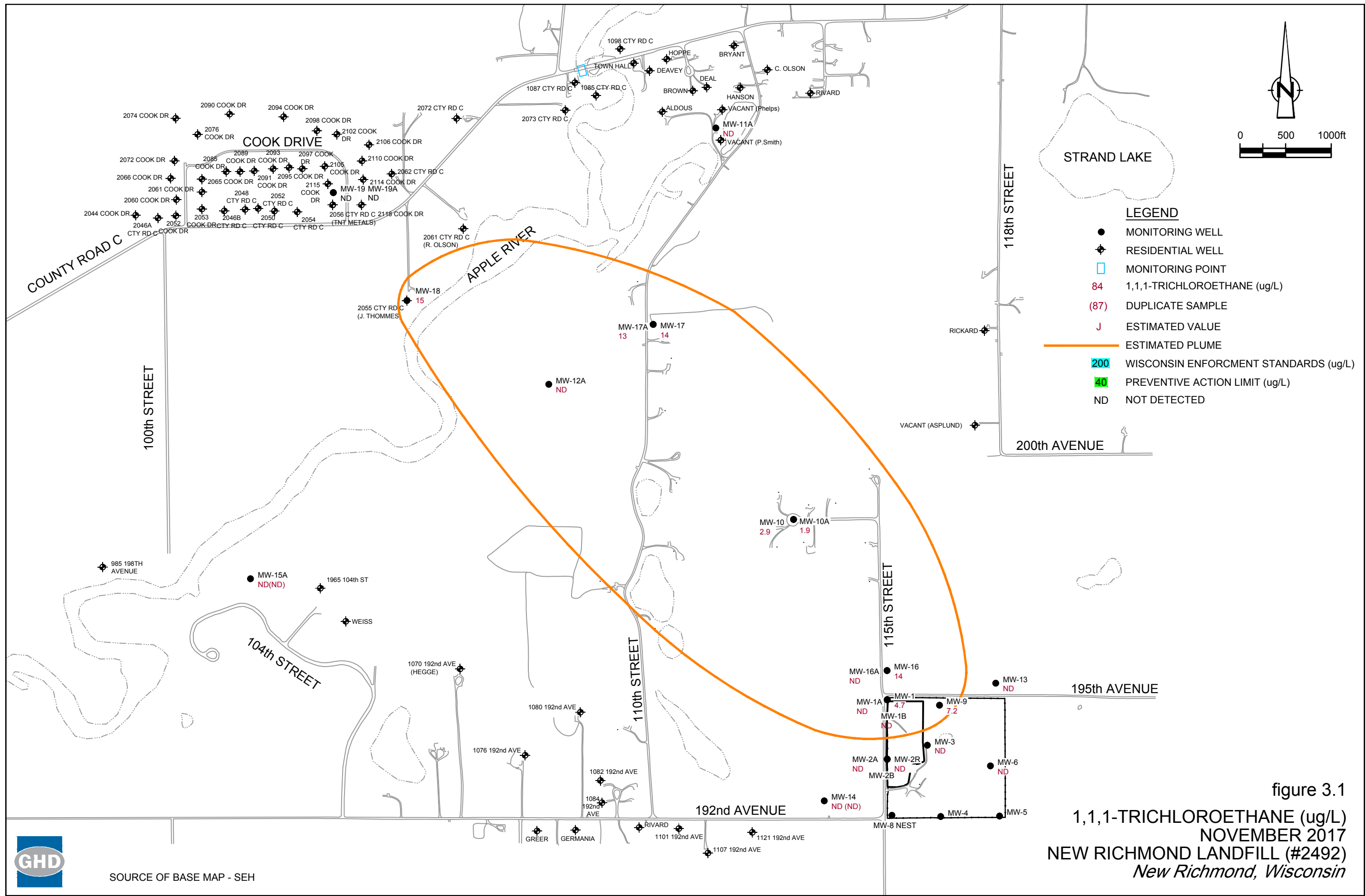


figure 3.1
 1,1,1-TRICHLOROETHANE (ug/L)
 NOVEMBER 2017
 NEW RICHMOND LANDFILL (#2492)
 New Richmond, Wisconsin



SOURCE OF BASE MAP - SEH

Figure 3.2

1,1,1-TCA and 1,1,-DCE Concentrations
(MW-2R)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

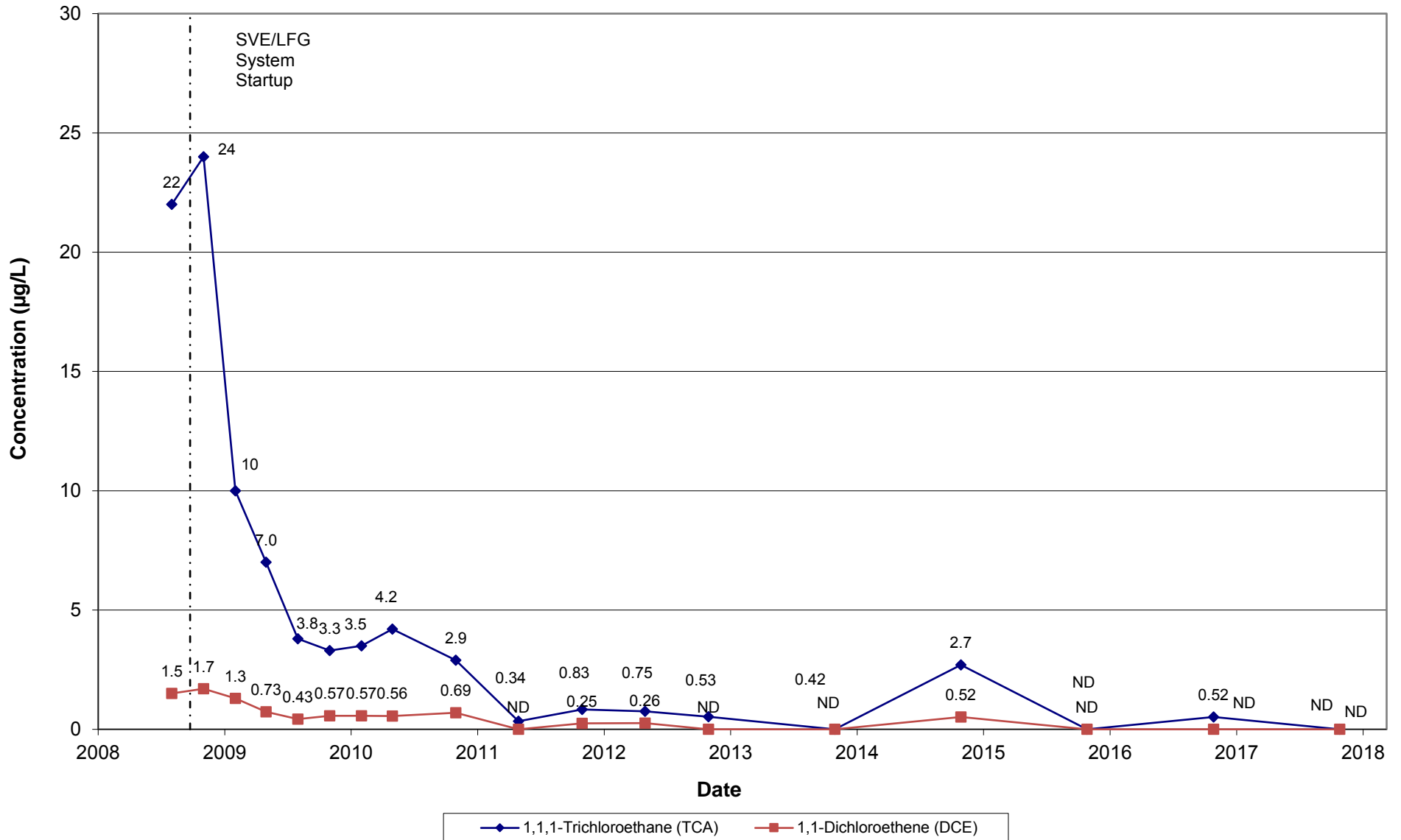


Figure 3.3

1,1,1-TCA, 1,1-DCE, and PCE Concentrations
(MW-16)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

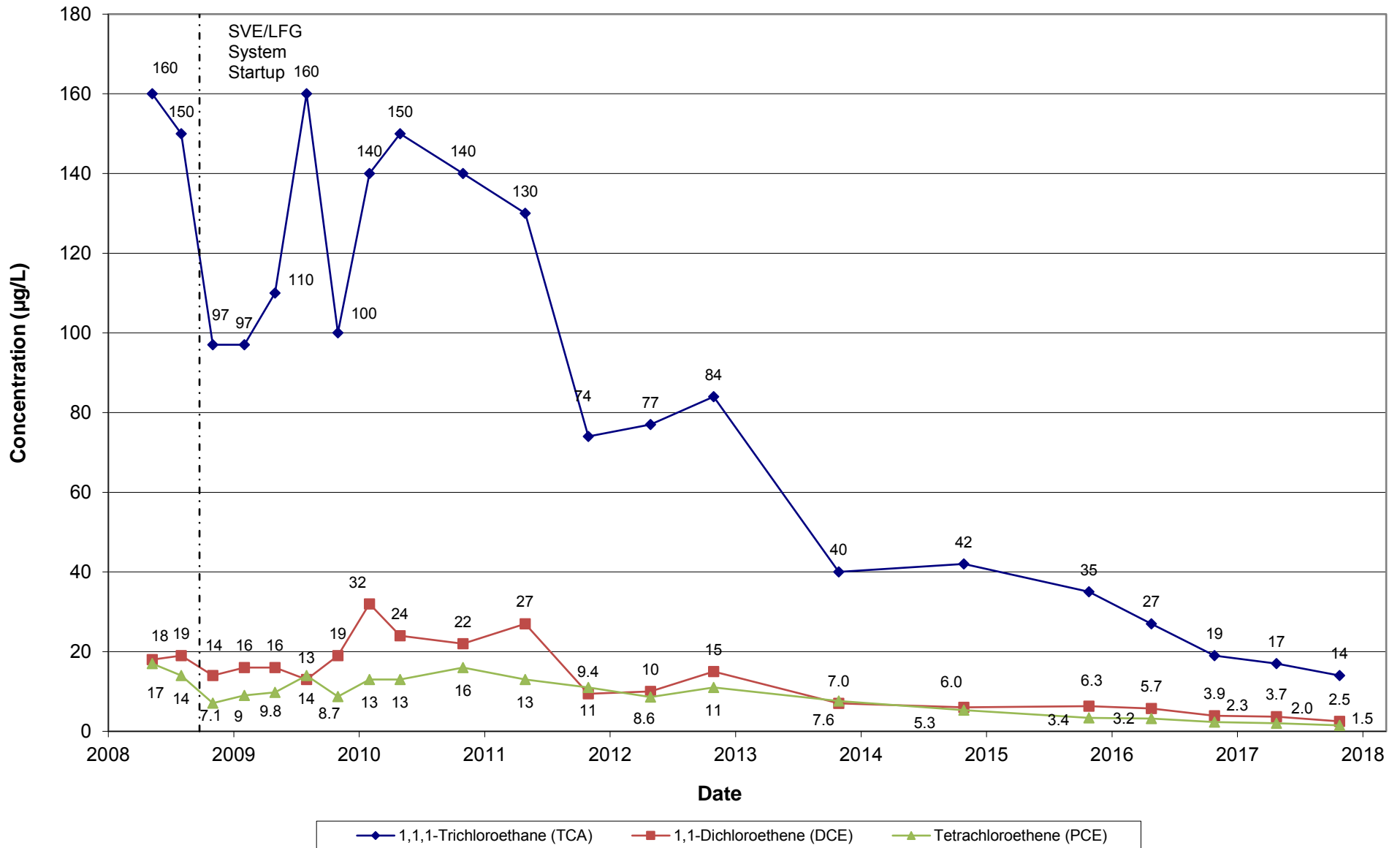


Figure 3.4

1,1,1-TCA, 1,1-DCE, and PCE Concentrations
(MW-10)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

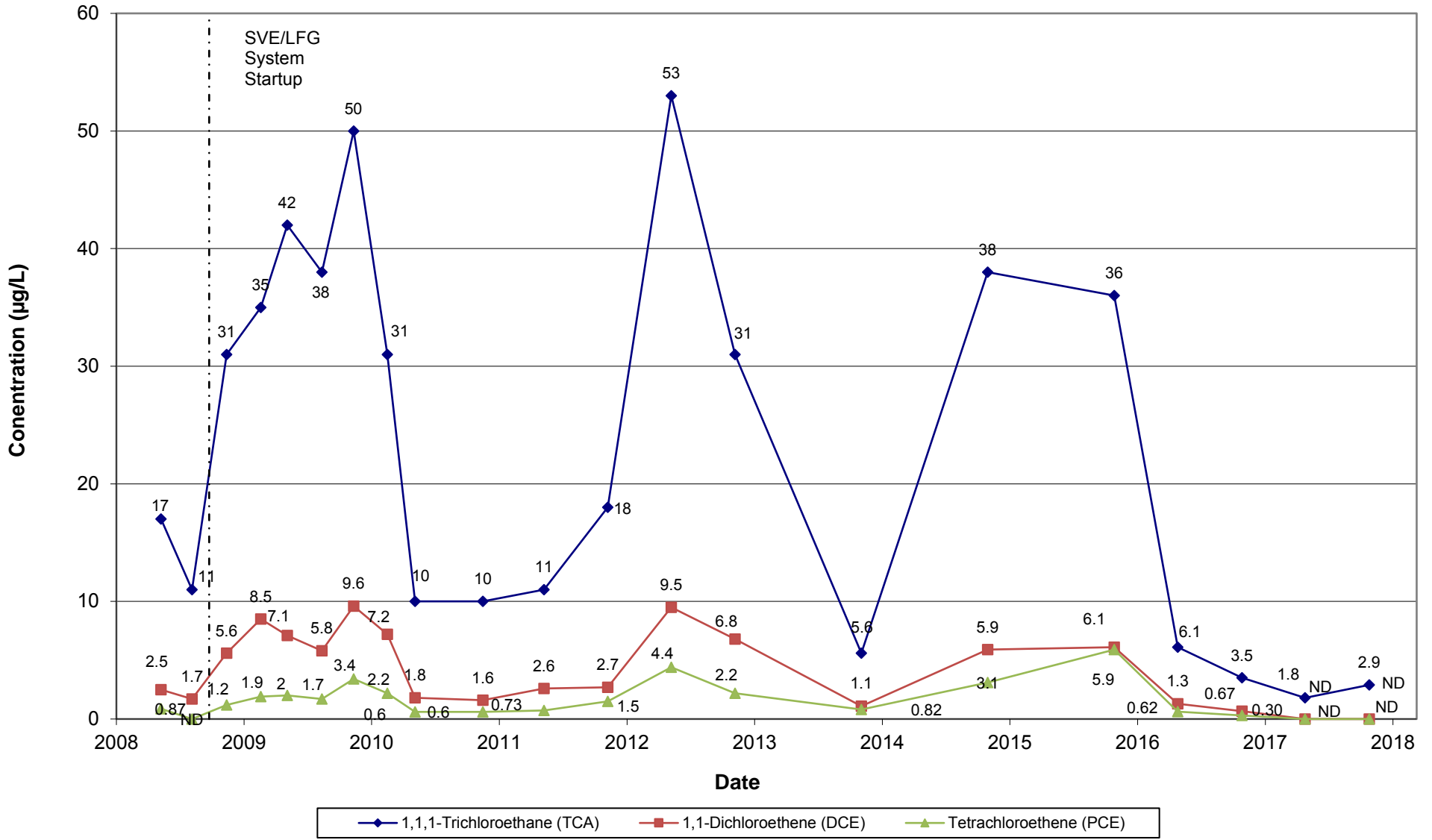


Figure 3.5
1,1,1-TCA, 1,1-DCE, and PCE Concentrations
(MW-10A)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

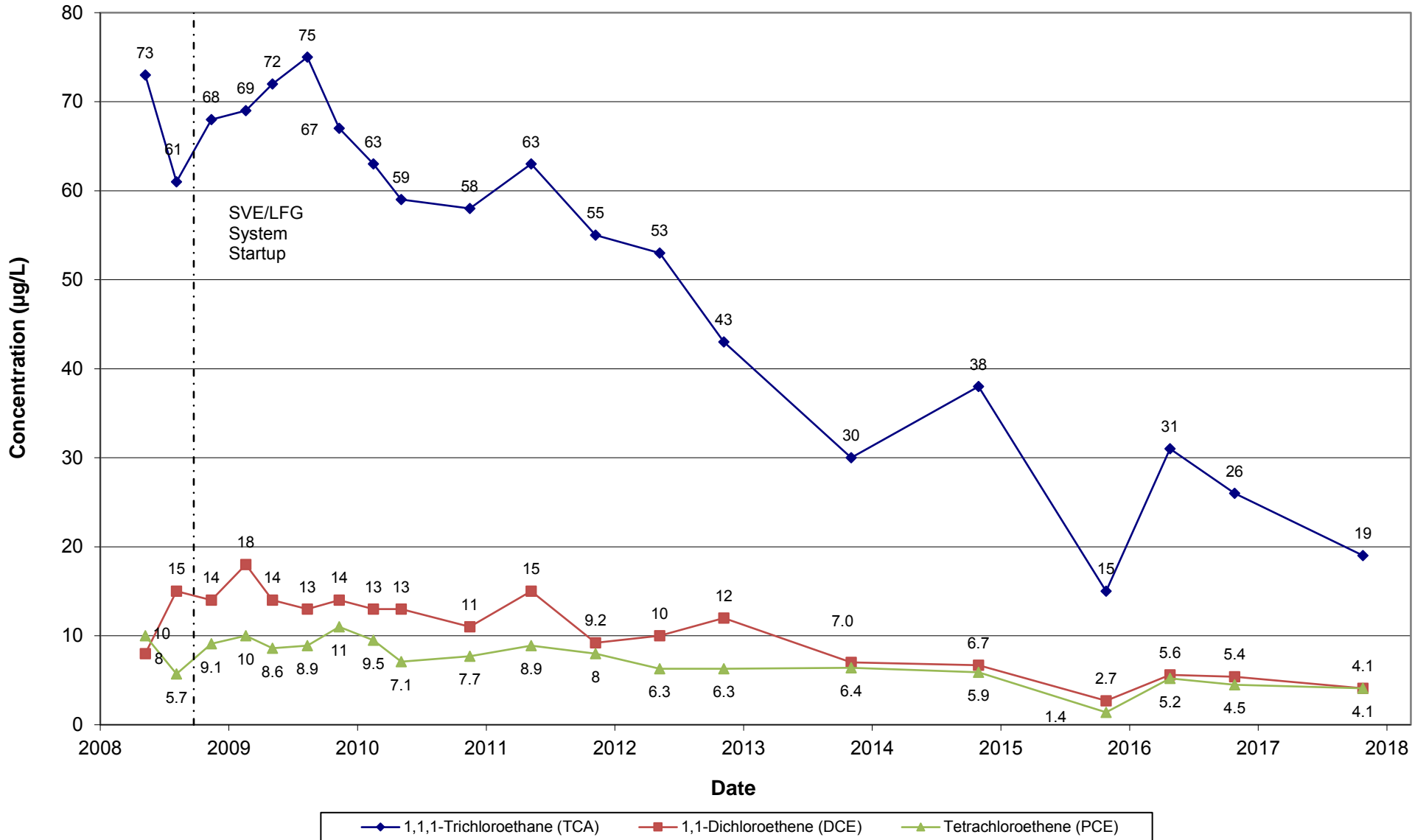


Figure 3.6

1,1,1-TCA, 1,1-DCE, and PCE Concentrations
(MW-17)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

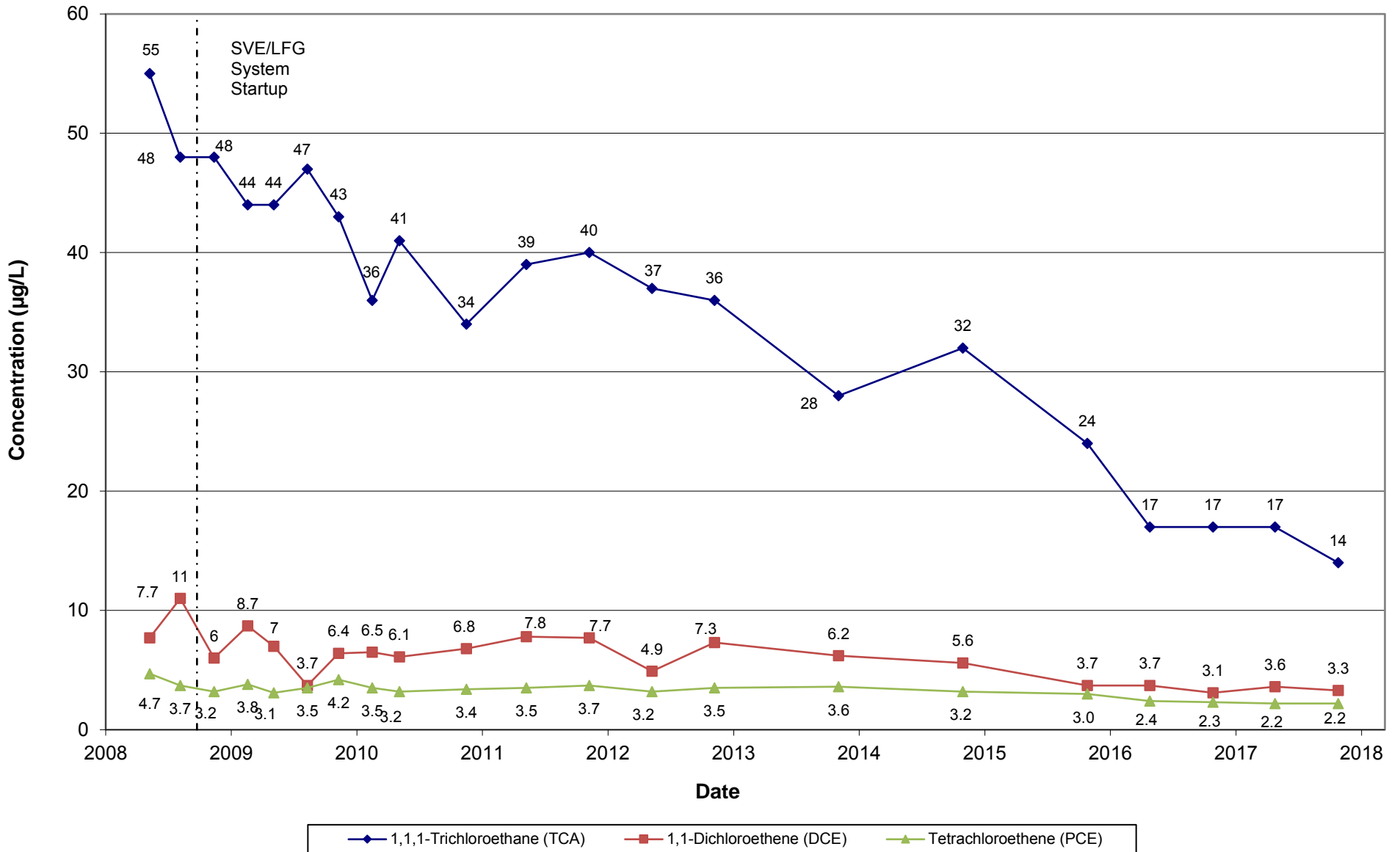


Figure 3.7

1,1,1-TCA and 1,1-DCE Concentrations
(MW-18)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

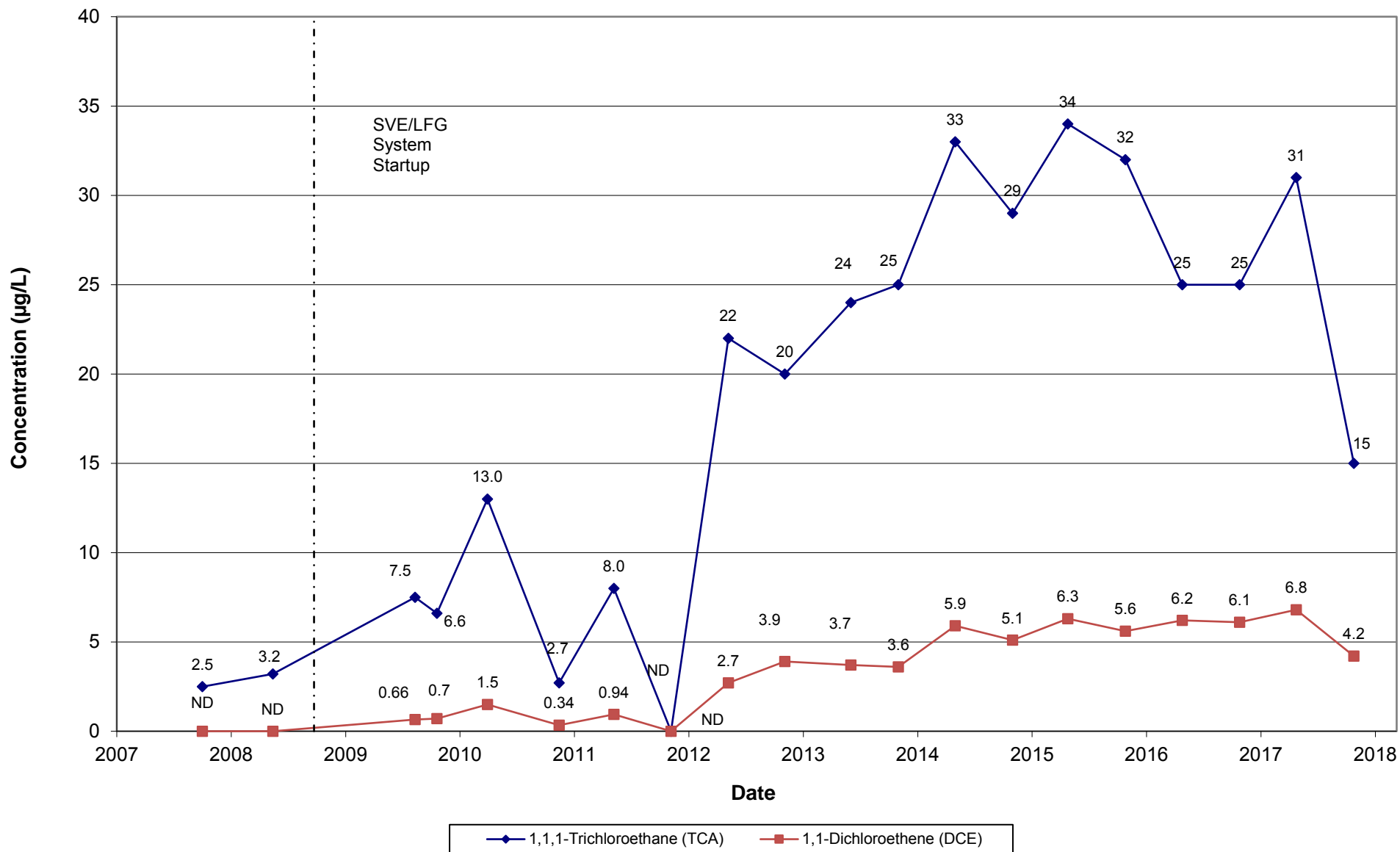




Figure 4.2

Monthly Condensate Discharge Volumes to New Richmond WWTF
New Richmond Landfill (#2492)
New Richmond, Wisconsin

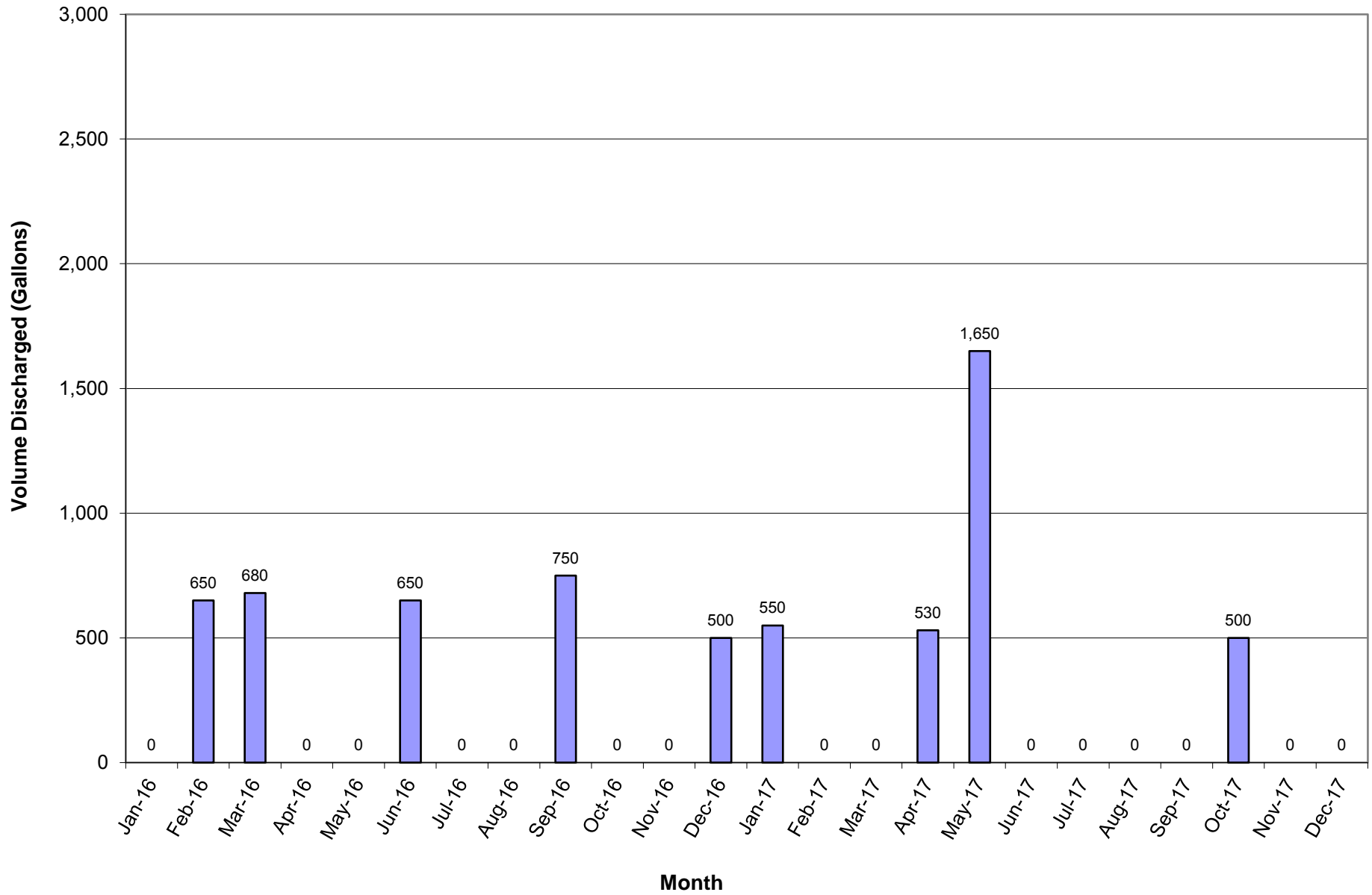


Figure 4.4

Historical Blower Discharge Removal of Select VOCs
(Cumulative Since September 2008)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

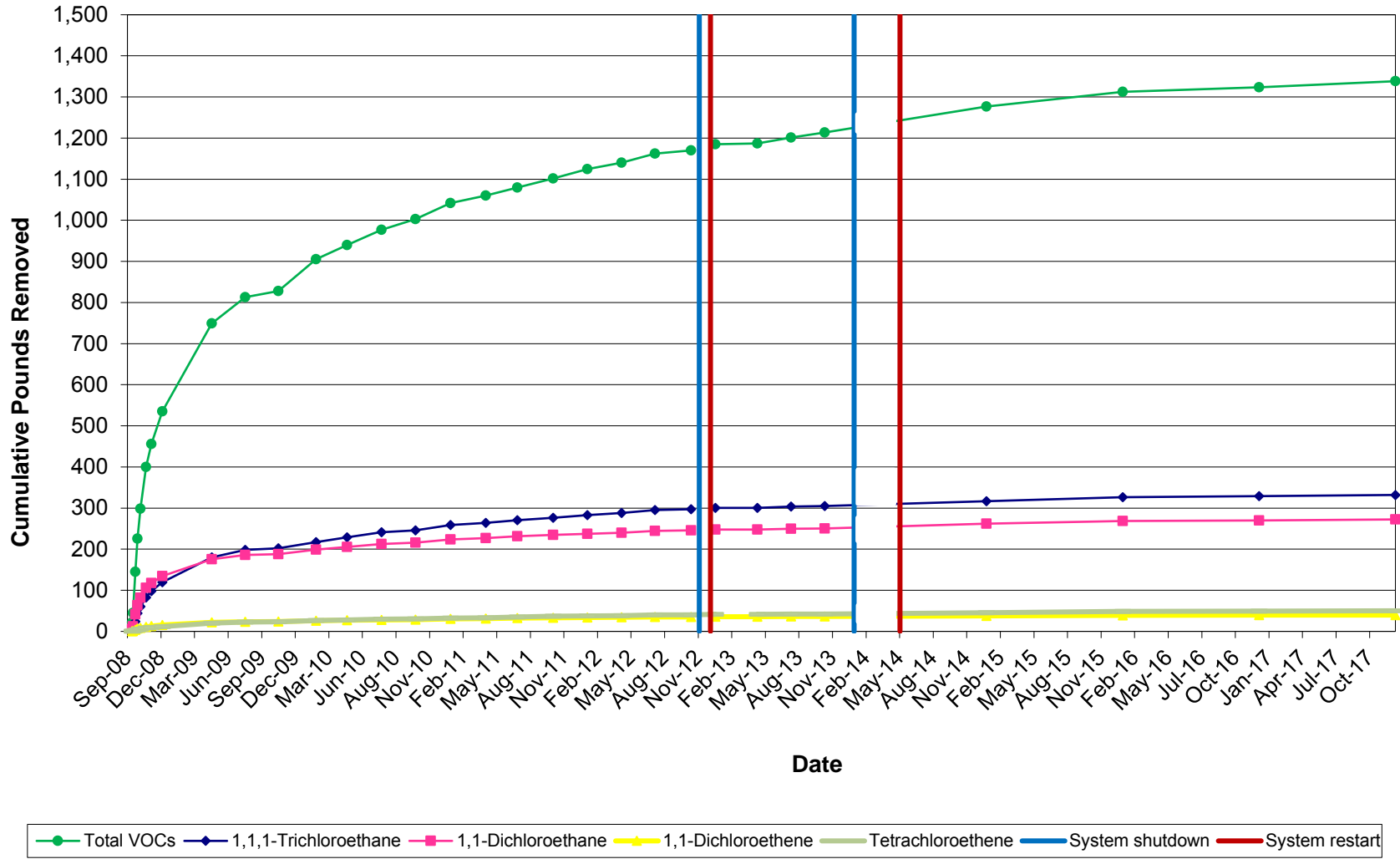


Figure 4.5

1,1,1-TCA Concentration Over Time
(SVE-2)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

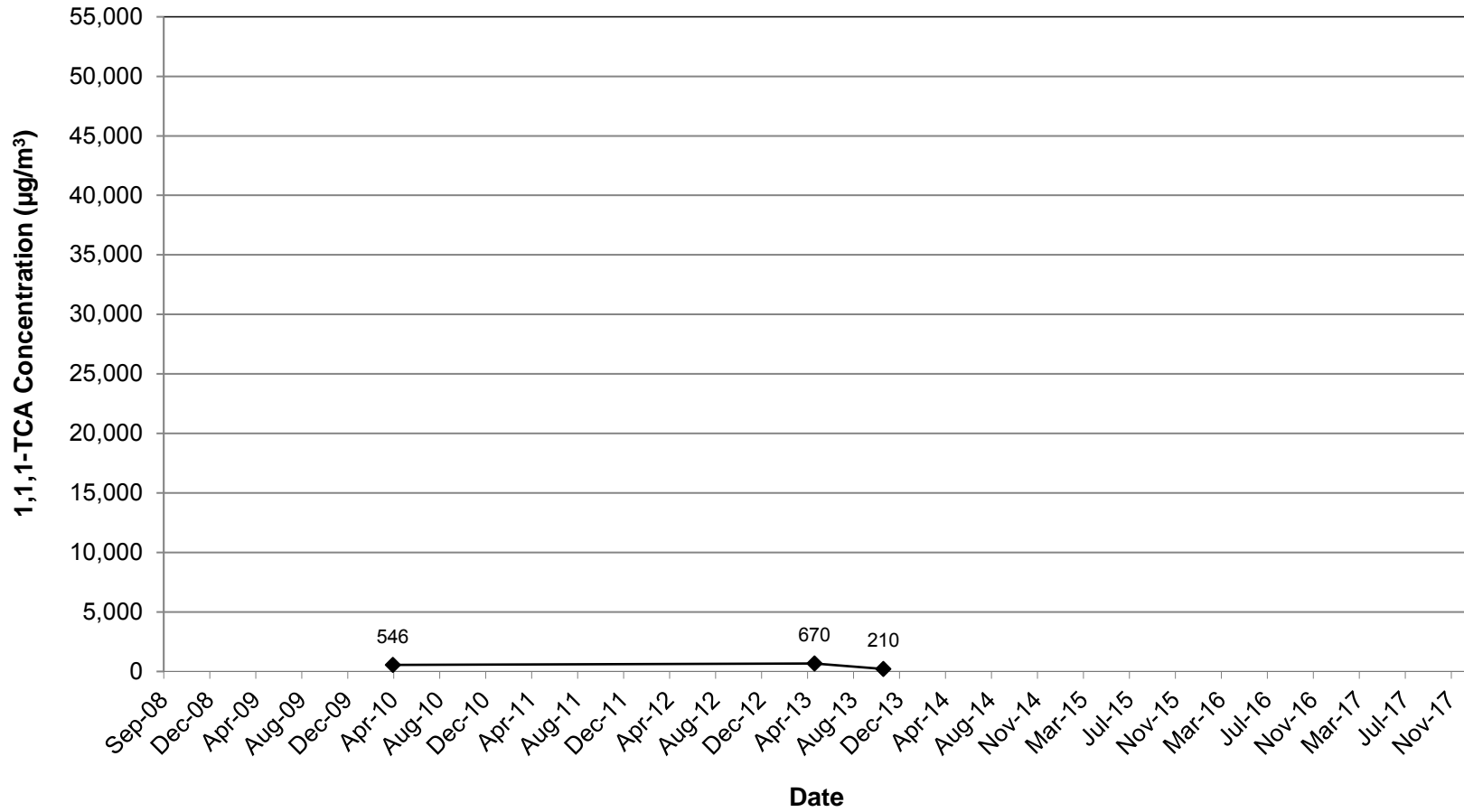


Figure 4.6

1,1,1-TCA Concentration Over Time
(SVE-3)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

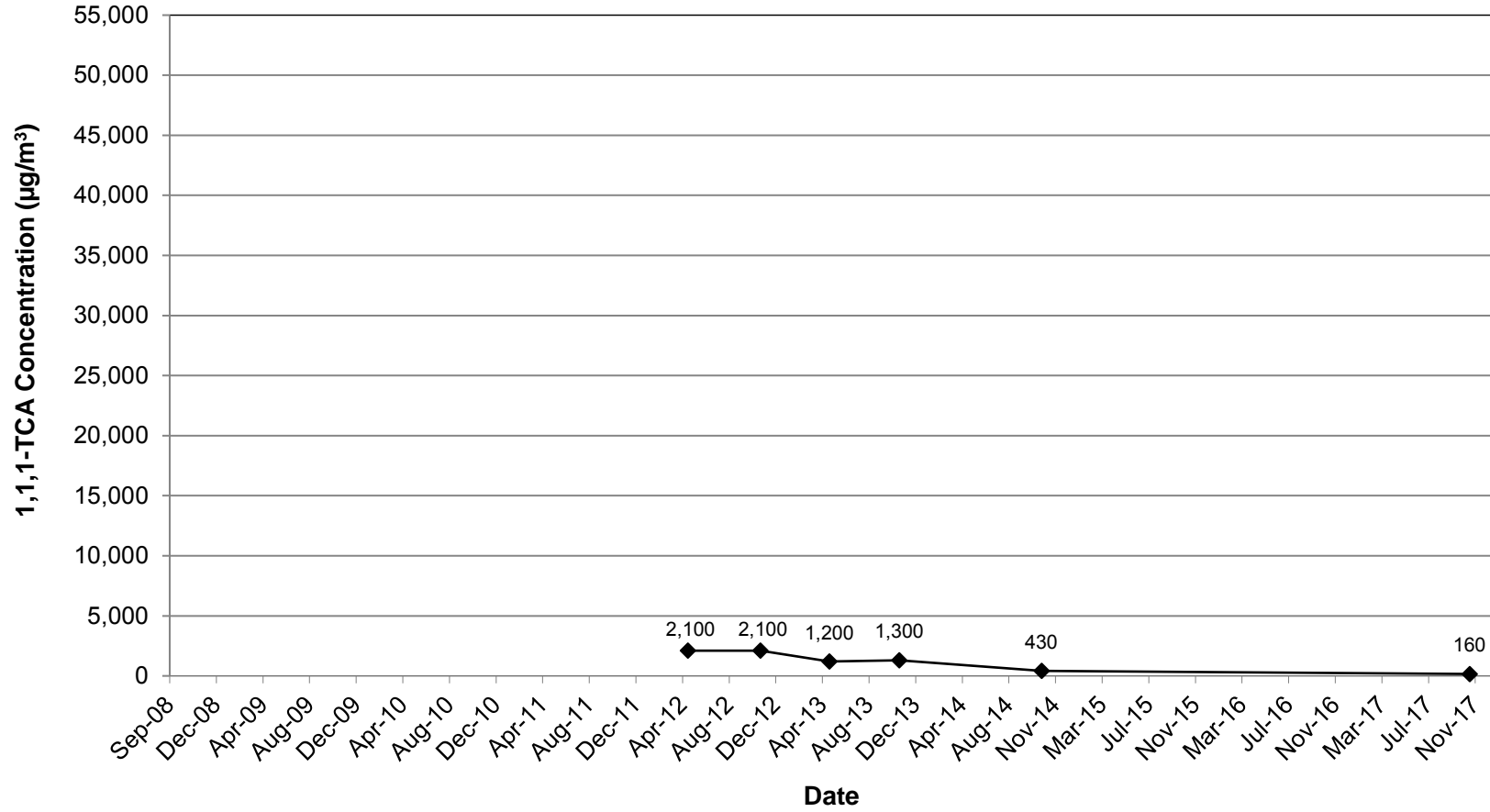


Figure 4.7

1,1,1-TCA Concentration Over Time
(SVE-4)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

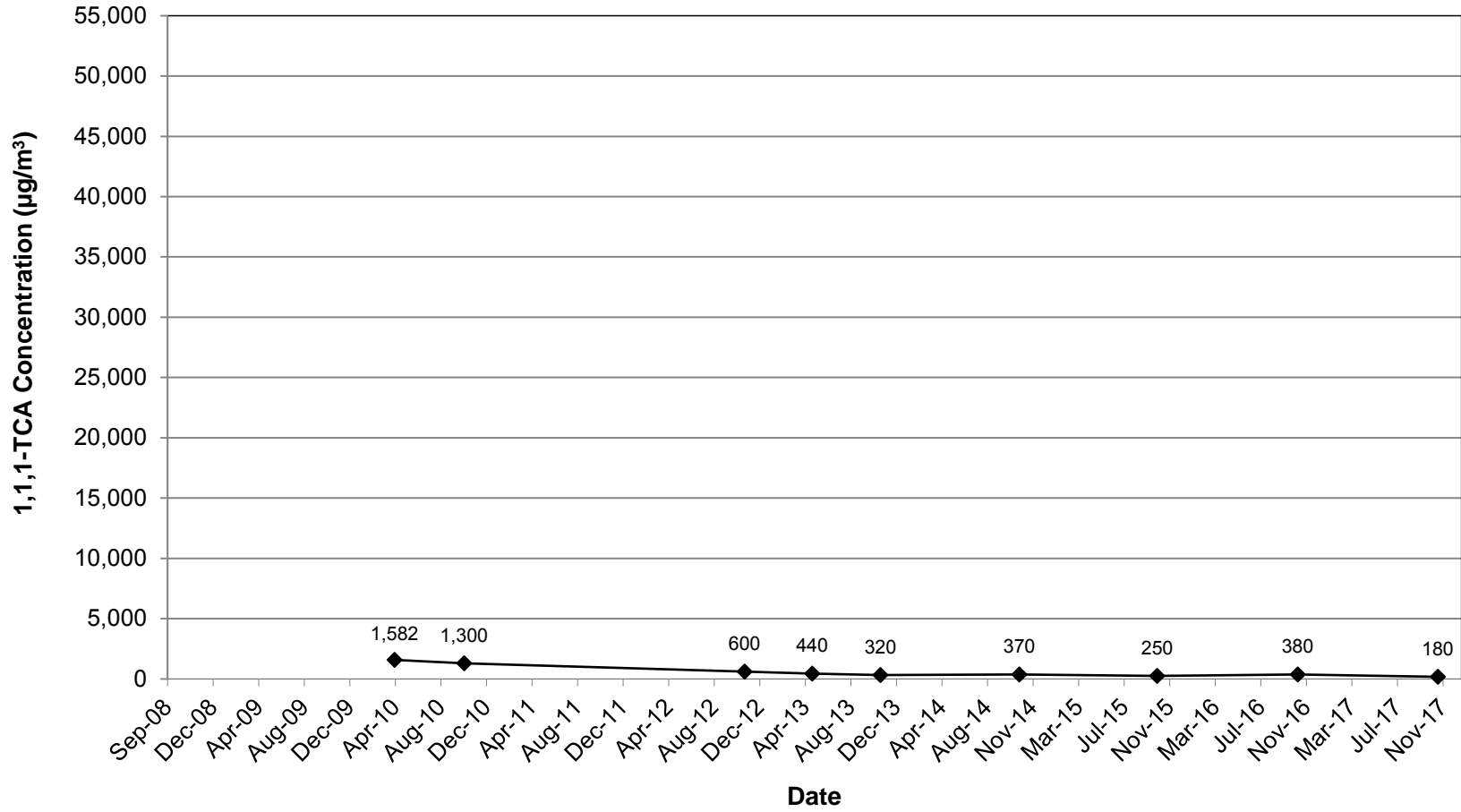


Figure 4.8

1,1,1-TCA Concentration Over Time
(SVE-5)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

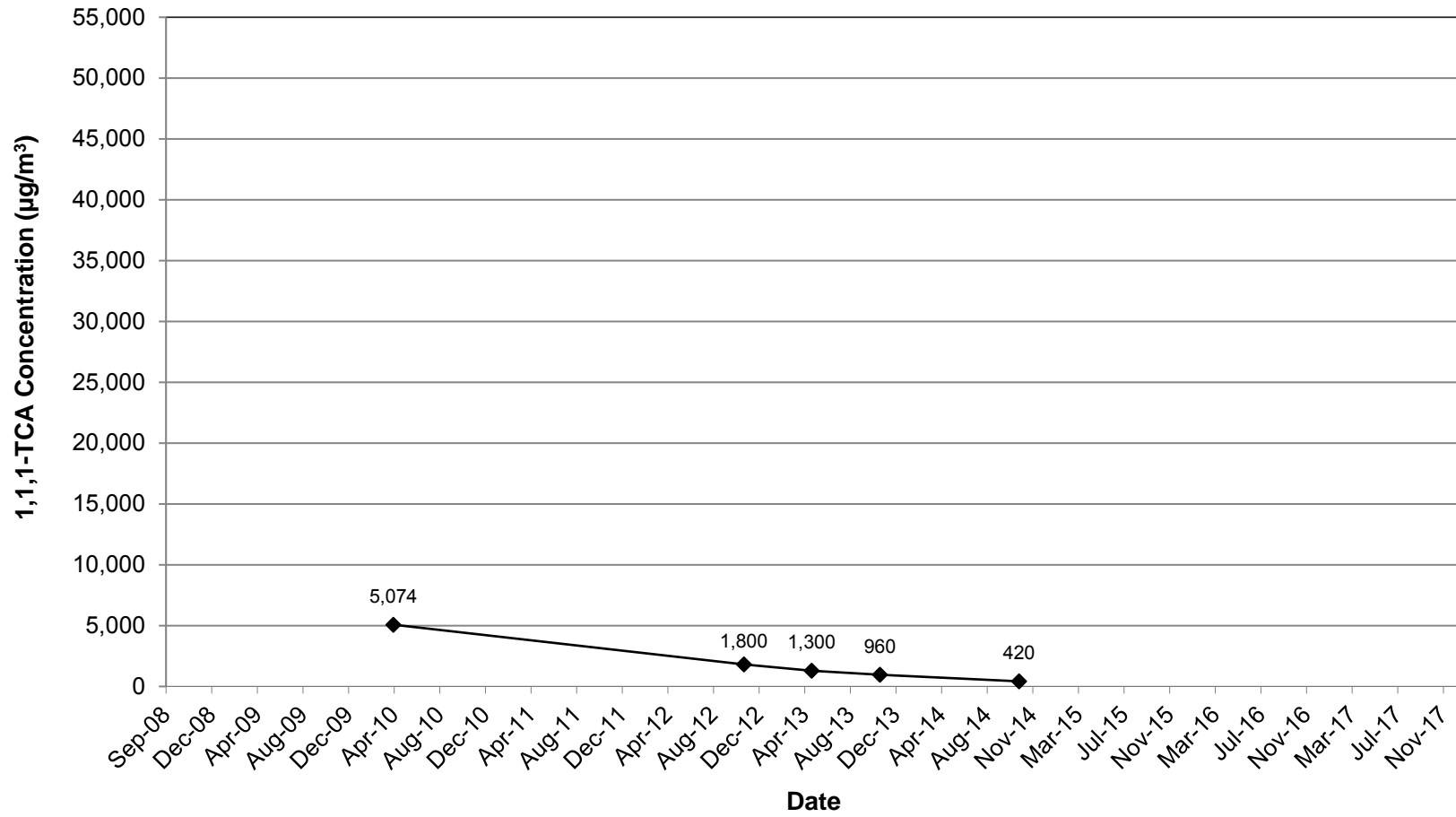


Figure 4.9

1,1,1-TCA Concentration Over Time
(SVE-6)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

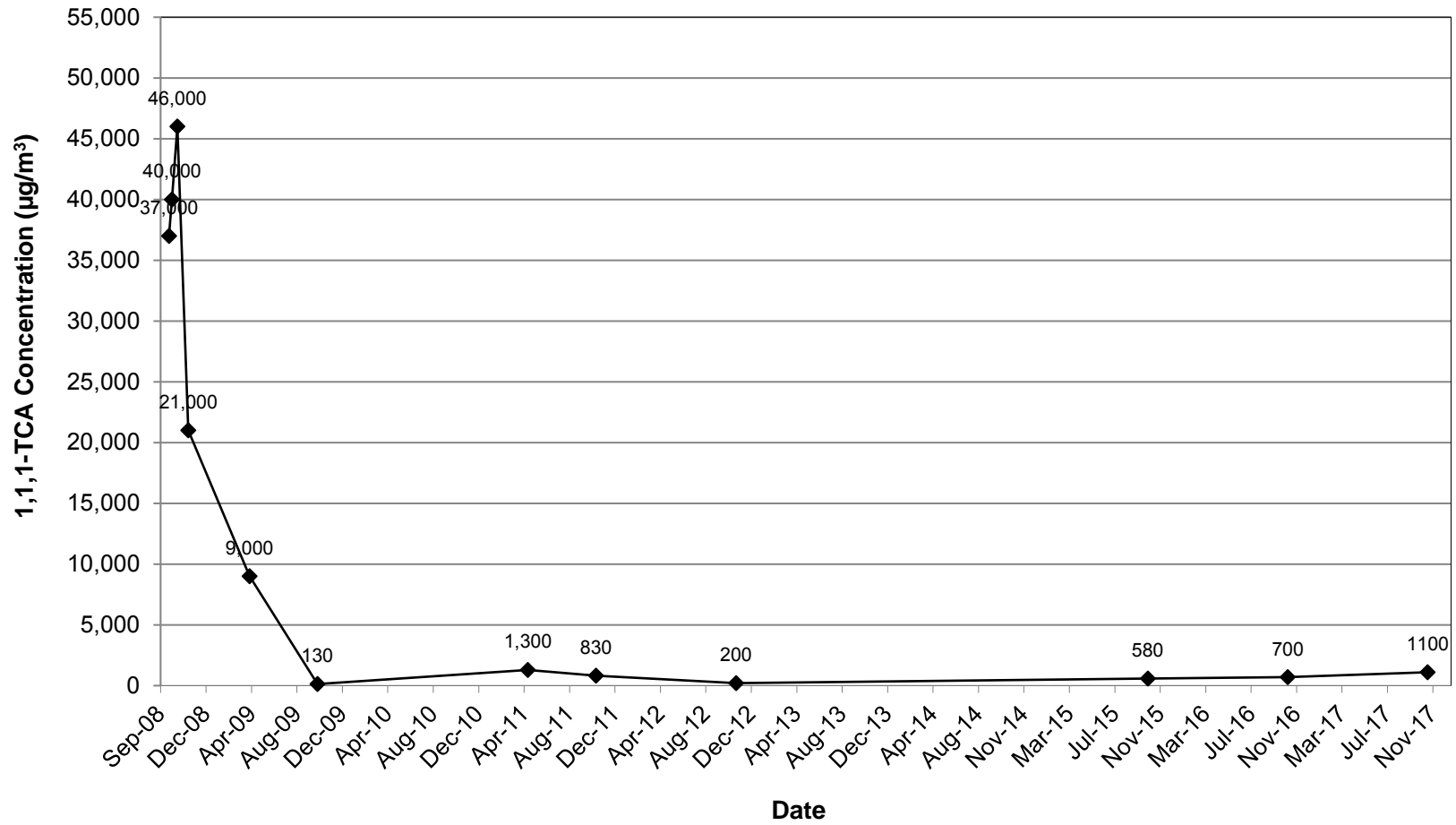


Figure 4.10

1,1,1-TCA Concentration Over Time
(SVE-7)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

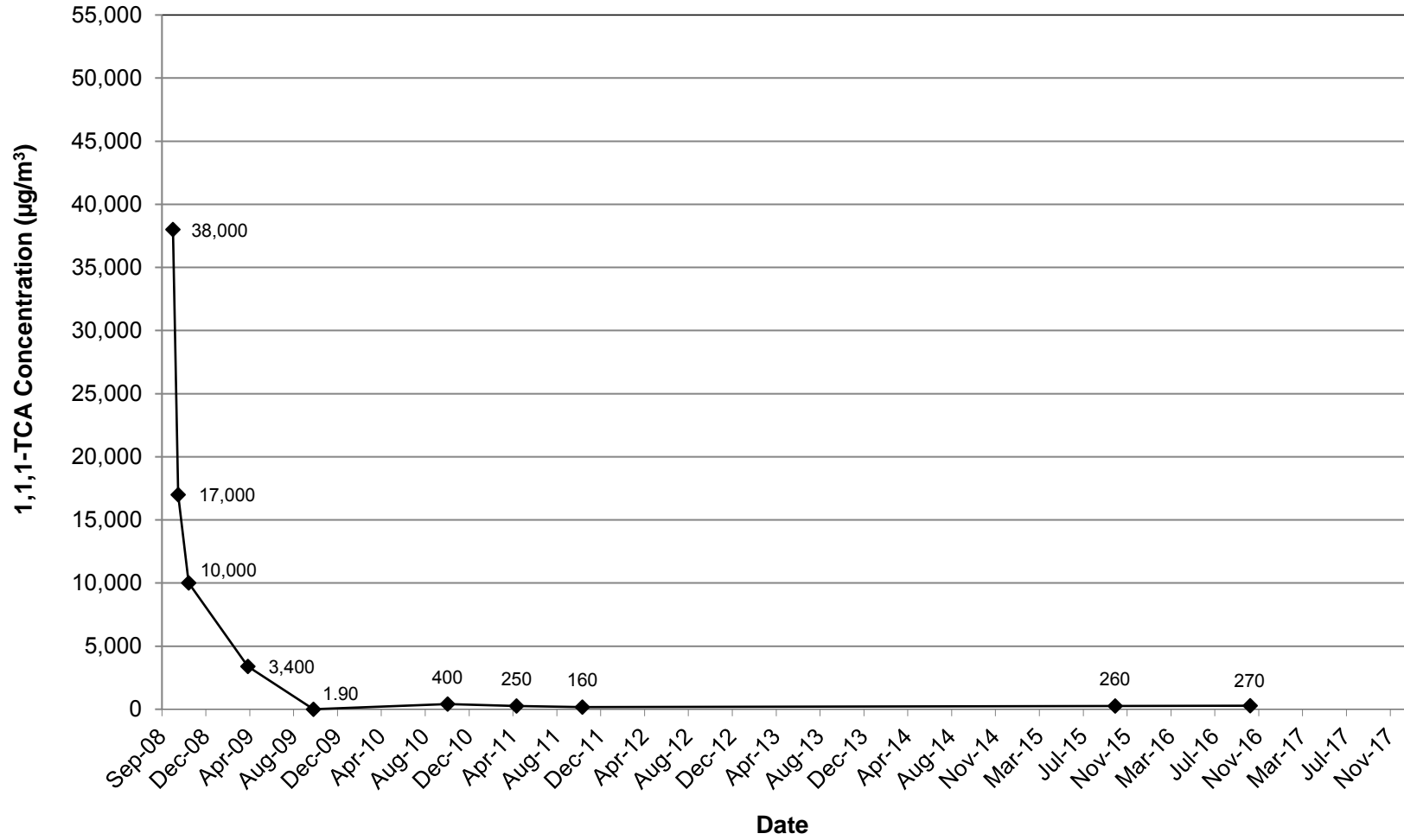


Figure 4.11

1,1,1-TCA Concentration Over Time
(SVE-8)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

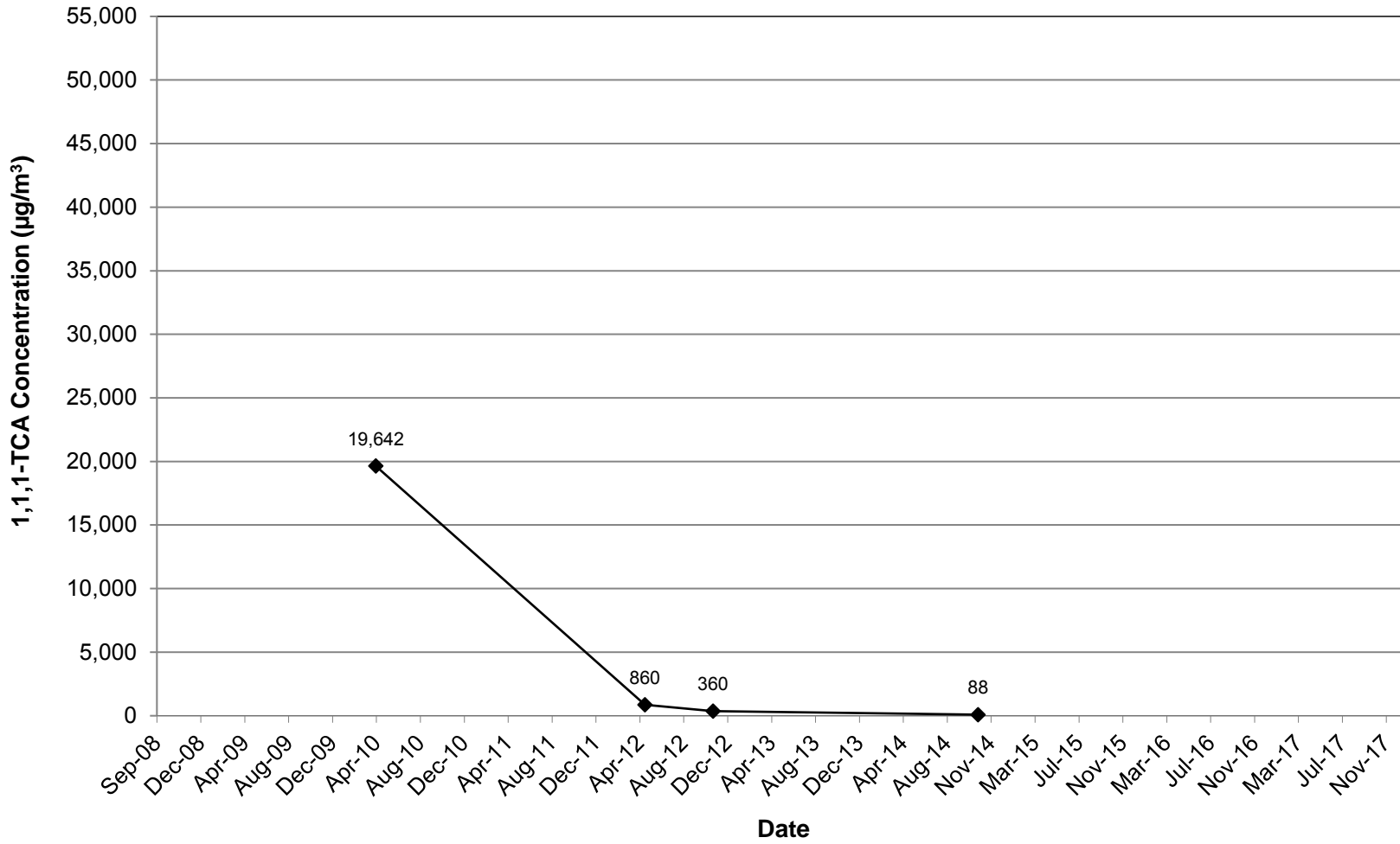


Figure 4.12

1,1,1-TCA Concentration Over Time
(SVE-10)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

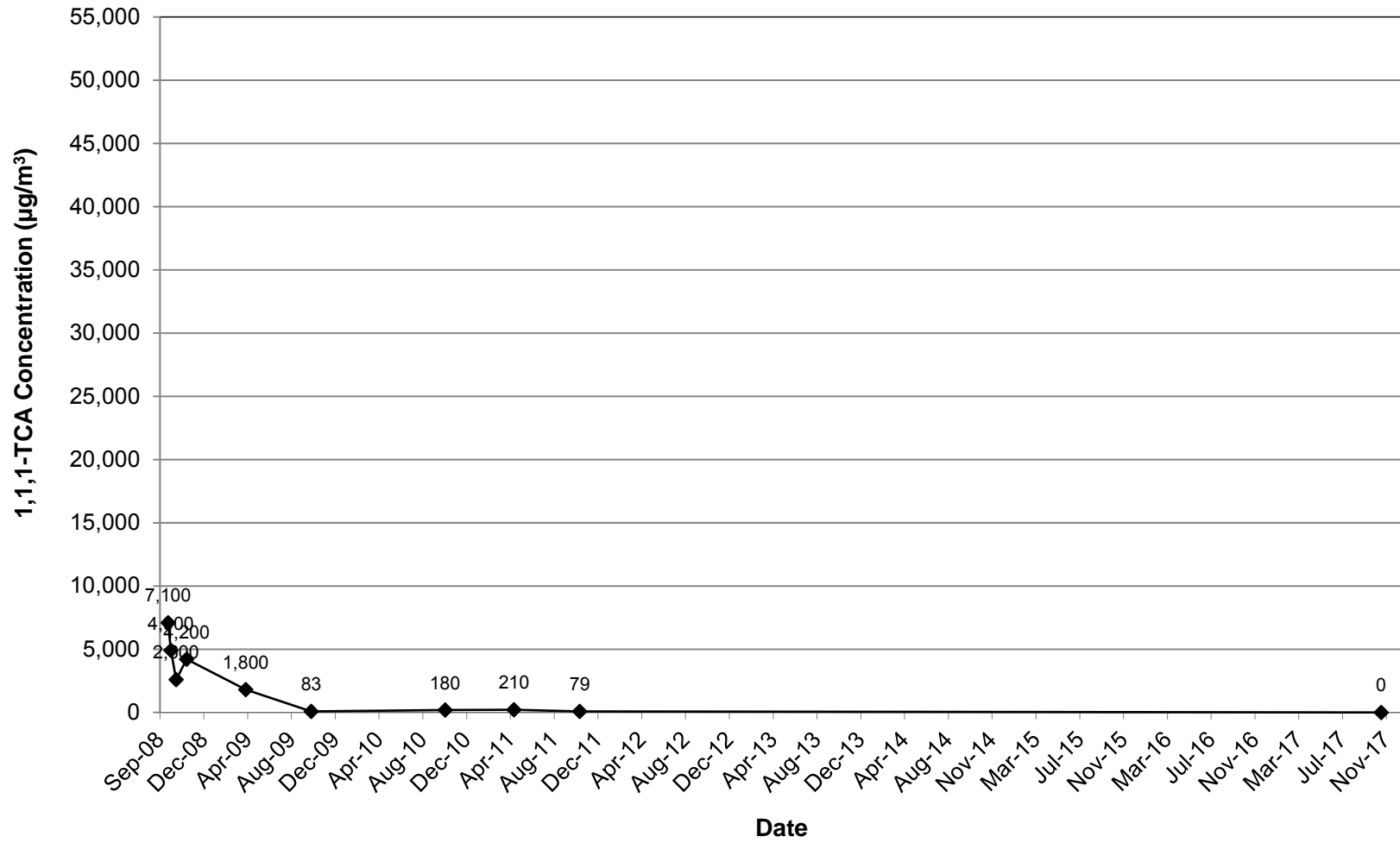


Figure 4.13

1,1,1-TCA Concentration Over Time
(SVE-12)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

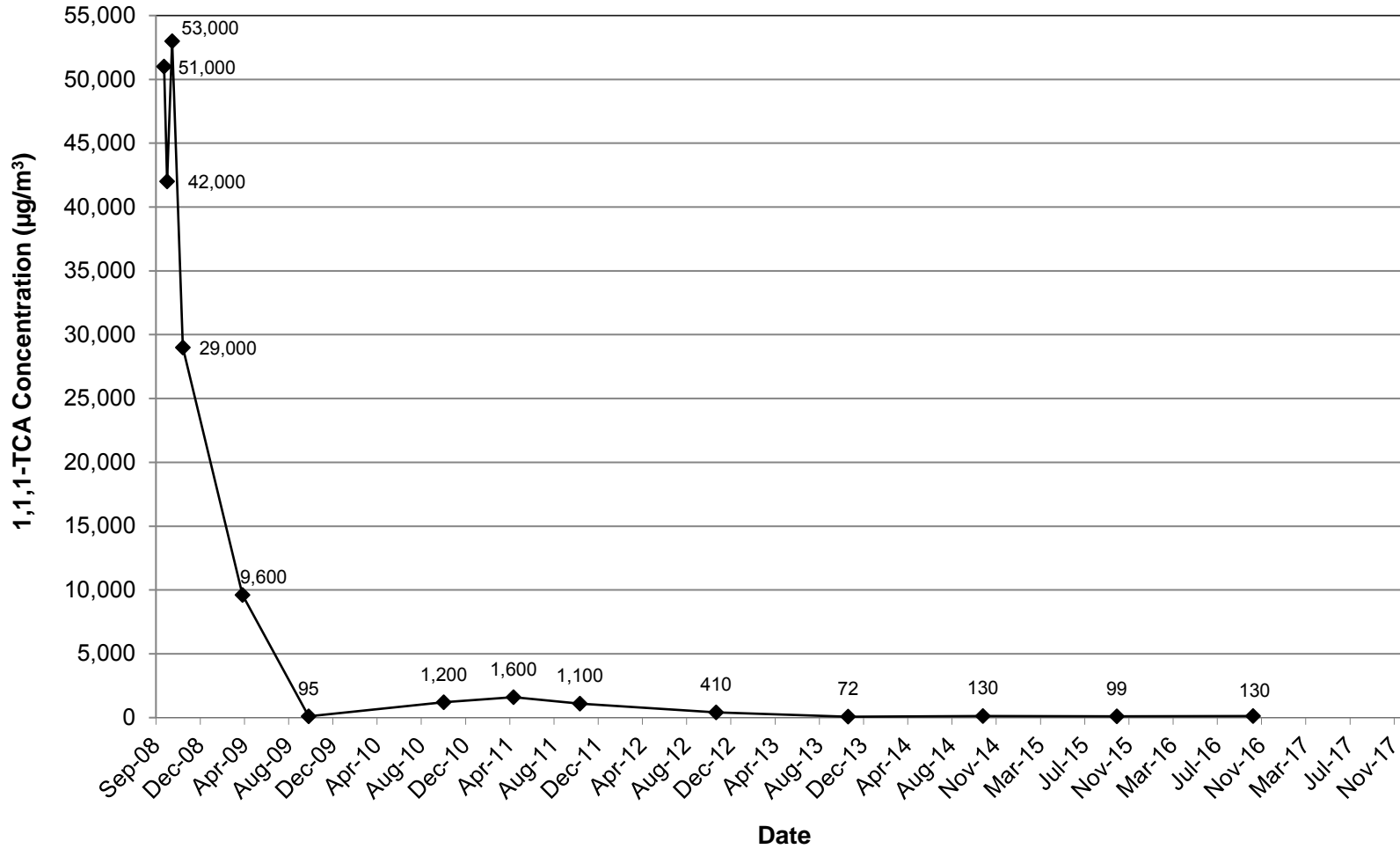


Figure 4.14

1,1,1-TCA Concentration Over Time
(SVE-14)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

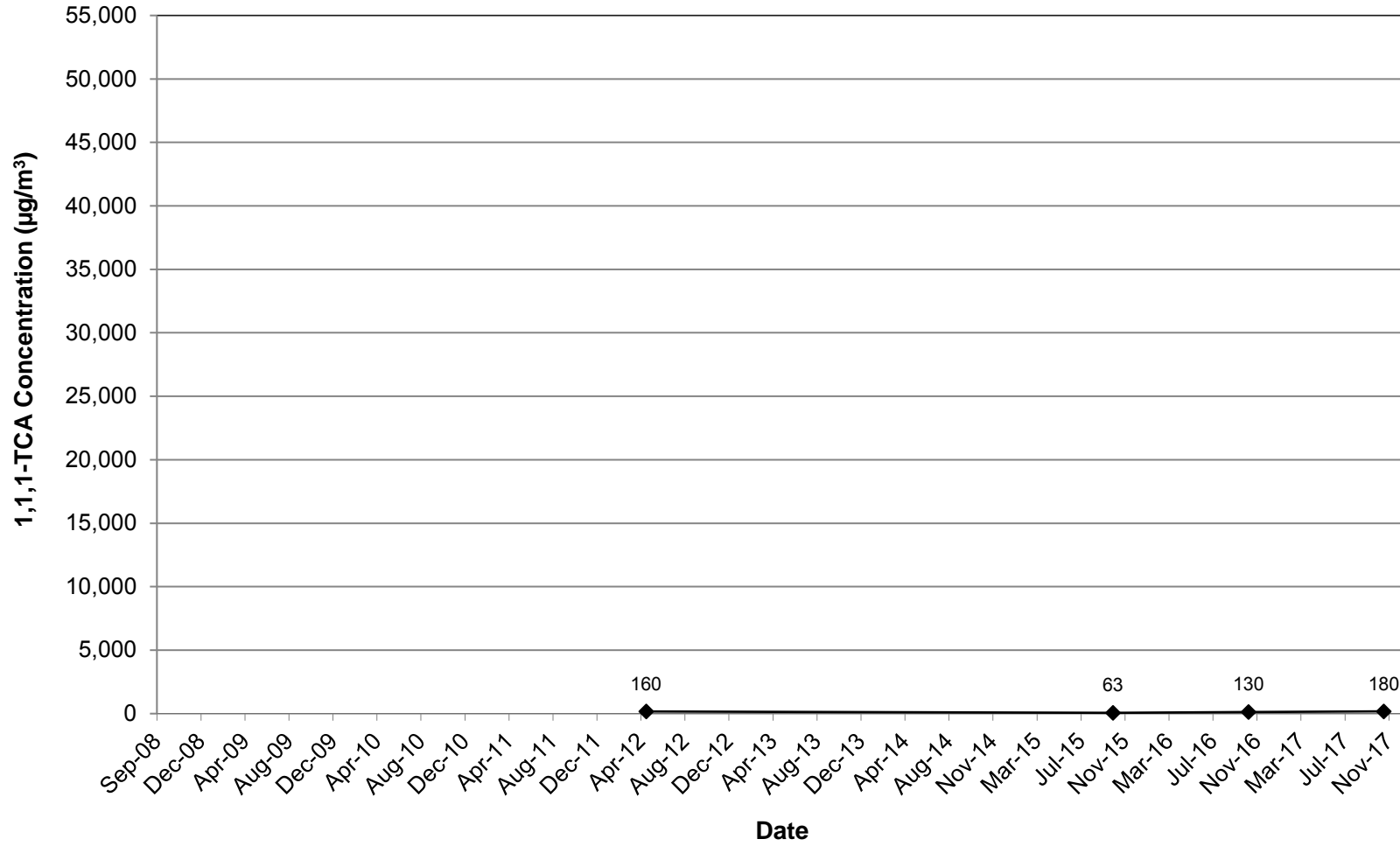


Figure 4.15

1,1,1-TCA Concentration Over Time
(SVE-15)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

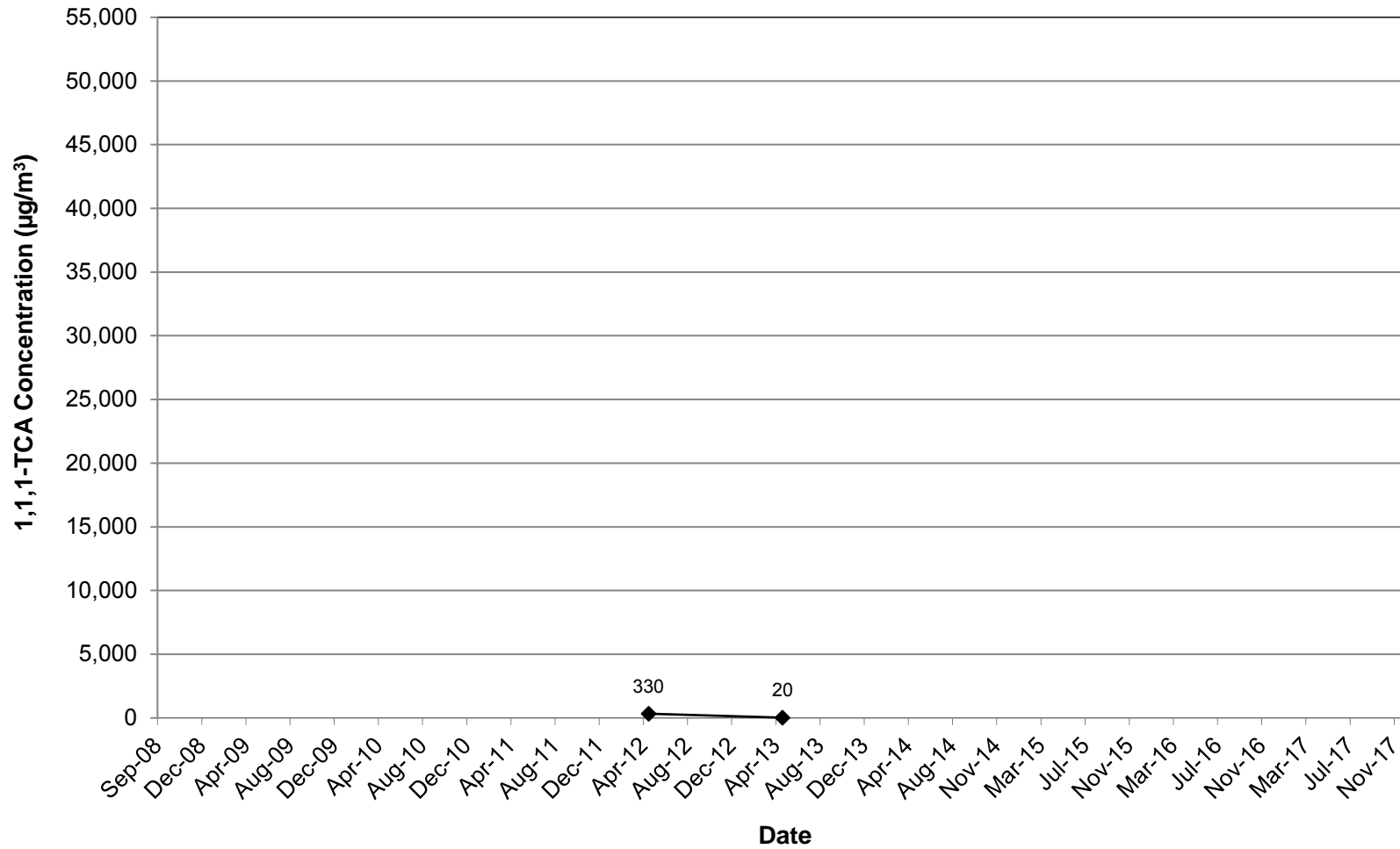


Figure 4.16

1,1,1-TCA Concentration Over Time
(SVE-16)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

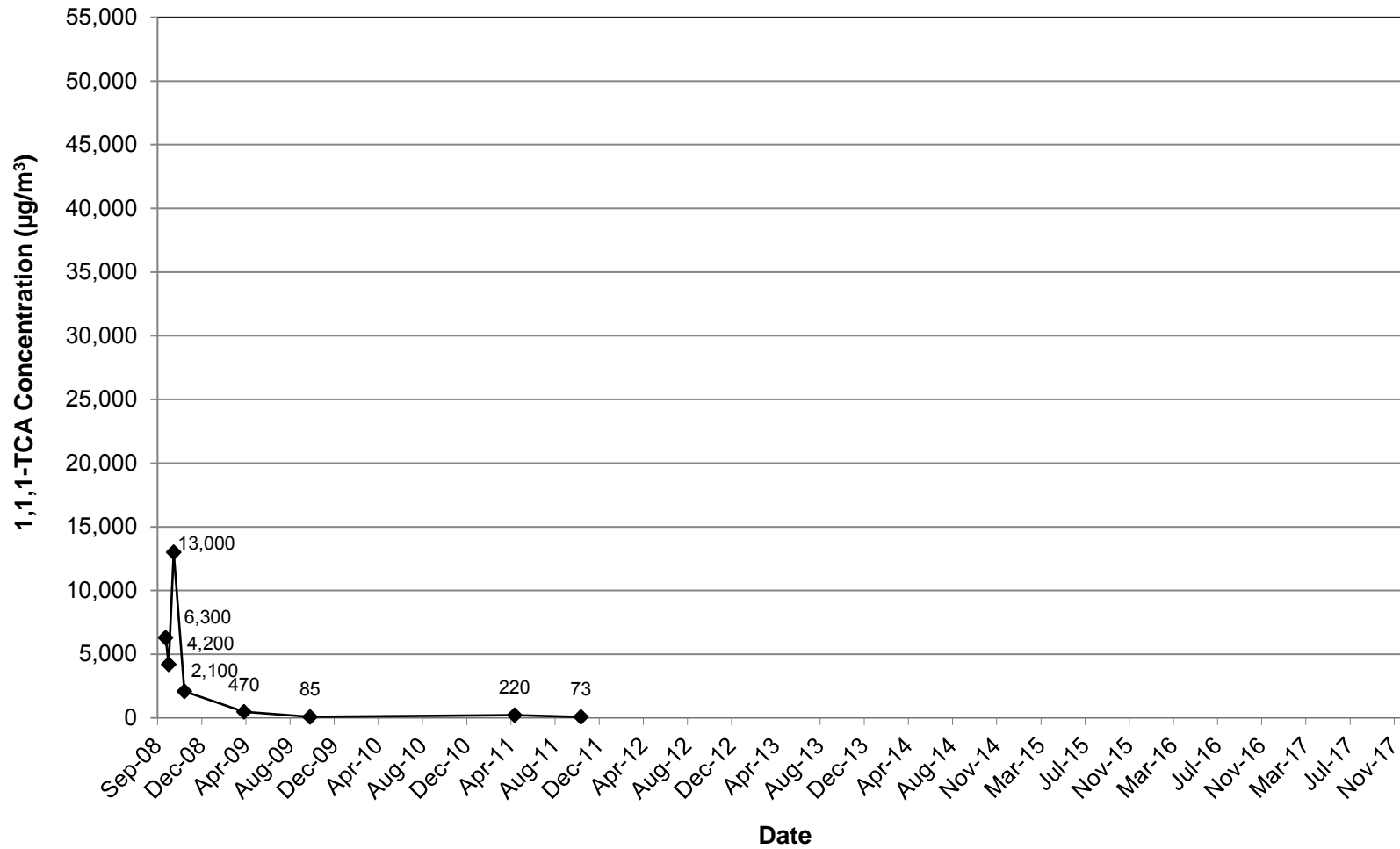


Table 2.1

**Groundwater Elevation Summary
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Monitoring Well	Top of Casing Elevation	Groundwater Elevation	
		May 2017	November 2017
MW1	1044.71	906.56	907.64
MW1A	1044.00	905.57	906.63
MW1B	1044.86	905.62	906.71
MW2R	1058.23	910.30	910.82
MW2A	1058.62	909.91	911.00
MW2B	1058.59	909.88	910.99
MW3	1019.14	919.43	919.30
MW4	1072.50	919.33	-
MW5	1022.91	924.41	925.60
MW6	1042.48	920.14	921.38
MW8	1049.91	915.09	916.19
MW8A	1049.67	915.12	916.22
MW9	1026.90	910.60	911.76
MW9A	1026.03	909.68	910.60
MW10	1029.08	886.95	887.53
MW10A	1028.94	886.80	887.77
MW10B	1028.79	887.03	887.30
MW11A	868.67	-	862.12
MW12	880.06	-	868.84
MW12A	879.67	-	868.54
MW13	1033.70	912.94	914.34
MW13A	1033.57	913.26	914.23

Table 2.1

**Groundwater Elevation Summary
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Monitoring Well	Top of Casing Elevation	Groundwater Elevation	
		May 2017	November 2017
MW14	1028.94	909.20	916.14
MW14A	1027.84	908.88	910.34
MW15	880.76	860.14	858.93
MW15A	879.52	862.47	861.75
MW16	1039.90	902.78	903.70
MW16A	1040.08	902.72	903.71
MW17	907.23	871.89	871.95
MW17A	907.44	871.78	872.04
MW18	897.73	865.72	864.36
MW19	-	-	-
MW19A	-	-	-
Apple River*	870.68	862.27	860.57

Notes:

All elevations in feet above mean sea level (AMSL)

* - Measured from bridge on County Road C

MW-11 and MW-11A were converted to flush mounts on 11/15/12.

New TOC Elevations: MW-11 869.05 MW-11A 868.67

MW-11 was abandoned in 2016

Table 2.2

**Groundwater Monitoring Completed
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Monitoring Well	May-17	Nov-17
MW1	V, L	V, L
MW1A	L	V, L
MW1B	L	V, L
MW2R	L	V, L
MW2A	L	V, L
MW2B	L	V, L
MW3	L	V, L
MW4	L	L
MW5	L	L
MW6	L	V, L
MW8	L	L
MW8A	L	L
MW9	L	V, L
MW9A	L	L
MW10	V, L	V, L
MW10A	L	V, L
MW10B	V, L	L
MW11A	L	V, L
MW12	L	L
MW12A	L	V, L
MW13	L	V, L
MW13A	L	L
MW14	L	V, L
MW14A	L	L
MW15	L	L
MW15A	L	V, L
MW16	V, L	V, L
MW16A	V, L	V, L
MW17	V, L	V, L
MW17A	V, L	V, L
MW18	V, L	V, L
MW19	V, L	V, L
MW19A	V, L	V, L

Notes:

V - Sample collected for VOCs

L - Water level measured

Table 3.1

**Enforcement Standard and Preventative Action Limit Exceedences
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Sample	Date	ES PAL	1,1,1-Trichloroethane 200 40 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	Chloroethane 400 80 ug/L	Chloroform (Trichloromethane) 6 0.6 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	Trichloroethene 5 0.5 ug/L	Trichlorofluoromethane (CFC-11) NA NA ug/L
1070 192nd Ave	W-170518-DO-01	5/18/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
1070 192nd Ave	W-170518-DO-02	5/18/17	D	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
2055 Cty Rd C	W-170519-DO-12	5/19/17		2.2	2.5	1.4	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
2055 Cty Rd C	W-171031-RA-12	10/31/17		2.1	2.4	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
2056 Cty Rd C	W-170518-DO-03	5/18/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW1	W-170518-DO-04	5/18/17		7.0	7.6	0.92 J	< 1.0	2.2	< 1.0	0.45 J	< 5.0	< 1.0	< 1.0
MW1	W-171030-RA-06	10/30/17		4.7	6.0	0.60 J	< 1.0	1.8 J	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW1A	W-171101-RA-24	11/1/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW1B	W-171101-RA-23	11/1/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW2R	W-171101-RA-21	11/1/17		< 1.0	< 1.0	< 1.0	< 1.0	1.1 J	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW2A	W-171101-RA-20	11/1/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW2B	W-171101-RA-22	11/1/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW3	W-171101-RA-19	11/1/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW6	W-171030-RA-05	10/30/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW9	W-171031-RA-11	10/31/17		7.2	7.9	1.6	< 1.0	1.2 J	0.60 J	1.4	< 5.0	< 1.0	< 1.0
MW10	W-170518-DO-04	5/18/17		1.8	1.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW10	W-171101-RA-27	11/1/17		2.9	2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0

**Enforcement Standard and Preventative Action Limit Exceedences
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Sample	Date	ES PAL	1,1,1-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	Chloroethane	Chloroform (Trichloromethane)	cis-1,2-Dichloroethene	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Trichlorofluoromethane (CFC-11)
				200 40 ug/L	850 85 ug/L	7 0.7 ug/L	400 80 ug/L	6 0.6 ug/L	70 7 ug/L	5 0.5 ug/L	50 10 ug/L	5 0.5 ug/L	NA NA ug/L
MW10A	W-171101-RA-28	11/1/17		19	19	4.1	< 1.0	0.7 J	1.7	4.1	< 5.0	0.4 J	< 1.0
MW10B	W-170518-DO-07	5/18/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW11A	W-171030-RA-03	10/30/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW12A	W-171030-RA-04	10/30/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW13	W-171031-RA-09	10/31/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW14	W-171031-RA-07	10/31/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW14	W-171031-RA-08	10/31/17	D	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW15A	W-171030-RA-01	10/30/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW15A	W-171030-RA-02	10/30/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW16	W-170518-DO-09	5/18/17		17	20	3.7	< 1.0	1.2	1.1	2.0	1.1 J	< 1.0	< 1.0
MW16	W-171101-RA-26	11/1/17		14	15	2.5	< 1.0	1.1 J	< 1.0	1.5	< 1.0	< 1.0	< 1.0
MW16A	W-170518-DO-08	5/18/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW16A	W-171101-RA-25	11/1/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW17	W-170518-DO-10	5/18/17		17	22	3.6	0.9 J	< 1.0	1.2	2.2	1.0 J	< 1.0	< 1.0
MW17	W-171101-RA-16	11/1/17		14	18	3.3	1.3	< 1.0	< 1.0	2.2	< 1.0	< 1.0	< 1.0
MW17A	W-170518-DO-11	5/19/17		10	14	2.0	0.65 J	< 1.0	0.61 J	1.2	0.9 J	< 1.0	< 1.0
MW17A	W-171101-RA-17	11/1/17		13	13	2.0	0.85 J	< 1.0	< 1.0	1.8	< 1.0	< 1.0	< 1.0

**Enforcement Standard and Preventative Action Limit Exceedences
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Sample	Date	ES PAL	1,1,1-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	Chloroethane	Chloroform (Trichloromethane)	cis-1,2-Dichloroethene	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Trichlorofluoromethane (CFC-11)
				200 40 ug/L	850 85 ug/L	7 0.7 ug/L	400 80 ug/L	6 0.6 ug/L	70 7 ug/L	5 0.5 ug/L	50 10 ug/L	5 0.5 ug/L	NA NA ug/L
MW18	W-170518-DO-13	5/19/17		31	3.8	6.8	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW18	W-171101-RA-13	11/1/17		15	2.6	4.2	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW19	W-171031-RA-14	10/31/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW19A	W-171031-RA-15	10/31/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0

Notes:
 All results are in ug/L
 Enforcement Standard (ES) and Preventative Action Limit (PAL) as found in Wisconsin Administrative Code Chapter NR 140 (July 2015).
 D - Duplicate
 J - Estimated concentration
Bold Lettering - Exceeds PAL
 Exceeds ES

VOC Results Within the Plume Boundary
 New Richmond Landfill (#2492)
 New Richmond, Wisconsin

Location	Sample	Date	ES PAL	1,1,1-Trichloroethane 200 40 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	Chloroethane 400 80 ug/L	Chloroform (Trichloromethane) 6 0.6 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	Trichloroethene 5 0.5 ug/L	Trichlorofluoromethane (CFC-11) NA NA ug/L
MW2R	W-171101-RA-21	11/1/17		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW9	W-171031-RA-11	10/31/17		7.2	7.9	1.6	< 1.0	1.2 J	0.60 J	1.4	< 5.0	< 1.0	< 1.0
MW10	W-170518-DO-04	5/18/17		1.8	1.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW10	W-171101-RA-27	11/1/17		2.9	2.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW10A	W-171101-RA-28	11/1/17		19	19	4.1	< 1.0	0.7 J	1.7	4.1	< 5.0	0.4 J	< 1.0
MW16	W-170518-DO-09	5/18/17		17	20	3.7	< 1.0	1.2	1.1	2.0	1.1 J	< 1.0	< 1.0
MW16	W-171101-RA-26	11/1/17		14	15	2.5	< 1.0	1.1 J	< 1.0	1.5	< 1.0	< 1.0	< 1.0
MW17	W-170518-DO-10	5/18/17		17	22	3.6	0.9 J	< 1.0	1.2	2.2	1.0 J	< 1.0	< 1.0
MW17	W-171101-RA-16	11/1/17		14	18	3.3	1.3	< 1.0	< 1.0	2.2	< 1.0	< 1.0	< 1.0
MW17A	W-170518-DO-11	5/19/17		10	14	2.0	0.65 J	< 1.0	0.61 J	1.2	0.9 J	< 1.0	< 1.0
MW17A	W-171101-RA-17	11/1/17		13	13	2.0	0.85 J	< 1.0	< 1.0	1.8	< 1.0	< 1.0	< 1.0
MW18	W-170518-DO-13	5/19/17		31	3.8	6.8	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
MW18	W-171101-RA-13	11/1/17		15	2.6	4.2	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0

Notes:

All results are in ug/L

Enforcement Standard (ES) and Preventative Action Limit (PAL) as found in Wisconsin Administrative Code Chapter NR 140 (July 2015).

D - Duplicate

J - Estimated concentration

Bold Lettering - Exceeds PAL

Exceeds ES

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)			
Stack	1/10/17	0.4	14.7	0.1	40	488	310-450	NA ¹
Stack	2/14/17	0.0	17.4	0.2	44	499	310-450	2,167
Stack	3/7/17	0.3	17.2	0	40	437	310-450	3,491
Stack	4/5/17	0.5	14.5	0.2	50	378	310-450	NA ¹
Stack	5/25/17	0.2	13	0.7	53	430	310-450	NA ¹
Stack	6/28/17	0.0	16.5	0	63	910	310-450	3,117
Stack	7/24/17	0.0	17.8	0	68	962	310-450	3,710
Stack	8/14/17	0.0	17.1	0	66	964	310-450	4,989
Stack	9/13/17	0.3	15.9	0	67	0 ²	310-450	NA ¹
Stack	10/30/17	0.4	14.3	0	54	448	310-450	NA ¹
Stack	11/17/17	0.0	16.4	0	55	447	310-450	NA ¹
Stack	12/7/17	0.0	18.4	0	52	464	310-450	3,841
SVE-1	04/05/17	0.0	14.3	-7.7	50	0	-	NA ¹
SVE-1	10/30/17	0.0	16.7	-10.2	54	0	-	674
SVE-2	04/05/17	0.0	16.3	-0.1	50	0	-	741
SVE-2	10/30/17	0.0	20.0	0.0	54	0	-	1,008
SVE-3	04/05/17	0.0	20.5	0.0	50	0	-	1,108
SVE-3	10/30/17	0.0	14.4	-0.6	54	0	-	NA ¹
SVE-4	01/10/17	0.0	13.5	-10.8	40	58	40-50	NA ¹
SVE-4	02/14/17	0.0	15.5	-14.3	44	58	40-50	NA ¹
SVE-4	03/07/17	0.0	14.3	-14.8	40	57	40-50	NA ¹

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)			
SVE-4	04/05/17	0.0	14.0	-12.3	50	54	40-50	NA ¹
SVE-4	05/25/17	0.0	12.9	-16.4	53	0 ²	40-50	NA ¹
SVE-4	06/28/17	0.0	16.3	-14.0	63	0 ²	40-50	492
SVE-4	07/24/17	0.0	15.7	-14.0	68	0 ²	40-50	611
SVE-4	08/14/17	0.0	15.0	-14.0	66	0 ²	40-50	NA ¹
SVE-4	09/13/17	0.3	15.5	-12.4	67	42	40-50	NA ¹
SVE-4	10/30/17	0.5	14.4	-16.1	54	56	40-50	NA ¹
SVE-4	11/17/17	0.5	16.0	-12.4	55	64	40-50	NA ¹
SVE-4	12/07/17	0.4	16.0	-12.4	52	0 ²	40-50	NA ¹
SVE-5	4/5/2017 ⁴	-	-	-	-	-	-	-
SVE-5	10/30/17	0.0	20.3	-0.8	54	0	-	427
SVE-6	01/10/17	0.0	18.8	-11.6	40	61	40-50	1,101
SVE-6	02/14/17	0.0	18.3	-14.4	44	48	40-50	949
SVE-6	03/07/17	0.0	18.1	-13.6	40	47	40-50	1,110
SVE-6	04/05/17	0.0	15.0	-13.4	50	41	40-50	NA ¹
SVE-6	05/25/17	0.0	15.4	-16.4	53	0 ²	40-50	NA ¹
SVE-6	06/28/17	0.0	17.5	-14.0	63	0 ²	40-50	NA ¹
SVE-6	07/24/17	0.0	16.8	-12.8	68	0 ²	40-50	991
SVE-6	08/14/17	0.0	17.1	-13.1	66	0 ²	40-50	1,106
SVE-6	09/13/17	0.0	16.5	-11.9	67	42	40-50	NA ¹
SVE-6	10/30/17	0.0	15.2	-16.0	54	46	40-50	NA ¹
SVE-6	11/17/17	0.0	17.5	-11.9	55	0 ²	40-50	511
SVE-6	12/07/17	0.0	18.4	-11.9	52	48	40-50	720

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)			
SVE-7	01/10/17	0.3	14.0	-10.8	40	54	40-50	NA ¹
SVE-7	02/14/17	0.0	16.1	-14.4	44	55	40-50	740
SVE-7	03/07/17	0.0	14.7	-14.1	40	41	40-50	NA ¹
SVE-7	04/05/17	0.1	13.5	-12.8	50	41	40-50	NA ¹
SVE-7	05/25/17	0.6	11.4	-16.3	53	0 ²	40-50	NA ¹
SVE-7	06/28/17	0.3	15.5	-14.1	63	0 ²	40-50	NA ¹
SVE-7	07/24/17	0.5	15.8	-12.6	68	0 ²	40-50	408
SVE-7	08/14/17	0.2	16.4	-13.1	66	0 ²	40-50	593
SVE-7	09/13/17	0.7	16.5	-12.0	67	41	40-50	NA ¹
SVE-7	10/30/17	0.8	15.5	-16.2	54	44	40-50	NA ¹
SVE-7	11/17/17	0.3	16.9	-12.0	55	0 ²	40-50	840
SVE-7	12/07/17	0.2	16.8	-12.0	52	0 ²	40-50	825
SVE-8	04/05/17 ⁴	-	-	-	-	-	-	-
SVE-8	10/30/17	0	19.6	-0.3	54	0	-	729
SVE-9	04/05/17	0.0	15.0	-0.1	50	0	-	NA ¹
SVE-9	10/30/17	0.2	13.8	0.0	54	0	-	NA ¹
SVE-10	04/05/17	0.0	20.1	0.0	50	0	-	599
SVE-10	10/30/17	0.0	15.0	0.0	54	0	-	NA ¹
SVE-11	04/05/17	0.0	18.7	-0.4	50	0	-	781
SVE-11	10/30/17	0.0	15.2	0.0	54	0	-	NA ¹

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible					VOC Concentration	
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)	Flow rate (CFM)	Target Flow Rate (CFM)	by FID (ppm)
SVE-12	01/10/17	0.8	17.0	-6.4	40	70	40-50	1,244
SVE-12	02/14/17	0.0	18.1	-8.8	44	49	40-50	1,314
SVE-12	03/07/17	0.2	18.0	-10.3	40	55	40-50	841
SVE-12	04/05/17	0.1	18.3	-11.9	50	47	40-50	1,011
SVE-12	05/25/17	0.8	12.9	-12.0	53	0 ²	40-50	NA ¹
SVE-12	06/28/17	0.1	17.9	-8.6	63	0 ²	40-50	911
SVE-12	07/24/17	0.1	18.1	-8.7	68	0 ²	40-50	1,022
SVE-12	08/14/17	0.1	19.0	-9.0	66	0 ²	40-50	989
SVE-12	09/13/17	0.2	18.6	-7.7	67	42	40-50	904
SVE-12	10/30/17	0.1	19.1	0.0	54	52	40-50	1,410
SVE-12	11/17/17	0.0	19.1	-7.7	55	0 ²	40-50	1,591
SVE-12	12/07/17	0.0	19.6	-7.7	52	0 ²	40-50	1,308
SVE-13	01/10/17	0.0	13.4	-10.9	40	50	40-50	NA ¹
SVE-13	02/14/17	0.0	15.7	-15.0	44	48	40-50	NA ¹
SVE-13	03/07/17	0.0	14.0	-14.9	40	51	40-50	NA ¹
SVE-13	04/05/17	0.0	14.8	-13.6	50	44	40-50	NA ¹
SVE-13	05/25/17	0.0	12.2	-16.2	53	0 ²	40-50	NA ¹
SVE-13	06/28/17	0.0	14.9	-14.2	63	0 ²	40-50	NA ¹
SVE-13	07/24/17	0.0	14.3	-14.0	68	0 ²	40-50	NA ¹
SVE-13	08/14/17	0.0	13.9	-14.1	66	48	40-50	NA ¹
SVE-13	09/13/17	0.0	13.6	-12.1	67	44	40-50	NA ¹
SVE-13	10/30/17	0.0	13.9	0.0	54	49	40-50	NA ¹
SVE-13	11/17/17	0.0	14.2	-12.1	55	0 ²	40-50	NA ¹

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)			
SVE-13	12/07/17	0.0	14.6	-12.1	52	40	40-50	NA ¹
SVE-14	01/10/17	0.4	13.8	-9.2	40	44	40-50	NA ¹
SVE-14	02/14/17	0.0	13.2	-13.9	44	59	40-50	NA ¹
SVE-14	03/07/17	0.2	12.7	-14.0	40	53	40-50	NA ¹
SVE-14	04/05/17	0.2	13.4	-13.6	50	50	40-50	NA ¹
SVE-14	05/25/17	0.7	11.0	-15.0	53	0 ²	40-50	NA ¹
SVE-14	06/28/17	0.2	13.6	-13.2	63	0 ²	40-50	NA ¹
SVE-14	07/24/17	0.3	13.3	-13.1	68	0 ²	40-50	NA ¹
SVE-14	08/14/17	0.2	13.4	-13.4	66	0 ²	40-50	NA ¹
SVE-14	09/13/17	0.5	14.3	-11.8	67	54	40-50	NA ¹
SVE-14	10/30/17	0.4	14.2	0.0	54	44	40-50	NA ¹
SVE-14	11/17/17	0.4	14.6	-11.8	55	0 ²	40-50	NA ¹
SVE-14	12/07/17	0.3	15.1	-11.8	52	0 ²	40-50	NA ¹
SVE-15	04/05/17	0.0	19.6	-0.1	50	0	-	940
SVE-15	10/30/17	0.1	17.4	0.0	54	0	-	1,230
SVE-16	04/05/17	0.0	19.4	0.3	50	0	-	407
SVE-16	10/30/17	0.0	19.1	0.0	54	0	-	611
SVE-17	04/05/17	0.0	15.0	-0.1	50	0	-	NA ¹
SVE-17	10/30/17	0.0	15.2	0.0	54	0	-	NA ¹
SVE-18	04/05/17	0.0	19.2	-0.3	50	0	-	394

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)			
SVE-18	10/30/17	0.0	20.1	0.0	54	0	-	890
SVE-19	04/05/17	0.0	18.7	-0.9	50	0	-	681
SVE-19	10/30/17	0.0	20.4	0.0	54	0	-	1,046
LFG-1	01/10/17	5.7	3.3	-0.9	35	9	5-10	NA ¹
LFG-1	02/14/17	0.2	11.2	-1.7	46	6	5-10	NA ¹
LFG-1	03/07/17	4.4	2.1	-0.9	46	6	5-10	NA ¹
LFG-1	04/05/17	4.3	3.4	-14.0	51	10	5-10	NA ¹
LFG-1	05/25/17	5.8	2.1	-2.4	66	0 ²	5-10	NA ¹
LFG-1	06/28/17	1.0	10.0	-1.0	68	0 ²	5-10	NA ¹
LFG-1	07/24/17	1.5	9.6	-0.7	68	0 ²	5-10	NA ¹
LFG-1	08/14/17	1.6	10.1	-1.1	68	0 ²	5-10	NA ¹
LFG-1	09/13/17	1.9	8.6	-1.0	77	10	5-10	NA ¹
LFG-1	10/30/17	6.0	0.8	0.1	44	0 ²	5-10	NA ¹
LFG-1	11/17/17	1.6	10.0	-1.0	41	0 ²	5-10	NA ¹
LFG-1	12/07/17	1.4	12.4	-1.0	37	10	5-10	NA ¹
LFG-2	01/10/17	2.7	2.4	-0.7	37	10	5-10	NA ¹
LFG-2	02/14/17	0.0	12.1	-1.2	41	10	5-10	NA ¹
LFG-2	03/07/17	0.8	1.8	-0.8	44	8	5-10	NA ¹
LFG-2	04/05/17	0.5	1.9	-14.1	50	8	5-10	NA ¹
LFG-2	05/25/17	1.1	2.2	-2.0	71	0 ²	5-10	NA ¹
LFG-2	06/28/17	0.0	14.5	-0.8	70	0 ²	5-10	NA ¹
LFG-2	07/24/17	0.0	14.7	-0.8	69	0 ²	5-10	NA ¹

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)			
LFG-2	08/14/17	0.0	13.9	-0.6	68	8	5-10	NA ¹
LFG-2	09/13/17	0.1	13.6	-1.1	71	10	5-10	NA ¹
LFG-2	10/30/17	0.5	2.8	-0.6	41	0 ²	5-10	NA ¹
LFG-2	11/17/17	0.0	20.7	-1.1	38	0 ²	5-10	629
LFG-2	12/07/17	0.0	20.1	-1.1	36	0 ²	5-10	590
LFG-3	01/10/17	3.0	9.5	-11.7	40	6	5-10	NA ¹
LFG-3	02/14/17	0.7	12.4	-14.8	49	8	5-10	NA ¹
LFG-3	03/07/17	2.9	10.1	-14.8	45	6	5-10	NA ¹
LFG-3	04/05/17	3.4	10.3	-13.9	53	9	5-10	NA ¹
LFG-3	05/25/17	1.2	7.0	-16.8	66	0 ²	5-10	NA ¹
LFG-3	06/28/17	0.7	15.0	-13.6	65	0 ²	5-10	NA ¹
LFG-3	07/24/17	0.9	15.0	-13.4	70	0 ²	5-10	NA ¹
LFG-3	08/14/17	1.1	15.0	-13.0	70	0 ²	5-10	NA ¹
LFG-3	09/13/17	1.0	14.7	-7.8	78	8	5-10	NA ¹
LFG-3	10/30/17	1.9	12.1	-7.3	42	0 ²	5-10	NA ¹
LFG-3	11/17/17	0.4	16.7	-7.8	40	0 ²	5-10	1,177
LFG-3	12/07/17	0.3	16.9	-7.8	39	8	5-10	1,081
LFG-4	01/10/17	9.0	4.7	-12.1	34	11	15-20	NA ¹
LFG-4	02/14/17	0.1	12.0	-14.5	44	20	15-20	NA ¹
LFG-4	03/07/17	6.6	5.4	-13.5	52	15	15-20	NA ¹
LFG-4	04/05/17	6.0	5.4	-13.9	54	20	15-20	NA ¹
LFG-4	05/25/17	4.3	3.8	-16.6	68	0 ²	15-20	NA ¹
LFG-4	06/28/17	0.1	15.9	-13.3	66	0 ²	15-20	NA ¹

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)			by FID (ppm)
LFG-4	07/24/17	0.2	16.1	-13.0	72	0 ²	15-20	NA ¹
LFG-4	08/14/17	0.2	14.4	-12.9	49	0 ²	15-20	NA ¹
LFG-4	09/13/17	0.1	15.9	-12.9	73	17	15-20	NA ¹
LFG-4	10/30/17	1.4	8.5	-6.4	47	13	15-20	NA ¹
LFG-4	11/17/17	0.0	16.7	-12.9	42	0 ²	15-20	989
LFG-4	12/07/17	0.0	17.2	-12.9	37	14	15-20	907
LFG-5	01/10/17	0.2	15.5	0.0	39	6	5-10	NA ¹
LFG-5	02/14/17	0.0	14.2	-10.8	45	7	5-10	NA ¹
LFG-5	03/07/17	1.2	5.3	-11.8	49	5	5-10	NA ¹
LFG-5	04/05/17	1.0	5.1	-14.0	51	8	5-10	NA ¹
LFG-5	05/25/17	0.5	5.3	-15.9	60	0 ²	5-10	NA ¹
LFG-5	06/28/17	0.0	17.5	-11.8	66	0 ²	5-10	NA ¹
LFG-5	07/24/17	0.0	17.5	-10.9	72	0 ²	5-10	NA ¹
LFG-5	08/14/17	0.0	17.9	-14.2	70	0 ²	5-10	2,004
LFG-5	09/13/17	0.0	18.0	-7.8	76	5	5-10	2,111
LFG-5	10/30/17	0.7	8.9	-2.9	44	9	5-10	NA ¹
LFG-5	11/17/17	0.0	17.7	-7.8	40	8	5-10	2,004
LFG-5	12/07/17	0.0	18.2	-7.8	33	9	5-10	1,633
LFG-6	01/10/17	4.7	9.7	-9.4	38	15	15-20	NA ¹
LFG-6	02/14/17	0.4	12.2	-12.7	48	19	15-20	NA ¹
LFG-6	03/07/17	3.3	8.8	-12.7	52	19	15-20	NA ¹
LFG-6	04/05/17	3.2	8.0	-14.0	55	15	15-20	NA ¹
LFG-6	05/25/17	2.8	9.9	-15.9	67	0 ²	15-20	NA ¹

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)			by FID (ppm)
LFG-6	06/28/17	0.1	17.1	-12.2	66	0 ²	15-20	NA ¹
LFG-6	07/24/17	0.3	17.0	-11.9	72	0 ²	15-20	4,991
LFG-6	08/14/17	0.2	16.8	-11.4	70	0 ²	15-20	5,714
LFG-6	09/13/17	0.3	17.0	-9.5	72	15	15-20	4,923
LFG-6	10/30/17	1.5	9.9	-3.4	44	19	15-20	NA ¹
LFG-6	11/17/17	0.4	15.6	-9.5	44	17	15-20	NA ¹
LFG-6	12/07/17	0.3	15.1	-9.5	34	0 ²	15-20	NA ¹
LFG-7	01/10/17	1.4	3.1	-12.9	31	0 ²	5-10	NA ¹
LFG-7	02/14/17	0.1	5.9	-15.3	46	5	5-10	NA ¹
LFG-7	03/07/17	1.5	9.0	-14.8	45	7	5-10	NA ¹
LFG-7	04/05/17	2.1	8.7	-14.0	51	6	5-10	NA ¹
LFG-7	05/25/17	0.5	1.4	-17.0	65	0 ²	5-10	NA ¹
LFG-7	06/28/17	0.0	13.6	-14.2	66	0 ²	5-10	NA ¹
LFG-7	07/24/17	0.0	13.7	-14.2	69	0 ²	5-10	NA ¹
LFG-7	08/14/17	0.0	13.6	-14.2	68	0 ²	5-10	NA ¹
LFG-7	09/13/17	0.0	14.1	-11.6	71	5	5-10	NA ¹
LFG-7	10/30/17	1.0	10.1	-15.3	49	9	5-10	NA ¹
LFG-7	11/17/17	0.3	12.8	-11.6	41	5	5-10	NA ¹
LFG-7	12/07/17	0.6	13.3	-11.6	36	8	5-10	NA ¹
LFG-8	01/10/17	27.3	0.3	-12.8	38	20	15-20	NA ¹
LFG-8	02/14/17	5.5	5.3	-15.4	44	20	15-20	NA ¹
LFG-8	03/07/17	19.0	1.1	-14.7	47	15	15-20	NA ¹
LFG-8	04/05/17	19.6	2.0	-14.1	53	15	15-20	NA ¹

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)			
LFG-8	05/25/17	13.2	0.0	-17.1	65	0 ²	15-20	NA ¹
LFG-8	06/28/17	2.9	6.7	-14.3	67	0 ²	15-20	NA ¹
LFG-8	07/24/17	3.6	6.9	-14.3	68	0 ²	15-20	NA ¹
LFG-8	08/14/17	3.9	6.9	-14.1	66	0 ²	15-20	NA ¹
LFG-8	09/13/17	3.1	9.8	-13.0	74	16	15-20	NA ¹
LFG-8	10/30/17	7.9	3.6	-16.0	49	0 ²	15-20	NA ¹
LFG-8	11/17/17	3.6	8.8	-13.0	41	19	15-20	NA ¹
LFG-8	12/07/17	4.4	9.0	-13.0	37	0 ²	15-20	NA ¹
LFG-9	01/10/17	0.0	13.5	0.2	34	7	5-10	NA ¹
LFG-9	02/14/17	0.0	15.5	-0.1	50	11	5-10	NA ¹
LFG-9	03/07/17	0.0	10.3	-0.2	44	10	5-10	NA ¹
LFG-9	04/05/17	0.0	11.1	-13.5	51	10	5-10	NA ¹
LFG-9	05/25/17	0.0	13.4	-0.1	65	5	5-10	NA ¹
LFG-9	06/28/17	0.0	14.3	0.0	66	0 ²	5-10	NA ¹
LFG-9	07/24/17	0.0	13.6	-14.0	70	0 ²	5-10	NA ¹
LFG-9	08/14/17	0.0	13.4	-14.2	68	7	5-10	NA ¹
LFG-9	09/13/17	0.0	12.4	-0.2	72	10	5-10	NA ¹
LFG-9	10/30/17	0.0	11.4	0.0	46	0 ²	5-10	NA ¹
LFG-9	11/17/17	0.0	13.5	-0.2	45	8	5-10	NA ¹
LFG-9	12/07/17	0.0	14.2	-0.2	38	0 ²	5-10	NA ¹
GP-01	01/10/17	0.0	20.1	0.0	-	-	-	-
GP-01	04/05/17	0.0	20.0	0.0	-	-	-	-
GP-01	07/24/17	0.0	20.1	0.0	-	-	-	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)	Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration
		Gas (%)						by FID (ppm)
GP-01	10/30/17	0.0	19.8	0.9	-	-	-	-
GP-1A	01/10/17	0.0	20.3	0.0	-	-	-	-
GP-1A	04/05/17	0.0	20.3	0.0	-	-	-	-
GP-1A	07/24/17	0.0	20.7	0.0	-	-	-	-
GP-1A	10/30/17	0.0	20.0	0.9	-	-	-	-
GP-02	01/10/17	0.0	16.4	0.2	-	-	-	-
GP-02	04/05/17	0.0	17.1	-0.1	-	-	-	-
GP-02	07/24/17	0.0	16.9	-0.2	-	-	-	-
GP-02	10/30/17	0.0	16.9	1.0	-	-	-	-
GP-2A	01/10/17	0.0	17.9	-0.3	-	-	-	-
GP-2A	04/05/17	0.0	18.5	-0.1	-	-	-	-
GP-2A	07/24/17	0.0	18.8	-0.1	-	-	-	-
GP-2A	10/30/17	0.0	18.7	1.0	-	-	-	-
GP-2B	01/10/17	0.0	19.4	-0.2	-	-	-	-
GP-2B	04/05/17	0.0	17.3	-0.2	-	-	-	-
GP-2B	07/24/17	0.0	17.9	-0.1	-	-	-	-
GP-2B	10/30/17	0.0	17.5	1.0	-	-	-	-
GP-03	01/10/17	0.0	20.5	-0.1	-	-	-	-
GP-03	04/05/17	0.0	20.2	-0.1	-	-	-	-
GP-03	07/24/17	0.0	20.0	-0.1	-	-	-	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)	Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration
		Gas (%)						by FID (ppm)
GP-03	10/30/17	0.0	20.2	0.9	-	-	-	-
GP-3A	01/10/17	0.0	20.7	-0.4	-	-	-	-
GP-3A	04/05/17	0.0	20.2	0.0	-	-	-	-
GP-3A	07/24/17	0.0	20.4	0.0	-	-	-	-
GP-3A	10/30/17	0.0	19.9	0.9	-	-	-	-
GP-4A	01/10/17	0.0	20.5	-0.4	-	-	-	-
GP-4A	04/05/17	0.0	20.5	-0.4	-	-	-	-
GP-4A	07/24/17	0.0	20.6	-0.3	-	-	-	-
GP-4A	10/30/17	0.0	20.4	0.8	-	-	-	-
GP-8A	01/10/17	0.0	19.7	-0.1	-	-	-	-
GP-8A	04/05/17	0.0	19.9	0.0	-	-	-	-
GP-8A	07/24/17	0.0	19.8	-0.1	-	-	-	-
GP-8A	10/30/17	0.0	19.7	1.0	-	-	-	-
GP-8B	01/10/17	0.0	20.1	0.0	-	-	-	-
GP-8B	04/05/17	0.0	20.4	0.0	-	-	-	-
GP-8B	07/24/17	0.0	20.6	-0.1	-	-	-	-
GP-8B	10/30/17	0.0	20.2	0.9	-	-	-	-
GP-09	01/10/17	0.0	20.7	0.0	-	-	-	-
GP-09	04/05/17	0.0	20.0	0.0	-	-	-	-
GP-09	07/24/17	0.0	19.8	-0.1	-	-	-	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)	Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration
		Gas (%)						by FID (ppm)
GP-09	10/30/17	0.0	20.4	1.0	-	-	-	-
GP-9A	01/10/17	0.0	19.6	0.0	-	-	-	-
GP-9A	04/05/17	0.0	18.8	-0.2	-	-	-	-
GP-9A	07/24/17	0.0	18.6	-0.2	-	-	-	-
GP-9A	10/30/17	0.0	18.3	1.0	-	-	-	-
GP-10	01/10/17	0.0	19.1	0.1	-	-	-	-
GP-10	04/05/17	0.0	19.0	0.2	-	-	-	-
GP-10	07/24/17	0.0	20.0	-0.2	-	-	-	-
GP-10	10/30/17	0.0	18.8	0.9	-	-	-	-
GP-10A	01/10/17	0.0	18.8	0.0	-	-	-	-
GP-10A	04/05/17	0.0	18.7	0.0	-	-	-	-
GP-10A	07/24/17	0.0	20.1	-0.2	-	-	-	-
GP-10A	10/30/17	0.0	18.9	1.0	-	-	-	-
GP-11	01/10/17	0.0	19.9	0.0	-	-	-	-
GP-11	04/05/17	0.0	18.7	0.0	-	-	-	-
GP-11	07/24/17	0.0	20.3	0.0	-	-	-	-
GP-11	10/30/17	0.0	18.2	0.9	-	-	-	-
GP-11A	01/10/17	0.0	17.9	0.0	-	-	-	-
GP-11A	04/05/17	0.0	16.4	-0.1	-	-	-	-
GP-11A	07/24/17	0.0	17.7	0.0	-	-	-	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2017)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)	Flow rate (CFM)	Target Flow Rate (CFM)	VOC Concentration
		Gas (%)						by FID (ppm)
GP-11A	10/30/17	0.0	17.0	0.9	-	-	-	-
GP-12	01/10/17	0.0	20.4	0.1	-	-	-	-
GP-12	04/05/17	0.0	20.1	0.0	-	-	-	-
GP-12	07/24/17	0.0	20.2	0.0	-	-	-	-
GP-12	10/30/17	0.0	20.3	0.8	-	-	-	-

Notes:

¹ No reading could be obtained; FID flamed out because of low oxygen level.

² Air flow is heard through the pipe, but no flow measurement could be determined.

³ Valve is fully open

⁴ No reading could be obtained due to water/blockage in the pipe.

⁵ Valve is stuck; cannot close it.

⁶ Air flow is heard through the pipe, but no flow measurement could be determined because valve on Pitot Tube was closed.

⁷ Well turned off due to vacuum in annular space around the well.

⁸ Well is not under vacuum; unable to obtain flow reading.

⁹ Values could not be determined because well was frozen.

- Not applicable

With approval from the WDNR on 10/21/15, System modifications occurred on 10/29/15. Modifications included operating the system on a part time schedule (16 hrs/day) and operating only SVE wells SVE-4, SVE-6, SVE-7, SVE-12, SVE-13, and SVE-14.

These wells are monitored on a monthly basis. All other SVE wells will be monitored on a semi-annual basis (April and October)

and will be "turned on" on an as needed basis. Extraction from the LFG wells was also modified in order to focus gas extraction in the vicinity of the GP-2 nest.

SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Parameter	Blower Discharge 09/23/08	Blower Discharge 09/25/08	Blower Discharge 10/01/08	Blower Discharge 10/07/08	Blower Discharge 10/15/08	Blower Discharge 10/30/08	Blower Discharge 11/13/08	Blower Discharge 04/24/09	Blower Discharge 07/23/09	Blower Discharge 10/20/09	Blower Discharge 01/29/10	Blower Discharge 04/22/10	Blower Discharge 07/23/10	Blower Discharge 07/23/10 ¹	Blower Discharge 10/22/10
1,1,1-Trichloroethane	17,000	28,000	27,000	29,000	18,000	15,000	11,000	5,700	2,000	380	1,300	1,473	1,400	1,700	1,000
1,1,2,2-Tetrachloroethane	< 510	< 650	< 470	< 310	< 140	< 150	< 68	< 25	< 27	< 2.7	< 5.5	< 27.46	< 14	< 14	< 14
1,1,2-Trichloroethane	< 400	< 510	< 380	< 250	< 110	< 120	< 54	22	< 22	< 2.2	11	< 21.82	< 11	< 11	< 11
1,1-Dichloroethane	51,000	59,000	42,000	32,000	20,000	16,000	8,600	3,900	1,100	220.0	920	850	790	950	680
1,1-Dichloroethene	3,300	3,900	4,700	3,800	1,900	1,700	1,400	560	180.0	29.00	180.0	150.7	140	160	110
1,2,4-Trichlorobenzene	< 2700	< 3500	< 2600	< 1700	< 760	< 820	< 370	< 130	< 150	< 15	< 30	< 148.43	< 74	< 74	< 74
1,2,4-Trimethylbenzene	< 360	< 460	< 340	< 220	< 100	130	< 49	24	20	2	16.0	< 19.66	< 9.8	< 9.8	17.0
1,2-Dibromoethane (Ethylene dibromide)	< 570	< 720	< 530	< 350	< 160	< 170	< 76	< 28	< 31	< 3.1	< 6.1	< 30.73	< 15	< 15	< 15
1,2-Dichlorobenzene	< 440	< 570	< 410	< 270	< 120	< 130	< 60	< 22	< 24	< 2.4	5.9	< 24.05	< 12	< 12	< 12
1,2-Dichloroethane	< 300	< 380	< 280	190	< 83	< 90	< 40	19	< 16	< 1.6	4.9	< 16.19	< 8.1	< 8.1	< 8.1
1,2-Dichloropropane	< 340	< 440	< 320	210	140	150	66	37	< 18	2.80	19.0	< 18.49	< 9.2	14.0	< 9.2
1,2-Dichlorotetrafluoroethane (CFC 114)	< 510	< 660	< 480	< 320	< 140	< 150	< 69	29	< 28	4	31	< 27.96	21	17	69
1,3,5-Trimethylbenzene	< 360	< 460	< 340	< 220	< 100	< 110	< 49	26	< 20	3	28.0	< 19.66	< 9.8	18.0	17.0
1,3-Butadiene	< 330	< 420	< 300	< 200	< 91	< 98	< 44	< 16	< 18	< 1.8	< 3.5	< 17.7	< 8.8	< 8.8	< 8.8
1,3-Dichlorobenzene	< 440	< 570	< 410	< 270	< 120	< 130	< 60	< 22	< 24	< 2.4	< 4.8	< 24.05	< 12	< 12	< 12
1,4-Dichlorobenzene	< 440	< 570	< 410	< 270	< 120	< 130	< 60	32	27	6	43.0	< 24.05	18.0	46.0	24.0
2-Butanone (Methyl ethyl ketone) (MEK)	2,600	4,700	3,500	2,600	3,200	3,400	1,700	790	250	43.00	360.0	79.6	81.0	160.0	< 29
2-Hexanone	< 750	< 960	< 700	< 460	< 210	< 230	< 100	44	< 41	< 4.1	15	< 40.97	< 20	< 20	< 20
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	< 750	1,400	1,200	950	1,200	1,700	830	560	240	29	380.0	114.7	100.0	240.0	37.0
Acetone	< 4400	< 5600	< 4100	< 2700	3,200	3,700	1,900	1,300	430	170	480.0	< 237.55	< 120	240.0	130.0
Acetonitrile	< 620	< 790	< 580	< 380	< 170	< 190	< 83	< 31	< 34	< 3.4	17.0	< 33.58	< 17	< 17	< 17
Acrolein	< 680	< 860	< 630	< 420	< 190	< 200	< 91	< 33	< 37	< 3.7	< 7.3	< 36.69	< 18	< 18	< 18
Acrylonitrile	< 1600	< 2000	< 1500	< 980	< 450	< 480	< 220	< 79	< 87	< 8.7	< 17	< 86.81	< 43	< 43	< 43
Allyl chloride (3-Chloropropene)	< 230	< 290	< 220	< 140	< 64	< 69	< 31	< 11	< 13	< 1.3	< 2.5	< 12.52	< 6.3	< 6.3	< 6.3
alpha-Methylstyrene	< 710	< 910	< 660	< 440	< 200	< 210	< 96	< 35	< 39	< 3.9	< 7.7	< -999	< 19	< 19	< 19
Benzene	780	750	460	300	160	130	50	16	< 13	1.6	6	< 12.78	< 6.4	< 6.4	8
Benzyl chloride	< 760	< 980	< 710	< 470	< 210	< 230	< 100	< 38	< 41	< 4.1	< 8.3	< 41.42	< 21	< 21	< 21
Bromodichloromethane	< 490	< 630	< 460	< 300	< 140	< 150	< 66	< 24	< 27	< 2.7	< 5.4	< 26.8	< 13	< 13	< 13
Bromoform	< 760	< 970	< 710	< 470	< 210	< 230	< 100	< 38	< 41	< 4.1	< 8.3	< 41.35	< 21	< 21	< 21
Bromomethane (Methyl bromide)	< 290	< 370	< 270	< 180	< 80	< 86	< 38	< 14	< 16	< 1.6	< 3.1	< 15.53	< 7.8	< 7.8	< 7.8
Butane	790	630	< 330	260	< 98	120	84	63	39	8	36	24	29	26	170
Carbon disulfide	< 570	< 730	< 540	< 350	270	370	260	65	< 31	< 3.1	17	< 31.14	< 16	< 16	22
Carbon tetrachloride	< 460	< 590	< 430	< 290	< 130	< 140	< 62	< 23	< 25	< 2.5	< 5.0	< 25.16	< 13	< 13	< 13
Chlorobenzene	420	< 430	< 320	< 210	< 95	< 100	< 46	< 17	< 18	< 1.8	8	< 18.41	< 9.2	< 9.2	< 9.2
Chlorodifluoromethane	3,400	2,600	1,200	670	200	130	81	27	17	3	10	< -999	12	11	71
Chloroethane	20,000	16,000	9,500	6,000	2,300	1,300	820	170	66	13.0	61	50	55.0	53	120
Chloroform (Trichloromethane)	< 360	< 460	< 340	< 220	140	170	110	66	26	5.2	27.0	27.8	25.0	36.0	18

SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Parameter	Blower Discharge 09/23/08	Blower Discharge 09/25/08	Blower Discharge 10/01/08	Blower Discharge 10/07/08	Blower Discharge 10/15/08	Blower Discharge 10/30/08	Blower Discharge 11/13/08	Blower Discharge 04/24/09	Blower Discharge 07/23/09	Blower Discharge 10/20/09	Blower Discharge 01/29/10	Blower Discharge 04/22/10	Blower Discharge 07/23/10	Blower Discharge 07/23/10 ¹	Blower Discharge 10/22/10
Chloromethane (Methyl chloride)	< 380	< 490	< 360	< 230	< 110	< 110	< 51	< 19	< 21	3.3	5	< 20.65	< 10	< 10	< 10
cis-1,2-Dichloroethene	6,900	8,600	7,600	6,100	4,200	3,400	2,300	950	310	73.0	330	222	210	240	180
cis-1,3-Dichloropropene	< 330	< 430	< 310	< 210	< 93	< 100	< 45	< 17	< 18	< 1.8	< 3.6	< 18.15	< 9.1	< 9.1	< 9.1
Cyclohexane	4,400	2,900	1,500	980	460	430	300	140	64	14	85	45	51	53	82
Dibromochloromethane	< 630	< 800	< 590	< 390	< 180	< 190	< 84	< 31	< 34	< 3.4	< 6.8	< 34.07	< 17	< 17	< 17
Dibromomethane	< 1000	< 1300	< 980	< 640	< 290	< 310	< 140	< 52	< 57	< 5.7	< 11	< -999	< 28	< 28	< 28
Dichlorodifluoromethane (CFC-12)	2,800	2,300	1,700	1,700	650	700	1,200	300	180	28.0	57	109	120	110	840
Ethyl ether	< 2200	< 2900	< 2100	< 1400	< 620	660	340	200	< 120	16.0	120.0	< 121.26	< 61	74.0	< 61
Ethylbenzene	6,000	5,200	1,900	1,100	1,100	1,000	370	180	82	12.0	82	< 17.37	30	30	160
Hexachlorobutadiene	< 3900	< 5000	< 3700	< 2400	< 1100	< 1200	< 530	< 190	< 210	< 21	< 43	< 213.3	< 110	< 110	< 110
Hexane	2,300	1,400	660	< 400	230	< 190	120	57	< 35	8.6	33	< 35.25	32	31	110
Isopropyl benzene (Cumene)	< 720	< 930	< 680	< 450	< 200	< 220	< 97	< 36	< 39	< 3.9	10	< 39.33	< 20	< 20	< 20
m&p-Xylenes	10,000	9,500	4,600	2,800	2,900	3,000	1,000	740	370	43.0	280	65	94	150	350
Methyl tert butyl ether (MTBE)	< 1300	< 1700	< 1200	< 820	< 370	< 400	< 180	< 66	< 72	< 7.2	< 14	< 72.11	< 36	< 36	< 36
Methylene chloride	7,100	6,700	5,800	4,900	3,100	2,500	1,900	460	160	12.0	64	52	37	41	35
Naphthalene	< 970	< 1200	< 900	< 590	< 270	< 290	< 130	< 48	< 52	< 5.2	< 10	< 52.42	< 26	< 26	< 26
N-Decane	< 2100	< 2700	< 2000	< 1300	< 600	< 640	< 290	150	< 120	20.0	150	< 116.39	< 58	130	100
N-Dodecane	< 2600	< 3300	< 2400	< 1600	< 720	< 770	< 350	< 130	< 140	< 14	< 28	< 139.34	< 70	< 70	< 70
N-Heptane	5,400	3,400	1,400	770	500	630	330	430	140	25.0	110	66	67	110	130
Nonane	2,300	2,100	< 900	< 590	360	570	180	170	81	15.0	120	< 52.46	43	100	120
N-Propylbenzene	< 720	< 930	< 680	< 450	< 200	< 220	< 97	< 36	< 39	< 3.9	< 7.9	< 39.33	< 20	< 20	< 20
N-Undecane	< 2400	< 3000	< 2200	< 1400	< 660	< 710	< 320	< 120	< 130	< 13	27	< 127.86	< 64	< 64	< 64
Octane	1,900	1,500	< 640	< 420	320	290	140	62	< 37	5.8	43	< 37.38	< 19	29	53
o-Xylene	2,400	2,400	890	560	870	940	290	170	94	12.0	90	19	30	63	68
Pentane	< 1100	< 1400	< 1000	< 670	< 300	< 330	< 150	80	< 59	7.0	36	< 59.02	< 30	< 30	93
Styrene	< 310	< 400	< 290	< 190	< 88	< 94	< 42	< 15	< 17	< 1.7	< 3.4	< 17.04	< 8.5	< 8.5	< 8.5
Tetrachloroethene	3,000	3,700	2,500	2,100	1,900	1,800	1,000	760	320	49.0	300	176	190	310	190
Toluene	24,000	25,000	21,000	14,000	10,000	7,900	3,300	780	270	38.0	160	45	110	230	340
trans-1,2-Dichloroethene	< 290	< 370	< 270	< 180	87	< 88	< 39	< 14	< 16	< 1.6	< 3.2	< 15.86	< 7.9	< 7.9	< 7.9
trans-1,3-Dichloropropene	< 330	< 430	< 310	< 210	< 93	< 100	< 45	< 17	< 18	< 1.8	< 3.6	< 18.15	< 9.1	< 9.1	< 9.1
Trichloroethene	690	630	590	490	360	390	240	170	66	16.0	71	41	46	68	51
Trichlorofluoromethane (CFC-11)	450	710	810	880	410	430	720	250	150	29.0	92.0	101.1	150.0	100.0	220.0
Trifluorotrchloroethane (Freon 113)	< 560	< 720	< 530	< 350	< 160	< 170	< 76	< 28	< 31	< 3.1	< 6.1	< 30.65	< 15	< 15	< 15
Vinyl acetate	< 1300	< 1700	< 1200	< 800	< 360	< 390	< 170	< 64	< 70	< 7.0	< 14	< 70.42	< 35	< 35	< 35
Vinyl chloride	16,000	12,000	5,000	2,900	730	500	290	62	34	9.4	40.0	21.5	35.0	34.0	160.0
Total VOCs	194,930	205,020	145,510	115,070	78,800	68,360	40,581	20,243	7,023	1,427	6,651	4,453	4,175	5,574	5,629

SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Parameter	Blower Discharge 01/24/11	Blower Discharge 04/29/11	Blower Discharge 07/22/11	Blower Discharge 10/26/11	Blower Discharge 01/26/12	Blower Discharge 04/27/12	Blower Discharge 07/25/12	Blower Discharge 10/30/12	Blower Discharge 11/21/12	Blower Discharge 12/21/12	Blower Discharge 01/03/13	Blower Discharge 04/26/13	Blower Discharge 07/25/13	Blower Discharge 10/23/13	Blower Discharge 01/10/14
1,1,1-Trichloroethane	1,500	940	870	650	760	790	940	350	330	400	420	15	300	200	290
1,1,2,2-Tetrachloroethane	< 14	< 14	< 2.7	< 14	< 14	< 14	< 14	< 2.7	< 14	< 14	< 14	< 1.4	< 14	< 14	< 5.5
1,1,2-Trichloroethane	< 11	< 11	4	< 11	< 11	< 11	< 11	< 2.2	< 11	< 11	< 11	< 1.1	< 11	< 11	< 4.4
1,1-Dichloroethane	940	550	450	370	350	370	550	190	220	330	290	12	180	120	200
1,1-Dichloroethene	190	180	150	70	76	83	100	43	53	47	61	2.1	38	25	37
1,2,4-Trichlorobenzene	< 74	< 74	< 15	< 74	< 74	< 74	< 74	< 15	< 74	< 74	< 74	< 7.4	< 74	< 74	< 30
1,2,4-Trimethylbenzene	< 9.8	< 9.8	< 2.0	< 9.8	< 9.8	< 9.8	< 9.8	< 2.0	< 9.8	< 9.8	< 9.8	< 0.98	< 9.8	< 9.8	< 3.9
1,2-Dibromoethane (Ethylene dibromide)	< 15	< 15	< 3.1	< 15	< 15	< 15	< 15	< 3.1	< 15	< 15	< 15	< 1.5	< 15	< 15	< 6.1
1,2-Dichlorobenzene	< 12	< 12	< 2.4	< 12	< 12	< 12	< 12	< 2.4	< 12	< 12	< 12	< 1.2	< 12	< 12	< 4.8
1,2-Dichloroethane	< 8.1	< 8.1	1.9	< 8.1	< 8.1	< 8.1	< 8.1	< 1.6	< 8.1	< 8.1	< 8.1	< 0.81	< 8.1	< 8.1	< 3.2
1,2-Dichloropropane	< 9.2	< 9.2	4.9	< 9.2	< 9.2	< 9.2	< 9.2	< 1.8	< 9.2	< 9.2	< 9.2	< 0.92	< 9.2	< 9.2	< 3.7
1,2-Dichlorotetrafluoroethane (CFC 114)	27	16	17	< 14	64.0	< 14	58	16	19	170	19	< 1.4	< 14	19	20
1,3,5-Trimethylbenzene	< 9.8	< 9.8	< 2.0	< 9.8	< 9.8	< 9.8	< 9.8	< 2.0	< 9.8	< 9.8	< 9.8	< 0.98	< 9.8	< 9.8	< 3.9
1,3-Butadiene	< 8.8	< 8.8	< 1.8	< 8.8	< 8.8	< 8.8	< 8.8	< 1.8	< 8.8	< 8.8	< 8.8	< 0.88	< 8.8	< 8.8	< 3.5
1,3-Dichlorobenzene	< 12	< 12	< 2.4	< 12	< 12	< 12	< 12	< 2.4	< 12	< 12	< 12	< 1.2	< 12	< 12	< 4.8
1,4-Dichlorobenzene	16.0	< 12	< 2.4	14.0	< 12	< 12	< 12	4	< 12	< 12	13	< 1.2	< 12	< 12	5.5
2-Butanone (Methyl ethyl ketone) (MEK)	33.0	< 29	7.9	< 29	< 29	< 29	< 29	< 5.9	< 29	< 29	< 29	< 2.9	< 29	< 29	< 12
2-Hexanone	< 20	< 20	< 4.1	< 20	< 20	< 20	< 20	< 4.1	< 20	< 20	< 20	< 2.0	< 20	< 20	< 8.2
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	52.0	33.0	110.0	50.0	22.0	< 20	< 20	< 4.1	< 20	< 20	< 20	< 2.0	< 20	< 20	< 8.2
Acetone	< 120	< 120	31.0	< 120	< 120	< 120	< 120	< 24	< 120	140	< 120	< 12	< 120	< 120	< 48
Acetonitrile	< 17	< 17	< 3.4	< 17	< 17	< 17	< 17	< 3.4	< 17	< 17	< 17	< 1.7	< 17	< 17	< 6.7
Acrolein	< 18	< 18	< 3.7	< 18	< 18	< 18	< 18	< 3.7	< 18	< 18	< 18	< 1.8	< 18	< 23	< 9.2
Acrylonitrile	< 43	< 43	< 8.7	< 43	< 43	< 43	< 43	< 8.7	< 43	< 43	< 43	< 4.3	< 43	< 43	< 17
Allyl chloride (3-Chloropropene)	< 6.3	< 6.3	< 1.3	< 6.3	< 6.3	< 6.3	< 6.3	< 1.3	< 6.3	< 6.3	< 6.3	< 0.63	< 6.3	< 6.3	< 2.5
alpha-Methylstyrene	< 19	< 19	< 3.9	< 19	< 19	< 19	< 19	< 3.9	< 19	< 19	< 19	< 1.9	< 19	< 19	< 7.7
Benzene	< 6.4	< 6.4	1.4	< 6.4	< 6.4	< 6.4	< 6.4	1.3	< 6.4	7	< 6.4	1.8	< 6.4	< 6.4	< 2.6
Benzyl chloride	< 21	< 21	< 4.1	< 21	< 21	< 21	< 21	< 4.1	< 21	< 21	< 21	< 2.1	< 21	< 21	< 8.3
Bromodichloromethane	< 13	< 13	< 2.7	< 13	< 13	< 13	< 13	< 2.7	< 13	< 13	< 13	< 1.3	< 13	< 13	< 5.4
Bromoform	< 21	< 21	< 4.1	< 21	< 21	< 21	< 21	< 4.1	< 21	< 21	< 21	< 2.1	< 21	< 21	< 8.3
Bromomethane (Methyl bromide)	< 7.8	< 7.8	< 1.6	< 7.8	< 7.8	< 7.8	< 7.8	< 1.6	< 7.8	< 7.8	< 7.8	< 0.78	< 7.8	< 7.8	< 3.1
Butane	35	29	14	16	58	16	66	9	< 9.5	170	23	62	< 9.5	14	34
Carbon disulfide	< 16	< 16	5.8	< 16	< 16	< 16	< 16	< 3.1	< 16	< 16	< 16	< 1.6	< 16	< 16	< 6.2
Carbon tetrachloride	< 13	< 13	< 2.5	< 13	< 13	< 13	< 13	< 2.5	< 13	< 13	< 13	< 1.3	< 13	< 13	< 5.0
Chlorobenzene	< 9.2	< 9.2	2.9	< 9.2	< 9.2	< 9.2	< 9.2	2.5	< 9.2	< 9.2	< 9.2	< 0.92	< 9.2	< 9.2	< 3.7
Chlorodifluoromethane	17.0	18	14	20.0	36.0	13.0	27.0	6.1	< 7.1	71	20.0	6	< 7.1	10 J	29
Chloroethane	66	45	38	25	39	42	63.0	15.0	19.0	91	44.0	2.2	9.6	18	25
Chloroform (Trichloromethane)	36	25	25	20.00	17.00	19.00	33	13	13	13.0	16	< 0.98	17	11	13

SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Parameter	Blower Discharge 01/24/11	Blower Discharge 04/29/11	Blower Discharge 07/22/11	Blower Discharge 10/26/11	Blower Discharge 01/26/12	Blower Discharge 04/27/12	Blower Discharge 07/25/12	Blower Discharge 10/30/12	Blower Discharge 11/21/12	Blower Discharge 12/21/12	Blower Discharge 01/03/13	Blower Discharge 04/26/13	Blower Discharge 07/25/13	Blower Discharge 10/23/13	Blower Discharge 01/10/14
Chloromethane (Methyl chloride)	< 10	< 10	3.1	< 10	< 10	< 10	< 10	< 2.1	< 10	< 10	< 10	1.3	< 10	< 10	< 4.1
cis-1,2-Dichloroethene	200	94	54	39.0	61	64	130	25.0	37	54	58	< 0.79	36	13	24
cis-1,3-Dichloropropene	< 9.1	< 9.1	< 1.8	< 9.1	< 9.1	< 9.1	< 9.1	< 1.8	< 9.1	< 9.1	< 9.1	< 0.91	< 9.1	< 9.1	< 3.6
Cyclohexane	48	23.0	17.0	20.0	34	28	36.0	14.0	21.0	51.0	29.0	2.4	< 17	< 17	25
Dibromochloromethane	< 17	< 17	< 3.4	< 17	< 17	< 17	< 17	< 3.4	< 17	< 17	< 17	< 1.7	< 17	< 17	< 6.8
Dibromomethane	< 28	< 28	< 5.7	< 28	< 28	< 28	< 28	< 5.7	< 28	< 28	< 28	< 2.8	< 28	< 28	< 11
Dichlorodifluoromethane (CFC-12)	280	100	35	86	200	100	160	48.0	330.0	580	110	6.8	37	60	97
Ethyl ether	< 61	< 61	32.0	< 61	< 61	< 61	< 61	< 12	< 61	< 61	< 61	< 6.1	< 61	< 61	< 24
Ethylbenzene	22	< 8.7	18.0	13.0	33	9.6	37	12	16	50	33	2	< 8.7	< 8.7	20
Hexachlorobutadiene	< 110	< 110	< 21	< 110	< 110	< 110	< 110	< 21	< 110	< 110	< 110	< 11	< 110	< 110	< 43
Hexane	35	< 18	12.0	< 18	30	< 18	32	9.4	< 18	51	23	11	< 18	< 18	22
Isopropyl benzene (Cumene)	< 20	< 20	< 3.9	< 20	< 20	< 20	< 20	< 3.9	< 20	< 20	< 20	< 2.0	< 20	< 20	< 7.9
m&p-Xylenes	63	27.0	48.0	25.0	57	16	75	21	23	70	74	5.7	< 8.7	< 8.7	31
Methyl tert butyl ether (MTBE)	< 36	< 36	< 7.2	< 36	< 36	< 36	< 36	< 7.2	< 36	< 36	< 36	< 3.6	< 36	< 36	< 14
Methylene chloride	46	34.0	28.0	22.0	< 17	18	21	9.7	23	< 17	< 17	75	< 17	< 17	< 6.9
Naphthalene	< 26	< 26	< 5.2	< 26	< 26	< 26	< 26	< 5.2	< 26	< 26	< 26	< 2.6	< 26	< 26	< 10
N-Decane	< 58	< 58	< 12	< 58	< 58	< 58	< 58	13	< 58	< 58	< 58	< 5.8	< 58	< 58	< 23
N-Dodecane	< 70	< 70	< 14	< 70	< 70	< 70	< 70	< 14	< 70	< 70	< 70	< 7.0	< 70	< 70	< 28
N-Heptane	26	< 20	5.4	< 20	25	31	28	6.5	< 20	63	21	2.9	< 20	< 20	14
Nonane	47	< 26	< 5.2	< 26	< 26	< 26	45	9.3	< 26	64	34	< 2.6	< 26	< 26	21
N-Propylbenzene	< 20	< 20	< 3.9	< 20	< 20	< 20	< 20	< 3.9	< 20	< 20	< 20	< 2.0	< 20	< 20	< 7.9
N-Undecane	< 64	< 64	< 13	< 64	< 64	< 64	< 64	< 13	< 64	< 64	< 64 J	< 6.4	< 64	< 64	< 26
Octane	< 19	< 19	4.1	< 19	< 19	< 19	< 19	< 3.7	< 19	31	< 19	< 1.9	< 19	< 19	9.1
o-Xylene	23	11.0	11.0	< 8.7	11	< 8.7	20	4.7	< 8.7	13	18	1.6	< 8.7	< 8.7	5.2
Pentane	< 30	41.0	16.0	< 30	38	< 30	< 30	6.1	< 30	79	< 30	37	< 30	< 30	16
Styrene	< 8.5	< 8.5	< 1.7	< 8.5	< 8.5	< 8.5	< 8.5	< 1.7	< 8.5	< 8.5	< 8.5	< 0.85	< 8.5	< 8.5	< 3.4
Tetrachloroethene	190	160.0	270.0	170.0	95	110	250	66	80	110	110	1.9	74	16	59
Toluene	52	17.0	11.0	< 7.5	27	16	36	2.6	< 7.5	34	17	12	< 7.5	< 7.5	3.7
trans-1,2-Dichloroethene	< 7.9	< 7.9	< 1.6	< 7.9	< 7.9	< 7.9	< 7.9	< 1.6	< 7.9	< 7.9	< 7.9	< 0.79	< 7.9	< 7.9	< 3.2
trans-1,3-Dichloropropene	< 9.1	< 9.1	< 1.8	< 9.1	< 9.1	< 9.1	< 9.1	< 1.8	< 9.1	< 9.1	< 9.1	< 0.91	< 9.1	< 9.1	< 3.6
Trichloroethene	48	30	23	17	12	13	27	25	< 11	15	14	< 1.1	< 11	< 11	8.3
Trichlorofluoromethane (CFC-11)	140.0	130.0	88.0	64.0	120.0	66.0	170.0	54.0	47.0	120.0	87.0	12.0	40.0	66.0	57
Trifluorotrchloroethane (Freon 113)	< 15	< 15	< 3.1	< 15	< 15	< 15	< 15	< 3.1	< 15	< 15	< 15	< 1.5	< 15	< 15	< 6.1
Vinyl acetate	< 35	< 35	< 7.0	< 35	< 35	< 35	< 35	< 7.0	< 35	< 35	< 35	< 3.5	< 35	< 35	< 14
Vinyl chloride	44.0	16.0	15.0	18.0	35.0	21.0	70.0	12.0	14.0	160.0	41.0	1.3	7.0	26.0	49
Total VOCs	4,521	3,145	2,633	2,369	2,821	2,149	3,116	1,102	1,245.0	2,983.5	2,202	337.6	1,454.3	1,296.3	1,356

**SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Parameter	Blower Discharge 05/13/14	Blower Discharge 05/28/14	Blower Discharge 07/31/14	Blower Discharge 10/24/14	Blower Discharge 01/21/15	Blower Discharge 04/17/15	Blower Discharge 07/31/15	Blower Discharge 10/22/15	Blower Discharge 03/22/16	Blower Discharge 04/22/16	Blower Discharge 07/27/16	Blower Discharge 10/26/16	Blower Discharge 02/14/17	Blower Discharge 04/05/17	Blower Discharge 07/24/17
1,1,1-Trichloroethane	1,000	440	320	240	300	220	210	180	260	170	320	320	380	310	370
1,1,2,2-Tetrachloroethane	< 25	< 7.0	< 3.4	< 1.4	< 1.4	< 1.4	< 3.4	< 5.5	< 1.4	< 3.6	< 2.7	< 5.5	< 1.4	< 2.7	< 5.5
1,1,2-Trichloroethane	< 20	< 5.5	< 3.8	2.4	1.2	< 1.1	< 2.7	< 4.4	1.6	< 2.9	< 2.2	< 4.4	< 1.1	< 2.2	< 4.4
1,1-Dichloroethane	1200	450	310	180	170	160	110	120	190	120	230	280	230	260	280
1,1-Dichloroethene	110	61	40	41	35	30	22	28	22	15	26	24	30	23	44
1,2,4-Trichlorobenzene	< 130	< 38	< 19	< 7.4	< 7.4	< 7.4	< 19	< 30	< 7.4	< 20	< 15	< 30	< 7.4	< 15	< 30
1,2,4-Trimethylbenzene	< 18	< 5.0	< 2.5	1.1	< 0.98	< 0.98	< 2.5	< 3.9	< 0.98	< 2.6	< 2.0	< 3.9	< 0.98	< 2.0	< 3.9
1,2-Dibromoethane (Ethylene dibromide)	< 28	< 7.8	< 3.8	< 1.5	< 1.5	< 1.5	< 3.8	< 6.1	< 1.5	< 4.0	< 3.1	< 6.1	< 1.5	< 3.1	< 6.1
1,2-Dichlorobenzene	< 22	< 6.1	< 3.0	< 1.2	< 1.2	< 1.2	< 3	< 4.8	< 1.2	< 3.2	< 2.4	< 4.8	< 1.2	< 2.4	< 4.8
1,2-Dichloroethane	< 15	< 4.1	< 2.0	< 0.81	< 0.81	< 0.81	< 2	< 3.2	< 0.81	< 2.1	< 1.6	< 3.2	< 0.81	< 1.6	< 3.2
1,2-Dichloropropane	< 17	< 4.7	2.4	2.2	1.7	1.4	< 2.3	< 3.7	1.5	< 2.4	< 1.8	< 3.7	1.9	< 1.8	< 3.7
1,2-Dichlorotetrafluoroethane (CFC 114)	110	19	93	9.1	7.4	11	6.7	29	29	12	24	80	19	60	47
1,3,5-Trimethylbenzene	< 18	< 5.0	< 2.5	0.96	< 0.98	< 0.98	< 2.5	< 3.9	< 0.98	< 2.6	< 2.0	< 3.9	< 0.98	< 2.0	< 3.9
1,3-Butadiene	< 16	< 4.5	< 2.2	< 0.88	< 0.88	< 0.88	< 2.2	< 3.5	< 0.88	< 2.3	< 1.8	< 3.5	< 0.88	< 1.8	< 3.5
1,3-Dichlorobenzene	< 22	< 6.1	< 3	< 1.2	< 1.2	< 1.2	< 3	< 4.8	< 1.2	< 3.2	< 2.4	< 4.8	< 1.2	< 2.4	< 4.8
1,4-Dichlorobenzene	< 22	< 6.1	< 3	2.8	4.6	< 1.2	< 3	< 4.8	< 1.2	< 3.2	2.8	< 4.8	1.2	< 2.4	< 4.8
2-Butanone (Methyl ethyl ketone) (MEK)	< 54	17	9.8	< 2.9	< 2.9	17	< 7.4	< 12	10	< 7.8	< 5.9	< 12	4	7.8	< 12
2-Hexanone	< 37	< 10	< 5.1	< 2	< 2	< 2	< 5.1	< 8.2	< 2.0	< 5.4	< 4.1	< 8.2	< 2.0	< 4.1	< 8.2
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	< 37	< 10	5.11	< 2	< 2	< 2	< 5.1	< 8.2	4.6	6.4	< 4.1	24	< 2.0	< 4.1	< 8.2
Acetone	< 220	< 60	57	< 12	< 12	< 12	< 30	< 48	< 12	< 31	24	< 48	< 12	25	< 48
Acetonitrile	< 31	< 8.5	< 4.2	< 1.7	< 1.7	< 1.7	< 4.2	< 6.7	< 1.7	< 4.4	< 3.4	< 6.7	< 1.7	< 3.4	< 6.7
Acrolein	< 42	< 12	< 5.7	< 2.3	< 2.3	4.1	< 5.7	< 9.2	< 2.3	< 6.0	< 4.6	< 9.2	< 2.3	< 4.6	< 9.2
Acrylonitrile	< 79	< 22	< 11	< 4.3	< 4.3	< 4.3	< 11	< 17	< 4.3	< 11	< 8.7	< 17	< 4.3	< 8.7	< 17
Allyl chloride (3-Chloropropene)	< 11	< 3.2	< 1.6	< 0.63	< 0.63	< 0.63	< 1.6	< 2.5	< 0.63	< 1.6	< 1.3	< 2.5	< 0.63	< 1.3	< 2.5
alpha-Methylstyrene	< 35	< 9.8	< 4.8	< 1.9	< 1.9	< 1.9	< 4.8	< 7.7	< 1.9	< 5.1	< 3.9	< 7.7	< 1.9	< 3.9	< 7.7
Benzene	< 12	< 3.2	2.7	1.1	0.99	1	< 1.6	< 2.6	1.2	< 1.7	1.6	4.9	1.6	3.8	< 2.6
Benzyl chloride	< 38	< 11	< 5.2	< 2.1	< 2.1	< 2.1	< 5.2	< 8.3	< 2.1	< 5.5	< 4.1	< 8.3	< 2.1	< 4.1	< 8.3
Bromodichloromethane	< 24	< 6.8	< 3.4	< 1.3	< 1.3	< 1.3	< 3.4	< 5.4	< 1.3	< 3.5	< 2.7	< 5.4	< 1.3	< 2.7	< 5.4
Bromoform	< 38	< 11	< 5.2	< 2.1	< 2.1	< 2.1	< 5.2	< 8.3	< 2.1	< 5.4	< 4.1	< 8.3	< 2.1	< 4.1	< 8.3
Bromomethane (Methyl bromide)	< 14	< 3.9	< 1.9	< 0.78	< 0.78	< 0.78	< 1.9	< 5.4	< 0.78	< 2.0	< 1.6	< 3.1	< 0.78	< 1.6	< 3.1
Butane	250	26	43	7.6	4.9	11	4.9	6.9	33	12	32	110	13	100	24
Carbon disulfide	< 28	< 7.9	< 3.9	< 1.6	< 1.6	< 1.6	< 3.9	< 6.2	< 1.6	< 4.1	< 3.1	< 6.2	< 1.6	< 3.1	< 6.2
Carbon tetrachloride	< 23	< 6.4	< 3.1	< 1.3	< 1.3	< 1.3	< 3.1	< 5.0	< 1.3	< 3.3	< 2.5	< 5.0	< 1.3	< 2.5	< 5.0
Chlorobenzene	< 17	< 4.7	2.8	1.9	1.5	< 0.92	< 2.3	< 3.7	< 0.92	< 2.4	2.8	4.6	1.1	2.4	5
Chlorodifluoromethane	210	56	50	5.6	5.5	3.4	2.4	3.8	18	11	22	62	14	44	30
Chloroethane	190	41	56	23	15	9.6	11	11	11	11	25	59	17	53	38
Chloroform (Trichloromethane)	36	28	22	23	20	17	14	14	25	15	25	22	32	17	44

SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Parameter	Blower Discharge 05/13/14	Blower Discharge 05/28/14	Blower Discharge 07/31/14	Blower Discharge 10/24/14	Blower Discharge 01/21/15	Blower Discharge 04/17/15	Blower Discharge 07/31/15	Blower Discharge 10/22/15	Blower Discharge 03/22/16	Blower Discharge 04/22/16	Blower Discharge 07/27/16	Blower Discharge 10/26/16	Blower Discharge 02/14/17	Blower Discharge 04/05/17	Blower Discharge 07/24/17
Chloromethane (Methyl chloride)	< 19	< 5.2	< 2.6	2.2	< 1	1.3	< 2.6	< 4.1	< 1.0	< 2.7	< 2.1	< 4.1	< 1.0	< 2.1	< 4.1
cis-1,2-Dichloroethene	130	66	34	30	12	9.4	9.5	11	32	15	22	47	26	33	60
cis-1,3-Dichloropropene	< 17	< 4.6	< 2.3	< 0.91	< 0.91	< 0.91	< 2.3	< 3.6	< 0.91	< 2.4	< 1.8	< 3.6	< 0.91	< 1.8	< 3.6
Cyclohexane	110	20	31	13	10	8.8	< 4.3	< 6.9	12	5.6	14	31	11	23	11
Dibromochloromethane	< 31	< 8.7	< 4.3	< 1.7	< 1.7	< 1.7	< 4.3	< 6.8	< 1.7	< 4.5	< 3.4	< 6.8	< 1.7	< 3.4	< 6.8
Dibromomethane	< 52	< 14	< 7.1	< 2.8	< 2.8	< 2.8	< 7.1	< 11	< 2.8	< 7.5	< 5.7	< 11	< 2.8	< 5.7	< 11
Dichlorodifluoromethane (CFC-12)	370	74	49	37	41	54	30	45	76	42	78	190	53	180	90
Ethyl ether	< 110	< 31	< 15	6.8	< 6.1	< 6.1	< 15	< 24	< 6.1	< 16	< 12	< 24	< 6.1	< 12	< 24
Ethylbenzene	63	10	11	9.8	5.5	6.2	4.1	< 3.5	2.7	< 2.3	3.6	7.6	1.5	3.4	3.6
Hexachlorobutadiene	< 190	< 54	< 27	< 11	< 11	< 11	< 27	< 43	< 11	< 28	< 21	< 43	< 11	< 21	< 43
Hexane	88	14	40	7.9	4.6	5	< 4.4	< 7.0	7.6	< 4.6	11	31	8.3	21	10
Isopropyl benzene (Cumene)	< 36	< 10	< 4.9	2	< 2	< 2	< 4.9	< 7.9	< 2.0	< 5.2	< 3.9	< 7.9	< 2.0	< 3.9	< 7.9
m&p-Xylenes	88	27	17	10	7.7	7.5	5.3	< 3.5	2.9	< 2.3	4.6	11	1.9	4.7	3.6
Methyl tert butyl ether (MTBE)	< 66	< 18	< 9	< 3.8	< 3.6	< 3.6	< 9	< 14	< 3.6	< 9.5	< 7.2	< 14	< 3.6	< 7.2	< 14
Methylene chloride	< 32	9.6	11	5.8	4.7	2.9	4.4	7.1	2.6	< 4.6	< 3.5	31	< 1.7	< 3.5	8.8
Naphthalene	< 48	< 13	< 6.6	< 2.6	< 2.6	< 2.6	< 6.6	< 10	6.5	< 15	< 12	< 23	< 5.8	< 12	< 23
N-Decane	< 110	< 30	< 15	12	14	11	< 15	< 23	< 7.0	< 18	< 14	< 28	< 7.0	< 14	< 28
N-Dodecane	< 130	< 35	< 17	< 7	< 7	< 7	< 17	< 28	3.4	< 5.4	< 4.1	13	4.8	9.9	< 8.2
N-Heptane	180	11	19	4.7	5.1	15	< 5.1	< 8.2	< 2.0	< 5.2	< 3.9	< 7.9	< 2.0	< 3.9	< 7.9
Nonane	160	22	12	11	12	11	< 6.6	< 10	< 6.4	< 17	< 13	< 26	< 6.4	< 13	< 26
N-Propylbenzene	< 36	< 10	< 4.9	< 2	< 2	< 2	< 4.9	< 7.9	< 2.6	< 6.9	< 5.2	< 10	< 2.6	< 5.2	< 10
N-Undecane	< 120	< 32	< 16	< 6.4	< 6.4	< 6.4	< 16	< 26	3.7	< 6.9	< 5.2	12	6.5	10	< 10
Octane	53	< 9.5	8.5	2.9	3.7	4.5	< 4.7	< 7.5	1.1	< 2.3	< 1.7	< 3.5	< 0.87	< 1.7	< 3.5
o-Xylene	16	7.2	3.6	3.9	2.7	1.6	< 2.2	< 3.5	< 1.9	< 4.9	< 3.7	< 7.5	2.9	3.7	< 7.5
Pentane	110	< 15	65	4.6	< 3	6	< 7.4	< 12	15	< 7.8	12	42	10	39	< 12
Styrene	< 15	< 4.3	< 2.1	< 0.85	< 0.85	< 0.85	< 2.1	< 3.4	< 0.85	< 2.2	< 1.7	< 3.4	< 0.85	< 1.7	< 3.4
Tetrachloroethene	260	130	140	84	81	56	55	70	95	47	89	110	95	120	130
Toluene	43	14	10	2	0.97	2.3	3.9	< 3.0	1.3	< 2.0	< 1.5	4.7	< 0.75	< 1.5	< 3.0
trans-1,2-Dichloroethene	< 14	< 4.0	< 2	< 0.79	< 0.79	< 0.79	< 2	< 3.2	< 0.79	< 2.1	< 1.6	< 3.2	< 0.79	< 1.6	< 3.2
trans-1,3-Dichloropropene	< 17	< 4.6	< 2.3	< 0.91	< 0.91	< 0.91	< 2.3	< 3.6	< 0.91	< 2.4	< 1.8	< 3.6	< 0.91	< 1.8	< 3.6
Trichloroethene	40	20	22	9.4	6.9	6.1	4.6	5.9	9.2	5.9	9.8	13	6.7	8.6	14
Trichlorofluoromethane (CFC-11)	100	43	110	43	43	53	42	42	77	100	140	130	54	110	100
Trifluorotrchloroethane (Freon 113)	< 28	< 7.8	< 3.8	< 1.5	< 1.5	< 1.5	< 3.8	< 6.1	< 1.5	< 4.0	< 3.1	< 6.1	< 1.5	< 3.1	< 6.1
Vinyl acetate	< 64	< 18	< 8.8	< 3.5	< 3.5	< 3.5	< 8.8	< 14	< 3.5	< 9.3	< 7.0	< 14	< 3.5	< 7.0	< 14
Vinyl chloride	540	45	74	29	19	11	8.8	19	40	22	42	130	34	150	53
Total VOCs	6,571	1,960	1,798	922	898	812	717	867	1,049	787	1,277	2,032	1,119	1,730	1,626

**SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Parameter	Blower Discharge 10/30/17	SVE-1 04/27/12	SVE-2 04/22/10	SVE-2 04/26/13	SVE-2 10/23/13	SVE-3 04/27/12	SVE-3 10/30/12	SVE-3 04/26/13	SVE-3 10/23/13	SVE-3 10/24/14	SVE-3 10/30/17	SVE-4 04/22/10	SVE-4 10/22/10	SVE-4 10/30/12	SVE-4 04/26/13	SVE-4 10/23/13
1,1,1-Trichloroethane	330	44.0	546	670	210	2100	2100	1200	1300	430	160	1,582	1,300	600	440	320
1,1,2,2-Tetrachloroethane	< 14	< 14	< 13.73	< 14	< 14	< 14	< 14	< 14	< 14	< 1.4	< 14	< 13.73	< 14	< 14	< 5.5	< 14
1,1,2-Trichloroethane	< 11	< 11	< 10.91	< 11	< 11	< 11	< 11	< 11	< 11	< 1.5	< 11	< 10.91	< 11	< 11	< 4.4	< 11
1,1-Dichloroethane	280	35.0	567	580	220	690	650	450	340	150	91	809	800	410	320	220
1,1-Dichloroethene	33	< 7.9	83.3	50	18	610.0	520.0	310	260	95	12	178.4	150.0	85.0	70	34
1,2,4-Trichlorobenzene	< 74	< 74	< 74.21	< 74	< 74	< 74	< 74	< 74	< 74	< 7.4	< 74	< 74.21	< 74	< 74	< 30	< 74
1,2,4-Trimethylbenzene	< 9.8	< 9.8	< 9.83	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 0.98	< 9.8	< 9.83	< 9.8	< 9.8	< 3.9	< 9.8
1,2-Dibromoethane (Ethylene dibromide)	< 15	< 15	< 15.37	< 15	< 15	< 15	< 15	< 15	< 15	< 1.5	< 15	< 15.37	< 15	< 15	< 6.1	< 15
1,2-Dichlorobenzene	< 12	< 12	< 12.02	< 12	< 12	< 12	< 12	< 12	< 12	< 1.2	< 12	< 12.02	< 12	< 12	< 4.8	< 12
1,2-Dichloroethane	< 8.1	< 8.1	< 8.09	< 8.1	< 8.1	< 8.1	< 8.1	< 8.1	< 8.1	< 0.81	< 8.1	< 8.09	< 8.1	< 8.1	< 3.2	< 8.1
1,2-Dichloropropane	< 9.2	< 9.2	< 9.24	< 9.2	< 9.2	< 9.2	< 9.2	< 9.2	< 9.2	0.97	< 9.2	< 9.24	< 9.2	< 9.2	< 3.7	< 9.2
1,2-Dichlorotetrafluoroethane (CFC 114)	62	< 14	26	82	< 14	< 14	< 14	< 14	< 14	3.1	94	15	37	23	16	26
1,3,5-Trimethylbenzene	< 9.8	< 9.8	< 9.83	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 0.98	< 9.8	< 9.83	< 9.8	< 9.8	< 3.9	< 9.8
1,3-Butadiene	< 8.8	< 8.8	< 8.85	< 8.8	< 8.8	< 8.8	< 8.8	< 8.8	< 8.8	< 0.88	< 8.8	< 8.85	< 8.8	< 8.8	< 3.5	< 8.8
1,3-Dichlorobenzene	< 12	< 12	< 12.02	< 12	< 12	< 12	< 12	< 12	< 12	< 1.2	< 12	< 12.02	< 12	< 12	< 4.8	< 12
1,4-Dichlorobenzene	< 12	< 12	< 12.02	< 12	< 12	< 12	< 12	< 12	< 12	< 1.2	< 12	< 12.02	< 12	< 12	< 4.8	< 12
2-Butanone (Methyl ethyl ketone) (MEK)	< 29	< 29	< 29.49	< 29	< 29	< 29	< 29	< 29	< 29	< 2.9	< 29	< 29.49	< 29	< 29	< 12	< 29
2-Hexanone	< 20	< 20	< 20.48	< 20	< 20	< 20	< 20	< 20	< 20	< 2	< 20	< 20.48	< 20	< 20	< 8.2	< 20
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	< 20	< 20	< 20.48	< 20	< 20	< 20	< 20	< 20	< 20	< 2	< 20	< 20.48	< 20	< 20	< 8.2	< 20
Acetone	< 120	< 120	< 118.77	< 120	< 120	< 120	< 120	< 120	< 120	< 12	< 120	< 118.77	< 120	< 120	< 48	< 120
Acetonitrile	< 17	< 17	< 16.79	< 17	< 17	< 17	< 17	< 17	< 17	< 1.7	< 17	< 16.79	< 17	< 17	< 6.7	< 17
Acrolein	< 23	< 18	< 18.34	< 18	< 23	< 18	< 18	< 18	< 23	< 2.3	< 23	< 18.34	< 18	< 18	< 7.3	< 23
Acrylonitrile	< 43	< 43	< 43.4	< 43	< 43	< 43	< 43	< 43	< 43	< 4.3	< 43	< 43.4	< 43	< 43	< 17	< 43
Allyl chloride (3-Chloropropene)	< 6.3	< 6.3	< 6.26	< 6.3	< 6.3	< 6.3	< 6.3	< 6.3	< 6.3	< 0.63	< 6.3	< 6.26	< 6.3	< 6.3	< 2.5	< 6.3
alpha-Methylstyrene	< 19	< 19	< -999	< 19	< 19	< 19	< 19	< 19	< 19	< 1.9	< 19	< -999	< 19	< 19	< 7.7	< 19
Benzene	< 6.4	< 6.4	< 6.39	< 6.4	< 6.4	< 6.4	< 6.4	< 6.4	< 6.4	< 0.64	< 6.4	< 6.39	< 6.4	< 6.4	< 2.6	< 6.4
Benzyl chloride	< 21	< 21	< 20.71	< 21	< 21	< 21	< 21	< 21	< 21	< 2.1	< 21	< 20.71	< 21	< 21	< 8.3	< 21
Bromodichloromethane	< 13	< 13	< 13.4	< 13	< 13	< 13	< 13	< 13	< 13	< 1.3	< 13	< 13.4	< 13	< 13	< 5.4	< 13
Bromoform	< 21	< 21	< 20.67	< 21	< 21	< 21	< 21	< 21	< 21	< 2.1	< 21	< 20.67	< 21	< 21	< 8.3	< 21
Bromomethane (Methyl bromide)	< 7.8	< 7.8	< 7.77	< 7.8	< 7.8	< 7.8	< 7.8	< 7.8	< 7.8	< 0.78	< 7.8	< 7.77	< 7.8	< 7.8	< 3.1	< 7.8
Butane	69	< 9.5	22.8	40	10	< 9.5	< 9.5	< 9.5	< 9.5	1.2	< 9.5	18.8	67.0	26.0	21	20
Carbon disulfide	< 16	< 16	< 15.57	< 16	< 16	< 16	< 16	< 16	< 16	< 1.6	< 16	< 15.57	< 16	< 16	< 6.2	< 16
Carbon tetrachloride	< 13	< 13	< 12.58	< 13	< 13	< 13	< 13	< 13	< 13	< 1.3	< 13	< 12.58	< 13	< 13	< 5.0	< 13
Chlorobenzene	< 9.2	< 9.2	< 9.21	< 9.2	< 9.2	< 9.2	< 9.2	< 9.2	< 9.2	< 0.92	< 9.2	< 9.21	< 9.2	< 9.2	< 3.7	< 9.2
Chlorodifluoromethane	49	< 7.1	-999.0	27	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1	3	< 7.1	< -999	28.0	9.3	7.4	16 J
Chloroethane	48	8.5	60.7	34	12	27.0	22.0	12	9.7	11	< 5.3	55.4	140.0	72.0	63	42
Chloroform (Trichloromethane)	33	< 9.8	< 9.77	< 9.8	< 9.8	37.0	43.0	31	31	15	< 9.8	12.7	14.0	12.0	11	< 9.8

Table 4.2

**SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Parameter	Blower Discharge 10/30/17	SVE-1 04/27/12	SVE-2 04/22/10	SVE-2 04/26/13	SVE-2 10/23/13	SVE-3 04/27/12	SVE-3 10/30/12	SVE-3 04/26/13	SVE-3 10/23/13	SVE-3 10/24/14	SVE-3 10/30/17	SVE-4 04/22/10	SVE-4 10/22/10	SVE-4 10/30/12	SVE-4 04/26/13	SVE-4 10/23/13
Chloromethane (Methyl chloride)	< 10	< 10	< 10.33	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 10	< 10.33	15.0	< 10	4.9	< 10
cis-1,2-Dichloroethene	35	< 7.9	28.2	13	< 7.9	22.0	22.0	14	< 7.9	14	< 7.9	43.6	74	57	11	39
cis-1,3-Dichloropropene	< 9.1	< 9.1	< 9.08	< 9.1	< 9.1	< 9.1	< 9.1	< 9.1	< 9.1	< 0.91	< 9.1	< 9.08	< 9.1	< 9.1	< 3.6	< 9.1
Cyclohexane	23	< 17	< 17.21	46	< 17	< 17	< 17	< 17	< 17	1.8	< 17	62.0	94.0	31.0	40	< 17
Dibromochloromethane	< 17	< 17	< 17.04	< 17	< 17	< 17	< 17	< 17	< 17	< 1.7	< 17	< 17.04	< 17	< 17	< 6.8	< 17
Dibromomethane	< 28	< 28	< -999	< 28	< 28	< 28	< 28	< 28	< 28	< 2.8	< 28	< -999	< 28	< 28	< 11	< 28
Dichlorodifluoromethane (CFC-12)	280	< 9.9	203	220	60	86.0	72	47	50	290	320	41	110	39	53	71
Ethyl ether	< 61	< 61	< 60.63	< 61	< 61	< 61	< 61	< 61	< 61	< 6.1	< 61	< 60.63	< 61	< 61	< 24	< 61
Ethylbenzene	< 8.7	< 8.7	< 8.68	< 8.7	< 8.7	< 8.7	< 8.7	< 8.7	< 8.7	< 0.87	< 8.7	< 8.68	< 8.7	< 8.7	< 3.5	< 8.7
Hexachlorobutadiene	< 110	< 110	< 106.65	< 110	< 110	< 110	< 110	< 110	< 110	< 11	< 110	< 106.65	< 110	< 110	< 43	< 110
Hexane	27	< 18	< 17.62	24	< 18	< 18	< 18	< 18	< 18	< 1.8	< 18	25	570	33	55	< 18
Isopropyl benzene (Cumene)	< 20	< 20	< 19.66	< 20	< 20	< 20	< 20	< 20	< 20	< 2	< 20	< 19.66	< 20	< 20	< 7.9	< 20
m&p-Xylenes	9.1	< 8.7	< 8.68	< 8.7	< 8.7	< 8.7	< 8.7	< 8.7	< 8.7	< 0.87	< 8.7	< 8.68	< 8.7	< 8.7	< 3.5	< 8.7
Methyl tert butyl ether (MTBE)	< 36	< 36	< 36.05	< 36	< 36	< 36	< 36	< 36	< 36	< 3.6	< 36	< 36.05	< 36	< 36	< 14	< 36
Methylene chloride	< 17	< 17	32	< 17	< 17	17	21	< 17	< 17	5.9	< 17	28	23	< 17	< 6.9	< 17
Naphthalene	< 58	< 26	< 26.21	< 26	< 26	< 26	< 26	< 26	< 26	< 2.6	< 58	< 26.21	< 26	< 26	< 10	< 26
N-Decane	< 70	< 58	< 58.2	< 58	< 58	< 58	< 58	< 58	< 58	< 5.8	< 70	< 58.2	< 58	< 58	< 23	< 58
N-Dodecane	< 20	< 70	< 69.67	< 70	< 70	< 70	< 70	< 70	< 70	< 7.0	< 20	< 69.67	< 70	< 70	< 28	< 70
N-Heptane	< 20	< 20	< 20.49	22	< 20	< 20	< 20	< 20	< 20	< 2	< 20	< 20.49	34	< 20	21	< 20
Nonane	< 64	< 26	< 26.23	< 26	< 26	< 26	< 26	< 26	< 26	< 2.6	< 64	< 26.23	< 26	< 26	< 10	< 26
N-Propylbenzene	< 26	< 20	< 19.66	< 20	< 20	< 20	< 20	< 20	< 20	< 2	< 26	< 19.66	< 20	< 20	< 7.9	< 20
N-Undecane	< 26	< 64	< 63.93	< 64	< 64	< 64	< 64	< 64	< 64	< 6.4	< 26	< 63.93	< 64	< 64	< 26	< 64
Octane	< 8.7	< 19	< 18.69	< 19	< 19	< 19	< 19	< 19	< 19	< 1.9	< 8.7	< 18.69	< 19	< 19	< 7.5	< 19
o-Xylene	< 19	< 8.7	< 8.68	< 8.7	< 8.7	< 8.7	< 8.7	< 8.7	< 8.7	< 0.87	< 19	< 8.68	< 8.7	< 8.7	< 3.5	< 8.7
Pentane	< 30	< 30	< 29.51	30	< 30	< 30	< 30	< 30	< 30	< 3	< 30	< 29.51	55	< 30	13	< 30
Styrene	< 8.5	< 8.5	< 8.52	< 8.5	< 8.5	< 8.5	< 8.5	< 8.5	< 8.5	< 0.85	< 8.5	< 8.52	< 8.5	< 8.5	< 3.4	< 8.5
Tetrachloroethene	120	< 14	18	16	< 14	20	22	25	20	24	< 14	66	49	90	28	50
Toluene	< 7.5	< 7.5	< 7.53	< 7.5	< 7.5	< 7.5	< 7.5	< 7.5	< 7.5	< 0.75	< 7.5	< 7.53	< 7.5	< 7.5	< 3.0	< 7.5
trans-1,2-Dichloroethene	< 7.9	< 7.9	< 7.93	< 7.9	< 7.9	< 7.9	< 7.9	< 7.9	< 7.9	< 0.79	< 7.9	< 7.93	< 7.9	< 7.9	< 3.2	< 7.9
trans-1,3-Dichloropropene	< 9.1	< 9.1	< 9.08	< 9.1	< 9.1	< 9.1	< 9.1	< 9.1	< 9.1	< 0.91	< 9.1	< 9.08	< 9.1	< 9.1	< 3.6	< 9.1
Trichloroethene	13	< 11	< 10.75	< 11	< 11	< 11	< 11	< 11	< 11	5.4	< 11	16	19	12	6	< 11
Trichlorofluoromethane (CFC-11)	140	18.0	84.3	45	59	40	42	24	27	72	12	106.8	41	31	11	32
Trifluorotrchloroethane (Freon 113)	< 15	< 15	< 15.33	< 15	< 15	< 15	< 15	< 15	< 15	< 1.5	< 15	< 15.33	< 15	< 15	< 6.1	< 15
Vinyl acetate	< 35	< 35	< 35.21	< 35	< 35	< 35	< 35	< 35	< 35	< 3.5	< 35	< 35.21	< 35	< 35	< 14	< 35
Vinyl chloride	84	< 5.1	11.5	21.0	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	1.1	< 5.1	12.8	120	27	33	18
Total VOCs	2,306	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 4.2

SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Parameter	SVE-4 10/24/14	SVE-4 10/22/15	SVE-4 10/26/16	SVE-4 10/30/17	SVE-5 04/22/10	SVE-5 10/30/12	SVE-5 04/26/13	SVE-5 10/23/13	SVE-5 10/24/14	SVE-6 09/23/08	SVE-6 10/01/08	SVE-6 10/15/08	SVE-6 11/13/08	SVE-6 04/24/09	SVE-6 10/20/09	SVE-6 04/29/11
1,1,1-Trichloroethane	370	250	380	180	5,074	1,800	1300	960	420	37,000	40,000	46,000	21,000	9,000	130	1,300
1,1,2,2-Tetrachloroethane	< 1.4	< 2.7	< 6.9	< 14	< 51.49	< 14	< 27	< 14	< 1.4	< 1200	< 550	< 440	< 96	< 88	< 1.4	< 14
1,1,2-Trichloroethane	1.3	< 2.2	< 5.5	< 11	< 40.92	< 11	< 22	< 11	< 1.5	< 960	< 440	< 350	< 76	< 70	< 1.1	< 11
1,1-Dichloroethane	330	200	420	250	2,590	1,200	1800	540	240	90,000	65,000	49,000	15,000	3,500	58.0	550
1,1-Dichloroethene	55	34	41	22	634.4	330.0	350	200	110	4,400	7,700	5,100	3,100	830	19	250
1,2,4-Trichlorobenzene	< 7.4	< 15	< 37	< 74	< 274.59	< 74	< 150	< 74	< 7.4	< 6500	< 3000	< 2400	< 520	< 470	< 7.4	< 74
1,2,4-Trimethylbenzene	< 0.98	< 2.0	< 4.9	< 9.8	< 36.87	< 9.8	< 20	< 9.8	< 0.98	< 860	< 390	< 310	< 69	< 63	< 0.98	< 9.8
1,2-Dibromoethane (Ethylene dibromide)	< 1.5	< 3.1	< 7.7	< 15	< 57.63	< 15	< 31	< 15	< 1.5	< 1300	< 610	< 490	< 110	< 98	< 1.5	< 15
1,2-Dichlorobenzene	< 1.2	< 2.4	< 6.0	< 12	< 45.09	< 12	< 24	< 12	< 1.2	< 1100	< 480	< 380	< 84	< 77	< 1.2	< 12
1,2-Dichloroethane	1.2	< 1.6	< 4.0	< 8.1	< 30.36	< 8.1	< 16	< 8.1	0.83	< 710	< 320	< 260	69	< 52	< 0.81	< 8.1
1,2-Dichloropropane	2.1	< 1.8	< 4.6	< 9.2	< 34.66	< 9.2	< 18	< 9.2	2.4	< 810	< 370	< 300	130	< 59	< 0.92	< 9.2
1,2-Dichlorotetrafluoroethane (CFC 114)	10	7.6	74	92	< 52.43	25.0	< 28	< 14	< 1.4	< 1200	< 560	< 450	< 98	< 89	3.8	< 14
1,3,5-Trimethylbenzene	< 0.98	< 2.0	< 4.9	< 9.8	< 36.87	< 9.8	< 20	< 9.8	< 0.98	< 860	< 390	< 310	< 69	< 63	< 0.98	< 9.8
1,3-Butadiene	< 0.88	< 1.8	< 4.4	< 8.8	< 33.18	< 8.8	< 18	< 8.8	< 0.88	< 780	< 350	< 280	< 62	< 57	< 0.88	< 8.8
1,3-Dichlorobenzene	< 1.2	< 2.4	< 6.0	< 12	< 45.09	< 12	< 24	< 12	< 1.2	< 1100	< 480	< 380	< 84	< 77	< 1.2	< 12
1,4-Dichlorobenzene	< 1.2	< 2.4	< 6.0	< 12	< 45.09	< 12	< 24	< 12	< 1.2	< 1100	< 480	< 380	< 84	< 77	< 1.2	< 12
2-Butanone (Methyl ethyl ketone) (MEK)	< 2.9	< 5.9	< 15	< 29	< 109.12	< 29	< 59	< 29	5.3	< 2600	2,500	5,400	4,700	3,800	7	< 29
2-Hexanone	< 2	< 4.1	< 10	< 20	< 77.83	< 20	< 41	< 20	< 2	< 1800	< 820	< 660	< 140	< 130	< 2.0	< 20
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	< 2	< 4.1	< 10	< 20	< 77.83	< 20	< 41	< 20	2.4	< 1800	< 820	1,500	3,000	480	< 2.0	< 20
Acetone	< 12	< 24	< 59	< 120	< 451.34	< 120	< 240	< 120	23	< 10000	< 4700	11,000	8,100	14,000	35	< 120
Acetonitrile	< 1.7	< 3.4	< 8.4	< 17	< 62.12	< 17	< 34	< 17	< 1.7	< 1500	< 670	< 540	< 120	< 110	2.30	< 17
Acrolein	< 2.3	< 4.6	< 11	< 23	< 68.79	< 18	< 37	< 23	< 2.3	< 1600	< 730	< 590	< 130	< 120	< 1.8	< 18
Acrylonitrile	< 4.3	< 8.7	< 22	< 43	< 162.76	< 43	< 87	< 43	< 4.3	< 3800	< 1700	< 1400	< 300	< 280	< 4.3	< 43
Allyl chloride (3-Chloropropene)	< 0.63	< 1.3	< 3.1	< 6.3	< 23.47	< 6.3	< 13	< 6.3	< 0.63	< 550	< 250	< 200	< 44	< 40	< 0.63	< 6.3
alpha-Methylstyrene	< 1.9	< 3.9	< 9.7	< 19	< -999	< 19	< 39	< 19	< 1.9	< 1700	< 770	< 620	< 140	< 120	< 1.9	< 19
Benzene	0.69	< 1.3	< 3.2	< 6.4	< 23.96	< 6.4	< 13	< 6.4	< 0.64	660	310	250	68	< 41	< 0.64	< 6.4
Benzyl chloride	< 2.1	< 4.1	< 10	< 21	< 77.66	< 21	< 41	< 21	< 2.1	< 1800	< 830	< 660	< 140	< 130	< 2.1	< 21
Bromodichloromethane	< 1.3	< 2.7	< 6.7	< 13	< 50.25	< 13	< 27	< 13	< 1.3	< 1200	< 530	< 430	< 94	< 86	< 1.3	< 13
Bromoform	< 2.1	< 4.1	< 10	< 21	< 77.52	< 21	< 41	< 21	< 2.1	< 1800	< 820	< 660	< 140	< 130	< 2.1	< 21
Bromomethane (Methyl bromide)	< 0.78	< 1.6	< 3.9	< 7.8	< 29.12	< 7.8	< 16	< 7.8	< 0.78	< 680	< 310	< 250	< 54	< 50	< 0.78	< 7.8
Butane	6.8	3	67	66	< 35.66	< 9.5	< 19	< 9.5	3.2	970	< 380	< 300	< 67	< 61	5	23
Carbon disulfide	< 1.6	< 3.1	< 7.8	< 16	< 59.17	< 16	36	< 16	< 1.6	< 1400	< 620	< 500	250	< 100	< 1.6	< 16
Carbon tetrachloride	< 1.3	< 2.5	< 6.3	< 13	< 47.18	< 13	< 25	< 13	< 1.3	< 1100	< 500	< 400	< 88	< 81	< 1.3	< 13
Chlorobenzene	< 0.92	< 1.8	< 4.6	< 9.2	< 34.53	< 9.2	< 18	< 9.2	< 0.92	1,200	< 370	< 290	< 64	< 59	< 0.92	< 9.2
Chlorodifluoromethane	4.1	2.4	45	47	< -999	< 7.1	16	< 7.1	2	5,200	1,400	320	150	< 45	2	< 7.1
Chloroethane	32	9.9	150	110	343.0	250.0	1300	84	26	68,000	29,000	6,700	1,100	140	3	17
Chloroform (Trichloromethane)	12	8.3	18	< 9.8	42	60	54	46	29	< 860	< 390	< 310	240	87	2	31

Table 4.2

SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Parameter	SVE-4 10/24/14	SVE-4 10/22/15	SVE-4 10/26/16	SVE-4 10/30/17	SVE-5 04/22/10	SVE-5 10/30/12	SVE-5 04/26/13	SVE-5 10/23/13	SVE-5 10/24/14	SVE-6 09/23/08	SVE-6 10/01/08	SVE-6 10/15/08	SVE-6 11/13/08	SVE-6 04/24/09	SVE-6 10/20/09	SVE-6 04/29/11
Chloromethane (Methyl chloride)	1.8	< 2.1	< 5.2	< 10	< 39.24	23.0	55	15	2.5	< 910	< 410	< 330	< 72	< 66	1	< 10
cis-1,2-Dichloroethene	95	20	87	66	107.1	56.0	94	15	10	9,000	8,100	6,700	2,700	390	2.8	28.0
cis-1,3-Dichloropropene	< 0.91	< 1.8	< 4.5	< 9.1	< 34.04	< 9.1	< 18	< 9.1	< 0.91	< 800	< 360	< 290	< 64	< 58	< 0.91	< 9.1
Cyclohexane	14	< 3.4	26	24	< 65.4	< 17	< 34	< 17	< 1.7	3,800	1,100	< 550	140	< 110	< 1.7	< 17
Dibromochloromethane	< 1.7	< 3.4	< 8.5	< 17	< 63.89	< 17	< 34	< 17	< 1.7	< 1500	< 680	< 550	< 120	< 110	< 1.7	< 17
Dibromomethane	< 2.8	< 5.7	< 14	< 28	< -999	< 28	< 57	< 28	< 2.8	< 2500	< 1100	< 910	< 200	< 180	< 2.8	< 28
Dichlorodifluoromethane (CFC-12)	17	22	99	110	84.1	59.0	52	51	13	4,000	2,600	1,900	3,300	660	21.0	70.0
Ethyl ether	6.9	< 12	< 30	< 61	< 227.36	< 61	< 120	< 61	10	< 5300	< 2400	< 1900	840	< 390	< 6.1	< 61
Ethylbenzene	< 0.87	< 1.7	< 4.3	< 8.7	< 32.57	< 8.7	< 17	< 8.7	< 0.87	7,000	460	1,200	770	290	< 0.87	< 8.7
Hexachlorobutadiene	< 11	< 21	< 53	< 110	< 394.61	< 110	< 210	< 110	< 11	< 9400	< 4300	< 3400	< 750	< 680	< 11	< 110
Hexane	6.1	< 3.5	53	53	< 66.97	< 18	< 35	< 18	< 1.8	1,600	< 700	< 560	< 120	< 110	3.4	< 18
Isopropyl benzene (Cumene)	< 2	< 3.9	< 9.8	< 20	< 73.74	< 20	< 39	< 20	< 2	< 1700	< 780	< 630	< 140	< 130	< 2.0	< 20
m&p-Xylenes	< 0.87	< 1.7	< 4.3	< 8.7	< 32.57	< 8.7	< 17	< 8.7	< 0.87	13,000	1,000	3,600	2,800	970	< 0.87	< 8.7
Methyl tert butyl ether (MTBE)	< 3.6	< 7.2	< 18	< 36	< 133.4	< 36	< 72	< 36	< 3.6	< 3200	< 1400	< 1200	< 250	< 230	< 3.6	< 36
Methylene chloride	7.9	3.7	40	24	240	120.0	150	32	9.8	15,000	14,000	13,000	6,900	970	7.7	68.0
Naphthalene	< 2.6	< 5.2	< 29	< 58	< 99.6	< 26	< 52	< 26	< 2.6	< 2300	< 1000	< 840	< 180	< 170	< 2.6	< 26
N-Decane	< 5.8	< 12	< 35	< 70	< 215.33	< 58	< 120	< 58	< 5.8	< 5100	< 2300	< 1900	< 410	< 370	< 5.8	< 58
N-Dodecane	< 7	< 14	< 10	< 20	< 257.77	< 70	< 140	< 70	< 7	< 6100	< 2800	< 2200	< 490	< 450	< 7.0	< 70
N-Heptane	< 2	< 4.1	< 9.8	< 20	< 77.87	< 20	< 41	< 20	< 2	9,500	970	< 660	160	170	< 2.0	< 20
Nonane	< 2.6	< 5.2	< 32	< 64	< 99.67	< 26	< 52	< 26	< 2.6	< 2300	< 1000	< 840	190	< 170	< 2.6	< 26
N-Propylbenzene	< 2	< 3.9	< 13	< 26	< 73.74	< 20	< 39	< 20	< 2	< 1700	< 780	< 630	< 140	< 130	< 2.0	< 20
N-Undecane	< 6.4	< 13	< 13	< 26	< 236.54	< 64	< 130	< 64	< 6.4	< 5600	< 2600	< 2000	< 450	< 410	< 6.4	< 64
Octane	< 1.9	< 3.7	< 4.3	< 8.7	< 70.08	< 19	< 37	< 19	< 1.9	1,700	< 750	< 600	140	< 120	< 1.9	< 19
o-Xylene	< 0.87	< 1.7	< 9.3	< 19	< 32.57	< 8.7	< 17	< 8.7	< 0.87	2,900	< 350	950	730	120	< 0.87	< 8.7
Pentane	4.3	< 5.9	26	< 30	< 109.18	< 30	< 59	< 30	< 3	< 2600	< 1200	< 940	< 210	< 190	3.7	42.0
Styrene	< 0.85	< 1.7	< 4.3	< 8.5	< 31.95	< 8.5	< 17	< 8.5	< 0.85	< 750	< 340	< 270	< 60	< 55	< 0.85	< 8.5
Tetrachloroethene	85	82	67	26	< 50.87	52.0	77	16	32	2,300	690	2,000	1,600	470	1.8	43.0
Toluene	< 0.75	< 1.5	< 3.8	< 7.5	< 28.22	< 7.5	25	< 7.5	< 0.75	44,000	11,000	17,000	6,800	2,400	3.5	< 7.5
trans-1,2-Dichloroethene	< 0.79	< 1.6	< 4.0	< 7.9	< 29.74	< 7.9	< 16	< 7.9	< 0.79	< 700	< 320	< 250	< 56	< 51	< 0.79	< 7.9
trans-1,3-Dichloropropene	< 0.91	< 1.8	< 4.5	< 9.1	< 34.04	< 9.1	< 18	< 9.1	< 0.91	< 800	< 360	< 290	< 64	< 58	< 0.91	< 9.1
Trichloroethene	10	6.4	13	< 11	< 40.3	12	< 21	< 11	4	< 940	< 430	430	240	< 69	1.1	15.0
Trichlorofluoromethane (CFC-11)	17	13	28	22	51.7	33	< 22	27	8.3	< 990	800	920	1,400	990	7.1	28.0
Trifluorotrchloroethane (Freon 113)	< 1.5	< 3.1	< 7.7	< 15	< 57.48	< 15	< 31	< 15	< 1.5	< 1300	< 610	< 490	< 110	< 98	< 1.5	< 15
Vinyl acetate	< 3.5	< 7.0	< 18	< 35	< 130.28	< 35	< 70	< 35	< 3.5	< 3100	< 1400	< 1100	< 250	< 230	< 3.5	< 35
Vinyl chloride	15	2.3	69	53	46	10	45	8.1	1.7	14,000	4,900	960	160	91	2.1	< 5.1
Total VOCs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

SVE/LFG System VOC Results (µg/m³)
 New Richmond Landfill (#2492)
 New Richmond, Wisconsin

Parameter	SVE-6 10/26/11	SVE-6 10/30/12	SVE-6 10/22/15	SVE-6 10/26/16	SVE-6 10/30/17	SVE-7 10/01/08	SVE-7 10/15/08	SVE-7 11/13/08	SVE-7 04/24/09	SVE-7 10/20/09	SVE-7 10/22/10	SVE-7 04/29/11	SVE-7 10/26/11	SVE-7 10/22/15	SVE-7 10/26/16	SVE-8 04/22/10
Chloromethane (Methyl chloride)	< 10	< 2.1	< 3.4	< 6.9	< 10 U	< 630	< 320	< 56	< 10	1	2.6	< 2.1	< 10	< 4.1	< 5.2	< 206.5
cis-1,2-Dichloroethene	16.0	5	11	< 5.3	9	23,000	7,700	2,400	260	< 0.79	17.0	8.0	< 7.9	30	110	436
cis-1,3-Dichloropropene	< 9.1	< 1.8	< 3.0	< 6.1	< 9.1 U	< 560	< 280	< 49	< 9.1	< 0.91	< 2.3	< 1.8	< 9.1	< 3.6	< 4.5	< 181.55
Cyclohexane	< 17	< 3.4	< 5.7	< 11	< 17 U	2,300	< 530	290	94	< 1.7	21.0	< 3.4	< 17	16	29	< 344.21
Dibromochloromethane	< 17	< 3.4	< 5.7	< 11	< 17 U	< 1000	< 530	< 92	< 17	< 1.7	< 4.3	< 3.4	< 17	< 6.8	< 8.5	< 340.74
Dibromomethane	< 28	< 5.7	< 9.5	< 19	< 28 U	< 1700	< 880	< 150	< 28	< 2.8	< 7.1	< 5.7	< 28	< 11	< 14	< -999
Dichlorodifluoromethane (CFC-12)	46.0	16.0	84	380	140	1,900	520	300	66	3.30	21	7	< 9.9	38	68	< 197.81
Ethyl ether	< 61	< 12	< 20	< 40	< 61 U	< 3700	< 1900	520	380	< 6.1	< 15	< 12	< 61	< 24	< 30	< 1212.6
Ethylbenzene	< 8.7	< 1.7	< 2.9	< 5.8	< 8.7 U	5,300	1,400	620	< 8.7	< 0.87	53.0	< 1.7	< 8.7	< 3.5	< 4.3	< 173.69
Hexachlorobutadiene	< 110	< 21	< 36	< 71	< 110 U	< 6500	< 3300	< 580	< 110	< 11	< 27	< 21	< 110	< 43	< 53	< 2133.01
Hexane	< 18	< 3.5	< 5.9	< 12	< 18 U	1,300	< 550	180	72	5	11.0	< 3.5	< 18	< 7.0	25	< 352.47
Isopropyl benzene (Cumene)	< 20	< 3.9	< 6.6	< 13	< 20 U	< 1200	< 610	< 110	< 20	< 2.0	< 4.9	< 3.9	< 20	< 7.9	< 9.8	< 398.18
m&p-Xylenes	< 8.7	< 1.7	< 2.9	< 5.8	< 8.7 U	12,000	3,300	1,700	13	< 0.87	82.0	< 1.7	< 8.7	< 3.5	< 4.3	< 173.69
Methyl tert butyl ether (MTBE)	< 36	< 7.2	< 12	< 24	< 36 U	< 2200	< 1100	< 190	< 36	< 3.6	< 9.0	< 7.2	< 36	< 14	< 18	< 721.06
Methylene chloride	27.0	13	7.8	44	< 17 U	12,000	6,600	3,600	370	< 1.7	6.2	4.6	< 17	9.6	20	556
Naphthalene	< 26	< 5.2	< 8.7	< 39	< 58 U	< 1600	< 810	< 140	< 26	< 2.6	< 6.3	< 5.2	< 26	< 10	< 29	< 524.21
N-Decane	< 58	< 12	< 19	< 46	< 70 U	< 3600	< 1800	< 310	< 58	< 5.8	< 15	< 12	< 58	< 23	< 35	< 1163.93
N-Dodecane	< 70	< 14	< 23	< 14	< 20 U	< 4300	< 2200	< 380	< 70	< 7.0	< 17	< 14	< 70	< 28	< 10	< 1393.37
N-Heptane	< 20	< 4.1	< 6.8	< 13	< 20 U	3,100	< 630	200	52	< 2.0	13.0	< 4.1	< 20	< 8.2	< 9.8	3,689
Nonane	< 26	< 5.2	< 8.7	< 43	< 64 U	< 1600	< 810	< 140	< 26	< 2.6	26.0	< 5.2	< 26	< 10	< 32	< 524.56
N-Propylbenzene	< 20	< 3.9	< 6.6	< 17	< 26 U	< 1200	< 610	< 110	< 20	< 2.0	< 4.9	< 3.9	< 20	< 7.9	< 13	< 398.18
N-Undecane	< 64	< 13	< 21	< 17	< 26 U	< 3900	< 2000	< 350	< 64	< 6.4	< 16	< 13	< 64	< 26	< 13	< 1278.61
Octane	< 19	< 3.7	< 6.2	< 5.8	< 8.7 U	< 1100	< 580	< 100	< 19	< 1.9	14.0	< 3.7	< 19	< 7.5	< 4.3	< 378.43
o-Xylene	< 8.7	< 1.7	< 2.9	< 12	< 19 U	1,800	680	420	< 8.7	< 0.87	14.0	< 1.7	< 8.7	< 3.5	< 9.3	< 173.69
Pentane	< 30	< 5.9	< 9.8	< 20	< 30 U	< 1800	< 910	< 160	< 30	< 3.0	16.0	< 5.9	< 30	< 12	41	< 590.18
Styrene	< 8.5	< 1.7	< 2.8	< 5.7	< 8.5 U	< 520	< 260	< 46	< 8.5	< 0.85	< 2.1	< 1.7	< 8.5	< 3.4	< 4.3	< 170.39
Tetrachloroethene	45.0	9	82	66	86	7,700	2,200	1,300	180	< 1.4	110	23	19	120	100	< 271.3
Toluene	< 7.5	5	< 2.5	< 5.0	< 7.5 U	84,000	20,000	5,900	250	< 0.75	23.0	< 1.5	< 7.5	< 3.0	< 3.8	1,091
trans-1,2-Dichloroethene	< 7.9	< 1.6	< 2.6	< 5.3	< 7.9 U	< 490	< 250	< 43	< 7.9	< 0.79	< 2.0	< 1.6	< 7.9	< 3.2	< 4.0	< 158.59
trans-1,3-Dichloropropene	< 9.1	< 1.8	< 3.0	< 6.1	< 9.1 U	< 560	< 280	< 49	< 9.1	< 0.91	< 2.3	< 1.8	< 9.1	< 3.6	< 4.5	< 181.55
Trichloroethene	< 11	4	10	10	13	1,900	360	160	35	< 1.1	16.0	6.3	< 11	14	18	< 214.95
Trichlorofluoromethane (CFC-11)	18.0	6	14	15	20	< 690	< 350	160	57	2	11	4	< 11	28	35	< 224.74
Trifluorotrchloroethane (Freon 113)	< 15	< 3.1	< 5.1	< 10	< 15 U	< 940	< 470	< 83	< 15	< 1.5	< 3.8	< 3.1	< 15	< 6.1	< 7.7	< 306.54
Vinyl acetate	< 35	< 7.0	< 21	< 23	< 35 U	< 2200	< 1100	< 190	< 35	< 3.5	< 8.8	< 7.0	< 35	< 14	< 18	< 704.21
Vinyl chloride	< 5.1	< 1.0	< 1.7	18	5.3	13,000	1,700	380	50	< 0.51	4	< 1.0	< 5.1	24	340	146
Total VOCs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Parameter	SVE-8 04/27/12	SVE-8 10/30/12	SVE-8 10/24/14	SVE-9 04/22/10	SVE-10 09/23/08	SVE-10 10/01/08	SVE-10 10/15/08	SVE-10 11/13/08	SVE-10 04/24/09	SVE-10 10/20/09	SVE-10 10/22/10	SVE-10 04/29/11	SVE-10 10/26/11	SVE-10 10/30/17	SVE-11 04/27/12	SVE-12 09/23/08
1,1,1-Trichloroethane	860	360	88	158	7,100	4,900	2,600	4,200	1,800	83	180	210	79	< 11	180	51,000
1,1,2,2-Tetrachloroethane	< 14	< 14	< 1.4	< 1.37	< 580	< 130	< 33	< 72	< 25	< 1.4	< 2.7	< 2.7	< 14	< 14	< 14	< 2500
1,1,2-Trichloroethane	< 11	< 11	< 1.5	< 1.09	< 460	< 100	< 26	< 57	< 20	< 1.1	< 2.2	3	< 11	< 11	< 11	< 2000
1,1-Dichloroethane	790	430	86	109.3	12,000	5,100	2,500	2,900	1,400	75.0	150.0	170.0	68.0	< 8.1	330	140,000
1,1-Dichloroethene	67	49	15	15	1,400	850	510	440	160	7	13	18	< 7.9	< 7.9	25	17,000
1,2,4-Trichlorobenzene	< 74	< 74	< 7.4	< 7.42	< 3100	< 700	< 180	< 390	< 130	< 7.4	< 15	< 15	< 74	< 74	< 74	< 14000
1,2,4-Trimethylbenzene	< 9.8	< 9.8	< 0.98	< 0.98	800	< 93	< 24	< 52	< 18	< 0.98	< 2.0	< 2.0	< 9.8	< 9.8	< 9.8	< 1800
1,2-Dibromoethane (Ethylene dibromide)	< 15	< 15	< 1.5	< 1.54	< 640	< 150	< 37	< 81	< 28	< 1.5	< 3.1	< 3.1	< 15	< 15	< 15	< 2800
1,2-Dichlorobenzene	< 12	< 12	< 1.2	< 1.2	< 500	< 110	< 29	< 63	< 22	< 1.2	< 2.4	< 2.4	< 12	< 12	< 12	< 2200
1,2-Dichloroethane	< 8.1	< 8.1	< 0.81	< 0.81	< 340	< 76	< 20	< 42	< 15	< 0.81	< 1.6	2	< 8.1	< 8.1	< 8.1	< 1500
1,2-Dichloropropane	< 9.2	< 9.2	< 0.92	1	< 390	90	< 22	< 48	< 17	1	4	< 1.8	< 9.2	< 9.2	< 9.2	< 1700
1,2-Dichlorotetrafluoroethane (CFC 114)	< 14	15	< 1.4	2.8	< 590	< 130	< 34	< 73	28	3.0	21.0	5.9	< 14	< 14	23.0	< 2600
1,3,5-Trimethylbenzene	< 9.8	< 9.8	< 0.98	< 0.98	460	< 93	< 24	< 52	< 18	< 0.98	< 2.0	< 2.0	< 9.8	< 9.8	< 9.8	< 1800
1,3-Butadiene	< 8.8	< 8.8	< 0.88	< 0.88	< 370	< 84	< 21	< 46	< 16	< 0.88	< 1.8	< 1.8	< 8.8	< 8.8	< 8.8	< 1600
1,3-Dichlorobenzene	< 12	< 12	< 1.2	< 1.2	< 500	< 110	< 29	< 63	< 22	< 1.2	< 2.4	< 2.4	< 12	< 12	< 12	< 2200
1,4-Dichlorobenzene	< 12	< 12	< 1.2	< 1.2	< 500	< 110	< 29	< 63	< 22	< 1.2	< 2.4	< 2.4	< 12	< 12	< 12	< 2200
2-Butanone (Methyl ethyl ketone) (MEK)	< 29	< 29	< 2.9	8.3	7,500	4,800	2,900	5,100	930	21.00	< 5.9	< 5.9	< 29	< 29	< 29	< 5400
2-Hexanone	< 20	< 20	< 2	< 2.05	< 860	< 190	< 50	< 110	< 37	< 2.0	< 4.1	< 4.1	< 20	< 20	< 20	< 3800
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	52	< 20	2	5.74	890	< 190	81	170	< 37	< 2.0	< 4.1	< 4.1	< 20	< 20	< 20	< 3800
Acetone	< 120	< 120	13 J	21.6	6,400	3,600	2,900	4,000	1,100	46	< 24	< 24	< 120	< 120	< 120	< 22000
Acetonitrile	< 17	< 17	< 1.7	< 1.68	< 700	< 160	< 41	< 88	< 31	2.30	< 3.4	< 3.4	< 17	< 17	< 17	< 3100
Acrolein	< 18	< 18	< 2.3	< 1.83	< 770	< 170	< 45	< 96	< 33	< 1.8	< 3.7	< 3.7	< 18	< 23	< 18	< 3400
Acrylonitrile	< 43	< 43	< 4.3	< 4.34	< 1800	< 410	< 110	< 230	< 79	< 4.3	< 8.7	< 8.7	< 43	< 43	< 43	< 8000
Allyl chloride (3-Chloropropene)	< 6.3	< 6.3	< 0.63	< 0.63	< 260	< 59	< 15	< 33	< 11	< 0.63	< 1.3	< 1.3	< 6.3	< 6.3	< 6.3	< 1200
alpha-Methylstyrene	< 19	< 19	< 1.9	< -999	< 810	< 180	< 47	< 100	< 35	< 1.9	< 3.9	< 3.9	< 19	< 19	< 19	< 3600
Benzene	< 6.4	< 6.4	< 0.64	< 0.64	1,300	250	39	44	14	1.2	5	< 1.3	< 6.4	< 6.4	8	1,300
Benzyl chloride	< 21	< 21	< 2.1	< 2.07	< 870	< 200	< 50	< 110	< 38	< 2.1	< 4.1	< 4.1	< 21	< 21	< 21	< 3800
Bromodichloromethane	< 13	< 13	< 1.3	< 1.34	< 560	< 130	< 33	< 70	< 24	< 1.3	< 2.7	< 2.7	< 13	< 13	< 13	< 2500
Bromoform	< 21	< 21	< 2.1	< 2.07	< 870	< 200	< 50	< 110	< 38	< 2.1	< 4.1	< 4.1	< 21	< 21	< 21	< 3800
Bromomethane (Methyl bromide)	< 7.8	< 7.8	< 0.78	< 0.78	< 330	< 73	< 19	< 41	< 14	< 0.78	< 1.6	< 1.6	< 7.8	< 7.8	< 7.8	< 1400
Butane	< 9.5	< 9.5	12	1.9	1,300	140	58	61	49	9	71	10	30	< 9.5	56	< 1800
Carbon disulfide	< 16	< 16	< 1.6	2.1	< 650	270	190	230	35	2.00	29.0	7.4	< 16	< 16	< 16	< 2900
Carbon tetrachloride	< 13	< 13	< 1.3	< 1.26	< 530	< 120	< 31	< 66	< 23	< 1.3	< 2.5	< 2.5	< 13	< 13	< 13	< 2300
Chlorobenzene	< 9.2	< 9.2	< 0.92	< 0.92	450	< 87	< 22	< 48	< 17	< 0.92	< 1.8	< 1.8	< 9.2	< 9.2	< 9.2	< 1700
Chlorodifluoromethane	< 7.1	< 7.1	3.2	-999.0	5,600	550	140	70	21	2.9	45.0	8.9	23.0	< 7.1	60	1,900
Chloroethane	130	89	6.9	2.0	3,000	800	390	180	56	6	14	7	6	< 5.3	250	4,800
Chloroform (Trichloromethane)	10	11	5.6	1.7	< 410	< 92	35	75	39	2	8.5	12.0	< 9.8	< 9.8	< 9.8	< 1800

**SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Parameter	SVE-8 04/27/12	SVE-8 10/30/12	SVE-8 10/24/14	SVE-9 04/22/10	SVE-10 09/23/08	SVE-10 10/01/08	SVE-10 10/15/08	SVE-10 11/13/08	SVE-10 04/24/09	SVE-10 10/20/09	SVE-10 10/22/10	SVE-10 04/29/11	SVE-10 10/26/11	SVE-10 10/30/17	SVE-11 04/27/12	SVE-12 09/23/08
Chloromethane (Methyl chloride)	< 10	< 10	1.7	1.1	< 430	< 97	< 25	< 54	< 19	1	6.30	< 2.1	< 10	< 10	< 10	< 1900
cis-1,2-Dichloroethene	46	16	3.5	14.3	26,000	8,000	2,600	3,700	890	26.0	68	91.0	22	< 7.9	24	23,000
cis-1,3-Dichloropropene	< 9.1	< 9.1	< 0.91	< 0.91	< 380	< 86	< 22	< 48	< 17	< 0.91	< 1.8	< 1.8	< 9.1	< 9.1	< 9.1	< 1700
Cyclohexane	< 17	< 17	< 1.7	2	9,300	750	160	220	110	11.0	81.0	17.0	31.0	< 17	100.0	3,500
Dibromochloromethane	< 17	< 17	< 1.7	< 1.7	< 720	< 160	< 41	< 89	< 31	< 1.7	< 3.4	< 3.4	< 17	< 17	< 17	< 3100
Dibromomethane	< 28	< 28	< 2.8	< -999	< 1200	< 270	< 69	< 150	< 52	< 2.8	< 5.7	< 5.7	< 28	< 28	< 28	< 5200
Dichlorodifluoromethane (CFC-12)	23	30	7.7	10.4	3,100	470	290	260	82	16.0	72	32.0	31	< 9.9	120.0	3,000
Ethyl ether	< 61	< 61	< 6.1	6.7	3,600	2,400	390	360	170	22.0	27.0	30.0	< 61	< 61	< 61	< 11000
Ethylbenzene	< 8.7	< 8.7	< 0.87	< 0.87	4,200	230	56	110	< 16	1.5	7	< 1.7	< 8.7	< 8.7	< 8.7	2,600
Hexachlorobutadiene	< 110	< 110	< 11	< 10.67	< 4500	< 1000	< 260	< 560	< 190	< 11	< 21	< 21	< 110	< 110	< 110	< 20000
Hexane	< 18	< 18	2.3	< 1.76	4,400	380	110	100	57	6.8	50	8	< 18	< 18	70	< 3200
Isopropyl benzene (Cumene)	< 20	< 20	< 2	< 1.97	< 830	< 190	< 48	< 100	< 36	< 2.0	< 3.9	< 3.9	< 20	< 20	< 20	< 3600
m&p-Xylenes	< 8.7	< 8.7	< 0.87	< 0.87	6,200	390	110	250	20	2.4	10	< 1.7	< 8.7	< 8.7	< 8.7	4,600
Methyl tert butyl ether (MTBE)	< 36	< 36	< 3.6	< 3.61	< 1500	< 340	< 88	< 190	< 66	< 3.6	< 7.2	< 7.2	< 36	< 36	< 36	< 6600
Methylene chloride	37	29	17	5.9	1,700	700	400	600	180	6.9	10	8	< 17	< 17	< 17	34,000
Naphthalene	< 26	< 26	< 2.6	< 2.62	< 1100	< 250	< 64	< 140	< 48	< 2.6	< 5.2	< 5.2	< 26	< 58	< 26	< 4800
N-Decane	< 58	< 58	< 5.8	< 5.82	< 2400	< 550	< 140	< 310	< 110	< 5.8	< 12	< 12	< 58	< 70	< 58	< 11000
N-Dodecane	< 70	< 70	< 7	< 6.97	< 2900	< 660	< 170	< 370	< 130	< 7.0	< 14	< 14	< 70	< 20	< 70	< 13000
N-Heptane	150.0	< 20	< 2	9.4	5,700	450	63	< 110	38	8.9	27	< 4.1	< 20	< 20	130	< 3800
Nonane	< 26	< 26	< 2.6	< 2.62	3,200	< 250	< 64	< 140	< 48	< 2.6	< 5.2	< 5.2	< 26	< 64	< 26	< 4800
N-Propylbenzene	< 20	< 20	< 2	< 1.97	< 830	< 190	< 48	< 100	< 36	< 2.0	< 3.9	< 3.9	< 20	< 26	< 20	< 3600
N-Undecane	< 64	< 64	< 6.4	< 6.39	< 2700	< 600	< 160	< 340	< 120	< 6.4	< 13	< 13	< 64	< 26	< 64	< 12000
Octane	< 19	< 19	< 1.9	< 1.87	3,600	180	< 45	< 98	< 34	< 1.9	7	< 3.7	< 19	< 8.7	< 19	< 3400
o-Xylene	< 8.7	< 8.7	< 0.87	< 0.87	1,700	< 82	34	92	< 16	< 0.87	2	< 1.7	< 8.7	< 19	< 8.7	< 1600
Pentane	< 30	< 30	2.9	< 2.95	< 1200	< 280	< 72	< 150	54	6.1	34	8	< 30	< 30	39	< 5400
Styrene	< 8.5	< 8.5	< 0.85	< 0.85	< 360	< 80	< 21	< 45	< 15	< 0.85	< 1.7	< 1.7	< 8.5	< 8.5	< 8.5	< 1600
Tetrachloroethene	22	28	8.5	6.1	5,700	1,400	540	1,400	170	5.3	39	89	29	< 14	< 14	7,200
Toluene	20.0	< 7.5	1.2	3.8	9,100	1,800	610	970	130	9.1	37	< 1.5	< 7.5	< 7.5	9	27,000
trans-1,2-Dichloroethene	< 7.9	< 7.9	< 0.79	< 0.79	370	100	47	< 42	< 14	< 0.79	< 1.6	< 1.6	< 7.9	< 7.9	< 7.9	< 1500
trans-1,3-Dichloropropene	< 9.1	< 9.1	< 0.91	< 0.91	< 380	< 86	< 22	< 48	< 17	< 0.91	< 1.8	< 1.8	< 9.1	< 9.1	< 9.1	< 1700
Trichloroethene	< 11	< 11	1.5	2.5	1,200	450	120	250	50	3.2	18	17	< 11	< 11	< 11	2,500
Trichlorofluoromethane (CFC-11)	< 11	< 11	4.7	6	< 470	220	190	200	85	20.0	76.0	38.0	25.0	< 11	25.0	< 2100
Trifluorotrchloroethane (Freon 113)	< 15	< 15	< 1.5	< 1.53	< 640	< 140	< 37	< 80	< 28	< 1.5	< 3.1	< 3.1	< 15	< 15	< 15	< 2800
Vinyl acetate	< 35	< 35	< 3.5	< 3.52	< 1500	< 330	< 85	< 180	< 64	< 3.5	< 7.0	< 7.0	< 35	< 35	< 35	< 6500
Vinyl chloride	19	7	0.52	< 0.51	25,000	2,700	660	310	95	11.0	77.0	7.7	21.0	< 5.1	220.0	8,700
Total VOCs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 4.2

SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Parameter	SVE-12 10/01/08	SVE-12 10/15/08	SVE-12 11/13/08	SVE-12 04/24/09	SVE-12 10/20/09	SVE-12 10/22/10	SVE-12 04/29/11	SVE-12 10/26/11	SVE-12 10/30/12	SVE-12 10/23/13	SVE-12 10/24/14	SVE-12 10/22/15	SVE-12 10/26/16	SVE-13 04/27/12	SVE-14 04/27/12	SVE-14 10/22/15
1,1,1-Trichloroethane	42,000	53,000	29,000	9,600	95	1,200	1,600	1,100	410	72	130	99	130	130	160	63
1,1,2,2-Tetrachloroethane	< 990	< 830	< 320	< 95	< 1.4	< 14	< 27	< 14	< 14	< 14	< 1.4	< 5.5	< 9.2	< 14	< 14	< 5.5
1,1,2-Trichloroethane	< 790	< 660	< 250	< 75	< 1.1	< 11	< 22	< 11	< 11	< 11	< 1.5	< 4.4	< 7.3	< 11	< 11	< 4.4
1,1-Dichloroethane	130,000	100,000	35,000	15,000	160.0	1,500	1,900	1,200	400	76	150	96	140	130	100	31
1,1-Dichloroethene	9,400	6,200	4,300	1,100	17	200	330	160	60	13	26	18	21	< 7.9	22	7.8
1,2,4-Trichlorobenzene	< 5300	< 4500	< 1700	< 510	< 7.4	< 74	< 150	< 74	< 74	< 74	< 7.4	< 30	< 49	< 74	< 74	< 30
1,2,4-Trimethylbenzene	< 710	< 600	< 230	< 68	< 0.98	< 9.8	< 20	< 9.8	< 9.8	< 9.8	< 0.98	< 3.9	< 6.6	< 9.8	< 9.8	< 3.9
1,2-Dibromoethane (Ethylene dibromide)	< 1100	< 930	< 350	< 110	< 1.5	< 15	< 31	< 15	< 15	< 15	< 1.5	< 6.1	< 10	< 15	< 15	< 6.1
1,2-Dichlorobenzene	< 870	< 730	< 280	< 83	< 1.2	< 12	< 24	< 12	< 12	< 12	< 1.2	< 4.8	< 8.0	< 12	< 12	< 4.8
1,2-Dichloroethane	< 580	< 490	< 190	< 56	< 0.81	< 8.1	< 16	< 8.1	< 8.1	< 8.1	< 0.81	< 3.2	< 5.4	< 8.1	< 8.1	< 3.2
1,2-Dichloropropane	750	610	210	110	< 0.92	14	< 18	< 9.2	< 9.2	< 9.2	1.9	< 3.7	< 6.2	< 9.2	< 9.2	< 3.7
1,2-Dichlorotetrafluoroethane (CFC 114)	< 1000	< 850	< 320	< 97	3.7	37	< 28	< 14	< 14	17	7.2	< 5.6	16	< 14	28	250
1,3,5-Trimethylbenzene	< 710	< 600	< 230	< 68	< 0.98	< 9.8	< 20	< 9.8	< 9.8	< 9.8	< 0.98	< 3.9	< 6.6	< 9.8	< 9.8	< 3.9
1,3-Butadiene	< 640	< 540	< 200	< 61	< 0.88	< 8.8	< 18	< 8.8	< 8.8	< 8.8	< 0.88	< 3.5	< 5.9	< 8.8	< 8.8	< 3.5
1,3-Dichlorobenzene	< 870	< 730	< 280	< 83	< 1.2	< 12	< 24	< 12	< 12	< 12	< 1.2	< 4.8	< 8.0	< 12	< 12	< 4.8
1,4-Dichlorobenzene	< 870	< 730	< 280	< 83	< 1.2	< 12	< 24	< 12	< 12	< 12	< 1.2	< 4.8	< 8.0	< 12	< 12	< 4.8
2-Butanone (Methyl ethyl ketone) (MEK)	7,900	10,000	5,100	1,500	16	150	110	< 29	< 29	< 29	< 2.9	< 12	< 20	< 29	< 29	< 12
2-Hexanone	< 1500	< 1200	< 470	< 140	< 2.0	< 20	< 41	< 20	< 20	< 20	< 2	< 8.2	< 14	< 20	< 20	< 8.2
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	< 1500	3,800	1,600	770	2.2	47	74	< 20	< 20	< 20	< 2	< 8.2	< 14	< 20	< 20	< 8.2
Acetone	< 8600	8,700	5,500	2,400	63	230	< 240	< 120	< 120	< 120	14 J	< 48	< 79	< 120	< 120	< 48
Acetonitrile	< 1200	< 1000	< 390	< 120	2.70	< 17	< 34	< 17	< 17	< 17	< 1.7	< 6.7	< 11	< 17	< 17	< 6.7
Acrolein	< 1300	< 1100	< 420	< 130	< 1.8	< 18	< 37	< 18	< 18	< 23	< 2.3	< 9.2	< 15	< 18	< 18	< 9.2
Acrylonitrile	< 3100	< 2600	< 1000	< 300	< 4.3	< 43	< 87	< 43	< 43	< 43	< 4.3	< 17	< 29	< 43	< 43	< 17
Allyl chloride (3-Chloropropene)	< 450	< 380	< 140	< 43	< 0.63	< 6.3	< 13	< 6.3	< 6.3	< 6.3	< 0.63	< 2.5	< 4.2	< 6.3	< 6.3	< 2.5
alpha-Methylstyrene	< 1400	< 1200	< 440	< 130	< 1.9	< 19	< 39	< 19	< 19	< 19	< 1.9	< 7.7	< 13	< 19	< 19	< 7.7
Benzene	1,100	490	< 150	< 44	< 0.64	< 6.4	< 13	< 6.4	< 6.4	< 6.4	0.68	< 2.6	< 4.3	< 6.4	< 6.4	2.6
Benzyl chloride	< 1500	< 1300	< 480	< 140	< 2.1	< 21	< 41	< 21	< 21	< 21	< 2.1	< 8.3	< 14	< 21	< 21	< 8.3
Bromodichloromethane	< 960	< 810	< 310	< 93	< 1.3	< 13	< 27	< 13	< 13	< 13	< 1.3	< 5.4	< 8.9	< 13	< 13	< 5.4
Bromoform	< 1500	< 1300	< 480	< 140	< 2.1	< 21	< 41	< 21	< 21	< 21	< 2.1	< 8.3	< 14	< 21	< 21	< 8.3
Bromomethane (Methyl bromide)	< 560	< 470	< 180	< 54	< 0.78	< 7.8	< 16	< 7.8	< 7.8	< 7.8	< 0.78	< 3.1	< 5.2	< 7.8	< 7.8	< 3.1
Butane	< 680	< 580	< 220	72	4	67	23	10	< 9.5	< 9.5	4.5	3.8	24	< 9.5	37	12
Carbon disulfide	< 1100	< 940	810	340	4	91	64	27	< 16	< 16	< 1.6	< 6.2	< 10	< 16	< 16	< 6.2
Carbon tetrachloride	< 910	< 760	< 290	< 87	< 1.3	< 13	< 25	< 13	< 13	< 13	< 1.3	< 5.0	< 8.4	< 13	< 13	< 5.0
Chlorobenzene	< 660	< 560	< 210	< 64	< 0.92	< 9.2	< 18	< 9.2	< 9.2	< 9.2	< 0.92	< 3.7	< 6.1	< 9.2	< 9.2	6.1
Chlorodifluoromethane	740	< 430	< 160	< 49	2.9	60	40	8	< 7.1	< 7.1	3.5	< 2.8	14	< 7.1	23	9.4
Chloroethane	3,000	1,400	360	160	6	67	65	11	11	11	10	7.3	37	9	9	7.8
Chloroform (Trichloromethane)	< 700	< 590	360	160	2	46	82	72	32	< 9.8	22	24	26	< 9.8	24	32

Table 4.2

SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Parameter	SVE-12 10/01/08	SVE-12 10/15/08	SVE-12 11/13/08	SVE-12 04/24/09	SVE-12 10/20/09	SVE-12 10/22/10	SVE-12 04/29/11	SVE-12 10/26/11	SVE-12 10/30/12	SVE-12 10/23/13	SVE-12 10/24/14	SVE-12 10/22/15	SVE-12 10/26/16	SVE-13 04/27/12	SVE-14 04/27/12	SVE-14 10/22/15
Chloromethane (Methyl chloride)	< 740	< 630	< 240	< 71	2	34.0	35.0	14.0	< 10	< 10	2.5	< 4.1	< 6.9	< 10	< 10	< 4.1
cis-1,2-Dichloroethene	26,000	17,000	4,500	4,900	67	1,100	900	120	67	9	14	19	26	< 7.9	< 7.9	< 3.2
cis-1,3-Dichloropropene	< 650	< 550	< 210	< 63	< 0.91	< 9.1	< 18	< 9.1	< 9.1	< 9.1	< 0.91	< 3.6	< 6.1	< 9.1	< 9.1	< 3.6
Cyclohexane	1,400	< 1000	< 400	260	2.60	61	44	< 17	< 17	< 17	3.7	< 6.9	19	< 17	26	14
Dibromochloromethane	< 1200	< 1000	< 390	< 120	< 1.7	< 17	< 34	< 17	< 17	< 17	< 1.7	< 6.8	< 11	< 17	< 17	< 6.8
Dibromomethane	< 2000	< 1700	< 650	< 200	< 2.8	< 28	< 57	< 28	< 28	< 28	< 2.8	< 11	< 19	< 28	< 28	< 11
Dichlorodifluoromethane (CFC-12)	2,300	1,700	1,100	1,400	32.0	410	140	90	49	30	26	23	42	15	130	150
Ethyl ether	< 4400	< 3700	< 1400	510	9	84.0	< 120	< 61	< 61	< 61	< 6.1	< 24	< 40	< 61	< 61	< 24
Ethylbenzene	1,600	1,200	< 200	< 60	< 0.87	12	< 17	< 8.7	< 8.7	< 8.7	5.6	< 3.5	< 5.8	< 8.7	< 8.7	< 3.5
Hexachlorobutadiene	< 7700	< 6500	< 2500	< 740	< 11	< 110	< 210	< 110	< 110	< 110	< 11	< 43	< 71	< 110	< 110	< 43
Hexane	< 1300	< 1100	< 410	< 120	1.8	30	< 35	< 18	< 18	< 18	1.8	< 7.0	< 12	< 18	38	< 7.0
Isopropyl benzene (Cumene)	< 1400	< 1200	< 450	< 140	< 2.0	< 20	< 39	< 20	< 20	< 20	< 2	< 7.9	< 13	< 20	< 20	< 7.9
m&p-Xylenes	4,100	3,000	260	65	< 0.87	42	32	< 8.7	< 8.7	< 8.7	3	< 3.5	< 5.8	< 8.7	< 8.7	< 3.5
Methyl tert butyl ether (MTBE)	< 2600	< 2200	< 830	< 250	< 3.6	< 36	< 72	< 36	< 36	< 36	< 3.6	< 14	< 24	< 36	< 36	< 14
Methylene chloride	20,000	13,000	5,500	1,300	8.9	120	150	68	22	< 17	4	7.7	28	< 17	18	< 6.9
Naphthalene	< 1900	< 1600	< 600	< 180	< 2.6	< 26	< 52	< 26	< 26	< 26	< 2.6	< 10	< 39	< 26	< 26	< 10
N-Decane	< 4200	< 3500	< 1300	< 400	< 5.8	< 58	< 120	< 58	< 58	< 58	< 5.8	< 23	< 46	< 58	< 58	< 23
N-Dodecane	< 5000	< 4200	< 1600	< 480	< 7.0	< 70	< 140	< 70	< 70	< 70	< 7	< 28	17	< 70	< 70	< 28
N-Heptane	< 1500	< 1200	< 470	320	5.9	50	< 41	< 20	< 20	< 20	3.6	< 8.2	< 13	< 20	< 20	< 8.2
Nonane	< 1900	< 1600	< 600	< 180	< 2.6	< 26	< 52	< 26	< 26	< 26	4.4	< 10	< 43	< 26	< 26	< 10
N-Propylbenzene	< 1400	< 1200	< 450	< 140	< 2.0	< 20	< 39	< 20	< 20	< 20	< 2	< 7.9	< 17	< 20	< 20	< 7.9
N-Undecane	< 4600	< 3900	< 1500	< 440	< 6.4	< 64	< 130	< 64	< 64	< 64	< 6.4	< 26	< 17	< 64	< 64	< 26
Octane	< 1300	< 1100	< 430	< 130	< 1.9	< 19	< 37	< 19	< 19	< 19	1.9	< 7.5	< 5.8	< 19	< 19	< 7.5
o-Xylene	970	860	< 200	< 60	< 0.87	9	< 17	< 8.7	< 8.7	< 8.7	1.4	< 3.5	< 12	< 8.7	< 8.7	< 3.5
Pentane	< 2100	< 1800	< 680	< 200	3.0	46	< 59	< 30	< 30	< 30	< 3	< 12	< 20	< 30	32	< 12
Styrene	< 610	< 520	< 200	< 59	< 0.85	< 8.5	< 17	< 8.5	< 8.5	< 8.5	< 0.85	< 3.4	< 5.7	< 8.5	< 8.5	< 3.4
Tetrachloroethene	5,900	5,900	1,300	530	2.2	68	130	33	15	< 14	11	10	13	< 14	< 14	13
Toluene	20,000	10,000	1,300	320	2.4	490	55	< 7.5	< 7.5	< 7.5	2.2	< 3.0	< 5.0	< 7.5	< 7.5	< 3.0
trans-1,2-Dichloroethene	< 570	< 480	< 180	< 55	< 0.79	10	< 16	< 7.9	< 7.9	< 7.9	< 0.79	< 3.2	< 5.3	< 7.9	< 7.9	< 3.2
trans-1,3-Dichloropropene	< 650	< 550	< 210	< 63	< 0.91	< 9.1	< 18	< 9.1	< 9.1	< 9.1	< 0.91	< 3.6	< 6.1	< 9.1	< 9.1	< 3.6
Trichloroethene	2,000	1,300	280	930	5.6	140	130	< 11	< 11	< 11	2.8	< 4.3	< 7.2	< 11	< 11	< 4.3
Trichlorofluoromethane (CFC-11)	960	1,100	660	510	12	76.0	59.0	30.0	19.0	11.0	6.7	6.0	15	< 11	130.0	65
Trifluorotrchloroethane (Freon 113)	< 1100	< 930	< 350	< 110	< 1.5	< 15	< 31	< 15	< 15	< 15	< 1.5	< 6.1	< 10	< 15	< 15	< 6.1
Vinyl acetate	< 2500	< 2100	< 810	< 240	< 3.5	< 35	< 70	< 35	< 35	< 35	< 3.5	< 14	< 23	< 35	< 35	< 14
Vinyl chloride	2,600	660	< 120	46	3	62	32	< 5.1	18	100	76	82	340	< 5.1	35.0	6.3
Total VOCs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Parameter	SVE-14 10/26/16	SVE-14 10/30/17	SVE-15 04/27/12	SVE-15 04/26/13	SVE-16 09/23/08	SVE-16 10/01/08	SVE-16 10/15/08	SVE-16 11/13/08	SVE-16 04/24/09	SVE-16 10/20/09	SVE-16 04/29/11	SVE-16 10/26/11	SVE-17 10/22/10	SVE-18 04/27/12	SVE-19 04/27/12
1,1,1-Trichloroethane	130	180	330	20	6,300	4,200	13,000	2,100	470	85	220	73	340	77	14
1,1,2,2-Tetrachloroethane	< 3.4	< 14	< 14	< 1.4	< 82	< 82	< 83	< 14	< 12	< 1.4	< 1.4	< 14	< 3.4	< 14	< 14
1,1,2-Trichloroethane	< 2.7	< 11	< 11	< 1.1	81	< 65	< 66	24	< 9.9	< 1.1	< 1.1	< 11	< 2.7	< 11	< 11
1,1-Dichloroethane	59	56	320	14	8,800	4,500	5,800	1,200	170	22.0	49.0	15.0	110	< 8.1	< 8.1
1,1-Dichloroethene	15	22	60	< 0.79	1,100	550	2,400	220	46	9	25	11	43	9	< 7.9
1,2,4-Trichlorobenzene	< 19	< 74	< 74	< 7.4	< 450	< 440	< 450	< 74	< 67	< 7.4	< 7.4	< 74	< 19	< 74	< 74
1,2,4-Trimethylbenzene	< 2.5	< 9.8	< 9.8	< 0.98	120	< 59	< 60	< 9.8	< 8.9	< 0.98	< 0.98	< 9.8	< 2.5	< 9.8	< 9.8
1,2-Dibromoethane (Ethylene dibromide)	< 3.8	< 15	< 15	< 1.5	< 92	< 92	< 93	< 15	< 14	< 1.5	< 1.5	< 15	< 3.8	< 15	< 15
1,2-Dichlorobenzene	< 3.0	< 12	< 12	< 1.2	< 72	< 72	< 73	< 12	< 11	< 1.2	< 1.2	< 12	< 3.0	< 12	< 12
1,2-Dichloroethane	< 2.0	< 8.1	< 8.1	< 0.81	< 49	< 48	< 49	< 8.1	< 7.4	< 0.81	< 0.81	< 8.1	< 2.0	< 8.1	< 8.1
1,2-Dichloropropane	< 2.3	< 9.2	< 9.2	< 0.92	100	< 55	< 56	12	< 8.4	< 0.92	2	< 9.2	< 2.3	< 9.2	< 9.2
1,2-Dichlorotetrafluoroethane (CFC 114)	35	54	< 14	< 1.4	290	< 84	< 85	< 14	< 13	3	38	< 14	14.0	< 14	< 14
1,3,5-Trimethylbenzene	< 2.5	< 9.8	< 9.8	< 0.98	130	< 59	< 60	< 9.8	< 8.9	< 0.98	< 0.98	< 9.8	< 2.5	< 9.8	< 9.8
1,3-Butadiene	< 2.2	< 8.8	< 8.8	< 0.88	< 53	< 53	< 54	< 8.8	< 8.0	< 0.88	< 0.88	< 8.8	< 2.2	< 8.8	< 8.8
1,3-Dichlorobenzene	< 3.0	< 12	< 12	< 1.2	< 72	< 72	< 73	< 12	< 11	< 1.2	< 1.2	< 12	< 3.0	< 12	< 12
1,4-Dichlorobenzene	< 3.0	< 12	< 12	< 1.2	< 72	< 72	< 73	< 12	< 11	< 1.2	< 1.2	< 12	< 3.0	< 12	< 12
2-Butanone (Methyl ethyl ketone) (MEK)	< 7.4	< 29	< 29	< 2.9	1,500	510	< 180	320	70	3	< 2.9	< 29	< 7.4	< 29	< 29
2-Hexanone	< 5.1	< 20	< 20	< 2.0	< 120	< 120	< 120	< 20	< 19	< 2.0	< 2.0	< 20	< 4.9	< 20	< 20
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	6.8	< 20	< 20	< 2.0	230	< 120	< 120	< 20	< 19	< 2.0	< 2.0	< 20	< 4.9	< 20	< 20
Acetone	< 30	< 120	< 120	< 12	1,100	< 710	< 720	380	< 110	17	12	< 120	< 29	< 120	< 120
Acetonitrile	< 4.2	< 17	< 17	< 1.7	< 100	< 100	< 100	< 17	< 15	< 1.7	< 1.7	< 17	< 4.2	< 17	< 17
Acrolein	< 5.7	< 23	< 18	< 1.8	< 110	< 110	< 110	< 18	< 17	< 1.8	< 1.8	< 18	< 4.6	< 18	< 18
Acrylonitrile	< 11	< 43	< 43	< 4.3	< 260	< 260	< 260	< 43	< 39	< 4.3	< 4.3	< 43	< 11	< 43	< 43
Allyl chloride (3-Chloropropene)	< 1.6	< 6.3	< 6.3	< 0.63	< 38	< 37	< 38	< 6.3	< 5.7	< 0.63	< 0.63	< 6.3	< 1.6	< 6.3	< 6.3
alpha-Methylstyrene	< 4.8	< 19	< 19	< 1.9	< 120	< 120	< 120	< 19	< 18	< 1.9	< 1.9	< 19	< 4.8	< 19	< 19
Benzene	11	7	< 6.4	< 0.64	350	62	< 39	6	< 5.8	< 0.64	4.8	< 6.4	< 1.6	< 6.4	< 6.4
Benzyl chloride	< 5.2	< 21	< 21	< 2.1	< 120	< 120	< 130	< 21	< 19	< 2.1	< 2.1	< 21	< 5.2	< 21	< 21
Bromodichloromethane	< 3.4	< 13	< 13	< 1.3	< 80	< 80	< 81	< 13	< 12	< 1.3	< 1.3	< 13	< 3.4	< 13	< 13
Bromoform	< 5.2	< 21	< 21	< 2.1	< 120	< 120	< 130	< 21	< 19	< 2.1	< 2.1	< 21	< 5.2	< 21	< 21
Bromomethane (Methyl bromide)	< 1.9	< 7.8	< 7.8	< 0.78	< 47	< 46	< 47	< 7.8	< 7.1	< 0.78	< 0.78	< 7.8	< 1.9	< 7.8	< 7.8
Butane	130	88	< 9.5	2	1,200	260	< 58	41	18	5	11	14	12.0	< 9.5	< 9.5
Carbon disulfide	< 3.9	< 16	< 16	< 1.6	< 93	98	< 95	81	15	2	4	< 16	< 3.7	< 16	< 16
Carbon tetrachloride	< 3.1	< 13	< 13	< 1.3	< 75	< 75	< 77	< 13	< 11	< 1.3	< 1.3	< 13	< 3.1	< 13	< 13
Chlorobenzene	11	< 9.2	< 9.2	< 0.92	300	< 55	< 56	< 9.2	< 8.4	< 0.92	< 0.92	< 9.2	< 2.3	< 9.2	< 9.2
Chlorodifluoromethane	110	82	< 7.1	0.83	3,900	510	< 43	31	< 6.4	3.10	6.5	9.00	10.0	< 7.1	< 7.1
Chloroethane	53	54	< 5.3	< 0.53	1,900	230	40	13	< 4.8	< 0.53	4	< 5.3	4.3	< 5.3	< 5.3
Chloroform (Trichloromethane)	68	83	17	1.1	160	100	240	81	23	4	21	10	19.0	< 9.8	< 9.8

**SVE/LFG System VOC Results ($\mu\text{g}/\text{m}^3$)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Parameter	SVE-14 10/26/16	SVE-14 10/30/17	SVE-15 04/27/12	SVE-15 04/26/13	SVE-16 09/23/08	SVE-16 10/01/08	SVE-16 10/15/08	SVE-16 11/13/08	SVE-16 04/24/09	SVE-16 10/20/09	SVE-16 04/29/11	SVE-16 10/26/11	SVE-17 10/22/10	SVE-18 04/27/12	SVE-19 04/27/12
Chloromethane (Methyl chloride)	< 2.6	< 10	< 10	< 1.0	< 62	< 62	< 63	< 10	< 9.4	1	< 1.0	< 10	< 2.5	< 10	< 10
cis-1,2-Dichloroethene	4.8	< 7.9	21	< 0.79	340	150	57	27	< 7.2	2	4	< 7.9	< 2.0	< 7.9	< 7.9
cis-1,3-Dichloropropene	< 2.3	< 9.1	< 9.1	< 0.91	< 54	< 54	< 55	< 9.1	< 8.3	< 0.91	< 0.91	< 9.1	< 2.3	< 9.1	< 9.1
Cyclohexane	38	< 17	< 17	< 1.7	1,400	140	< 100	36	< 16	2.30	17.0	< 17	11.0	< 17	< 17
Dibromochloromethane	< 4.3	< 17	< 17	< 1.7	< 100	< 100	< 100	< 17	< 15	< 1.7	< 1.7	< 17	< 4.3	< 17	< 17
Dibromomethane	< 7.1	< 28	< 28	< 2.8	< 170	< 170	< 170	< 28	< 26	< 2.8	< 2.8	< 28	< 7.1	< 28	< 28
Dichlorodifluoromethane (CFC-12)	160	670	50	2.5	1,600	860	1,000	130	51	40.0	110	82	91.0	110	25.0
Ethyl ether	< 15	< 61	< 61	< 6.1	600	< 360	< 370	100	< 55	< 6.1	11.0	< 61	< 15	< 61	< 61
Ethylbenzene	< 2.2	< 8.7	< 8.7	< 0.87	2,500	180	< 53	27	< 7.9	< 0.87	3	< 8.7	< 2.2	< 8.7	< 8.7
Hexachlorobutadiene	< 27	< 110	< 110	< 11	< 640	< 640	< 650	< 110	< 97	< 11	< 11	< 110	< 27	< 110	< 110
Hexane	9.8	< 18	< 18	< 1.8	1,800	170	< 110	37	20	6	36	< 18	< 4.2	< 18	< 18
Isopropyl benzene (Cumene)	< 4.9	< 20	< 20	< 2.0	170	< 120	< 120	< 20	< 18	< 2.0	< 2.0	< 20	< 4.9	< 20	< 20
m&p-Xylenes	< 2.2	< 8.7	< 8.7	< 0.87	1,900	320	< 53	83	< 7.9	< 0.87	10	< 8.7	< 2.2	< 8.7	< 8.7
Methyl tert butyl ether (MTBE)	< 9.0	< 36	< 36	< 3.6	< 220	< 220	< 220	< 36	< 33	< 3.6	< 3.6	< 36	< 9.0	< 36	< 36
Methylene chloride	21	< 17	< 17	< 1.7	430	150	130	41	< 16	2	3	< 17	5.30	< 17	< 17
Naphthalene	< 15	< 58	< 26	< 2.6	< 160	< 160	< 160	< 26	< 24	< 2.6	< 2.6	< 26	< 6.3	< 26	< 26
N-Decane	< 17	< 70	< 58	< 5.8	370	< 350	< 350	< 58	< 53	< 5.8	< 5.8	< 58	< 15	< 58	< 58
N-Dodecane	< 5.1	< 20	< 70	< 7.0	< 420	< 420	< 420	< 70	< 63	< 7.0	< 7.0	< 70	< 17	< 70	< 70
N-Heptane	< 4.9	< 20	< 20	< 2.0	1,300	< 120	< 120	31	< 19	4	16	< 20	< 4.9	< 20	< 20
Nonane	< 16	< 64	< 26	< 2.6	1,000	< 160	< 160	31	< 24	< 2.6	9	< 26	< 6.3	< 26	< 26
N-Propylbenzene	< 6.6	< 26	< 20	< 2.0	< 120	< 120	< 120	< 20	< 18	< 2.0	< 2.0	< 20	< 4.9	< 20	< 20
N-Undecane	< 6.6	< 26	< 64	< 6.4	< 380	< 380	< 390	< 64	< 58	< 6.4	< 6.4	< 64	< 16	< 64	< 64
Octane	< 2.2	< 8.7	< 19	< 1.9	780	< 110	< 110	27	< 17	< 1.9	12	< 19	< 4.7	< 19	< 19
o-Xylene	< 4.7	< 19	< 8.7	< 0.87	380	56	< 53	29	< 7.9	< 0.87	3	< 8.7	< 2.2	< 8.7	< 8.7
Pentane	45	31	< 30	< 3.0	590	< 180	< 180	30	< 27	< 3.0	8	< 30	< 7.4	< 30	< 30
Styrene	< 2.1	< 8.5	< 8.5	< 0.85	< 51	< 51	< 52	< 8.5	< 7.7	< 0.85	< 0.85	< 8.5	< 2.1	< 8.5	< 8.5
Tetrachloroethene	23	22	< 14	6.1	730	200	500	120	< 12	3	15	< 14	11.00	< 14	< 14
Toluene	< 1.9	< 7.5	< 7.5	< 0.75	1,800	620	< 46	140	< 6.9	2	4	< 7.5	9.30	< 7.5	< 7.5
trans-1,2-Dichloroethene	< 2.0	< 7.9	< 7.9	< 0.79	< 48	< 47	< 48	< 7.9	< 7.2	< 0.79	< 0.79	< 7.9	< 2.0	< 7.9	< 7.9
trans-1,3-Dichloropropene	< 2.3	< 9.1	< 9.1	< 0.91	< 54	< 54	< 55	< 9.1	< 8.3	< 0.91	< 0.91	< 9.1	< 2.3	< 9.1	< 9.1
Trichloroethene	5.9	< 11	< 11	2	200	< 64	< 65	22	< 9.8	< 1.1	4	< 11	< 2.7	< 11	< 11
Trichlorofluoromethane (CFC-11)	80	230	45.0	1.4	190	740	830	160	57	53	130	71	44	160	14
Trifluorotrchloroethane (Freon 113)	< 3.8	< 15	< 15	< 1.5	< 92	< 92	< 93	< 15	< 14	< 1.5	< 1.5	< 15	< 3.8	< 15	< 15
Vinyl acetate	< 8.8	< 35	< 35	< 3.5	< 210	< 210	< 210	< 35	< 32	< 3.5	< 3.5	< 35	< 8.8	< 35	< 35
Vinyl chloride	84	58	< 5.1	< 0.51	1,400	350	< 31	26	< 4.6	< 0.51	5	< 5.1	2	< 5.1	< 5.1
Total VOCs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

¹ - Summa Canister was taken with only SVE wells operating

For analands not detected, half the detection limit ($\mu\text{g}/\text{m}^3$) is used in calculating Total VOCs.

NA - Not applicable.

Table 4.3

**Mass Loading Calculations - October 30,2017
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Analand ⁽¹⁾	CAS #	Blower Discharge	Blower Discharge	Blower Discharge	Calculated Blower		WDNR NR 445.07	
		Concentration ⁽²⁾	Concentration ⁽³⁾	Flow Rate ⁽⁴⁾	Discharge Mass		Emission Thresholds	
		$\mu\text{g}/\text{m}^3$	(mg/m^3)	(cfm)	(lbs/hr)	(lbs/yr) ⁽⁵⁾	(lbs/hr)	(lbs/yr)
1,1-Dichloroethane	75-34-3	280	0.280	964	0.0010	8.9	84.5	-
1,1,1-Trichloroethane	71-55-6	330	0.330	964	0.0012	10.4	-	-
1,1,2-Trichloroethane	79-00-5	< 11	0.006	964	0.0000	0.2	11.4	-
1,1-Dichloroethene	75-35-4	33	0.033	964	0.0001	1.0	4.14	-
1,2,4-Trimethylbenzene	95-63-6	< 9.8	0.005	964	0.0000	0.2	25.6	-
1,2-Dichlorobenzene	95-50-1	< 12	0.006	964	0.0000	0.2	31.4	-
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	110	0.110	964	0.0004	3.5	-	-
1,2-Dichloroethane	107-06-2	< 8.1	0.004	964	0.0000	0.1	8.45	281
1,2-Dichloropropane	78-87-5	< 9.2	0.005	964	0.0000	0.1	72.3	2,920
1,3,5-Trimethylbenzene	108-67-8	< 9.8	0.005	964	0.0000	0.2	25.6	-
1,4-Dichlorobenzene	106-46-7	< 12	0.006	964	0.0000	0.2	664	584,000
2-Butanone (MEK)	78-93-3	< 54	0.027	964	0.0001	0.9	-	-
2-Hexanone	591-78-6	< 20	0.010	964	0.0000	0.3	4.27	-
Acetone	67-64-1	< 120	0.060	964	0.0002	1.9	-	-
Acetonitrile	75-05-8	< 17	0.009	964	0.0000	0.3	14	-
Benzene	71-43-2	< 6.4	0.003	964	0.0000	0.1	-	936
Carbon disulfide	75-15-0	< 16	0.008	964	0.0000	0.3	6.5	511,000
Chlorobenzene	108-90-7	< 9.2	0.005	964	0.0000	0.1	9.61	-
Chlorodifluoromethane	75-45-6	49	0.049	964	0.0002	1.6	-	36,500,000
Chloroethane	75-00-3	48	0.048	964	0.0002	1.5	55.1	7,300,000
Chloroform	67-66-3	36	0.036	964	0.0001	1.1	10.2	317
Chloromethane	74-87-3	< 19	0.010	964	0.0000	0.3	21.5	-
cis-1,2-Dichloroethene	156-59-2	35	0.035	964	0.0001	1.1	166	-
Cyclohexane	110-82-7	23	0.023	964	0.0001	0.7	-	-
Dichlorodifluoromethane	75-71-8	370	0.370	964	0.0013	11.7	-	-
Ethylbenzene	100-41-4	< 8.7	0.004	964	0.0000	0.1	90.6	730,000
Ethyl Ether	60-29-7	< 61	0.031	964	0.0001	1.0	-	-
Isopropylbenzene (Cumene)	98-82-8	< 36	0.018	964	0.0001	0.6	51.3	-
Methyl isobutyl ketone	108-10-1	< 37	0.019	964	0.0001	0.6	42.7	-
Methylene chloride	75-09-2	< 17	0.009	964	0.0000	0.3	36.2	15,532
N-Butane	106-97-8	250	0.250	964	0.0009	7.9	-	-
N-Decane	124-18-5	< 70	0.035	964	0.0001	1.1	-	-

Table 4.3

**Mass Loading Calculations - October 30,2017
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Analand ⁽¹⁾	CAS #	Blower Discharge	Blower Discharge	Blower Discharge	Calculated Blower		WDNR NR 445.07	
		Concentration ⁽²⁾	Concentration ⁽³⁾	Flow Rate ⁽⁴⁾	Discharge Mass		Emission Thresholds	
		$\mu\text{g}/\text{m}^3$	(mg/m^3)	(cfm)	(lbs/hr)	(lbs/yr) ⁽⁵⁾	(lbs/hr)	(lbs/yr)
N-heptane	142-82-5	< 20	0.010	964	0.0000	0.3	-	-
N-hexane	110-54-3	88	0.088	964	0.0003	2.8	36.8	146,000
N-Octane	111-65-9	53	0.053	964	0.0002	1.7	-	-
Nonane	111-84-2	< 64	0.032	964	0.0001	1.0	-	-
Pentane	2672-01-7	< 30	0.015	964	0.0001	0.5	-	-
Tetrachloroethene	127-18-4	120	0.120	964	0.0004	3.8	35.4	1,237
Toluene	108-88-3	< 7.5	0.004	964	0.0000	0.1	39.3	292,000
trans-1,2-Dichloroethene	156-60-5	< 7.9	0.004	964	0.0000	0.1	166	-
Trichloroethene	79-01-6	13	0.013	964	0.0000	0.4	56.1	3,650
Trichlorofluoromethane	75-69-4	100	0.100	964	0.0004	3.2	-	-
Undecane	1120-21-4	< 120	0.060	964	0.0002	1.9	-	-
Vinyl chloride	75-01-4	84	0.084	964	0.0003	2.7	830	73,000
Xylenes, m,p	1330-20-7	88	0.088	964	0.0003	2.8	90.6	-
Xylenes, o	95-47-6	16	0.016	964	0.0001	0.5	90.6	-
Xylenes, Total	1330-20-7	104	0.104	964	0.0004	3.3	90.6	-

Notes:

⁽¹⁾ Historically detected analands regulated under WDNR NR445.

⁽²⁾ The blower discharge sample collected on October 30,2017 was used for calculations because it had the greatest total VOC concentration.

⁽³⁾ For analands not detected, half the detection limit ($\mu\text{g}/\text{m}^3$) is used to calculate the concentration in $\mu\text{g}/\text{m}^3$.

⁽⁴⁾ The maximum flowrate for 2017.

⁽⁵⁾ Calculation assumes continuous operation throughout the year.

-- No regulatory limit.

Table 4.4

SVE/LFG System
Total VOC Mass Removal
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Date	Blower Meter Reading	Time Period	Total VOC Concentration $\mu\text{g}/\text{m}^3$	Flow Rate CFM	ft³/min to m³/min	μg to lb	Total VOC Mass Removed lbs.
09/23/08		Day 1	194,930	1,250	35.39605896	2.20462E-09	22
09/25/08		Day 2	205,020	1,250	35.39605896	2.20462E-09	23
10/01/08		Days 3-8	145,510	1,275	36.10398014	2.20462E-09	100
10/07/08		Week 2	115,070	1,300	36.81190132	2.20462E-09	81
10/15/08		Week 3	78,800	1,280	36.24556438	2.20462E-09	73
10/30/08		Weeks 4-5	68,360	1,100	31.14853189	2.20462E-09	101
11/13/08	1,229.9	Weeks 6-7	40,581	1,100	31.14853189	2.20462E-09	56
12/13/08	1,705.1	3rd Month	40,581	1,100	31.14853189	2.20462E-09	79
04/24/09	3,964.0	2nd Quarter 2009	20,243	1,290	36.52873285	2.20462E-09	214
07/23/09	2,160.0	3rd Quarter 2009	7,023	1,120	31.71486883	2.20462E-09	64
10/20/09	2,136.0	4th Quarter 2009	1,427	1,290	36.52873285	2.20462E-09	15
01/29/10	2,953.0	1st Quarter 2010	6,651	1,280	36.24556438	2.20462E-09	77
04/22/10	4,562.9	2nd Quarter 2010	4,453	1,290	36.52873285	2.20462E-09	35
07/23/10	6,590.5	3rd Quarter 2010	4,175	1,180	33.41387966	2.20462E-09	37
10/22/10	7,573.2	4th Quarter 2010	5,629	1,250	35.39605896	2.20462E-09	26
01/24/11	9,478.3	1st Quarter 2011	4,521	1,200	33.9802166	2.20462E-09	39
04/29/11	10,931.3	2nd Quarter 2011	3,145	1,080	30.58219494	2.20462E-09	18
07/22/11	12,495.8	3rd Quarter 2011	2,633	1,250	35.39605896	2.20462E-09	19
10/26/11	14,482.5	4th Quarter 2011	2,369	1,250	35.39605896	2.20462E-09	22
01/26/12	1,808.2	1st Quarter 2012	2,821	1,220	34.54655355	2.20462E-09	23
04/27/12	1,566.7	2nd Quarter 2012	2,149	1,200	33.9802166	2.20462E-09	15
07/25/12	1,479.8	3rd Quarter 2012	3,116	1,310	37.09506979	2.20462E-09	23
10/30/12	1,414.8	4th Quarter 2012	1,102	1,250	35.39605896	2.20462E-09	7.3
01/03/13	1,558.2	1st Quarter 2013	2,202	1,200	33.9802166	2.20462E-09	15
04/26/13	931.8	2nd Quarter 2013	338	1,270	35.96239591	2.20462E-09	1.5

Table 4.4

**SVE/LFG System
Total VOC Mass Removal
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Date	Blower Meter Reading	Time Period	Total VOC Concentration $\mu\text{g}/\text{m}^3$	Flow Rate CFM	ft3/min to m3/min	μg to lb	Total VOC Mass Removed lbs.
07/25/13	2,165.2	3rd Quarter 2013	1,454	1,250	35.39605896	2.20462E-09	15
10/23/13	1,984.0	4th Quarter 2013	1,296	1,250	35.39605896	2.20462E-09	12
12/31/14	3,664.7	2014 ¹	2,522	1,832	51.8693848	2.20462E-09	63
12/31/15	6,506.4	2015 ¹	823	1,786	50.56680983	2.20462E-09	36
12/31/16	4,809.3	2016 ¹	1,286	471	13.3490337	2.20462E-09	11
12/31/17	3,950.9	2017 ¹	1,695	584	16.54476152	2.20462E-09	15
Total							1,338

Notes:

- ¹ - Average flow rate and average total VOC concentration used to calculate pounds removed.
- Blower ran intermittently from November 25, 2008 to December 13, 2008 due to excess condensate water.
 - Blower was shut down from December 13, 2008, thru January 19, 2009, to devise condensate water collection system and clean well screens.
 - Blower was shutdown from November 21, 2012 to December 21, 2012 in order to evaluate the effects on the quantity of VOC removal.
 - Blower was shutdown from January 10, 2014 to May 13, 2014 in order to evaluate the effects on the quantity of VOC removal.
 - With approval from the WDNR on 10/21/15, System modifications occurred on 10/29/15. Modifications included operating the system on a part time schedule (16 hrs/day) and operating only SVE wells SVE-4, SVE-6, SVE-7, SVE-12, SVE-13, and SVE-14. These wells are monitored on a monthly basis. All other SVE wells will be monitored on a semi-annual basis (April and October) and will be "turned on" on an as needed basis. Extraction from the LFG wells was also modified in order to focus gas extraction in the vicinity of the GP-2 nest.

Table 4.5

SVE/LFG System
1,1,1-Trichloroethane Mass Removal
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Date	Time Period	1,1,1-TCA Concentration $\mu\text{g}/\text{m}^3$	Flow Rate CFM	Total 1,1,1-TCA Mass Removed lbs.
09/23/08	Day 1	17,000	1,250	1.9
09/25/08	Day 2	28,000	1,250	3.1
10/01/08	Days 3-8	27,000	1,275	19
10/07/08	Week 2	29,000	1,300	20
10/15/08	Week 3	18,000	1,280	17
10/30/08	Weeks 4-5	15,000	1,100	22
11/13/08	Weeks 6-7	11,000	1,100	15
12/13/08	3rd Month	11,000	1,100	22
04/24/09	2nd Quarter 2009	5,700	1,290	60
07/23/09	3rd Quarter 2009	2,000	1,120	18
10/20/09	4th Quarter 2009	380	1,290	3.9
01/29/10	1st Quarter 2010	1,300	1,280	15
04/22/10	2nd Quarter 2010	1,500	1,290	12
07/23/10	3rd Quarter 2010	1,400	1,180	13
10/22/10	4th Quarter 2010	1,000	1,250	4.6
01/24/11	1st Quarter 2011	1,500	1,200	13
04/29/11	2nd Quarter 2011	940	1,080	5.5
07/22/11	3rd Quarter 2011	830	1,250	6.1
10/26/11	4th Quarter 2011	650	1,250	6.0
01/26/12	1st Quarter 2012	760	1,220	6.3
04/27/12	2nd Quarter 2012	790	1,200	5.6
07/25/12	3rd Quarter 2012	940	1,310	6.8
10/30/12	4th Quarter 2012	350	1,250	2.3
01/03/13	1st Quarter 2013	420	1,200	2.9
04/26/13	2nd Quarter 2013	15	1,270	0.1
07/25/13	3rd Quarter 2013	300	1,250	3.0
10/23/13	4th Quarter 2013	200	1,250	1.9

Table 4.5

**SVE/LFG System
1,1,1-Trichloroethane Mass Removal
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Date	Time Period	1,1,1-TCA Concentration $\mu\text{g}/\text{m}^3$	Flow Rate CFM	Total 1,1,1-TCA Mass Removed lbs.
12/31/14	2014 ¹	458	1,832	12
12/31/15	2015 ¹	228	1,786	9.9
12/31/16	2016 ¹	268	471	2.3
12/31/17	2017 ¹	348	584	3.0
Total				332

Notes:

- ¹ - Average flow rate and average 1,1,1-Trichloroethane concentration used to calculate pounds removed.
- Blower ran intermittently from November 25, 2008 to December 13, 2008 due to excess condensate water.
 - Blower was shut down from December 13, 2008, thru January 19, 2009, to devise condensate water collection system and clean well screens.
 - Blower was shutdown from November 21, 2012 to December 21, 2012 in order to evaluate the effects on the quantity of VOC removal.
 - Blower was shutdown from January 10, 2014 to May 13, 2014 in order to evaluate the effects on the quantity of VOC removal.
 - With approval from the WDNR on 10/21/15, System modifications occurred on 10/29/15. Modifications included operating the system on a part time schedule (16 hrs/day) and operating only SVE wells SVE-4, SVE-6, SVE-7, SVE-12, SVE-13, and SVE-14. These wells are monitored on a monthly basis. All other SVE wells will be monitored on a semi-annual basis (April and October) and will be "turned on" on an as needed basis. Extraction from the LFG wells was also modified in order to focus gas extraction in the vicinity of the GP-2 nest.

Table 4.6

SVE/LFG System
1,1,-Dichloroethane Mass Removal
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Date	Time Period	1,1-DCA Concentration $\mu\text{g}/\text{m}^3$	Flow Rate CFM	1,1-DCA Mass Removed lbs.
09/23/08	Day 1	51,000	1,250	5.7
09/25/08	Day 2	59,000	1,250	6.6
10/01/08	Days 3-8	42,000	1,275	29
10/07/08	Week 2	32,000	1,300	22
10/15/08	Week 3	20,000	1,280	18
10/30/08	Weeks 4-5	16,000	1,100	24
11/13/08	Weeks 6-7	8,600	1,100	12
12/13/08	3rd Month	8,600	1,100	17
04/24/09	2nd Quarter 2009	3,900	1,290	41
07/23/09	3rd Quarter 2009	1,100	1,120	10
10/20/09	4th Quarter 2009	220	1,290	2.3
01/29/10	1st Quarter 2010	920	1,280	11
04/22/10	2nd Quarter 2010	850	1,290	6.6
07/23/10	3rd Quarter 2010	790	1,180	7.1
10/22/10	4th Quarter 2010	680	1,250	3.1
01/24/11	1st Quarter 2011	940	1,200	8.0
04/29/11	2nd Quarter 2011	550	1,080	3.2
07/22/11	3rd Quarter 2011	600	1,250	4.4
10/26/11	4th Quarter 2011	370	1,250	3.4
01/26/12	1st Quarter 2012	350	1,220	2.9
04/27/12	2nd Quarter 2012	370	1,200	2.6
07/25/12	3rd Quarter 2012	550	1,310	4.0
10/30/12	4th Quarter 2012	190	1,250	1.3
01/03/13	1st Quarter 2013	290	1,200	2.0
04/26/13	2nd Quarter 2013	12	1,270	0.1
07/25/13	3rd Quarter 2013	180	1,250	1.8
10/23/13	4th Quarter 2013	120	1,250	1.1

Table 4.6

**SVE/LFG System
1,1,-Dichloroethane Mass Removal
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Date	Time Period	1,1-DCA Concentration $\mu\text{g}/\text{m}^3$	Flow Rate CFM	1,1-DCA Mass Removed lbs.
12/31/14	2014 ¹	468	1,832	12
12/31/15	2015 ¹	140	1,786	6.1
12/31/16	2016 ¹	205	471	1.7
12/31/17	2017 ¹	263	584	2.3
			Total	272

Notes:

- ¹ - Average flow rate and average 1,1-Dichloroethane concentration used to calculate pounds removed.
- Blower ran intermittently from November 25, 2008 to December 13, 2008 due to excess condensate water.
 - Blower was shut down from December 13, 2008, thru January 19, 2009, to devise condensate water collection system and clean well screens.
 - Blower was shutdown from November 21, 2012 to December 21, 2012 in order to evaluate the effects on the quantity of VOC removal.
 - Blower was shutdown from January 10, 2014 to May 13, 2014 in order to evaluate the effects on the quantity of VOC removal.
 - With approval from the WDNR on 10/21/15, System modifications occurred on 10/29/15. Modifications included operating the system on a part time schedule (16 hrs/day) and operating only SVE wells SVE-4, SVE-6, SVE-7, SVE-12, SVE-13, and SVE-14. These wells are monitored on a monthly basis. All other SVE wells will be monitored on a semi-annual basis (April and October) and will be "turned on" on an as needed basis. Extraction from the LFG wells was also modified in order to focus gas extraction in the vicinity of the GP-2 nest.

Table 4.7

**SVE/LFG System
1,1,-Dichloroethene Mass Removal
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Date	Time Period	1,1-DCE	Flow Rate	1,1-DCE
		Concentration $\mu\text{g}/\text{m}^3$	CFM	Mass Removed lbs.
09/23/08	Day 1	3,300	1,250	0.4
09/25/08	Day 2	3,900	1,250	0.4
10/01/08	Days 3-8	4,700	1,275	3.2
10/07/08	Week 2	3,800	1,300	2.7
10/15/08	Week 3	1,900	1,280	1.7
10/30/08	Weeks 4-5	1,700	1,100	2.5
11/13/08	Weeks 6-7	1,400	1,100	1.9
12/13/08	3rd Month	1,400	1,100	2.7
04/24/09	2nd Quarter 2009	570	1,290	6.0
07/23/09	3rd Quarter 2009	180	1,120	1.6
10/20/09	4th Quarter 2009	29	1,290	0.3
01/29/10	1st Quarter 2010	180	1,280	2.1
04/22/10	2nd Quarter 2010	150	1,290	1.2
07/23/10	3rd Quarter 2010	140	1,180	1.3
10/22/10	4th Quarter 2010	110	1,250	0.5
01/24/11	1st Quarter 2011	190	1,200	1.6
04/29/11	2nd Quarter 2011	180	1,080	1.1
07/22/11	3rd Quarter 2011	150	1,250	1.1
10/26/11	4th Quarter 2011	70	1,250	0.7
01/26/12	1st Quarter 2012	76	1,220	0.6
04/27/12	2nd Quarter 2012	83	1,200	0.6
07/25/12	3rd Quarter 2012	100	1,310	0.7
10/30/12	4th Quarter 2012	43	1,250	0.3
01/03/13	1st Quarter 2013	61	1,200	0.4
04/26/13	2nd Quarter 2013	2	1,270	0.0
07/25/13	3rd Quarter 2013	38	1,250	0.4
10/23/13	4th Quarter 2013	25	1,250	0.2

Table 4.7

**SVE/LFG System
1,1,-Dichloroethene Mass Removal
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Date	Time Period	1,1-DCE Concentration $\mu\text{g}/\text{m}^3$	Flow Rate CFM	1,1-DCE Mass Removed lbs.
12/31/14	2014 ¹	58	1,832	1.5
12/31/15	2015 ¹	29	1,786	1.3
12/31/16	2016 ¹	22	471	0.2
12/31/17	2017 ¹	33	584	0.3
			Total	39.5

Notes:

- ¹ - Average flow rate and average 1,1-Dichloroethene concentration used to calculate pounds removed.
- Blower ran intermittently from November 25, 2008 to December 13, 2008 due to excess condensate water.
 - Blower was shut down from December 13, 2008, thru January 19, 2009, to devise condensate water collection system and clean well screens.
 - Blower was shutdown from November 21, 2012 to December 21, 2012 in order to evaluate the effects on the quantity of VOC removal.
 - Blower was shutdown from January 10, 2014 to May 13, 2014 in order to evaluate the effects on the quantity of VOC removal.
 - With approval from the WDNR on 10/21/15, System modifications occurred on 10/29/15. Modifications included operating the system on a part time schedule (16 hrs/day) and operating only SVE wells SVE-4, SVE-6, SVE-7, SVE-12, SVE-13, and SVE-14. These wells are monitored on a monthly basis. All other SVE wells will be monitored on a semi-annual basis (April and October) and will be "turned on" on an as needed basis. Extraction from the LFG wells was also modified in order to focus gas extraction in the vicinity of the GP-2 nest.

Table 4.8

**SVE/LFG System
Tetrachloroethene Mass Removal
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Date	Time Period	Tetrachloroethene	Flow Rate	Tetrachloroethene
		Concentration $\mu\text{g}/\text{m}^3$	CFM	Mass Removed lbs.
09/23/08	Day 1	3,000	1,250	0.3
09/25/08	Day 2	3,700	1,250	0.4
10/01/08	Days 3-8	2,500	1,275	1.7
10/07/08	Week 2	2,100	1,300	1.5
10/15/08	Week 3	1,900	1,280	1.7
10/30/08	Weeks 4-5	1,800	1,100	2.7
11/13/08	Weeks 6-7	1,000	1,100	1.4
12/13/08	3rd Month	1,000	1,100	2.0
04/24/09	2nd Quarter 2009	760	1,290	8.0
07/23/09	3rd Quarter 2009	320	1,120	2.9
10/20/09	4th Quarter 2009	49	1,290	0.5
01/29/10	1st Quarter 2010	300	1,280	3.5
04/22/10	2nd Quarter 2010	176	1,290	1.4
07/23/10	3rd Quarter 2010	190	1,180	1.7
10/22/10	4th Quarter 2010	190	1,250	0.9
01/24/11	1st Quarter 2011	190	1,200	1.6
04/29/11	2nd Quarter 2011	160	1,080	0.9
07/22/11	3rd Quarter 2011	270	1,250	2.0
10/26/11	4th Quarter 2011	170	1,250	1.6
01/26/12	1st Quarter 2012	95	1,220	0.8
04/27/12	2nd Quarter 2012	110	1,200	0.8
07/25/12	3rd Quarter 2012	250	1,310	1.8
10/30/12	4th Quarter 2012	66	1,250	0.4
01/03/13	1st Quarter 2013	110	1,200	0.8
04/26/13	2nd Quarter 2013	1.9	1,270	0.0
07/25/13	3rd Quarter 2013	74	1,250	0.8
10/23/13	4th Quarter 2013	16	1,250	0.1

Table 4.8

**SVE/LFG System
Tetrachloroethene Mass Removal
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Date	Time Period	Tetrachloroethene	Flow Rate	Tetrachloroethene
		Concentration $\mu\text{g}/\text{m}^3$	CFM	Mass Removed lbs.
12/31/14	2014 ¹	135	1,832	3.4
12/31/15	2015 ¹	66	1,786	2.9
12/31/16	2016 ¹	85	471	0.7
12/31/17	2017 ¹	116	584	1.0
Total				50.2

Notes:

- ¹ - Average flow rate and average 1,1-Dichloroethene concentration used to calculate pounds removed.
- Blower ran intermittently from November 25, 2008 to December 13, 2008 due to excess condensate water.
 - Blower was shut down from December 13, 2008, thru January 19, 2009, to devise condensate water collection system and clean well screens.
 - Blower was shutdown from November 21, 2012 to December 21, 2012 in order to evaluate the effects on the quantity of VOC removal.
 - Blower was shutdown from January 10, 2014 to May 13, 2014 in order to evaluate the effects on the quantity of VOC removal.
 - With approval from the WDNR on 10/21/15, System modifications occurred on 10/29/15. Modifications included operating the system on a part time schedule (16 hrs/day) and operating only SVE wells SVE-4, SVE-6, SVE-7, SVE-12, SVE-13, and SVE-14. These wells are monitored on a monthly basis. All other SVE wells will be monitored on a semi-annual basis (April and October) and will be "turned on" on an as needed basis. Extraction from the LFG wells was also modified in order to focus gas extraction in the vicinity of the GP-2 nest.

Appendix A

Historical Groundwater Elevation Summary

**Historical Groundwater Elevation Summary
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Monitoring Wells	Top of Casing Elevation	December 2003	August 2005	September 2005	April 2007	July 2007	May 2008	August 2008	November 2008	February 2009	May 2009	August 2009
MW-1	1044.71	908.39	903.70	NA	901.86	901.55	900.79	901.42	901.81	901.89	902.00	901.49
MW-1A	1044.00	907.99	903.18	NA	901.46	901.19	900.30	900.94	901.19	901.54	901.48	900.93
MW-1B	1044.86	908.02	902.18	NA	902.74	901.20	900.20	901.01	901.35	901.26	901.53	901.00
MW-2R	1058.23	NA	NA	906.73	905.24	905.03	904.02	904.66	904.85	905.40	905.33	904.77
MW-2A	1058.62	912.34	907.53	907.14	905.64	905.32	904.41	905.01	905.36	905.71	905.66	905.12
MW-2B	1058.59	912.32	907.54	907.11	905.63	905.31	904.38	904.97	905.35	905.68	905.62	905.08
MW-3	1019.14	919.16	917.69	NA	917.04	917.52	917.74	919.19	919.39	918.21	918.38	918.11
MW-4	1072.50	920.62	916.48	NA	914.53	914.29	913.25	914.02	914.24	914.68	914.60	914.05
MW-5	1022.91	926.02	921.46	NA	919.43	919.20	918.18	918.82	919.11	919.50	919.55	918.99
MW-6	1042.48	921.98	917.27	NA	915.39	914.96	914.10	914.87	915.03	915.24	915.39	914.73
MW-8	1049.91	916.63	912.51	NA	910.64	910.37	909.33	909.80	910.30	910.62	910.63	910.10
MW-8A	1049.67	916.68	912.51	NA	910.85	910.34	909.31	909.79	910.27	910.64	910.62	910.08
MW-9	1026.90	912.63	907.91	NA	906.10	905.62	904.95	906.59	906.41	906.52	906.35	905.49
MW-9A	1026.03	911.89	907.14	NA	905.46	905.00	904.33	905.11	905.25	905.48	905.51	904.82
MW-10	1029.08	NA	885.40	885.35	883.94	884.05	883.02	883.46	883.98	883.64	883.38	883.28
MW-10A	1028.94	NA	885.63	885.58	884.17	884.13	883.42	884.20	884.18	884.22	884.17	883.71
MW-10B	1028.79	NA	885.18	885.09	877.68	883.61	882.98	883.47	883.74	883.79	883.69	883.27
MW-11	872.37	NA	862.32	862.34	862.42	862.16	863.36	862.52	862.39	862.41	862.32	862.12
MW-11A	871.83	NA	861.21	861.25	861.70	861.09	862.21	861.44	861.29	861.32	861.24	861.02
MW-12	880.06	NA	868.76	868.74	868.86	868.12	869.44	868.92	868.20	867.98	868.62	867.82
MW-12A	879.67	NA	868.09	867.99	867.69	867.26	868.17	868.04	867.41	867.23	867.39	866.76
MW-13	1033.70	NA	911.02	910.90	909.33	908.85	908.25	909.13	909.20	909.15	909.39	908.59
MW-13A	1033.57	NA	911.01	910.88	909.25	908.79	908.17	909.00	909.08	909.14	909.28	908.51
MW-14	1028.94	NA	906.80	906.31	903.49	904.28	903.34	903.75	904.29	904.47	904.53	904.07
MW-14A	1027.84	NA	906.13	906.01	900.49	904.02	903.02	903.43	903.92	904.28	904.17	903.71

**Historical Groundwater Elevation Summary
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Monitoring Wells	Top of Casing Elevation	December 2003	August 2005	September 2005	April 2007	July 2007	May 2008	August 2008	November 2008	February 2009	May 2009	August 2009
MW-15	880.76	NA	858.44	858.50	859.31	858.00	860.06	858.52	858.28	858.63	858.51	857.89
MW-15A	879.52	NA	861.37	861.30	861.64	860.77	862.04	861.20	860.94	861.15	861.00	860.50
MW-16	1039.90	NA	NA	NA	NA	NA	897.82	898.40	898.72	898.91	898.88	898.30
MW-16A	1040.08	NA	NA	NA	NA	NA	897.82	898.38	898.75	898.94	898.88	898.37
MW-17	907.23	NA	NA	NA	NA	NA	870.55	870.86	870.65	870.52	870.63	870.03
MW-17A	907.44	NA	NA	NA	NA	NA	870.64	870.85	870.66	870.51	870.40	870.01
MW-18	897.73	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-19**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-19A**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Apple River*	870.68	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Historical Groundwater Elevation Summary
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Monitoring Wells	Top of Casing Elevation	November 2009	January 2010	May 2010	November 2010	May 2011	November 2011	May 2012	November 2012	May 2013	November 2013
MW-1	1044.71	900.91	DRY	DRY	DRY	DRY	DRY	DRY	900.87	DRY	901.81
MW-1A	1044.00	900.37	899.96	899.75	897.69	898.60	899.82	900.65	900.49	900.04	901.25
MW-1B	1044.86	900.41	899.99	899.79	899.37	898.64	899.84	900.67	900.51	900.09	901.31
MW-2R	1058.23	904.14	903.73	903.43	902.15	902.06	903.33	904.42	904.23	903.70	904.95
MW-2A	1058.62	904.53	904.05	903.81	902.56	902.41	903.72	904.76	904.62	904.01	905.28
MW-2B	1058.59	904.47	903.05	903.81	902.49	902.39	903.67	904.73	904.57	904.00	905.24
MW-3	1019.14	917.69	917.27	917.79	918.32	919.19	917.75	918.06	917.43	918.43	919.23
MW-4	1072.50	913.45	NA	912.57	911.05	911.04	912.52	913.71	913.50	912.91	914.20
MW-5	1022.91	918.39	NA	917.47	915.96	916.07	917.40	918.64	918.40	917.63	918.93
MW-6	1042.48	914.10	NA	913.12	911.79	912.03	913.40	914.36	914.18	913.63	914.98
MW-8	1049.91	909.50	908.91	908.72	907.29	907.08	908.54	909.76	909.59	908.94	909.23
MW-8A	1049.67	909.49	908.90	908.70	907.27	907.06	908.52	909.77	909.55	908.95	910.20
MW-9	1026.90	904.67	903.99	903.85	902.58	903.70	904.76	905.31	905.08	904.58	906.39
MW-9A	1026.03	904.18	903.66	903.47	902.22	902.64	903.74	904.49	904.37	904.01	905.23
MW-10	1029.08	883.27	882.65	882.38	881.58	881.87	882.88	883.54	883.36	882.56	883.81
MW-10A	1028.94	883.18	883.02	882.93	882.09	882.22	883.24	883.45	883.29	882.94	884.17
MW-10B	1028.79	882.84	882.59	882.59	881.69	881.88	882.82	883.02	882.82	882.52	883.74
MW-11	872.37	862.34	862.49	862.08	862.25	862.14	862.14	862.66	861.50	865.61	864.95
MW-11A	871.83	861.22	861.37	860.97	861.16	862.22	861.03	861.50	861.46	864.41	864.86
MW-12	880.06	868.09	867.65	868.17	868.31	869.25	867.75	868.65	867.45	869.48	868.09
MW-12A	879.67	866.87	866.71	867.67	866.96	868.05	866.92	867.19	866.49	868.66	867.21
MW-13	1033.70	907.88	907.39	907.02	905.87	906.78	905.82	908.20	907.85	908.13	909.16
MW-13A	1033.57	907.75	907.31	906.98	905.82	906.59	907.76	908.18	907.84	907.98	909.11
MW-14	1028.94	903.53	903.05	902.69	901.46	901.17	902.67	903.63	903.37	902.85	904.23
MW-14A	1027.84	903.14	901.95	902.49	901.14	900.89	902.23	903.34	903.00	902.56	903.85

**Historical Groundwater Elevation Summary
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Monitoring Wells	Top of Casing Elevation	November 2009	January 2010	May 2010	November 2010	May 2011	November 2011	May 2012	November 2012	May 2013	November 2013
MW-15	880.76	858.25	858.42	858.05	858.51	859.57	858.17	859.07	857.89	859.89	858.15
MW-15A	879.52	860.67	860.75	860.49	860.71	861.57	860.69	861.18	860.41	861.81	860.75
MW-16	1039.90	897.74	897.31	897.14	896.01	896.20	897.38	898.00	897.80	897.51	898.70
MW-16A	1040.08	897.75	897.44	897.10	896.08	896.23	897.37	898.02	897.80	897.51	898.68
MW-17	907.23	869.84	869.72	869.43	869.42	870.06	870.21	870.03	869.76	870.26	870.50
MW-17A	907.44	869.83	869.67	869.54	869.32	869.96	870.08	869.90	869.63	867.41	870.44
MW-18	897.73	NA	864.35	864.22	864.24	861.03	859.72	861.51	860.12	860.68	860.14
MW-19**	NA	NA	NA	NA	NA	NA	NA	NA	NA	38.07	38.19
MW-19A**	NA	NA	NA	NA	NA	NA	NA	NA	NA	38.05	38.21
Apple River*	870.68	NA	860.12	859.99	861.04	864.97	864.25	864.46	864.01	865.12	864.36

**Historical Groundwater Elevation Summary
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Monitoring Wells	Top of Casing Elevation	May 2014	November 2014	May 2015	November 2015	May 2016	November 2016	May 2017	November 2017
MW-1	1044.71	DRY	906.17	906.42	905.40	906.98	907.19	906.56	907.64
MW-1A	1044.00	901.56	905.57	905.80	904.51	906.58	906.50	905.57	906.63
MW-1B	1044.86	901.63	905.73	905.82	904.72	906.36	906.55	905.62	906.71
MW-2R	1058.23	905.47	909.78	910.15	909.13	910.65	911.07	910.30	910.82
MW-2A	1058.62	905.74	909.95	910.14	909.11	910.67	910.85	909.91	911.00
MW-2B	1058.59	905.68	909.90	910.12	909.08	910.66	910.83	909.88	910.99
MW-3	1019.14	918.75	920.98	919.58	919.54	920.39	919.66	919.43	919.30
MW-4	1072.50	914.72	919.21	919.51	918.32	-	920.02	919.33	-
MW-5	1022.91	NA	923.73	924.64	923.32	-	925.24	924.41	925.60
MW-6	1042.48	915.49	917.83	920.19	919.04	920.77	920.92	920.14	921.38
MW-8	1049.91	910.78	915.23	915.32	914.30	915.69	915.76	915.09	916.19
MW-8A	1049.67	910.76	915.25	915.33	914.27	915.70	915.75	915.12	916.22
MW-9	1026.90	906.27	911.18	910.65	909.64	911.74	911.49	910.60	911.76
MW-9A	1026.03	905.54	909.82	909.76	908.64	910.44	910.46	909.68	910.60
MW-10	1029.08	883.96	886.10	887.30	886.33	887.44	887.63	886.95	887.53
MW-10A	1028.94	884.27	887.23	887.58	886.64	887.77	887.94	886.80	887.77
MW-10B	1028.79	883.78	886.71	886.96	886.17	887.28	887.38	887.03	887.30
MW-11	872.37	863.01	862.19	862.07	862.60	862.53	-	-	-
MW-11A	871.83	862.95	862.15	862.04	862.58	862.49	862.20	-	862.12
MW-12	880.06	869.54	868.98	868.85	869.31	869.36	868.97	-	868.84
MW-12A	879.67	868.34	868.48	868.02	868.60	869.01	868.41	-	868.54
MW-13	1033.70	909.31	913.28	913.13	912.44	914.29	913.91	912.94	914.34
MW-13A	1033.57	909.29	913.36	913.22	912.13	913.94	914.02	913.26	914.23
MW-14	1028.94	904.69	909.02	909.44	908.06	910.02	909.91	909.20	916.14
MW-14A	1027.84	904.31	908.70	909.15	908.05	909.82	909.73	908.88	910.34

**Historical Groundwater Elevation Summary
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Monitoring Wells	Top of Casing Elevation	May 2014	November 2014	May 2015	November 2015	May 2016	November 2016	May 2017	November 2017
MW-15	880.76	860.33	858.87	858.65	859.41	859.60	858.95	860.14	858.93
MW-15A	879.52	862.25	861.61	861.39	861.44	862.25	861.74	862.47	861.75
MW-16	1039.90	898.95	902.49	902.90	901.70	903.40	903.21	902.78	903.70
MW-16A	1040.08	898.94	902.49	902.72	901.86	903.45	903.49	902.72	903.71
MW-17	907.23	870.85	872.20	871.66	871.77	872.48	872.09	871.89	871.95
MW-17A	907.44	870.77	872.12	871.56	871.49	872.39	872.01	871.78	872.04
MW-18	897.73	865.51	865.26	864.83	865.61	865.84	865.61	865.72	864.36
MW-19**	NA	38.07	38.19	38.58	38.02	-	-	-	-
MW-19A**	NA	38.05	38.21	38.56	38.00	-	-	-	-
Apple River*	870.68	861.88	860.14	860.36	860.18	861.78	860.38	862.27	860.57

Notes:

December 2003 through April 2007 data provided by SEH.

All elevations in feet above mean sea level (AMSL).

* - Measured from bridge on County Road C.

** - Not surveyed

MW-11 and MW-11A were converted to flush mounts on 11/15/12.

New TOC Elevations: MW-11 869.05 MW-11A 868.67

MW-11 was abandoned in 2016

Appendix B

Data Quality Validation Memorandums and Laboratory Reports



Memorandum

June 16, 2017

To: Ryan Aamot, GHD

Ref. No.: 048038-70-01

From: 
Grant Anderson/sb/28

Tel: 651-639-0913

**Subject: Analytical Results and Reduced Validation
Groundwater and Residential Well Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
May 2017**

1. Introduction

This document details a reduced validation of analytical results for groundwater and residential well samples collected at the New Richmond Landfill Site during May 2017. Samples were submitted to TestAmerica Laboratories, Inc. (TestAmerica), located in North Canton, Ohio. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD Services Inc. (GHD) report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, recovery data from surrogate spikes, laboratory control samples (LCS), matrix spikes (MS), and field QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

- i) "Quality Assurance Project Plan (QAPP), New Richmond Landfill, WDNR License #2492"; April 2008, Conestoga-Rovers & Associates, Report 7
- ii) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," October 1999, United States Environmental Protection Agency (USEPA) 540/R 99/008

Item ii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria and sample preservation requirements for the analyses are summarized in Table 3. The sample chain of custody document and analytical report were used to determine sample holding times. All samples were prepared and analyzed within the required holding time.



All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

Laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for VOC determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries met the above criteria.

5. Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS contained all compounds of interest. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.



MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

7. Field QA/QC Samples

The field QA/QC consisted of a trip blank sample, a field blank sample, and a field duplicate sample set.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, a trip blank sample was submitted to the laboratory for volatile organic compound (VOC) analysis. All results were non-detect for the compounds of interest.

Field Blank Sample Analysis

To assess ambient conditions at the site and cleanliness of sample containers, a field blank was submitted for analysis, as identified in Table 1. All results were non-detect for the analytes of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, a field duplicate sample set was collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value for water samples.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL were qualified as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the RL in Table 2.

9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable without qualification.

Table 1

**Sample Collection and Analysis Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
May 2017**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters	Comments
W-170518-DO-01	1070 192nd AVE	water	05/18/2017	8:58	VOC	
W-170518-DO-02	1070 192nd AVE	water	05/18/2017	8:58	VOC	duplicate (DO-01)
W-170518-DO-03	2056 CTY RD C	water	05/18/2017	9:30	VOC	
W-170518-DO-04	MW-1	water	05/18/2017	11:11	VOC	
W-170518-DO-05	MW-1	water	05/18/2017	11:15	VOC	field blank
W-170518-DO-06	MW-10	water	05/18/2017	11:40	VOC	
W-170518-DO-07	MW-10A	water	05/18/2017	12:40	VOC	MS/MSD
W-170518-DO-08	MW-16A	water	05/18/2017	14:10	VOC	
W-170518-DO-09	MW-16	water	05/18/2017	14:50	VOC	
W-170518-DO-10	MW-17	water	05/18/2017	15:42	VOC	
W-170519-DO-11	MW-17A	water	05/19/2017	11:50	VOC	
W-170519-DO-12	2055 CTY RD C	water	05/19/2017	11:20	VOC	
W-170519-DO-13	MW-18	water	05/19/2017	13:05	VOC	
TRIP BLANK	lab	water	05/19/2017	00:00	VOC	Trip Blank

Notes:

VOC - Volatile organic compounds

MS/MSD - Matrix spike/Matrix spike duplicate

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
May 2017**

Location ID:	1070 192nd Ave	1070 192nd Ave	2055 Cty Rd C	2056 Cty Rd C	MW1	MW1
Sample Name:	W-170518-DO-01	W-170518-DO-02	W-170519-DO-12	W-170518-DO-03	W-170518-DO-04	W-170518-DO-05
Sample Date:	05/18/2017	05/18/2017	05/19/2017	05/18/2017	05/18/2017	05/18/2017

Duplicate

Parameters	Unit						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	2.2	1.0 U	7.0	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	2.5	1.0 U	7.6	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.4	1.0 U	0.92	1.0 U
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	µg/L	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	µg/L	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobromomethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	2.2	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
May 2017**

Location ID:	1070 192nd Ave	1070 192nd Ave	2055 Cty Rd C	2056 Cty Rd C	MW1	MW1
Sample Name:	W-170518-DO-01	W-170518-DO-02	W-170519-DO-12	W-170518-DO-03	W-170518-DO-04	W-170518-DO-05
Sample Date:	05/18/2017	05/18/2017	05/19/2017	05/18/2017	05/18/2017	05/18/2017
		Duplicate				

Parameters	Unit						
Volatile Organic Compounds							
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	0.45 J	1.0 U
Tetrahydrofuran	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
May 2017**

Location ID:	MW10	MW10A	MW16	MW16A	MW17	MW17A	MW18
Sample Name:	W-170518-DO-06	W-170518-DO-07	W-170518-DO-09	W-170518-DO-08	W-170518-DO-10	W-170519-DO-11	W-170519-DO-13
Sample Date:	05/18/2017	05/18/2017	05/18/2017	05/18/2017	05/18/2017	05/19/2017	05/19/2017

Parameters	Unit							
Volatile Organic Compounds								
1,1,1-Trichloroethane	µg/L	1.8	1.0 U	17	1.0 U	17	10	31
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.3	1.0 U	20	1.0 U	22	14	3.8
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	3.7	1.0 U	3.6	2.0	6.8
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobromomethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	0.86 J	0.65 J	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.1	1.0 U	1.2	0.61 J	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
May 2017**

Location ID:	MW10	MW10A	MW16	MW16A	MW17	MW17A	MW18
Sample Name:	W-170518-DO-06	W-170518-DO-07	W-170518-DO-09	W-170518-DO-08	W-170518-DO-10	W-170519-DO-11	W-170519-DO-13
Sample Date:	05/18/2017	05/18/2017	05/18/2017	05/18/2017	05/18/2017	05/19/2017	05/19/2017

Parameters	Unit	MW10	MW10A	MW16	MW16A	MW17	MW17A	MW18
Volatile Organic Compounds								
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	2.0	1.0 U	2.2	1.2	1.0 U
Tetrahydrofuran	µg/L	5.0 U	5.0 U	1.1 J	5.0 U	1.0 J	0.86 J	5.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrchloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

U - Not detected at the associated reporting limit

J - Estimated concentration

Table 3

**Analytical Methods and Holding Times
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
May 2017**

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Volatile Organic Compounds (VOCs)	SW-846 8260B	Water	-	14

Notes:

Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-79876-1

Client Project/Site: 48038, New Richmond Landfill

For:

GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson



Authorized for release by:
6/2/2017 8:01:14 AM

Denise Heckler, Project Manager II
(330)966-9477

denise.heckler@testamericainc.com

LINKS

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www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

- 1
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- 9
- 10
- 11
- 12
- 13
- 14



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Method Summary	5
Sample Summary	6
Detection Summary	7
Client Sample Results	9
Surrogate Summary	37
QC Sample Results	38
QC Association Summary	44
Lab Chronicle	45
Certification Summary	48
Chain of Custody	49

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.
X	Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Job ID: 240-79876-1

Laboratory: TestAmerica Canton

Narrative

**Job Narrative
240-79876-1**

Comments

No additional comments.

Receipt

The samples were received on 5/23/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.0° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Method Summary

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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Sample Summary

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-79876-1	W-170518-DO-01	Water	05/18/17 00:00	05/23/17 09:30
240-79876-2	W-170518-DO-02	Water	05/18/17 00:00	05/23/17 09:30
240-79876-3	W-170518-DO-03	Water	05/18/17 00:00	05/23/17 09:30
240-79876-4	W-170518-DO-04	Water	05/18/17 00:00	05/23/17 09:30
240-79876-5	W-170518-DO-05	Water	05/18/17 00:00	05/23/17 09:30
240-79876-6	W-170518-DO-06	Water	05/18/17 00:00	05/23/17 09:30
240-79876-7	W-170518-DO-07	Water	05/18/17 00:00	05/23/17 09:30
240-79876-8	W-170518-DO-08	Water	05/18/17 00:00	05/23/17 09:30
240-79876-9	W-170518-DO-09	Water	05/18/17 00:00	05/23/17 09:30
240-79876-10	W-170518-DO-10	Water	05/18/17 00:00	05/23/17 09:30
240-79876-11	W-170519-DO-11	Water	05/19/17 00:00	05/23/17 09:30
240-79876-12	W-170519-DO-12	Water	05/19/17 00:00	05/23/17 09:30
240-79876-13	W-170519-DO-13	Water	05/19/17 00:00	05/23/17 09:30
240-79876-14	TRIP BLANK	Water	05/18/17 00:00	05/23/17 09:30

Detection Summary

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-01

Lab Sample ID: 240-79876-1

No Detections.

Client Sample ID: W-170518-DO-02

Lab Sample ID: 240-79876-2

No Detections.

Client Sample ID: W-170518-DO-03

Lab Sample ID: 240-79876-3

No Detections.

Client Sample ID: W-170518-DO-04

Lab Sample ID: 240-79876-4

Analyte	Result	Qualifier	RL	LOD	Unit	Dil Fac	D	Method	Prep Type
Chloroform	2.2		1.0	0.31	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	7.6		1.0	0.25	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	0.92		1.0	0.27	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.45	J	1.0	0.30	ug/L	1		8260B	Total/NA
1,1,1-Trichloroethane	7.0		1.0	0.23	ug/L	1		8260B	Total/NA

Client Sample ID: W-170518-DO-05

Lab Sample ID: 240-79876-5

No Detections.

Client Sample ID: W-170518-DO-06

Lab Sample ID: 240-79876-6

Analyte	Result	Qualifier	RL	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.3		1.0	0.25	ug/L	1		8260B	Total/NA
1,1,1-Trichloroethane	1.8		1.0	0.23	ug/L	1		8260B	Total/NA

Client Sample ID: W-170518-DO-07

Lab Sample ID: 240-79876-7

No Detections.

Client Sample ID: W-170518-DO-08

Lab Sample ID: 240-79876-8

No Detections.

Client Sample ID: W-170518-DO-09

Lab Sample ID: 240-79876-9

Analyte	Result	Qualifier	RL	LOD	Unit	Dil Fac	D	Method	Prep Type
Chloroform	1.2		1.0	0.31	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	20		1.0	0.25	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	3.7		1.0	0.27	ug/L	1		8260B	Total/NA
Tetrachloroethene	2.0		1.0	0.30	ug/L	1		8260B	Total/NA
1,1,1-Trichloroethane	17		1.0	0.23	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.1		1.0	0.30	ug/L	1		8260B	Total/NA
Tetrahydrofuran	1.1	J	5.0	0.84	ug/L	1		8260B	Total/NA

Client Sample ID: W-170518-DO-10

Lab Sample ID: 240-79876-10

Analyte	Result	Qualifier	RL	LOD	Unit	Dil Fac	D	Method	Prep Type
Chloroethane	0.86	J	1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	22		1.0	0.25	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Detection Summary

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-10 (Continued)

Lab Sample ID: 240-79876-10

Analyte	Result	Qualifier	RL	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	3.6		1.0	0.27	ug/L	1		8260B	Total/NA
Tetrachloroethene	2.2		1.0	0.30	ug/L	1		8260B	Total/NA
1,1,1-Trichloroethane	17		1.0	0.23	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.2		1.0	0.30	ug/L	1		8260B	Total/NA
Tetrahydrofuran	1.0	J	5.0	0.84	ug/L	1		8260B	Total/NA

Client Sample ID: W-170519-DO-11

Lab Sample ID: 240-79876-11

Analyte	Result	Qualifier	RL	LOD	Unit	Dil Fac	D	Method	Prep Type
Chloroethane	0.65	J	1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	14		1.0	0.25	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	2.0		1.0	0.27	ug/L	1		8260B	Total/NA
Tetrachloroethene	1.2		1.0	0.30	ug/L	1		8260B	Total/NA
1,1,1-Trichloroethane	10		1.0	0.23	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.61	J	1.0	0.30	ug/L	1		8260B	Total/NA
Tetrahydrofuran	0.86	J	5.0	0.84	ug/L	1		8260B	Total/NA

Client Sample ID: W-170519-DO-12

Lab Sample ID: 240-79876-12

Analyte	Result	Qualifier	RL	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	2.5		1.0	0.25	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	1.4		1.0	0.27	ug/L	1		8260B	Total/NA
1,1,1-Trichloroethane	2.2		1.0	0.23	ug/L	1		8260B	Total/NA

Client Sample ID: W-170519-DO-13

Lab Sample ID: 240-79876-13

Analyte	Result	Qualifier	RL	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	3.8		1.0	0.25	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	6.8		1.0	0.27	ug/L	1		8260B	Total/NA
1,1,1-Trichloroethane	31		1.0	0.23	ug/L	1		8260B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-79876-14

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-01

Lab Sample ID: 240-79876-1

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 02:33	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 02:33	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 02:33	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 02:33	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 02:33	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 02:33	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 02:33	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 02:33	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 02:33	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 02:33	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 02:33	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 02:33	1
1,1-Dichloroethane	ND		1.0	0.25	ug/L			05/27/17 02:33	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 02:33	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 02:33	1
1,1-Dichloroethene	ND		1.0	0.27	ug/L			05/27/17 02:33	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 02:33	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 02:33	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 02:33	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 02:33	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 02:33	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 02:33	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 02:33	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 02:33	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 02:33	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 02:33	1
Tetrachloroethene	ND		1.0	0.30	ug/L			05/27/17 02:33	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 02:33	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 02:33	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 02:33	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 02:33	1
1,1,1-Trichloroethane	ND		1.0	0.23	ug/L			05/27/17 02:33	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 02:33	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 02:33	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 02:33	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 02:33	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 02:33	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 02:33	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 02:33	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 02:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 02:33	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 02:33	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 02:33	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 02:33	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 02:33	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 02:33	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 02:33	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 02:33	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 02:33	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
 Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-01

Lab Sample ID: 240-79876-1

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 02:33	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 02:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		61 - 138					05/27/17 02:33	1
4-Bromofluorobenzene (Surr)	111		69 - 120					05/27/17 02:33	1
Toluene-d8 (Surr)	104		73 - 120					05/27/17 02:33	1
Dibromofluoromethane (Surr)	102		69 - 124					05/27/17 02:33	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-02

Lab Sample ID: 240-79876-2

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 02:54	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 02:54	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 02:54	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 02:54	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 02:54	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 02:54	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 02:54	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 02:54	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 02:54	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 02:54	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 02:54	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 02:54	1
1,1-Dichloroethane	ND		1.0	0.25	ug/L			05/27/17 02:54	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 02:54	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 02:54	1
1,1-Dichloroethene	ND		1.0	0.27	ug/L			05/27/17 02:54	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 02:54	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 02:54	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 02:54	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 02:54	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 02:54	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 02:54	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 02:54	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 02:54	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 02:54	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 02:54	1
Tetrachloroethene	ND		1.0	0.30	ug/L			05/27/17 02:54	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 02:54	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 02:54	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 02:54	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 02:54	1
1,1,1-Trichloroethane	ND		1.0	0.23	ug/L			05/27/17 02:54	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 02:54	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 02:54	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 02:54	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 02:54	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 02:54	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 02:54	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 02:54	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 02:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 02:54	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 02:54	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 02:54	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 02:54	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 02:54	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 02:54	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 02:54	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 02:54	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 02:54	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
 Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-02

Lab Sample ID: 240-79876-2

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 02:54	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 02:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		61 - 138					05/27/17 02:54	1
4-Bromofluorobenzene (Surr)	111		69 - 120					05/27/17 02:54	1
Toluene-d8 (Surr)	105		73 - 120					05/27/17 02:54	1
Dibromofluoromethane (Surr)	106		69 - 124					05/27/17 02:54	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-03

Lab Sample ID: 240-79876-3

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 03:16	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 03:16	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 03:16	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 03:16	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 03:16	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 03:16	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 03:16	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 03:16	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 03:16	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 03:16	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 03:16	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 03:16	1
1,1-Dichloroethane	ND		1.0	0.25	ug/L			05/27/17 03:16	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 03:16	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 03:16	1
1,1-Dichloroethene	ND		1.0	0.27	ug/L			05/27/17 03:16	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 03:16	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 03:16	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 03:16	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 03:16	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 03:16	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 03:16	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 03:16	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 03:16	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 03:16	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 03:16	1
Tetrachloroethene	ND		1.0	0.30	ug/L			05/27/17 03:16	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 03:16	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 03:16	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 03:16	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 03:16	1
1,1,1-Trichloroethane	ND		1.0	0.23	ug/L			05/27/17 03:16	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 03:16	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 03:16	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 03:16	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 03:16	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 03:16	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 03:16	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 03:16	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 03:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 03:16	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 03:16	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 03:16	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 03:16	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 03:16	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 03:16	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 03:16	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 03:16	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 03:16	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
 Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-03

Lab Sample ID: 240-79876-3

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 03:16	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 03:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		61 - 138					05/27/17 03:16	1
4-Bromofluorobenzene (Surr)	109		69 - 120					05/27/17 03:16	1
Toluene-d8 (Surr)	105		73 - 120					05/27/17 03:16	1
Dibromofluoromethane (Surr)	104		69 - 124					05/27/17 03:16	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-04

Lab Sample ID: 240-79876-4

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 03:38	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 03:38	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 03:38	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 03:38	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 03:38	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 03:38	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 03:38	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 03:38	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 03:38	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 03:38	1
Chloroform	2.2		1.0	0.31	ug/L			05/27/17 03:38	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 03:38	1
1,1-Dichloroethane	7.6		1.0	0.25	ug/L			05/27/17 03:38	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 03:38	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 03:38	1
1,1-Dichloroethene	0.92		1.0	0.27	ug/L			05/27/17 03:38	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 03:38	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 03:38	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 03:38	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 03:38	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 03:38	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 03:38	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 03:38	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 03:38	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 03:38	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 03:38	1
Tetrachloroethene	0.45 J		1.0	0.30	ug/L			05/27/17 03:38	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 03:38	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 03:38	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 03:38	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 03:38	1
1,1,1-Trichloroethane	7.0		1.0	0.23	ug/L			05/27/17 03:38	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 03:38	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 03:38	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 03:38	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 03:38	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 03:38	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 03:38	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 03:38	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 03:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 03:38	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 03:38	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 03:38	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 03:38	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 03:38	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 03:38	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 03:38	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 03:38	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 03:38	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-04

Lab Sample ID: 240-79876-4

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 03:38	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 03:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		61 - 138					05/27/17 03:38	1
4-Bromofluorobenzene (Surr)	111		69 - 120					05/27/17 03:38	1
Toluene-d8 (Surr)	102		73 - 120					05/27/17 03:38	1
Dibromofluoromethane (Surr)	104		69 - 124					05/27/17 03:38	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-05

Lab Sample ID: 240-79876-5

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 04:00	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 04:00	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 04:00	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 04:00	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 04:00	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 04:00	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 04:00	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 04:00	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 04:00	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 04:00	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 04:00	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 04:00	1
1,1-Dichloroethane	ND		1.0	0.25	ug/L			05/27/17 04:00	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 04:00	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 04:00	1
1,1-Dichloroethene	ND		1.0	0.27	ug/L			05/27/17 04:00	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 04:00	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 04:00	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 04:00	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 04:00	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 04:00	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 04:00	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 04:00	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 04:00	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 04:00	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 04:00	1
Tetrachloroethene	ND		1.0	0.30	ug/L			05/27/17 04:00	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 04:00	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 04:00	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 04:00	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 04:00	1
1,1,1-Trichloroethane	ND		1.0	0.23	ug/L			05/27/17 04:00	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 04:00	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 04:00	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 04:00	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 04:00	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 04:00	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 04:00	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 04:00	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 04:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 04:00	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 04:00	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 04:00	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 04:00	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 04:00	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 04:00	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 04:00	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 04:00	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 04:00	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
 Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-05

Lab Sample ID: 240-79876-5

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 04:00	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 04:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		61 - 138					05/27/17 04:00	1
4-Bromofluorobenzene (Surr)	110		69 - 120					05/27/17 04:00	1
Toluene-d8 (Surr)	106		73 - 120					05/27/17 04:00	1
Dibromofluoromethane (Surr)	99		69 - 124					05/27/17 04:00	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-06

Lab Sample ID: 240-79876-6

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 04:22	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 04:22	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 04:22	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 04:22	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 04:22	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 04:22	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 04:22	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 04:22	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 04:22	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 04:22	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 04:22	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 04:22	1
1,1-Dichloroethane	1.3		1.0	0.25	ug/L			05/27/17 04:22	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 04:22	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 04:22	1
1,1-Dichloroethene	ND		1.0	0.27	ug/L			05/27/17 04:22	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 04:22	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 04:22	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 04:22	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 04:22	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 04:22	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 04:22	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 04:22	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 04:22	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 04:22	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 04:22	1
Tetrachloroethene	ND		1.0	0.30	ug/L			05/27/17 04:22	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 04:22	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 04:22	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 04:22	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 04:22	1
1,1,1-Trichloroethane	1.8		1.0	0.23	ug/L			05/27/17 04:22	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 04:22	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 04:22	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 04:22	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 04:22	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 04:22	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 04:22	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 04:22	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 04:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 04:22	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 04:22	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 04:22	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 04:22	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 04:22	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 04:22	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 04:22	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 04:22	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 04:22	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-06

Lab Sample ID: 240-79876-6

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 04:22	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 04:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		61 - 138		05/27/17 04:22	1
4-Bromofluorobenzene (Surr)	114		69 - 120		05/27/17 04:22	1
Toluene-d8 (Surr)	104		73 - 120		05/27/17 04:22	1
Dibromofluoromethane (Surr)	102		69 - 124		05/27/17 04:22	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-07

Lab Sample ID: 240-79876-7

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 09:32	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 09:32	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 09:32	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 09:32	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 09:32	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 09:32	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 09:32	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 09:32	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 09:32	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 09:32	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 09:32	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 09:32	1
1,1-Dichloroethane	ND		1.0	0.25	ug/L			05/27/17 09:32	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 09:32	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 09:32	1
1,1-Dichloroethene	ND		1.0	0.27	ug/L			05/27/17 09:32	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 09:32	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 09:32	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 09:32	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 09:32	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 09:32	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 09:32	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 09:32	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 09:32	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 09:32	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 09:32	1
Tetrachloroethene	ND		1.0	0.30	ug/L			05/27/17 09:32	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 09:32	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 09:32	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 09:32	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 09:32	1
1,1,1-Trichloroethane	ND		1.0	0.23	ug/L			05/27/17 09:32	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 09:32	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 09:32	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 09:32	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 09:32	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 09:32	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 09:32	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 09:32	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 09:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 09:32	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 09:32	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 09:32	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 09:32	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 09:32	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 09:32	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 09:32	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 09:32	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 09:32	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-07

Lab Sample ID: 240-79876-7

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 09:32	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 09:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		61 - 138					05/27/17 09:32	1
4-Bromofluorobenzene (Surr)	113		69 - 120					05/27/17 09:32	1
Toluene-d8 (Surr)	105		73 - 120					05/27/17 09:32	1
Dibromofluoromethane (Surr)	106		69 - 124					05/27/17 09:32	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-08

Lab Sample ID: 240-79876-8

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 04:45	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 04:45	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 04:45	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 04:45	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 04:45	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 04:45	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 04:45	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 04:45	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 04:45	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 04:45	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 04:45	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 04:45	1
1,1-Dichloroethane	ND		1.0	0.25	ug/L			05/27/17 04:45	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 04:45	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 04:45	1
1,1-Dichloroethene	ND		1.0	0.27	ug/L			05/27/17 04:45	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 04:45	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 04:45	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 04:45	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 04:45	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 04:45	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 04:45	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 04:45	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 04:45	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 04:45	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 04:45	1
Tetrachloroethene	ND		1.0	0.30	ug/L			05/27/17 04:45	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 04:45	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 04:45	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 04:45	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 04:45	1
1,1,1-Trichloroethane	ND		1.0	0.23	ug/L			05/27/17 04:45	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 04:45	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 04:45	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 04:45	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 04:45	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 04:45	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 04:45	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 04:45	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 04:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 04:45	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 04:45	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 04:45	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 04:45	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 04:45	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 04:45	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 04:45	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 04:45	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 04:45	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-08

Lab Sample ID: 240-79876-8

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 04:45	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 04:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		61 - 138		05/27/17 04:45	1
4-Bromofluorobenzene (Surr)	111		69 - 120		05/27/17 04:45	1
Toluene-d8 (Surr)	104		73 - 120		05/27/17 04:45	1
Dibromofluoromethane (Surr)	104		69 - 124		05/27/17 04:45	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-09

Lab Sample ID: 240-79876-9

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 05:07	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 05:07	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 05:07	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 05:07	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 05:07	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 05:07	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 05:07	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 05:07	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 05:07	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 05:07	1
Chloroform	1.2		1.0	0.31	ug/L			05/27/17 05:07	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 05:07	1
1,1-Dichloroethane	20		1.0	0.25	ug/L			05/27/17 05:07	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 05:07	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 05:07	1
1,1-Dichloroethene	3.7		1.0	0.27	ug/L			05/27/17 05:07	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 05:07	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 05:07	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 05:07	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 05:07	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 05:07	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 05:07	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 05:07	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 05:07	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 05:07	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 05:07	1
Tetrachloroethene	2.0		1.0	0.30	ug/L			05/27/17 05:07	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 05:07	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 05:07	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 05:07	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 05:07	1
1,1,1-Trichloroethane	17		1.0	0.23	ug/L			05/27/17 05:07	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 05:07	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 05:07	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 05:07	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 05:07	1
cis-1,2-Dichloroethene	1.1		1.0	0.30	ug/L			05/27/17 05:07	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 05:07	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 05:07	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 05:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 05:07	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 05:07	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 05:07	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 05:07	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 05:07	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 05:07	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 05:07	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 05:07	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 05:07	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
 Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-09

Lab Sample ID: 240-79876-9

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 05:07	1
Tetrahydrofuran	1.1	J	5.0	0.84	ug/L			05/27/17 05:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		61 - 138					05/27/17 05:07	1
4-Bromofluorobenzene (Surr)	112		69 - 120					05/27/17 05:07	1
Toluene-d8 (Surr)	104		73 - 120					05/27/17 05:07	1
Dibromofluoromethane (Surr)	99		69 - 124					05/27/17 05:07	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-10

Lab Sample ID: 240-79876-10

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 05:29	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 05:29	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 05:29	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 05:29	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 05:29	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 05:29	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 05:29	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 05:29	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 05:29	1
Chloroethane	0.86	J	1.0	0.41	ug/L			05/27/17 05:29	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 05:29	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 05:29	1
1,1-Dichloroethane	22		1.0	0.25	ug/L			05/27/17 05:29	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 05:29	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 05:29	1
1,1-Dichloroethene	3.6		1.0	0.27	ug/L			05/27/17 05:29	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 05:29	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 05:29	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 05:29	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 05:29	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 05:29	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 05:29	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 05:29	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 05:29	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 05:29	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 05:29	1
Tetrachloroethene	2.2		1.0	0.30	ug/L			05/27/17 05:29	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 05:29	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 05:29	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 05:29	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 05:29	1
1,1,1-Trichloroethane	17		1.0	0.23	ug/L			05/27/17 05:29	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 05:29	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 05:29	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 05:29	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 05:29	1
cis-1,2-Dichloroethene	1.2		1.0	0.30	ug/L			05/27/17 05:29	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 05:29	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 05:29	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 05:29	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 05:29	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 05:29	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 05:29	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 05:29	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 05:29	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 05:29	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 05:29	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 05:29	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 05:29	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
 Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-10

Lab Sample ID: 240-79876-10

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 05:29	1
Tetrahydrofuran	1.0	J	5.0	0.84	ug/L			05/27/17 05:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		61 - 138					05/27/17 05:29	1
4-Bromofluorobenzene (Surr)	115		69 - 120					05/27/17 05:29	1
Toluene-d8 (Surr)	106		73 - 120					05/27/17 05:29	1
Dibromofluoromethane (Surr)	104		69 - 124					05/27/17 05:29	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170519-DO-11

Lab Sample ID: 240-79876-11

Date Collected: 05/19/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 05:51	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 05:51	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 05:51	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 05:51	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 05:51	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 05:51	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 05:51	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 05:51	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 05:51	1
Chloroethane	0.65	J	1.0	0.41	ug/L			05/27/17 05:51	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 05:51	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 05:51	1
1,1-Dichloroethane	14		1.0	0.25	ug/L			05/27/17 05:51	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 05:51	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 05:51	1
1,1-Dichloroethene	2.0		1.0	0.27	ug/L			05/27/17 05:51	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 05:51	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 05:51	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 05:51	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 05:51	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 05:51	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 05:51	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 05:51	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 05:51	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 05:51	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 05:51	1
Tetrachloroethene	1.2		1.0	0.30	ug/L			05/27/17 05:51	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 05:51	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 05:51	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 05:51	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 05:51	1
1,1,1-Trichloroethane	10		1.0	0.23	ug/L			05/27/17 05:51	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 05:51	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 05:51	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 05:51	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 05:51	1
cis-1,2-Dichloroethene	0.61	J	1.0	0.30	ug/L			05/27/17 05:51	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 05:51	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 05:51	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 05:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 05:51	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 05:51	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 05:51	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 05:51	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 05:51	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 05:51	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 05:51	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 05:51	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 05:51	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
 Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170519-DO-11

Lab Sample ID: 240-79876-11

Date Collected: 05/19/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 05:51	1
Tetrahydrofuran	0.86	J	5.0	0.84	ug/L			05/27/17 05:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		61 - 138					05/27/17 05:51	1
4-Bromofluorobenzene (Surr)	113		69 - 120					05/27/17 05:51	1
Toluene-d8 (Surr)	104		73 - 120					05/27/17 05:51	1
Dibromofluoromethane (Surr)	105		69 - 124					05/27/17 05:51	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170519-DO-12

Lab Sample ID: 240-79876-12

Date Collected: 05/19/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 06:13	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 06:13	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 06:13	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 06:13	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 06:13	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 06:13	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 06:13	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 06:13	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 06:13	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 06:13	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 06:13	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 06:13	1
1,1-Dichloroethane	2.5		1.0	0.25	ug/L			05/27/17 06:13	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 06:13	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 06:13	1
1,1-Dichloroethene	1.4		1.0	0.27	ug/L			05/27/17 06:13	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 06:13	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 06:13	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 06:13	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 06:13	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 06:13	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 06:13	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 06:13	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 06:13	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 06:13	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 06:13	1
Tetrachloroethene	ND		1.0	0.30	ug/L			05/27/17 06:13	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 06:13	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 06:13	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 06:13	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 06:13	1
1,1,1-Trichloroethane	2.2		1.0	0.23	ug/L			05/27/17 06:13	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 06:13	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 06:13	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 06:13	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 06:13	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 06:13	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 06:13	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 06:13	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 06:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 06:13	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 06:13	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 06:13	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 06:13	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 06:13	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 06:13	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 06:13	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 06:13	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 06:13	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170519-DO-12

Lab Sample ID: 240-79876-12

Date Collected: 05/19/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 06:13	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 06:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		61 - 138					05/27/17 06:13	1
4-Bromofluorobenzene (Surr)	111		69 - 120					05/27/17 06:13	1
Toluene-d8 (Surr)	105		73 - 120					05/27/17 06:13	1
Dibromofluoromethane (Surr)	105		69 - 124					05/27/17 06:13	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170519-DO-13

Lab Sample ID: 240-79876-13

Date Collected: 05/19/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 06:35	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 06:35	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 06:35	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 06:35	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 06:35	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 06:35	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 06:35	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 06:35	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 06:35	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 06:35	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 06:35	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 06:35	1
1,1-Dichloroethane	3.8		1.0	0.25	ug/L			05/27/17 06:35	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 06:35	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 06:35	1
1,1-Dichloroethene	6.8		1.0	0.27	ug/L			05/27/17 06:35	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 06:35	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 06:35	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 06:35	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 06:35	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 06:35	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 06:35	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 06:35	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 06:35	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 06:35	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 06:35	1
Tetrachloroethene	ND		1.0	0.30	ug/L			05/27/17 06:35	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 06:35	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 06:35	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 06:35	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 06:35	1
1,1,1-Trichloroethane	31		1.0	0.23	ug/L			05/27/17 06:35	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 06:35	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 06:35	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 06:35	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 06:35	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 06:35	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 06:35	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 06:35	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 06:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 06:35	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 06:35	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 06:35	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 06:35	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 06:35	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 06:35	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 06:35	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 06:35	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 06:35	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170519-DO-13

Lab Sample ID: 240-79876-13

Date Collected: 05/19/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 06:35	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 06:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		61 - 138					05/27/17 06:35	1
4-Bromofluorobenzene (Surr)	110		69 - 120					05/27/17 06:35	1
Toluene-d8 (Surr)	103		73 - 120					05/27/17 06:35	1
Dibromofluoromethane (Surr)	106		69 - 124					05/27/17 06:35	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-79876-14

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 06:57	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 06:57	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 06:57	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 06:57	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 06:57	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 06:57	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 06:57	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 06:57	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 06:57	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 06:57	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 06:57	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 06:57	1
1,1-Dichloroethane	ND		1.0	0.25	ug/L			05/27/17 06:57	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 06:57	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 06:57	1
1,1-Dichloroethene	ND		1.0	0.27	ug/L			05/27/17 06:57	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 06:57	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 06:57	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 06:57	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 06:57	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 06:57	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 06:57	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 06:57	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 06:57	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 06:57	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 06:57	1
Tetrachloroethene	ND		1.0	0.30	ug/L			05/27/17 06:57	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 06:57	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 06:57	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 06:57	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 06:57	1
1,1,1-Trichloroethane	ND		1.0	0.23	ug/L			05/27/17 06:57	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 06:57	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 06:57	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 06:57	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 06:57	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 06:57	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 06:57	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 06:57	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 06:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 06:57	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 06:57	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 06:57	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 06:57	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 06:57	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 06:57	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 06:57	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 06:57	1
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 06:57	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
 Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-79876-14

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 06:57	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 06:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		61 - 138					05/27/17 06:57	1
4-Bromofluorobenzene (Surr)	112		69 - 120					05/27/17 06:57	1
Toluene-d8 (Surr)	108		73 - 120					05/27/17 06:57	1
Dibromofluoromethane (Surr)	101		69 - 124					05/27/17 06:57	1



Surrogate Summary

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		12DCE (61-138)	BFB (69-120)	TOL (73-120)	DBFM (69-124)
240-79876-1	W-170518-DO-01	110	111	104	102
240-79876-2	W-170518-DO-02	114	111	105	106
240-79876-3	W-170518-DO-03	116	109	105	104
240-79876-4	W-170518-DO-04	114	111	102	104
240-79876-5	W-170518-DO-05	107	110	106	99
240-79876-6	W-170518-DO-06	112	114	104	102
240-79876-7	W-170518-DO-07	117	113	105	106
240-79876-7 MS	W-170518-DO-07	111	121 X	109	103
240-79876-7 MSD	W-170518-DO-07	119	117	104	104
240-79876-8	W-170518-DO-08	111	111	104	104
240-79876-9	W-170518-DO-09	111	112	104	99
240-79876-10	W-170518-DO-10	110	115	106	104
240-79876-11	W-170519-DO-11	115	113	104	105
240-79876-12	W-170519-DO-12	115	111	105	105
240-79876-13	W-170519-DO-13	116	110	103	106
240-79876-14	TRIP BLANK	110	112	108	101
LCS 240-280660/4	Lab Control Sample	114	117	106	99
MB 240-280660/7	Method Blank	110	114	107	106

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

QC Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-280660/7

Matrix: Water

Analysis Batch: 280660

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.8	ug/L			05/27/17 02:10	1
Benzene	ND		1.0	0.28	ug/L			05/27/17 02:10	1
Dichlorobromomethane	ND		1.0	0.30	ug/L			05/27/17 02:10	1
Bromoform	ND		1.0	0.43	ug/L			05/27/17 02:10	1
Bromomethane	ND		1.0	0.42	ug/L			05/27/17 02:10	1
2-Butanone (MEK)	ND		10	1.0	ug/L			05/27/17 02:10	1
Carbon disulfide	ND		1.0	0.34	ug/L			05/27/17 02:10	1
Carbon tetrachloride	ND		1.0	0.35	ug/L			05/27/17 02:10	1
Chlorobenzene	ND		1.0	0.32	ug/L			05/27/17 02:10	1
Chloroethane	ND		1.0	0.41	ug/L			05/27/17 02:10	1
Chloroform	ND		1.0	0.31	ug/L			05/27/17 02:10	1
Chloromethane	ND		1.0	0.43	ug/L			05/27/17 02:10	1
1,1-Dichloroethane	ND		1.0	0.25	ug/L			05/27/17 02:10	1
1,2,3-Trichlorobenzene	ND		1.0	0.35	ug/L			05/27/17 02:10	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/27/17 02:10	1
1,1-Dichloroethene	ND		1.0	0.27	ug/L			05/27/17 02:10	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			05/27/17 02:10	1
1,2,4-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 02:10	1
cis-1,3-Dichloropropene	ND		1.0	0.26	ug/L			05/27/17 02:10	1
trans-1,3-Dichloropropene	ND		1.0	0.31	ug/L			05/27/17 02:10	1
Ethylbenzene	ND		1.0	0.26	ug/L			05/27/17 02:10	1
2-Hexanone	ND		10	1.2	ug/L			05/27/17 02:10	1
Methylene Chloride	ND		1.0	0.53	ug/L			05/27/17 02:10	1
4-Methyl-2-pentanone (MIBK)	ND		10	0.71	ug/L			05/27/17 02:10	1
Styrene	ND		1.0	0.23	ug/L			05/27/17 02:10	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.32	ug/L			05/27/17 02:10	1
Tetrachloroethene	ND		1.0	0.30	ug/L			05/27/17 02:10	1
Toluene	ND		1.0	0.23	ug/L			05/27/17 02:10	1
Trichloroethene	ND		1.0	0.33	ug/L			05/27/17 02:10	1
1,3,5-Trimethylbenzene	ND		1.0	0.24	ug/L			05/27/17 02:10	1
Vinyl chloride	ND		1.0	0.45	ug/L			05/27/17 02:10	1
1,1,1-Trichloroethane	ND		1.0	0.23	ug/L			05/27/17 02:10	1
1,1,2-Trichloroethane	ND		1.0	0.34	ug/L			05/27/17 02:10	1
1,2-Dibromo-3-Chloropropane	ND		2.0	0.47	ug/L			05/27/17 02:10	1
Ethylene Dibromide	ND		1.0	0.23	ug/L			05/27/17 02:10	1
Dichlorodifluoromethane	ND		1.0	0.50	ug/L			05/27/17 02:10	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			05/27/17 02:10	1
trans-1,2-Dichloroethene	ND		1.0	0.29	ug/L			05/27/17 02:10	1
Isopropylbenzene	ND		1.0	0.21	ug/L			05/27/17 02:10	1
Methyl tert-butyl ether	ND		1.0	0.27	ug/L			05/27/17 02:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.41	ug/L			05/27/17 02:10	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			05/27/17 02:10	1
1,2-Dichlorobenzene	ND		1.0	0.26	ug/L			05/27/17 02:10	1
1,3-Dichlorobenzene	ND		1.0	0.32	ug/L			05/27/17 02:10	1
1,4-Dichlorobenzene	ND		1.0	0.23	ug/L			05/27/17 02:10	1
Trichlorofluoromethane	ND		1.0	0.50	ug/L			05/27/17 02:10	1
Chlorodibromomethane	ND		1.0	0.25	ug/L			05/27/17 02:10	1
Bromochloromethane	ND		1.0	0.47	ug/L			05/27/17 02:10	1

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-280660/7
Matrix: Water
Analysis Batch: 280660

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	LOD	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	ND		2.0	0.24	ug/L			05/27/17 02:10	1
o-Xylene	ND		1.0	0.28	ug/L			05/27/17 02:10	1
Tetrahydrofuran	ND		5.0	0.84	ug/L			05/27/17 02:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		61 - 138		05/27/17 02:10	1
4-Bromofluorobenzene (Surr)	114		69 - 120		05/27/17 02:10	1
Toluene-d8 (Surr)	107		73 - 120		05/27/17 02:10	1
Dibromofluoromethane (Surr)	106		69 - 124		05/27/17 02:10	1

Lab Sample ID: LCS 240-280660/4
Matrix: Water
Analysis Batch: 280660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	11.8		ug/L		59	35 - 131
Benzene	10.0	10.5		ug/L		105	79 - 120
Dichlorobromomethane	10.0	11.2		ug/L		112	79 - 125
Bromoform	10.0	9.82		ug/L		98	55 - 145
Bromomethane	10.0	7.79		ug/L		78	17 - 158
2-Butanone (MEK)	20.0	18.8		ug/L		94	43 - 149
Carbon disulfide	10.0	10.5		ug/L		105	49 - 141
Carbon tetrachloride	10.0	9.63		ug/L		96	55 - 171
Chlorobenzene	10.0	9.51		ug/L		95	80 - 120
Chloroethane	10.0	5.78		ug/L		58	10 - 149
Chloroform	10.0	10.6		ug/L		106	80 - 120
Chloromethane	10.0	10.7		ug/L		107	59 - 124
1,1-Dichloroethane	10.0	10.8		ug/L		108	74 - 120
1,2,3-Trichlorobenzene	10.0	10.0		ug/L		100	31 - 144
1,2-Dichloroethane	10.0	11.2		ug/L		112	68 - 133
1,1-Dichloroethene	10.0	9.34		ug/L		93	65 - 127
1,2-Dichloropropane	10.0	11.0		ug/L		110	78 - 127
1,2,4-Trimethylbenzene	10.0	10.7		ug/L		107	80 - 120
cis-1,3-Dichloropropene	10.0	10.9		ug/L		109	75 - 120
trans-1,3-Dichloropropene	10.0	10.3		ug/L		103	67 - 120
Ethylbenzene	10.0	9.20		ug/L		92	80 - 120
2-Hexanone	20.0	21.2		ug/L		106	28 - 169
Methylene Chloride	10.0	10.1		ug/L		101	64 - 140
4-Methyl-2-pentanone (MIBK)	20.0	23.4		ug/L		117	53 - 144
Styrene	10.0	9.97		ug/L		100	80 - 121
1,1,2,2-Tetrachloroethane	10.0	11.5		ug/L		115	58 - 122
Tetrachloroethene	10.0	8.65		ug/L		86	80 - 122
Toluene	10.0	9.92		ug/L		99	78 - 120
Trichloroethene	10.0	8.61		ug/L		86	76 - 124
1,3,5-Trimethylbenzene	10.0	11.0		ug/L		110	79 - 120
Vinyl chloride	10.0	9.24		ug/L		92	65 - 124
1,1,1-Trichloroethane	10.0	10.2		ug/L		102	64 - 147
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	76 - 121

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-280660/4

Matrix: Water

Analysis Batch: 280660

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromo-3-Chloropropane	10.0	10.6		ug/L		106	50 - 130
Ethylene Dibromide	10.0	10.3		ug/L		103	80 - 120
Dichlorodifluoromethane	10.0	7.96		ug/L		80	42 - 141
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	77 - 120
trans-1,2-Dichloroethene	10.0	10.5		ug/L		105	74 - 124
Isopropylbenzene	10.0	9.81		ug/L		98	80 - 128
Methyl tert-butyl ether	10.0	11.8		ug/L		118	73 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.92		ug/L		99	65 - 144
1,2,4-Trichlorobenzene	10.0	10.1		ug/L		101	34 - 141
1,2-Dichlorobenzene	10.0	9.95		ug/L		100	80 - 120
1,3-Dichlorobenzene	10.0	9.48		ug/L		95	80 - 120
1,4-Dichlorobenzene	10.0	9.69		ug/L		97	80 - 120
Trichlorofluoromethane	10.0	12.1		ug/L		121	27 - 176
Chlorodibromomethane	10.0	9.80		ug/L		98	64 - 129
Bromochloromethane	10.0	9.77		ug/L		98	78 - 120
m-Xylene & p-Xylene	10.0	9.81		ug/L		98	80 - 120
o-Xylene	10.0	10.1		ug/L		101	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	114		61 - 138
4-Bromofluorobenzene (Surr)	117		69 - 120
Toluene-d8 (Surr)	106		73 - 120
Dibromofluoromethane (Surr)	99		69 - 124

Lab Sample ID: 240-79876-7 MS

Matrix: Water

Analysis Batch: 280660

Client Sample ID: W-170518-DO-07

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		20.0	11.9		ug/L		60	19 - 133
Benzene	ND		10.0	9.34		ug/L		93	69 - 127
Dichlorobromomethane	ND		10.0	9.98		ug/L		100	75 - 128
Bromoform	ND		10.0	8.71		ug/L		87	61 - 135
Bromomethane	ND		10.0	8.48		ug/L		85	10 - 148
2-Butanone (MEK)	ND		20.0	16.7		ug/L		84	34 - 153
Carbon disulfide	ND		10.0	8.96		ug/L		90	46 - 143
Carbon tetrachloride	ND		10.0	8.18		ug/L		82	53 - 175
Chlorobenzene	ND		10.0	8.33		ug/L		83	76 - 120
Chloroethane	ND		10.0	6.51		ug/L		65	10 - 141
Chloroform	ND		10.0	9.82		ug/L		98	74 - 125
Chloromethane	ND		10.0	10.2		ug/L		102	34 - 127
1,1-Dichloroethane	ND		10.0	9.81		ug/L		98	69 - 122
1,2,3-Trichlorobenzene	ND		10.0	8.14		ug/L		81	40 - 139
1,2-Dichloroethane	ND		10.0	10.5		ug/L		105	64 - 138
1,1-Dichloroethene	ND		10.0	8.37		ug/L		84	62 - 127
1,2-Dichloropropane	ND		10.0	9.78		ug/L		98	72 - 131
1,2,4-Trimethylbenzene	ND		10.0	8.89		ug/L		89	64 - 120

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-79876-7 MS

Matrix: Water

Analysis Batch: 280660

Client Sample ID: W-170518-DO-07

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	ND		10.0	9.07		ug/L		91	68 - 120
trans-1,3-Dichloropropene	ND		10.0	9.01		ug/L		90	59 - 120
Ethylbenzene	ND		10.0	8.03		ug/L		80	72 - 121
2-Hexanone	ND		20.0	19.0		ug/L		95	21 - 184
Methylene Chloride	ND		10.0	9.25		ug/L		92	52 - 137
4-Methyl-2-pentanone (MIBK)	ND		20.0	20.6		ug/L		103	53 - 147
Styrene	ND		10.0	9.05		ug/L		90	74 - 125
1,1,2,2-Tetrachloroethane	ND		10.0	10.5		ug/L		105	51 - 123
Tetrachloroethene	ND		10.0	6.90		ug/L		69	69 - 126
Toluene	ND		10.0	8.77		ug/L		88	69 - 125
Trichloroethene	ND		10.0	7.49		ug/L		75	68 - 129
1,3,5-Trimethylbenzene	ND		10.0	8.87		ug/L		89	67 - 120
Vinyl chloride	ND		10.0	8.29		ug/L		83	55 - 123
1,1,1-Trichloroethane	ND		10.0	8.89		ug/L		89	57 - 156
1,1,2-Trichloroethane	ND		10.0	9.83		ug/L		98	68 - 127
1,2-Dibromo-3-Chloropropane	ND		10.0	9.52		ug/L		95	48 - 130
Ethylene Dibromide	ND		10.0	9.33		ug/L		93	73 - 121
Dichlorodifluoromethane	ND		10.0	6.51		ug/L		65	45 - 130
cis-1,2-Dichloroethene	ND		10.0	9.15		ug/L		92	69 - 127
trans-1,2-Dichloroethene	ND		10.0	8.99		ug/L		90	66 - 131
Isopropylbenzene	ND		10.0	7.99		ug/L		80	70 - 132
Methyl tert-butyl ether	ND		10.0	11.1		ug/L		111	67 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	8.15		ug/L		81	58 - 137
1,2,4-Trichlorobenzene	ND		10.0	7.72		ug/L		77	26 - 138
1,2-Dichlorobenzene	ND		10.0	8.22		ug/L		82	70 - 120
1,3-Dichlorobenzene	ND		10.0	7.73		ug/L		77	71 - 120
1,4-Dichlorobenzene	ND		10.0	8.04		ug/L		80	72 - 120
Trichlorofluoromethane	ND		10.0	9.86		ug/L		99	28 - 172
Chlorodibromomethane	ND		10.0	8.88		ug/L		89	62 - 131
Bromochloromethane	ND		10.0	8.77		ug/L		88	66 - 132
m-Xylene & p-Xylene	ND		10.0	8.35		ug/L		84	70 - 121
o-Xylene	ND		10.0	8.22		ug/L		82	71 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		61 - 138
4-Bromofluorobenzene (Surr)	121	X	69 - 120
Toluene-d8 (Surr)	109		73 - 120
Dibromofluoromethane (Surr)	103		69 - 124

Lab Sample ID: 240-79876-7 MSD

Matrix: Water

Analysis Batch: 280660

Client Sample ID: W-170518-DO-07

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		20.0	12.2		ug/L		61	19 - 133	2	35
Benzene	ND		10.0	9.98		ug/L		100	69 - 127	7	10
Dichlorobromomethane	ND		10.0	10.6		ug/L		106	75 - 128	6	13

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-79876-7 MSD

Matrix: Water

Analysis Batch: 280660

Client Sample ID: W-170518-DO-07

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromoform	ND		10.0	9.14		ug/L		91	61 - 135	5	13
Bromomethane	ND		10.0	7.85		ug/L		78	10 - 148	8	35
2-Butanone (MEK)	ND		20.0	15.6		ug/L		78	34 - 153	7	23
Carbon disulfide	ND		10.0	9.83		ug/L		98	46 - 143	9	18
Carbon tetrachloride	ND		10.0	8.75		ug/L		88	53 - 175	7	17
Chlorobenzene	ND		10.0	8.57		ug/L		86	76 - 120	3	12
Chloroethane	ND		10.0	6.09		ug/L		61	10 - 141	7	35
Chloroform	ND		10.0	10.4		ug/L		104	74 - 125	5	11
Chloromethane	ND		10.0	10.7		ug/L		107	34 - 127	5	25
1,1-Dichloroethane	ND		10.0	10.4		ug/L		104	69 - 122	6	11
1,2,3-Trichlorobenzene	ND		10.0	8.91		ug/L		89	40 - 139	9	35
1,2-Dichloroethane	ND		10.0	10.8		ug/L		108	64 - 138	3	11
1,1-Dichloroethene	ND		10.0	8.91		ug/L		89	62 - 127	6	14
1,2-Dichloropropane	ND		10.0	10.5		ug/L		105	72 - 131	7	12
1,2,4-Trimethylbenzene	ND		10.0	9.29		ug/L		93	64 - 120	4	22
cis-1,3-Dichloropropene	ND		10.0	9.56		ug/L		96	68 - 120	5	13
trans-1,3-Dichloropropene	ND		10.0	9.23		ug/L		92	59 - 120	2	14
Ethylbenzene	ND		10.0	8.11		ug/L		81	72 - 121	1	15
2-Hexanone	ND		20.0	18.7		ug/L		94	21 - 184	1	12
Methylene Chloride	ND		10.0	9.72		ug/L		97	52 - 137	5	12
4-Methyl-2-pentanone (MIBK)	ND		20.0	21.8		ug/L		109	53 - 147	6	16
Styrene	ND		10.0	8.91		ug/L		89	74 - 125	2	14
1,1,2,2-Tetrachloroethane	ND		10.0	10.9		ug/L		109	51 - 123	4	17
Tetrachloroethene	ND		10.0	7.48		ug/L		75	69 - 126	8	18
Toluene	ND		10.0	9.05		ug/L		90	69 - 125	3	14
Trichloroethene	ND		10.0	7.88		ug/L		79	68 - 129	5	12
1,3,5-Trimethylbenzene	ND		10.0	9.49		ug/L		95	67 - 120	7	25
Vinyl chloride	ND		10.0	9.39		ug/L		94	55 - 123	12	12
1,1,1-Trichloroethane	ND		10.0	9.59		ug/L		96	57 - 156	8	13
1,1,2-Trichloroethane	ND		10.0	9.71		ug/L		97	68 - 127	1	11
1,2-Dibromo-3-Chloropropane	ND		10.0	10.3		ug/L		103	48 - 130	8	31
Ethylene Dibromide	ND		10.0	9.75		ug/L		97	73 - 121	4	12
Dichlorodifluoromethane	ND		10.0	7.93		ug/L		79	45 - 130	20	34
cis-1,2-Dichloroethene	ND		10.0	10.0		ug/L		100	69 - 127	9	11
trans-1,2-Dichloroethene	ND		10.0	9.64		ug/L		96	66 - 131	7	11
Isopropylbenzene	ND		10.0	8.60		ug/L		86	70 - 132	7	16
Methyl tert-butyl ether	ND		10.0	11.5		ug/L		115	67 - 125	3	12
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	9.16		ug/L		92	58 - 137	12	35
1,2,4-Trichlorobenzene	ND		10.0	8.56		ug/L		86	26 - 138	10	35
1,2-Dichlorobenzene	ND		10.0	8.67		ug/L		87	70 - 120	5	19
1,3-Dichlorobenzene	ND		10.0	8.30		ug/L		83	71 - 120	7	18
1,4-Dichlorobenzene	ND		10.0	8.40		ug/L		84	72 - 120	4	17
Trichlorofluoromethane	ND		10.0	11.1		ug/L		111	28 - 172	12	26
Chlorodibromomethane	ND		10.0	9.31		ug/L		93	62 - 131	5	15
Bromochloromethane	ND		10.0	9.60		ug/L		96	66 - 132	9	15
m-Xylene & p-Xylene	ND		10.0	8.35		ug/L		83	70 - 121	0	15
o-Xylene	ND		10.0	9.00		ug/L		90	71 - 125	9	15

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-79876-7 MSD

Matrix: Water

Analysis Batch: 280660

Client Sample ID: W-170518-DO-07

Prep Type: Total/NA

Surrogate	MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	119		61 - 138
4-Bromofluorobenzene (Surr)	117		69 - 120
Toluene-d8 (Surr)	104		73 - 120
Dibromofluoromethane (Surr)	104		69 - 124

- 1
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- 14

QC Association Summary

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

GC/MS VOA

Analysis Batch: 280660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-79876-1	W-170518-DO-01	Total/NA	Water	8260B	
240-79876-2	W-170518-DO-02	Total/NA	Water	8260B	
240-79876-3	W-170518-DO-03	Total/NA	Water	8260B	
240-79876-4	W-170518-DO-04	Total/NA	Water	8260B	
240-79876-5	W-170518-DO-05	Total/NA	Water	8260B	
240-79876-6	W-170518-DO-06	Total/NA	Water	8260B	
240-79876-7	W-170518-DO-07	Total/NA	Water	8260B	
240-79876-8	W-170518-DO-08	Total/NA	Water	8260B	
240-79876-9	W-170518-DO-09	Total/NA	Water	8260B	
240-79876-10	W-170518-DO-10	Total/NA	Water	8260B	
240-79876-11	W-170519-DO-11	Total/NA	Water	8260B	
240-79876-12	W-170519-DO-12	Total/NA	Water	8260B	
240-79876-13	W-170519-DO-13	Total/NA	Water	8260B	
240-79876-14	TRIP BLANK	Total/NA	Water	8260B	
MB 240-280660/7	Method Blank	Total/NA	Water	8260B	
LCS 240-280660/4	Lab Control Sample	Total/NA	Water	8260B	
240-79876-7 MS	W-170518-DO-07	Total/NA	Water	8260B	
240-79876-7 MSD	W-170518-DO-07	Total/NA	Water	8260B	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-01

Date Collected: 05/18/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 02:33	LRW	TAL CAN

Client Sample ID: W-170518-DO-02

Date Collected: 05/18/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 02:54	LRW	TAL CAN

Client Sample ID: W-170518-DO-03

Date Collected: 05/18/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 03:16	LRW	TAL CAN

Client Sample ID: W-170518-DO-04

Date Collected: 05/18/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 03:38	LRW	TAL CAN

Client Sample ID: W-170518-DO-05

Date Collected: 05/18/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 04:00	LRW	TAL CAN

Client Sample ID: W-170518-DO-06

Date Collected: 05/18/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 04:22	LRW	TAL CAN

TestAmerica Canton

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170518-DO-07

Date Collected: 05/18/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 09:32	LRW	TAL CAN

Client Sample ID: W-170518-DO-08

Date Collected: 05/18/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 04:45	LRW	TAL CAN

Client Sample ID: W-170518-DO-09

Date Collected: 05/18/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 05:07	LRW	TAL CAN

Client Sample ID: W-170518-DO-10

Date Collected: 05/18/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 05:29	LRW	TAL CAN

Client Sample ID: W-170519-DO-11

Date Collected: 05/19/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 05:51	LRW	TAL CAN

Client Sample ID: W-170519-DO-12

Date Collected: 05/19/17 00:00

Date Received: 05/23/17 09:30

Lab Sample ID: 240-79876-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 06:13	LRW	TAL CAN

TestAmerica Canton

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Client Sample ID: W-170519-DO-13

Lab Sample ID: 240-79876-13

Date Collected: 05/19/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 06:35	LRW	TAL CAN

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-79876-14

Date Collected: 05/18/17 00:00

Matrix: Water

Date Received: 05/23/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	280660	05/27/17 06:57	LRW	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 48038, New Richmond Landfill

TestAmerica Job ID: 240-79876-1

Laboratory: TestAmerica Canton

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999518190	08-31-17 *

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane

* Accreditation/Certification renewal pending - accreditation/certification considered valid.





CONESTOGA-ROVERS & ASSOCIATES

4.0/4.0

CHAIN OF CUSTODY RECORD

1801 Old Highway 8 Northwest, Suite 114

St. Paul, Minnesota 55112 United States

Phone: (651) 639-0913

Fax: (651) 639-0923

COC NO.: **SP-02090**

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 048038				Laboratory Name: TEST AMERICA				Lab Location: North Canton OH				SSOW ID:									
Project Name: New Richmond Landfill				Lab Contact:				Lab Quote No:				Cooler No:									
Project Location: New Richmond, WI				SAMPLE TYPE				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)									
Chemistry Contact: G. Andersen				Matrix Code (see back of COC)	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	MS/MSD Request	Carrier:					
Sampler(s): D. Ojinaga																Airbill No:				Date Shipped:	
Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)			DATE (mm/dd/yy)	TIME (hh:mm)											COMMENTS/ SPECIAL INSTRUCTIONS:					
1	W-170518-DO-01			05/18/17		WG	X							3	X	 240-79876 Chain of Custody					
2	W-170518-DO-02					WG	X							3	X						
3	W-170518-DO-03					WG	X							3	X						
	W-170518-DO-04					WG	X							3	X						
	W-170518-DO-05					WG	X							3	X						
	W-170518-DO-06					WG	X							3	X						
	W-170518-DO-07					WG	X							9	X		X				
8	W-170518-DO-08					WG	X							3	X						
9	W-170518-DO-09					WG	X							3	X						
10	W-170518-DO-10					WG	X							3	X						
11	W-170518-DO-11			05/19/17		WG	X							3	X						
12	W-170518-DO-12					WG	X							3	X						
13	W-170519-DO-13					WG	X							3	X						
14	TRIP BLANK													1	X						
TAT Required in business days (use separate COCs for different TATs): <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> Other: STD						Total Number of Containers: 46				Notes/ Special Requirements: All Samples in Cooler must be on COC											
RELINQUISHED BY		COMPANY		DATE		TIME		RECEIVED BY		COMPANY		DATE		TIME							
1. Daniel Ojinaga		GHA		5-22-17		0930		1. POP		TAL		5-23-17		930							
								2.													
								3.													

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE - Fully Executed Copy (CRA)

YELLOW - Receiving Laboratory Copy

PINK - Shipper

GOLDENROD - Sampling Crew

CRA Form: COC-10A (20110804)



TestAmerica Canton Sample Receipt Form/Narrative

Login # : 79876

Canton Facility

Client CRA Site Name

Cooler unpacked by:

Cooler Received on 5-23-17 Opened on 5-23-17

P&P

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt... IR GUN# IR-8 (CF -0.4 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C... IR GUN #36 (CF +0°C) Observed Cooler Temp. 4.0 °C Corrected Cooler Temp. 4.0 °C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity Yes No
-Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
-Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
If yes, Questions 11-15 have been checked at the originating laboratory.
11. Were sample(s) at the correct pH upon receipt? Yes No CNA pH Strip Lot# HC697954
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B6030301UB Yes No
15. Was a LL Hg or Me Hg trip blank present? Yes No
Contacted PM Date by via Verbal Voice Mail Other

Concerning

Samples processed by:

16. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Blank lines for Chain of Custody and Sample Discrepancies.

17. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

18. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):



Memorandum

December 7, 2017

To: Ryan Aamot, GHD Ref. No.: 048038-70-01

From:  Grant Anderson/sb/30 Tel: 651-639-0913

**Subject: Analytical Results and Reduced Validation
Groundwater and Residential Well Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

1. Introduction

This document details a reduced validation of analytical results for groundwater and residential well samples collected at the New Richmond Landfill Site during October and November 2017. Samples were submitted to TestAmerica Laboratories, Inc. (TestAmerica), located in University Park, Illinois. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD Services Inc. (GHD) report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, recovery data from surrogate spikes, laboratory control samples (LCS), matrix spikes (MS), and field QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

- i) "Quality Assurance Project Plan (QAPP), New Richmond Landfill, WDNR License #2492"; April 2008, Conestoga-Rovers & Associates, Report 7
- ii) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," October 1999, United States Environmental Protection Agency (USEPA) 540/R 99/008

Item ii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria and sample preservation requirements for the analyses are summarized in Table 3. The sample chain of custody document and analytical report were used to determine sample holding times. All samples were prepared and analyzed within the required holding time.



All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

Laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile organic compound (VOC) determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries met the above criteria.

5. Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS contained all compounds of interest. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.



MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits or yielded recoveries outside of the control limits that did not require qualification, demonstrating acceptable analytical accuracy and precision.

7. Field QA/QC Samples

The field QA/QC consisted of a trip blank sample, two rinsate blank samples, and two field duplicate sample sets.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, a trip blank sample was submitted to the laboratory for VOC analysis. All results were non-detect for the compounds of interest.

Rinsate Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site and cleanliness of sample containers, two rinsate blanks were submitted for analysis, as identified in Table 1. Acetone and methylene chloride were detected in the rinsate blanks. Acetone was not detected in any associated samples. Table 4 lists the methylene chloride detection. Associated sample data are qualified as noted in the table.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, two field duplicate sample sets were collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value for water samples.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL were qualified as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the RL in Table 2.



9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Table 1

**Sample Collection and Analysis Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters	Comments
W-171030-RA-01	MW15A	water	10/30/2017	11:50	VOC	
W-171030-RA-02	MW15A	water	10/30/2017	11:52	VOC	duplicate (RA-01)
W-171030-RA-03	MW11A	water	10/30/2017	12:20	VOC	
W-171030-RA-04	MW12A	water	10/30/2017	13:00	VOC	
W-171030-RA-05	MW6	water	10/30/2017	13:54	VOC	
W-171030-RA-06	MW1	water	10/30/2017	14:30	VOC	
W-171031-RA-07	MW14	water	10/31/2017	10:07	VOC	
W-171031-RA-08	MW14	water	10/31/2017	10:08	VOC	duplicate (RA-07)
W-171031-RA-09	MW13	water	10/31/2017	11:06	VOC	MS/MSD
W-171031-RA-10	MW9	water	10/31/2017	11:30	VOC	rinsate blank
W-171031-RA-11	MW9	water	10/31/2017	11:49	VOC	
W-171031-RA-12	2055 Cty Rd C	water	10/31/2017	13:55	VOC	
W-171031-RA-13	MW18	water	10/31/2017	13:56	VOC	
W-171031-RA-14	MW19	water	10/31/2017	14:46	VOC	
W-171101-RA-15	MW19A	water	11/01/2017	09:38	VOC	
W-171101-RA-16	MW17	water	11/01/2017	10:05	VOC	
W-171101-RA-17	MW17A	water	11/01/2017	10:25	VOC	
W-171101-RA-18	MW3	water	11/01/2017	10:50	VOC	rinsate blank
W-171101-RA-19	MW3	water	11/01/2017	11:10	VOC	
W-171101-RA-20	MW2A	water	11/01/2017	12:10	VOC	
W-171101-RA-21	MW2R	water	11/01/2017	12:30	VOC	
W-171101-RA-22	MW2B	water	11/01/2017	12:35	VOC	
W-171101-RA-23	MW1B	water	11/01/2017	13:00	VOC	
W-171101-RA-24	MW1A	water	11/01/2017	13:15	VOC	
W-171101-RA-25	MW16A	water	11/01/2017	13:40	VOC	
W-171101-RA-26	MW16	water	11/01/2017	14:00	VOC	
W-171101-RA-27	MW10	water	11/01/2017	14:20	VOC	
W-171101-RA-28	MW10A	water	11/01/2017	14:25	VOC	
Trip Blank	Lab	water	11/01/2017	00:00	VOC	Trip Blank

Notes:

VOC - Volatile organic compounds

MS/MSD - Matrix spike/Matrix spike duplicate

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Location ID:	2055 Cty Rd C	MW1	MW10	MW10A	MW11A	MW12A
Sample Name:	W-171031-RA-12	W-171030-RA-06	W-171101-RA-27	W-171101-RA-28	W-171030-RA-03	W-171030-RA-04
Sample Date:	10/31/2017	10/30/2017	11/01/2017	11/01/2017	10/30/2017	10/30/2017

Parameters	Unit	2055 Cty Rd C	MW1	MW10	MW10A	MW11A	MW12A
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	2.1	4.7	2.9	19	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	2.4	6.0	2.5	19	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.2	0.60 J	1.0 U	4.1	1.0 U	1.0 U
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobromomethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	2.0 U	1.8 J	2.0 U	0.70 J	2.0 U	2.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Location ID:	2055 Cty Rd C	MW1	MW10	MW10A	MW11A	MW12A
Sample Name:	W-171031-RA-12	W-171030-RA-06	W-171101-RA-27	W-171101-RA-28	W-171030-RA-03	W-171030-RA-04
Sample Date:	10/31/2017	10/30/2017	11/01/2017	11/01/2017	10/30/2017	10/30/2017

Parameters	Unit	2055 Cty Rd C	MW1	MW10	MW10A	MW11A	MW12A
Volatile Organic Compounds							
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.7	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	0.26 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	4.1	1.0 U	1.0 U
Tetrahydrofuran	µg/L	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	µg/L	0.50 U	0.50 U	1.2	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	0.50 U	0.50 U	0.50 U	0.40 J	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Location ID:	MW13	MW14	MW14	MW15A	MW15A	MW16
Sample Name:	W-171031-RA-09	W-171031-RA-07	W-171031-RA-08	W-171030-RA-01	W-171030-RA-02	W-171101-RA-26
Sample Date:	10/31/2017	10/31/2017	10/31/2017 Duplicate	10/30/2017	10/30/2017 Duplicate	11/01/2017

Parameters	Unit						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	14
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	15
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobromomethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.1 J
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Location ID:	MW13	MW14	MW14	MW15A	MW15A	MW16
Sample Name:	W-171031-RA-09	W-171031-RA-07	W-171031-RA-08	W-171030-RA-01	W-171030-RA-02	W-171101-RA-26
Sample Date:	10/31/2017	10/31/2017	10/31/2017 Duplicate	10/30/2017	10/30/2017 Duplicate	11/01/2017

Parameters	Unit	MW13	MW14	MW14	MW15A	MW15A	MW16
Volatile Organic Compounds							
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5
Tetrahydrofuran	µg/L	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrchloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Location ID:	MW16A	MW17	MW17A	MW18	MW19	MW19A
Sample Name:	W-171101-RA-25	W-171101-RA-16	W-171101-RA-17	W-171031-RA-13	W-171031-RA-14	W-171101-RA-15
Sample Date:	11/01/2017	11/01/2017	11/01/2017	10/31/2017	10/31/2017	11/01/2017

Parameters	Unit						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	1.0 U	14	13	15	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	18	13	2.6	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	3.3	2.0	4.2	1.0 U	1.0 U
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobromomethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.3	0.85 J	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Location ID:	MW16A	MW17	MW17A	MW18	MW19	MW19A
Sample Name:	W-171101-RA-25	W-171101-RA-16	W-171101-RA-17	W-171031-RA-13	W-171031-RA-14	W-171101-RA-15
Sample Date:	11/01/2017	11/01/2017	11/01/2017	10/31/2017	10/31/2017	11/01/2017

Parameters	Unit	MW16A	MW17	MW17A	MW18	MW19	MW19A
Volatile Organic Compounds							
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	5.0 U	23 U	23 U	23 U	23 U	22 U
o-Xylene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	2.2	1.8	1.0 U	1.0 U	1.0 U
Tetrahydrofuran	µg/L	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Location ID:	MW1A	MW1B	MW2A	MW2B	MW2R	MW3
Sample Name:	W-171101-RA-24	W-171101-RA-23	W-171101-RA-20	W-171101-RA-22	W-171101-RA-21	W-171101-RA-19
Sample Date:	11/01/2017	11/01/2017	11/01/2017	11/01/2017	11/01/2017	11/01/2017

Parameters	Unit	MW1A	MW1B	MW2A	MW2B	MW2R	MW3
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	µg/L	15	16	5.0 U	5.0 U	14	5.0 U
Benzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobromomethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	1.1 J	2.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Location ID:	MW1A	MW1B	MW2A	MW2B	MW2R	MW3
Sample Name:	W-171101-RA-24	W-171101-RA-23	W-171101-RA-20	W-171101-RA-22	W-171101-RA-21	W-171101-RA-19
Sample Date:	11/01/2017	11/01/2017	11/01/2017	11/01/2017	11/01/2017	11/01/2017

Parameters	Unit	MW1A	MW1B	MW2A	MW2B	MW2R	MW3
Volatile Organic Compounds							
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	5.0 U	5.0 U	23 U	5.0 U	5.0 U	21 U
o-Xylene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrahydrofuran	µg/L	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrchloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Location ID:	MW3	MW6	MW9	MW9
Sample Name:	W-171101-RA-18	W-171030-RA-05	W-171031-RA-11	W-171031-RA-10
Sample Date:	11/01/2017	10/30/2017	10/31/2017	10/31/2017

Parameters	Unit				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	7.2	1.0 U
1,1,1,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	7.9	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.6	1.0 U
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	µg/L	6.9	5.0 U	5.0 U	5.2
Benzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	µg/L	2.0 U	2.0 U	2.0 U	2.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobromomethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	1.2 J	2.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Location ID:	MW3	MW6	MW9	MW9
Sample Name:	W-171101-RA-18	W-171030-RA-05	W-171031-RA-11	W-171031-RA-10
Sample Date:	11/01/2017	10/30/2017	10/31/2017	10/31/2017

Parameters	Unit				
Volatile Organic Compounds					
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	0.60 J	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U
Ethylbenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	22	5.0 U	5.0 U	5.0 U
o-Xylene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.4	1.0 U
Tetrahydrofuran	µg/L	10 U	10 U	10 U	10 U
Toluene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrchloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.50 U	0.50 U	0.50 U	0.50 U

Note:

U - Not detected at the associated reporting limit

J - Estimated concentration

Table 3

**Analytical Methods and Holding Times
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Volatile Organic Compounds (VOCs)	SW-846 8260B	Water	-	14

Notes:

Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 4

**Qualified Sample Data Due to Analyte Concentrations in the Rinse Blanks
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
October and November 2017**

Parameter	Rinse Blank ID	Blank Date (dd/mm/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
VOC	W-171101-RA-18	11/1/2017	Methylene chloride	19	W-171031-RA-13	23	23 U	ug/L
					W-171031-RA-14	23	23 U	ug/L
					W-171101-RA-15	22	22 U	ug/L
					W-171101-RA-16	23	23 U	ug/L
					W-171101-RA-17	23	23 U	ug/L
					W-171101-RA-19	21	21 U	ug/L
					W-171101-RA-20	23	23 U	ug/L

Notes:

U - Not detected at the associated reporting limit

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-136659-1
Client Project/Site: New Richmond LF 048038

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson



Authorized for release by:
11/16/2017 4:12:41 PM

Richard Wright, Senior Project Manager
(708)534-5200
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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- 2
- 3
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- 5
- 6
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- 8
- 9
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- 11
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- 13
- 14
- 15



Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Detection Summary	4
Method Summary	8
Sample Summary	9
Client Sample Results	10
Definitions	68
QC Association	69
Surrogate Summary	70
QC Sample Results	71
Chronicle	82
Certification Summary	87
Chain of Custody	88
Receipt Checklists	90

Case Narrative

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Job ID: 500-136659-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative 500-136659-1

Comments

No additional comments.

Receipt

The samples were received on 11/2/2017 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.2° C.

Receipt Exceptions

The ID written on the labels for laboratory samples 7 through 14 do not match what is written on the Chain of Custody. The prefix on the labels is "W-171031-RA-" while the prefix on the chain of custody is "W-171030-RA-" with a sample date of 10/31/17. The samples were logged per bottle labels.

GC/MS VOA

Method(s) 8260B: The method blanks for batches 409145 and 409332 were non-detect for all target analytes. Samples associated with the method blanks detected Acetone just above the reporting limit. Acetone is a known lab contaminant; therefore all low level detects for this compound should be considered lab contamination. The results have been flagged with a "CN" to denote the probable contamination.

W-171031-RA-10 (500-136659-10), W-171101-RA-18 (500-136659-18), W-171101-RA-21 (500-136659-21), W-171101-RA-23 (500-136659-23) and W-171101-RA-24 (500-136659-24)

Method(s) 8260B: The method blank for batch 409149 was non-detect for all target analytes. Samples associated with this method blank detected Methylene Chloride just above the reporting limit. Methylene Chloride is a known lab contaminant; therefore all low level detects for this compound should be considered lab contamination. The results have been flagged with a "CN" to denote the probable contamination.

W-171031-RA-13 (500-136659-13), W-171031-RA-14 (500-136659-14), W-171101-RA-15 (500-136659-15), W-171101-RA-16 (500-136659-16), W-171101-RA-17 (500-136659-17), W-171101-RA-18 (500-136659-18), W-171101-RA-19 (500-136659-19) and W-171101-RA-20 (500-136659-20)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-01

Lab Sample ID: 500-136659-1

No Detections.

Client Sample ID: W-171030-RA-02

Lab Sample ID: 500-136659-2

No Detections.

Client Sample ID: W-171030-RA-03

Lab Sample ID: 500-136659-3

No Detections.

Client Sample ID: W-171030-RA-04

Lab Sample ID: 500-136659-4

No Detections.

Client Sample ID: W-171030-RA-05

Lab Sample ID: 500-136659-5

No Detections.

Client Sample ID: W-171030-RA-06

Lab Sample ID: 500-136659-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	4.7		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	6.0		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	0.60	J	1.0	0.39	ug/L	1		8260B	Total/NA
Chloroform	1.8	J	2.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: W-171031-RA-07

Lab Sample ID: 500-136659-7

No Detections.

Client Sample ID: W-171031-RA-08

Lab Sample ID: 500-136659-8

No Detections.

Client Sample ID: W-171031-RA-09

Lab Sample ID: 500-136659-9

No Detections.

Client Sample ID: W-171031-RA-10

Lab Sample ID: 500-136659-10

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.2	C	5.0	1.7	ug/L	1		8260B	Total/NA

Client Sample ID: W-171031-RA-11

Lab Sample ID: 500-136659-11

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	7.2		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	7.9		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	1.6		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroform	1.2	J	2.0	0.37	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.60	J	1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	1.4		1.0	0.37	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-12

Lab Sample ID: 500-136659-12

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	2.1		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	2.4		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	1.2		1.0	0.39	ug/L	1		8260B	Total/NA
m-Xylene & p-Xylene	0.26	J	1.0	0.18	ug/L	1		8260B	Total/NA

Client Sample ID: W-171031-RA-13

Lab Sample ID: 500-136659-13

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	15		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	2.6		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	4.2		1.0	0.39	ug/L	1		8260B	Total/NA
Methylene Chloride	23	C	5.0	1.6	ug/L	1		8260B	Total/NA

Client Sample ID: W-171031-RA-14

Lab Sample ID: 500-136659-14

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	23	C	5.0	1.6	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-15

Lab Sample ID: 500-136659-15

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	22	C	5.0	1.6	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-16

Lab Sample ID: 500-136659-16

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	14		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	18		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	3.3		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	1.3		1.0	0.51	ug/L	1		8260B	Total/NA
Methylene Chloride	23	C	5.0	1.6	ug/L	1		8260B	Total/NA
Tetrachloroethene	2.2		1.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-17

Lab Sample ID: 500-136659-17

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	13		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	13		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	2.0		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	0.85	J	1.0	0.51	ug/L	1		8260B	Total/NA
Methylene Chloride	23	C	5.0	1.6	ug/L	1		8260B	Total/NA
Tetrachloroethene	1.8		1.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-18

Lab Sample ID: 500-136659-18

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.9	C	5.0	1.7	ug/L	1		8260B	Total/NA
Methylene Chloride	22	C	5.0	1.6	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-19

Lab Sample ID: 500-136659-19

This Detection Summary does not include radiochemical test results.

TestAmerica Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-19 (Continued)

Lab Sample ID: 500-136659-19

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	21	C	5.0	1.6	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-20

Lab Sample ID: 500-136659-20

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	23	C	5.0	1.6	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-21

Lab Sample ID: 500-136659-21

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	14	C	5.0	1.7	ug/L	1		8260B	Total/NA
Chloroform	1.1	J	2.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-22

Lab Sample ID: 500-136659-22

No Detections.

Client Sample ID: W-171101-RA-23

Lab Sample ID: 500-136659-23

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	16	C	5.0	1.7	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-24

Lab Sample ID: 500-136659-24

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	15	C	5.0	1.7	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-25

Lab Sample ID: 500-136659-25

No Detections.

Client Sample ID: W-171101-RA-26

Lab Sample ID: 500-136659-26

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	14		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	15		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	2.5		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroform	1.1	J	2.0	0.37	ug/L	1		8260B	Total/NA
Tetrachloroethene	1.5		1.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-27

Lab Sample ID: 500-136659-27

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	2.9		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	2.5		1.0	0.41	ug/L	1		8260B	Total/NA
Toluene	1.2		0.50	0.15	ug/L	1		8260B	Total/NA

Client Sample ID: W-171101-RA-28

Lab Sample ID: 500-136659-28

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	19		1.0	0.38	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-28 (Continued)

Lab Sample ID: 500-136659-28

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	19		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	4.1		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroform	0.70	J	2.0	0.37	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.7		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	4.1		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.40	J	0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-136659-29

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Chicago

Method Summary

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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Sample Summary

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-136659-1	W-171030-RA-01	Water	10/30/17 11:50	11/02/17 09:00
500-136659-2	W-171030-RA-02	Water	10/30/17 11:52	11/02/17 09:00
500-136659-3	W-171030-RA-03	Water	10/30/17 12:20	11/02/17 09:00
500-136659-4	W-171030-RA-04	Water	10/30/17 13:00	11/02/17 09:00
500-136659-5	W-171030-RA-05	Water	10/30/17 13:54	11/02/17 09:00
500-136659-6	W-171030-RA-06	Water	10/30/17 14:30	11/02/17 09:00
500-136659-7	W-171031-RA-07	Water	10/31/17 10:07	11/02/17 09:00
500-136659-8	W-171031-RA-08	Water	10/31/17 10:08	11/02/17 09:00
500-136659-9	W-171031-RA-09	Water	10/31/17 11:06	11/02/17 09:00
500-136659-10	W-171031-RA-10	Water	10/31/17 11:30	11/02/17 09:00
500-136659-11	W-171031-RA-11	Water	10/31/17 11:49	11/02/17 09:00
500-136659-12	W-171031-RA-12	Water	10/31/17 13:55	11/02/17 09:00
500-136659-13	W-171031-RA-13	Water	10/31/17 13:56	11/02/17 09:00
500-136659-14	W-171031-RA-14	Water	10/31/17 14:46	11/02/17 09:00
500-136659-15	W-171101-RA-15	Water	11/01/17 09:38	11/02/17 09:00
500-136659-16	W-171101-RA-16	Water	11/01/17 10:05	11/02/17 09:00
500-136659-17	W-171101-RA-17	Water	11/01/17 10:25	11/02/17 09:00
500-136659-18	W-171101-RA-18	Water	11/01/17 10:50	11/02/17 09:00
500-136659-19	W-171101-RA-19	Water	11/01/17 11:10	11/02/17 09:00
500-136659-20	W-171101-RA-20	Water	11/01/17 12:10	11/02/17 09:00
500-136659-21	W-171101-RA-21	Water	11/01/17 12:30	11/02/17 09:00
500-136659-22	W-171101-RA-22	Water	11/01/17 12:35	11/02/17 09:00
500-136659-23	W-171101-RA-23	Water	11/01/17 13:00	11/02/17 09:00
500-136659-24	W-171101-RA-24	Water	11/01/17 13:15	11/02/17 09:00
500-136659-25	W-171101-RA-25	Water	11/01/17 13:40	11/02/17 09:00
500-136659-26	W-171101-RA-26	Water	11/01/17 14:00	11/02/17 09:00
500-136659-27	W-171101-RA-27	Water	11/01/17 14:20	11/02/17 09:00
500-136659-28	W-171101-RA-28	Water	11/01/17 14:25	11/02/17 09:00
500-136659-29	Trip Blank	Water	11/01/17 00:00	11/02/17 09:00

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-01

Lab Sample ID: 500-136659-1

Date Collected: 10/30/17 11:50

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 16:01	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 16:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 16:01	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 16:01	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 16:01	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 16:01	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 16:01	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 16:01	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 16:01	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 16:01	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 16:01	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 16:01	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 16:01	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 16:01	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 16:01	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 16:01	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 16:01	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 16:01	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 16:01	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 16:01	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 16:01	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 16:01	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 16:01	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 16:01	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 16:01	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 16:01	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 16:01	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 16:01	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 16:01	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 16:01	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 16:01	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 16:01	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 16:01	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 16:01	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 16:01	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 16:01	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 16:01	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 16:01	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 16:01	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 16:01	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 16:01	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 16:01	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 16:01	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 16:01	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 16:01	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 16:01	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 16:01	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 16:01	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 16:01	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-01

Lab Sample ID: 500-136659-1

Date Collected: 10/30/17 11:50

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 16:01	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 16:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126					11/09/17 16:01	1
4-Bromofluorobenzene (Surr)	94		72 - 124					11/09/17 16:01	1
Toluene-d8 (Surr)	89		75 - 120					11/09/17 16:01	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-02

Lab Sample ID: 500-136659-2

Date Collected: 10/30/17 11:52

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 16:26	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 16:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 16:26	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 16:26	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 16:26	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 16:26	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 16:26	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 16:26	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 16:26	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 16:26	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 16:26	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 16:26	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 16:26	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 16:26	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 16:26	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 16:26	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 16:26	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 16:26	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 16:26	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 16:26	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 16:26	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 16:26	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 16:26	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 16:26	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 16:26	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 16:26	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 16:26	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 16:26	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 16:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 16:26	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 16:26	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 16:26	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 16:26	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 16:26	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 16:26	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 16:26	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 16:26	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 16:26	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 16:26	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 16:26	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 16:26	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 16:26	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-02

Lab Sample ID: 500-136659-2

Date Collected: 10/30/17 11:52

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 16:26	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 16:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 126					11/09/17 16:26	1
4-Bromofluorobenzene (Surr)	94		72 - 124					11/09/17 16:26	1
Toluene-d8 (Surr)	88		75 - 120					11/09/17 16:26	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-03

Lab Sample ID: 500-136659-3

Date Collected: 10/30/17 12:20

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 16:51	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 16:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 16:51	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 16:51	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 16:51	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 16:51	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 16:51	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 16:51	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 16:51	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 16:51	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 16:51	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 16:51	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 16:51	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 16:51	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 16:51	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 16:51	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 16:51	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 16:51	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 16:51	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 16:51	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 16:51	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 16:51	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 16:51	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 16:51	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 16:51	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 16:51	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 16:51	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 16:51	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 16:51	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 16:51	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 16:51	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 16:51	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 16:51	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 16:51	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 16:51	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 16:51	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 16:51	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 16:51	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 16:51	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 16:51	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 16:51	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 16:51	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 16:51	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 16:51	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 16:51	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 16:51	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 16:51	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 16:51	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 16:51	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-03

Lab Sample ID: 500-136659-3

Date Collected: 10/30/17 12:20

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 16:51	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 16:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		75 - 126					11/09/17 16:51	1
4-Bromofluorobenzene (Surr)	96		72 - 124					11/09/17 16:51	1
Toluene-d8 (Surr)	90		75 - 120					11/09/17 16:51	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-04

Lab Sample ID: 500-136659-4

Date Collected: 10/30/17 13:00

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 17:17	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 17:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 17:17	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 17:17	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 17:17	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 17:17	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 17:17	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 17:17	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 17:17	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 17:17	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 17:17	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 17:17	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 17:17	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 17:17	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 17:17	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 17:17	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 17:17	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 17:17	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 17:17	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 17:17	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 17:17	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 17:17	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 17:17	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 17:17	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 17:17	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 17:17	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 17:17	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 17:17	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 17:17	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 17:17	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 17:17	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 17:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 17:17	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 17:17	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 17:17	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 17:17	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 17:17	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 17:17	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 17:17	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 17:17	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 17:17	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 17:17	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 17:17	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 17:17	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 17:17	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 17:17	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 17:17	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 17:17	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 17:17	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-04

Lab Sample ID: 500-136659-4

Date Collected: 10/30/17 13:00

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 17:17	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 17:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126					11/09/17 17:17	1
4-Bromofluorobenzene (Surr)	92		72 - 124					11/09/17 17:17	1
Toluene-d8 (Surr)	89		75 - 120					11/09/17 17:17	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-05

Lab Sample ID: 500-136659-5

Date Collected: 10/30/17 13:54

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 17:42	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 17:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 17:42	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 17:42	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 17:42	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 17:42	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 17:42	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 17:42	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 17:42	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 17:42	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 17:42	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 17:42	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 17:42	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 17:42	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 17:42	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 17:42	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 17:42	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 17:42	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 17:42	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 17:42	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 17:42	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 17:42	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 17:42	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 17:42	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 17:42	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 17:42	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 17:42	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 17:42	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 17:42	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 17:42	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 17:42	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 17:42	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 17:42	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 17:42	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 17:42	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 17:42	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 17:42	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 17:42	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 17:42	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 17:42	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 17:42	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 17:42	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 17:42	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 17:42	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 17:42	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 17:42	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 17:42	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 17:42	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 17:42	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-05

Lab Sample ID: 500-136659-5

Date Collected: 10/30/17 13:54

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 17:42	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 17:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126					11/09/17 17:42	1
4-Bromofluorobenzene (Surr)	94		72 - 124					11/09/17 17:42	1
Toluene-d8 (Surr)	89		75 - 120					11/09/17 17:42	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-06

Lab Sample ID: 500-136659-6

Date Collected: 10/30/17 14:30

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	4.7		1.0	0.38	ug/L			11/09/17 18:07	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 18:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 18:07	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 18:07	1
1,1-Dichloroethane	6.0		1.0	0.41	ug/L			11/09/17 18:07	1
1,1-Dichloroethene	0.60	J	1.0	0.39	ug/L			11/09/17 18:07	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 18:07	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 18:07	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 18:07	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 18:07	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 18:07	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 18:07	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 18:07	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 18:07	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 18:07	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 18:07	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 18:07	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 18:07	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 18:07	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 18:07	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 18:07	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 18:07	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 18:07	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 18:07	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 18:07	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 18:07	1
Chloroform	1.8	J	2.0	0.37	ug/L			11/09/17 18:07	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 18:07	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 18:07	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 18:07	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 18:07	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 18:07	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 18:07	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 18:07	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 18:07	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 18:07	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 18:07	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 18:07	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 18:07	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 18:07	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 18:07	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 18:07	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 18:07	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 18:07	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 18:07	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 18:07	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 18:07	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 18:07	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 18:07	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-06

Lab Sample ID: 500-136659-6

Date Collected: 10/30/17 14:30

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 18:07	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 18:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		75 - 126					11/09/17 18:07	1
4-Bromofluorobenzene (Surr)	97		72 - 124					11/09/17 18:07	1
Toluene-d8 (Surr)	90		75 - 120					11/09/17 18:07	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-07

Lab Sample ID: 500-136659-7

Date Collected: 10/31/17 10:07

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 18:33	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 18:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 18:33	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 18:33	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 18:33	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 18:33	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 18:33	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 18:33	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 18:33	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 18:33	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 18:33	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 18:33	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 18:33	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 18:33	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 18:33	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 18:33	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 18:33	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 18:33	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 18:33	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 18:33	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 18:33	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 18:33	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 18:33	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 18:33	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 18:33	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 18:33	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 18:33	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 18:33	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 18:33	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 18:33	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 18:33	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 18:33	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 18:33	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 18:33	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 18:33	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 18:33	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 18:33	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 18:33	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 18:33	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 18:33	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 18:33	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 18:33	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 18:33	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 18:33	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 18:33	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 18:33	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 18:33	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 18:33	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 18:33	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-07

Lab Sample ID: 500-136659-7

Date Collected: 10/31/17 10:07

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 18:33	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 18:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126					11/09/17 18:33	1
4-Bromofluorobenzene (Surr)	94		72 - 124					11/09/17 18:33	1
Toluene-d8 (Surr)	86		75 - 120					11/09/17 18:33	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-08

Lab Sample ID: 500-136659-8

Date Collected: 10/31/17 10:08

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 18:58	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 18:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 18:58	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 18:58	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 18:58	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 18:58	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 18:58	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 18:58	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 18:58	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 18:58	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 18:58	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 18:58	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 18:58	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 18:58	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 18:58	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 18:58	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 18:58	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 18:58	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 18:58	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 18:58	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 18:58	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 18:58	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 18:58	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 18:58	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 18:58	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 18:58	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 18:58	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 18:58	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 18:58	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 18:58	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 18:58	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 18:58	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 18:58	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 18:58	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 18:58	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 18:58	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 18:58	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 18:58	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 18:58	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 18:58	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 18:58	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 18:58	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 18:58	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 18:58	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 18:58	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 18:58	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 18:58	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 18:58	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 18:58	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-08

Lab Sample ID: 500-136659-8

Date Collected: 10/31/17 10:08

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 18:58	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 18:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 126					11/09/17 18:58	1
4-Bromofluorobenzene (Surr)	95		72 - 124					11/09/17 18:58	1
Toluene-d8 (Surr)	91		75 - 120					11/09/17 18:58	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-09

Lab Sample ID: 500-136659-9

Date Collected: 10/31/17 11:06

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 19:23	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 19:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 19:23	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 19:23	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 19:23	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 19:23	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 19:23	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 19:23	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 19:23	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 19:23	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 19:23	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 19:23	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 19:23	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 19:23	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 19:23	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 19:23	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 19:23	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 19:23	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 19:23	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 19:23	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 19:23	1
Bromomethane	<0.80	F1	2.0	0.80	ug/L			11/09/17 19:23	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 19:23	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 19:23	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 19:23	1
Chloroethane	<0.51	F1	1.0	0.51	ug/L			11/09/17 19:23	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 19:23	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 19:23	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 19:23	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 19:23	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 19:23	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 19:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 19:23	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 19:23	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 19:23	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 19:23	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 19:23	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 19:23	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 19:23	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 19:23	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 19:23	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 19:23	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 19:23	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 19:23	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 19:23	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 19:23	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 19:23	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 19:23	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 19:23	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-09

Lab Sample ID: 500-136659-9

Date Collected: 10/31/17 11:06

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 19:23	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 19:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		75 - 126					11/09/17 19:23	1
4-Bromofluorobenzene (Surr)	97		72 - 124					11/09/17 19:23	1
Toluene-d8 (Surr)	92		75 - 120					11/09/17 19:23	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-10

Lab Sample ID: 500-136659-10

Date Collected: 10/31/17 11:30

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 20:38	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 20:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 20:38	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 20:38	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 20:38	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 20:38	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 20:38	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 20:38	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 20:38	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 20:38	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 20:38	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 20:38	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 20:38	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 20:38	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 20:38	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 20:38	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 20:38	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 20:38	1
Acetone	5.2	C	5.0	1.7	ug/L			11/09/17 20:38	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 20:38	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 20:38	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 20:38	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 20:38	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 20:38	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 20:38	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 20:38	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 20:38	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 20:38	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 20:38	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 20:38	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 20:38	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 20:38	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 20:38	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 20:38	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 20:38	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 20:38	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 20:38	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 20:38	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 20:38	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 20:38	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 20:38	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 20:38	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 20:38	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 20:38	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 20:38	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 20:38	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 20:38	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 20:38	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 20:38	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-10

Lab Sample ID: 500-136659-10

Date Collected: 10/31/17 11:30

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 20:38	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 20:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		75 - 126					11/09/17 20:38	1
4-Bromofluorobenzene (Surr)	94		72 - 124					11/09/17 20:38	1
Toluene-d8 (Surr)	90		75 - 120					11/09/17 20:38	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-11

Lab Sample ID: 500-136659-11

Date Collected: 10/31/17 11:49

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	7.2		1.0	0.38	ug/L			11/09/17 21:03	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 21:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 21:03	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 21:03	1
1,1-Dichloroethane	7.9		1.0	0.41	ug/L			11/09/17 21:03	1
1,1-Dichloroethene	1.6		1.0	0.39	ug/L			11/09/17 21:03	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 21:03	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 21:03	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 21:03	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 21:03	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 21:03	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 21:03	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 21:03	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 21:03	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 21:03	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 21:03	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 21:03	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 21:03	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 21:03	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 21:03	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 21:03	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 21:03	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 21:03	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 21:03	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 21:03	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 21:03	1
Chloroform	1.2 J		2.0	0.37	ug/L			11/09/17 21:03	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 21:03	1
cis-1,2-Dichloroethene	0.60 J		1.0	0.41	ug/L			11/09/17 21:03	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 21:03	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 21:03	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 21:03	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 21:03	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 21:03	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 21:03	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 21:03	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 21:03	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 21:03	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 21:03	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 21:03	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 21:03	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 21:03	1
Tetrachloroethene	1.4		1.0	0.37	ug/L			11/09/17 21:03	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 21:03	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 21:03	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 21:03	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 21:03	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 21:03	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 21:03	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-11

Lab Sample ID: 500-136659-11

Date Collected: 10/31/17 11:49

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 21:03	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 21:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		75 - 126					11/09/17 21:03	1
4-Bromofluorobenzene (Surr)	96		72 - 124					11/09/17 21:03	1
Toluene-d8 (Surr)	94		75 - 120					11/09/17 21:03	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-12

Lab Sample ID: 500-136659-12

Date Collected: 10/31/17 13:55

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	2.1		1.0	0.38	ug/L			11/09/17 21:28	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 21:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 21:28	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 21:28	1
1,1-Dichloroethane	2.4		1.0	0.41	ug/L			11/09/17 21:28	1
1,1-Dichloroethene	1.2		1.0	0.39	ug/L			11/09/17 21:28	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 21:28	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 21:28	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 21:28	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 21:28	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 21:28	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 21:28	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 21:28	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 21:28	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 21:28	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 21:28	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 21:28	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 21:28	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 21:28	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 21:28	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 21:28	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 21:28	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 21:28	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 21:28	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 21:28	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 21:28	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 21:28	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 21:28	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 21:28	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 21:28	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 21:28	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 21:28	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 21:28	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 21:28	1
m-Xylene & p-Xylene	0.26 J		1.0	0.18	ug/L			11/09/17 21:28	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 21:28	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 21:28	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 21:28	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 21:28	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 21:28	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 21:28	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 21:28	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 21:28	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 21:28	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 21:28	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 21:28	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 21:28	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 21:28	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 21:28	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-12

Lab Sample ID: 500-136659-12

Date Collected: 10/31/17 13:55

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 21:28	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 21:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		75 - 126					11/09/17 21:28	1
4-Bromofluorobenzene (Surr)	98		72 - 124					11/09/17 21:28	1
Toluene-d8 (Surr)	89		75 - 120					11/09/17 21:28	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-13

Lab Sample ID: 500-136659-13

Date Collected: 10/31/17 13:56

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	15		1.0	0.38	ug/L			11/09/17 13:41	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 13:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 13:41	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 13:41	1
1,1-Dichloroethane	2.6		1.0	0.41	ug/L			11/09/17 13:41	1
1,1-Dichloroethene	4.2		1.0	0.39	ug/L			11/09/17 13:41	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 13:41	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 13:41	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 13:41	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 13:41	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 13:41	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 13:41	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 13:41	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 13:41	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 13:41	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 13:41	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 13:41	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 13:41	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 13:41	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 13:41	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 13:41	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 13:41	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 13:41	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 13:41	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 13:41	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 13:41	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 13:41	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 13:41	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 13:41	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 13:41	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 13:41	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 13:41	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 13:41	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 13:41	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 13:41	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 13:41	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 13:41	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 13:41	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 13:41	1
Methylene Chloride	23 C		5.0	1.6	ug/L			11/09/17 13:41	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 13:41	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 13:41	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 13:41	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 13:41	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 13:41	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 13:41	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 13:41	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 13:41	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 13:41	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-13

Lab Sample ID: 500-136659-13

Date Collected: 10/31/17 13:56

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 13:41	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 13:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		75 - 126					11/09/17 13:41	1
4-Bromofluorobenzene (Surr)	93		72 - 124					11/09/17 13:41	1
Toluene-d8 (Surr)	95		75 - 120					11/09/17 13:41	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-14

Lab Sample ID: 500-136659-14

Date Collected: 10/31/17 14:46

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 14:08	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 14:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 14:08	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 14:08	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 14:08	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 14:08	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 14:08	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 14:08	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 14:08	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 14:08	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 14:08	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 14:08	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 14:08	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 14:08	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 14:08	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 14:08	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 14:08	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 14:08	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 14:08	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 14:08	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 14:08	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 14:08	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 14:08	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 14:08	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 14:08	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 14:08	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 14:08	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 14:08	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 14:08	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 14:08	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 14:08	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 14:08	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 14:08	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 14:08	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 14:08	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 14:08	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 14:08	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 14:08	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 14:08	1
Methylene Chloride	23	C	5.0	1.6	ug/L			11/09/17 14:08	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 14:08	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 14:08	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 14:08	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 14:08	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 14:08	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 14:08	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 14:08	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 14:08	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 14:08	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-14

Lab Sample ID: 500-136659-14

Date Collected: 10/31/17 14:46

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 14:08	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 14:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		75 - 126					11/09/17 14:08	1
4-Bromofluorobenzene (Surr)	95		72 - 124					11/09/17 14:08	1
Toluene-d8 (Surr)	95		75 - 120					11/09/17 14:08	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-15

Lab Sample ID: 500-136659-15

Date Collected: 11/01/17 09:38

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 14:36	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 14:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 14:36	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 14:36	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 14:36	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 14:36	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 14:36	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 14:36	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 14:36	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 14:36	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 14:36	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 14:36	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 14:36	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 14:36	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 14:36	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 14:36	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 14:36	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 14:36	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 14:36	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 14:36	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 14:36	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 14:36	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 14:36	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 14:36	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 14:36	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 14:36	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 14:36	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 14:36	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 14:36	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 14:36	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 14:36	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 14:36	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 14:36	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 14:36	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 14:36	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 14:36	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 14:36	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 14:36	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 14:36	1
Methylene Chloride	22	C	5.0	1.6	ug/L			11/09/17 14:36	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 14:36	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 14:36	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 14:36	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 14:36	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 14:36	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 14:36	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 14:36	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 14:36	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 14:36	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-15

Lab Sample ID: 500-136659-15

Date Collected: 11/01/17 09:38

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 14:36	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 14:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 126					11/09/17 14:36	1
4-Bromofluorobenzene (Surr)	93		72 - 124					11/09/17 14:36	1
Toluene-d8 (Surr)	94		75 - 120					11/09/17 14:36	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-16

Lab Sample ID: 500-136659-16

Date Collected: 11/01/17 10:05

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	14		1.0	0.38	ug/L			11/09/17 15:03	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 15:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 15:03	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 15:03	1
1,1-Dichloroethane	18		1.0	0.41	ug/L			11/09/17 15:03	1
1,1-Dichloroethene	3.3		1.0	0.39	ug/L			11/09/17 15:03	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 15:03	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 15:03	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 15:03	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 15:03	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 15:03	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 15:03	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 15:03	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 15:03	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 15:03	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 15:03	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 15:03	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 15:03	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 15:03	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 15:03	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 15:03	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 15:03	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 15:03	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 15:03	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 15:03	1
Chloroethane	1.3		1.0	0.51	ug/L			11/09/17 15:03	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 15:03	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 15:03	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 15:03	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 15:03	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 15:03	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 15:03	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 15:03	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 15:03	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 15:03	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 15:03	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 15:03	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 15:03	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 15:03	1
Methylene Chloride	23 C		5.0	1.6	ug/L			11/09/17 15:03	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 15:03	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 15:03	1
Tetrachloroethene	2.2		1.0	0.37	ug/L			11/09/17 15:03	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 15:03	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 15:03	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 15:03	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 15:03	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 15:03	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 15:03	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-16

Lab Sample ID: 500-136659-16

Date Collected: 11/01/17 10:05

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 15:03	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 15:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		75 - 126					11/09/17 15:03	1
4-Bromofluorobenzene (Surr)	96		72 - 124					11/09/17 15:03	1
Toluene-d8 (Surr)	94		75 - 120					11/09/17 15:03	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-17

Lab Sample ID: 500-136659-17

Date Collected: 11/01/17 10:25

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	13		1.0	0.38	ug/L			11/09/17 15:59	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 15:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 15:59	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 15:59	1
1,1-Dichloroethane	13		1.0	0.41	ug/L			11/09/17 15:59	1
1,1-Dichloroethene	2.0		1.0	0.39	ug/L			11/09/17 15:59	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 15:59	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 15:59	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 15:59	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 15:59	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 15:59	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 15:59	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 15:59	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 15:59	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 15:59	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 15:59	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 15:59	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 15:59	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 15:59	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 15:59	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 15:59	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 15:59	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 15:59	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 15:59	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 15:59	1
Chloroethane	0.85 J		1.0	0.51	ug/L			11/09/17 15:59	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 15:59	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 15:59	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 15:59	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 15:59	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 15:59	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 15:59	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 15:59	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 15:59	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 15:59	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 15:59	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 15:59	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 15:59	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 15:59	1
Methylene Chloride	23 C		5.0	1.6	ug/L			11/09/17 15:59	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 15:59	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 15:59	1
Tetrachloroethene	1.8		1.0	0.37	ug/L			11/09/17 15:59	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 15:59	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 15:59	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 15:59	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 15:59	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 15:59	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 15:59	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-17

Lab Sample ID: 500-136659-17

Date Collected: 11/01/17 10:25

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 15:59	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 15:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 126					11/09/17 15:59	1
4-Bromofluorobenzene (Surr)	95		72 - 124					11/09/17 15:59	1
Toluene-d8 (Surr)	95		75 - 120					11/09/17 15:59	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-18

Lab Sample ID: 500-136659-18

Date Collected: 11/01/17 10:50

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 16:26	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 16:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 16:26	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 16:26	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 16:26	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 16:26	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 16:26	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 16:26	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 16:26	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 16:26	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 16:26	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 16:26	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 16:26	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 16:26	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 16:26	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 16:26	1
Acetone	6.9	C	5.0	1.7	ug/L			11/09/17 16:26	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 16:26	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 16:26	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 16:26	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 16:26	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 16:26	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 16:26	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 16:26	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 16:26	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 16:26	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 16:26	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 16:26	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 16:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 16:26	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 16:26	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 16:26	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 16:26	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
Methylene Chloride	22	C	5.0	1.6	ug/L			11/09/17 16:26	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 16:26	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 16:26	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 16:26	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 16:26	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 16:26	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 16:26	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 16:26	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 16:26	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 16:26	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-18

Lab Sample ID: 500-136659-18

Date Collected: 11/01/17 10:50

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 16:26	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 16:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 126					11/09/17 16:26	1
4-Bromofluorobenzene (Surr)	94		72 - 124					11/09/17 16:26	1
Toluene-d8 (Surr)	94		75 - 120					11/09/17 16:26	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-19

Lab Sample ID: 500-136659-19

Date Collected: 11/01/17 11:10

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 16:52	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 16:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 16:52	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 16:52	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 16:52	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 16:52	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 16:52	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 16:52	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 16:52	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 16:52	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 16:52	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 16:52	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 16:52	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 16:52	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 16:52	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 16:52	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 16:52	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 16:52	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 16:52	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 16:52	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 16:52	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 16:52	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 16:52	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 16:52	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 16:52	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 16:52	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 16:52	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 16:52	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 16:52	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 16:52	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 16:52	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 16:52	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 16:52	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 16:52	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 16:52	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 16:52	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 16:52	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 16:52	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 16:52	1
Methylene Chloride	21	C	5.0	1.6	ug/L			11/09/17 16:52	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 16:52	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 16:52	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 16:52	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 16:52	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 16:52	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 16:52	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 16:52	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 16:52	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 16:52	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-19

Lab Sample ID: 500-136659-19

Date Collected: 11/01/17 11:10

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 16:52	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 16:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 126					11/09/17 16:52	1
4-Bromofluorobenzene (Surr)	93		72 - 124					11/09/17 16:52	1
Toluene-d8 (Surr)	95		75 - 120					11/09/17 16:52	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-20

Lab Sample ID: 500-136659-20

Date Collected: 11/01/17 12:10

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 17:18	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 17:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 17:18	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 17:18	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 17:18	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 17:18	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 17:18	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 17:18	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 17:18	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 17:18	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 17:18	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 17:18	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 17:18	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 17:18	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 17:18	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 17:18	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 17:18	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 17:18	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 17:18	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 17:18	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 17:18	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 17:18	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 17:18	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 17:18	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 17:18	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 17:18	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 17:18	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 17:18	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 17:18	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 17:18	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 17:18	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 17:18	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 17:18	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 17:18	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 17:18	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 17:18	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 17:18	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 17:18	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 17:18	1
Methylene Chloride	23	C	5.0	1.6	ug/L			11/09/17 17:18	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 17:18	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 17:18	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 17:18	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 17:18	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 17:18	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 17:18	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 17:18	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 17:18	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 17:18	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-20

Lab Sample ID: 500-136659-20

Date Collected: 11/01/17 12:10

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 17:18	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 17:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126					11/09/17 17:18	1
4-Bromofluorobenzene (Surr)	97		72 - 124					11/09/17 17:18	1
Toluene-d8 (Surr)	94		75 - 120					11/09/17 17:18	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-21

Lab Sample ID: 500-136659-21

Date Collected: 11/01/17 12:30

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/10/17 10:47	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/10/17 10:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/10/17 10:47	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/10/17 10:47	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/10/17 10:47	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/10/17 10:47	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/10/17 10:47	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/10/17 10:47	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/10/17 10:47	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/10/17 10:47	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/10/17 10:47	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/10/17 10:47	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/10/17 10:47	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/10/17 10:47	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/10/17 10:47	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/10/17 10:47	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/10/17 10:47	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/10/17 10:47	1
Acetone	14	C	5.0	1.7	ug/L			11/10/17 10:47	1
Benzene	<0.15		0.50	0.15	ug/L			11/10/17 10:47	1
Bromoform	<0.48		1.0	0.48	ug/L			11/10/17 10:47	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/10/17 10:47	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/10/17 10:47	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/10/17 10:47	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/10/17 10:47	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/10/17 10:47	1
Chloroform	1.1	J	2.0	0.37	ug/L			11/10/17 10:47	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/10/17 10:47	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/10/17 10:47	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/10/17 10:47	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/10/17 10:47	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/10/17 10:47	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/10/17 10:47	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/10/17 10:47	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/10/17 10:47	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/10/17 10:47	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/10/17 10:47	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/10/17 10:47	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/10/17 10:47	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/10/17 10:47	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/10/17 10:47	1
Styrene	<0.39		1.0	0.39	ug/L			11/10/17 10:47	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/10/17 10:47	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/10/17 10:47	1
Toluene	<0.15		0.50	0.15	ug/L			11/10/17 10:47	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/10/17 10:47	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/10/17 10:47	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/10/17 10:47	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/10/17 10:47	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-21

Lab Sample ID: 500-136659-21

Date Collected: 11/01/17 12:30

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/10/17 10:47	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/10/17 10:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126					11/10/17 10:47	1
4-Bromofluorobenzene (Surr)	91		72 - 124					11/10/17 10:47	1
Toluene-d8 (Surr)	94		75 - 120					11/10/17 10:47	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-22

Lab Sample ID: 500-136659-22

Date Collected: 11/01/17 12:35

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/10/17 11:13	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/10/17 11:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/10/17 11:13	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/10/17 11:13	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/10/17 11:13	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/10/17 11:13	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/10/17 11:13	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/10/17 11:13	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/10/17 11:13	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/10/17 11:13	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/10/17 11:13	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/10/17 11:13	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/10/17 11:13	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/10/17 11:13	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/10/17 11:13	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/10/17 11:13	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/10/17 11:13	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/10/17 11:13	1
Acetone	<1.7		5.0	1.7	ug/L			11/10/17 11:13	1
Benzene	<0.15		0.50	0.15	ug/L			11/10/17 11:13	1
Bromoform	<0.48		1.0	0.48	ug/L			11/10/17 11:13	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/10/17 11:13	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/10/17 11:13	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/10/17 11:13	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/10/17 11:13	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/10/17 11:13	1
Chloroform	<0.37		2.0	0.37	ug/L			11/10/17 11:13	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/10/17 11:13	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/10/17 11:13	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/10/17 11:13	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/10/17 11:13	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/10/17 11:13	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/10/17 11:13	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/10/17 11:13	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/10/17 11:13	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/10/17 11:13	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/10/17 11:13	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/10/17 11:13	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/10/17 11:13	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/10/17 11:13	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/10/17 11:13	1
Styrene	<0.39		1.0	0.39	ug/L			11/10/17 11:13	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/10/17 11:13	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/10/17 11:13	1
Toluene	<0.15		0.50	0.15	ug/L			11/10/17 11:13	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/10/17 11:13	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/10/17 11:13	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/10/17 11:13	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/10/17 11:13	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-22

Lab Sample ID: 500-136659-22

Date Collected: 11/01/17 12:35

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/10/17 11:13	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/10/17 11:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		75 - 126					11/10/17 11:13	1
4-Bromofluorobenzene (Surr)	93		72 - 124					11/10/17 11:13	1
Toluene-d8 (Surr)	96		75 - 120					11/10/17 11:13	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-23

Lab Sample ID: 500-136659-23

Date Collected: 11/01/17 13:00

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/10/17 11:39	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/10/17 11:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/10/17 11:39	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/10/17 11:39	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/10/17 11:39	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/10/17 11:39	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/10/17 11:39	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/10/17 11:39	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/10/17 11:39	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/10/17 11:39	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/10/17 11:39	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/10/17 11:39	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/10/17 11:39	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/10/17 11:39	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/10/17 11:39	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/10/17 11:39	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/10/17 11:39	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/10/17 11:39	1
Acetone	16	C	5.0	1.7	ug/L			11/10/17 11:39	1
Benzene	<0.15		0.50	0.15	ug/L			11/10/17 11:39	1
Bromoform	<0.48		1.0	0.48	ug/L			11/10/17 11:39	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/10/17 11:39	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/10/17 11:39	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/10/17 11:39	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/10/17 11:39	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/10/17 11:39	1
Chloroform	<0.37		2.0	0.37	ug/L			11/10/17 11:39	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/10/17 11:39	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/10/17 11:39	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/10/17 11:39	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/10/17 11:39	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/10/17 11:39	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/10/17 11:39	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/10/17 11:39	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/10/17 11:39	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/10/17 11:39	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/10/17 11:39	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/10/17 11:39	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/10/17 11:39	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/10/17 11:39	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/10/17 11:39	1
Styrene	<0.39		1.0	0.39	ug/L			11/10/17 11:39	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/10/17 11:39	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/10/17 11:39	1
Toluene	<0.15		0.50	0.15	ug/L			11/10/17 11:39	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/10/17 11:39	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/10/17 11:39	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/10/17 11:39	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/10/17 11:39	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-23

Lab Sample ID: 500-136659-23

Date Collected: 11/01/17 13:00

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/10/17 11:39	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/10/17 11:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 126					11/10/17 11:39	1
4-Bromofluorobenzene (Surr)	89		72 - 124					11/10/17 11:39	1
Toluene-d8 (Surr)	95		75 - 120					11/10/17 11:39	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-24

Lab Sample ID: 500-136659-24

Date Collected: 11/01/17 13:15

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/10/17 12:05	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/10/17 12:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/10/17 12:05	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/10/17 12:05	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/10/17 12:05	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/10/17 12:05	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/10/17 12:05	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/10/17 12:05	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/10/17 12:05	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/10/17 12:05	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/10/17 12:05	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/10/17 12:05	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/10/17 12:05	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/10/17 12:05	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/10/17 12:05	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/10/17 12:05	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/10/17 12:05	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/10/17 12:05	1
Acetone	15 C		5.0	1.7	ug/L			11/10/17 12:05	1
Benzene	<0.15		0.50	0.15	ug/L			11/10/17 12:05	1
Bromoform	<0.48		1.0	0.48	ug/L			11/10/17 12:05	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/10/17 12:05	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/10/17 12:05	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/10/17 12:05	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/10/17 12:05	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/10/17 12:05	1
Chloroform	<0.37		2.0	0.37	ug/L			11/10/17 12:05	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/10/17 12:05	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/10/17 12:05	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/10/17 12:05	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/10/17 12:05	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/10/17 12:05	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/10/17 12:05	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/10/17 12:05	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/10/17 12:05	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/10/17 12:05	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/10/17 12:05	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/10/17 12:05	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/10/17 12:05	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/10/17 12:05	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/10/17 12:05	1
Styrene	<0.39		1.0	0.39	ug/L			11/10/17 12:05	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/10/17 12:05	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/10/17 12:05	1
Toluene	<0.15		0.50	0.15	ug/L			11/10/17 12:05	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/10/17 12:05	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/10/17 12:05	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/10/17 12:05	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/10/17 12:05	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-24

Lab Sample ID: 500-136659-24

Date Collected: 11/01/17 13:15

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/10/17 12:05	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/10/17 12:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 126					11/10/17 12:05	1
4-Bromofluorobenzene (Surr)	90		72 - 124					11/10/17 12:05	1
Toluene-d8 (Surr)	93		75 - 120					11/10/17 12:05	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-25

Lab Sample ID: 500-136659-25

Date Collected: 11/01/17 13:40

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/10/17 12:31	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/10/17 12:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/10/17 12:31	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/10/17 12:31	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/10/17 12:31	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/10/17 12:31	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/10/17 12:31	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/10/17 12:31	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/10/17 12:31	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/10/17 12:31	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/10/17 12:31	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/10/17 12:31	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/10/17 12:31	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/10/17 12:31	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/10/17 12:31	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/10/17 12:31	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/10/17 12:31	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/10/17 12:31	1
Acetone	<1.7		5.0	1.7	ug/L			11/10/17 12:31	1
Benzene	<0.15		0.50	0.15	ug/L			11/10/17 12:31	1
Bromoform	<0.48		1.0	0.48	ug/L			11/10/17 12:31	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/10/17 12:31	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/10/17 12:31	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/10/17 12:31	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/10/17 12:31	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/10/17 12:31	1
Chloroform	<0.37		2.0	0.37	ug/L			11/10/17 12:31	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/10/17 12:31	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/10/17 12:31	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/10/17 12:31	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/10/17 12:31	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/10/17 12:31	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/10/17 12:31	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/10/17 12:31	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/10/17 12:31	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/10/17 12:31	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/10/17 12:31	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/10/17 12:31	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/10/17 12:31	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/10/17 12:31	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/10/17 12:31	1
Styrene	<0.39		1.0	0.39	ug/L			11/10/17 12:31	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/10/17 12:31	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/10/17 12:31	1
Toluene	<0.15		0.50	0.15	ug/L			11/10/17 12:31	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/10/17 12:31	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/10/17 12:31	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/10/17 12:31	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/10/17 12:31	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-25

Lab Sample ID: 500-136659-25

Date Collected: 11/01/17 13:40

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/10/17 12:31	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/10/17 12:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		75 - 126					11/10/17 12:31	1
4-Bromofluorobenzene (Surr)	93		72 - 124					11/10/17 12:31	1
Toluene-d8 (Surr)	96		75 - 120					11/10/17 12:31	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-26

Lab Sample ID: 500-136659-26

Date Collected: 11/01/17 14:00

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	14		1.0	0.38	ug/L			11/10/17 12:57	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/10/17 12:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/10/17 12:57	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/10/17 12:57	1
1,1-Dichloroethane	15		1.0	0.41	ug/L			11/10/17 12:57	1
1,1-Dichloroethene	2.5		1.0	0.39	ug/L			11/10/17 12:57	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/10/17 12:57	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/10/17 12:57	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/10/17 12:57	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/10/17 12:57	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/10/17 12:57	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/10/17 12:57	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/10/17 12:57	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/10/17 12:57	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/10/17 12:57	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/10/17 12:57	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/10/17 12:57	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/10/17 12:57	1
Acetone	<1.7		5.0	1.7	ug/L			11/10/17 12:57	1
Benzene	<0.15		0.50	0.15	ug/L			11/10/17 12:57	1
Bromoform	<0.48		1.0	0.48	ug/L			11/10/17 12:57	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/10/17 12:57	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/10/17 12:57	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/10/17 12:57	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/10/17 12:57	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/10/17 12:57	1
Chloroform	1.1 J		2.0	0.37	ug/L			11/10/17 12:57	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/10/17 12:57	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/10/17 12:57	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/10/17 12:57	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/10/17 12:57	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/10/17 12:57	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/10/17 12:57	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/10/17 12:57	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/10/17 12:57	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/10/17 12:57	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/10/17 12:57	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/10/17 12:57	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/10/17 12:57	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/10/17 12:57	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/10/17 12:57	1
Styrene	<0.39		1.0	0.39	ug/L			11/10/17 12:57	1
Tetrachloroethene	1.5		1.0	0.37	ug/L			11/10/17 12:57	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/10/17 12:57	1
Toluene	<0.15		0.50	0.15	ug/L			11/10/17 12:57	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/10/17 12:57	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/10/17 12:57	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/10/17 12:57	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/10/17 12:57	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-26

Lab Sample ID: 500-136659-26

Date Collected: 11/01/17 14:00

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/10/17 12:57	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/10/17 12:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		75 - 126					11/10/17 12:57	1
4-Bromofluorobenzene (Surr)	88		72 - 124					11/10/17 12:57	1
Toluene-d8 (Surr)	96		75 - 120					11/10/17 12:57	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-27

Lab Sample ID: 500-136659-27

Date Collected: 11/01/17 14:20

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	2.9		1.0	0.38	ug/L			11/10/17 13:23	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/10/17 13:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/10/17 13:23	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/10/17 13:23	1
1,1-Dichloroethane	2.5		1.0	0.41	ug/L			11/10/17 13:23	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/10/17 13:23	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/10/17 13:23	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/10/17 13:23	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/10/17 13:23	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/10/17 13:23	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/10/17 13:23	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/10/17 13:23	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/10/17 13:23	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/10/17 13:23	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/10/17 13:23	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/10/17 13:23	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/10/17 13:23	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/10/17 13:23	1
Acetone	<1.7		5.0	1.7	ug/L			11/10/17 13:23	1
Benzene	<0.15		0.50	0.15	ug/L			11/10/17 13:23	1
Bromoform	<0.48		1.0	0.48	ug/L			11/10/17 13:23	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/10/17 13:23	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/10/17 13:23	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/10/17 13:23	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/10/17 13:23	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/10/17 13:23	1
Chloroform	<0.37		2.0	0.37	ug/L			11/10/17 13:23	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/10/17 13:23	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/10/17 13:23	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/10/17 13:23	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/10/17 13:23	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/10/17 13:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/10/17 13:23	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/10/17 13:23	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/10/17 13:23	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/10/17 13:23	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/10/17 13:23	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/10/17 13:23	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/10/17 13:23	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/10/17 13:23	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/10/17 13:23	1
Styrene	<0.39		1.0	0.39	ug/L			11/10/17 13:23	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/10/17 13:23	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/10/17 13:23	1
Toluene	1.2		0.50	0.15	ug/L			11/10/17 13:23	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/10/17 13:23	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/10/17 13:23	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/10/17 13:23	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/10/17 13:23	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-27

Lab Sample ID: 500-136659-27

Date Collected: 11/01/17 14:20

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/10/17 13:23	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/10/17 13:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		75 - 126					11/10/17 13:23	1
4-Bromofluorobenzene (Surr)	92		72 - 124					11/10/17 13:23	1
Toluene-d8 (Surr)	96		75 - 120					11/10/17 13:23	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-28

Lab Sample ID: 500-136659-28

Date Collected: 11/01/17 14:25

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	19		1.0	0.38	ug/L			11/10/17 13:49	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/10/17 13:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/10/17 13:49	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/10/17 13:49	1
1,1-Dichloroethane	19		1.0	0.41	ug/L			11/10/17 13:49	1
1,1-Dichloroethene	4.1		1.0	0.39	ug/L			11/10/17 13:49	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/10/17 13:49	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/10/17 13:49	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/10/17 13:49	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/10/17 13:49	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/10/17 13:49	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/10/17 13:49	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/10/17 13:49	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/10/17 13:49	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/10/17 13:49	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/10/17 13:49	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/10/17 13:49	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/10/17 13:49	1
Acetone	<1.7		5.0	1.7	ug/L			11/10/17 13:49	1
Benzene	<0.15		0.50	0.15	ug/L			11/10/17 13:49	1
Bromoform	<0.48		1.0	0.48	ug/L			11/10/17 13:49	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/10/17 13:49	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/10/17 13:49	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/10/17 13:49	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/10/17 13:49	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/10/17 13:49	1
Chloroform	0.70 J		2.0	0.37	ug/L			11/10/17 13:49	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/10/17 13:49	1
cis-1,2-Dichloroethene	1.7		1.0	0.41	ug/L			11/10/17 13:49	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/10/17 13:49	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/10/17 13:49	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/10/17 13:49	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/10/17 13:49	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/10/17 13:49	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/10/17 13:49	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/10/17 13:49	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/10/17 13:49	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/10/17 13:49	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/10/17 13:49	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/10/17 13:49	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/10/17 13:49	1
Styrene	<0.39		1.0	0.39	ug/L			11/10/17 13:49	1
Tetrachloroethene	4.1		1.0	0.37	ug/L			11/10/17 13:49	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/10/17 13:49	1
Toluene	<0.15		0.50	0.15	ug/L			11/10/17 13:49	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/10/17 13:49	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/10/17 13:49	1
Trichloroethene	0.40 J		0.50	0.16	ug/L			11/10/17 13:49	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/10/17 13:49	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-28

Lab Sample ID: 500-136659-28

Date Collected: 11/01/17 14:25

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/10/17 13:49	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/10/17 13:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		75 - 126					11/10/17 13:49	1
4-Bromofluorobenzene (Surr)	92		72 - 124					11/10/17 13:49	1
Toluene-d8 (Surr)	95		75 - 120					11/10/17 13:49	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-136659-29

Date Collected: 11/01/17 00:00

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/10/17 14:15	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/10/17 14:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/10/17 14:15	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/10/17 14:15	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/10/17 14:15	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/10/17 14:15	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/10/17 14:15	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/10/17 14:15	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/10/17 14:15	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/10/17 14:15	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/10/17 14:15	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/10/17 14:15	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/10/17 14:15	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/10/17 14:15	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/10/17 14:15	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/10/17 14:15	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/10/17 14:15	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/10/17 14:15	1
Acetone	<1.7		5.0	1.7	ug/L			11/10/17 14:15	1
Benzene	<0.15		0.50	0.15	ug/L			11/10/17 14:15	1
Bromoform	<0.48		1.0	0.48	ug/L			11/10/17 14:15	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/10/17 14:15	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/10/17 14:15	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/10/17 14:15	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/10/17 14:15	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/10/17 14:15	1
Chloroform	<0.37		2.0	0.37	ug/L			11/10/17 14:15	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/10/17 14:15	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/10/17 14:15	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/10/17 14:15	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/10/17 14:15	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/10/17 14:15	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/10/17 14:15	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/10/17 14:15	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/10/17 14:15	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/10/17 14:15	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/10/17 14:15	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/10/17 14:15	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/10/17 14:15	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/10/17 14:15	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/10/17 14:15	1
Styrene	<0.39		1.0	0.39	ug/L			11/10/17 14:15	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/10/17 14:15	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/10/17 14:15	1
Toluene	<0.15		0.50	0.15	ug/L			11/10/17 14:15	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/10/17 14:15	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/10/17 14:15	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/10/17 14:15	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/10/17 14:15	1

TestAmerica Chicago

Client Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-136659-29

Date Collected: 11/01/17 00:00

Matrix: Water

Date Received: 11/02/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/10/17 14:15	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/10/17 14:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 126					11/10/17 14:15	1
4-Bromofluorobenzene (Surr)	92		72 - 124					11/10/17 14:15	1
Toluene-d8 (Surr)	96		75 - 120					11/10/17 14:15	1



Definitions/Glossary

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
C	See Case Narrative
J	Reported value was between the limit of detection and the limit of quantitation.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

GC/MS VOA

Analysis Batch: 409145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-136659-1	W-171030-RA-01	Total/NA	Water	8260B	
500-136659-2	W-171030-RA-02	Total/NA	Water	8260B	
500-136659-3	W-171030-RA-03	Total/NA	Water	8260B	
500-136659-4	W-171030-RA-04	Total/NA	Water	8260B	
500-136659-5	W-171030-RA-05	Total/NA	Water	8260B	
500-136659-6	W-171030-RA-06	Total/NA	Water	8260B	
500-136659-7	W-171031-RA-07	Total/NA	Water	8260B	
500-136659-8	W-171031-RA-08	Total/NA	Water	8260B	
500-136659-9	W-171031-RA-09	Total/NA	Water	8260B	
500-136659-10	W-171031-RA-10	Total/NA	Water	8260B	
500-136659-11	W-171031-RA-11	Total/NA	Water	8260B	
500-136659-12	W-171031-RA-12	Total/NA	Water	8260B	
MB 500-409145/6	Method Blank	Total/NA	Water	8260B	
LCS 500-409145/4	Lab Control Sample	Total/NA	Water	8260B	
500-136659-9 MS	W-171031-RA-09	Total/NA	Water	8260B	
500-136659-9 MSD	W-171031-RA-09	Total/NA	Water	8260B	

Analysis Batch: 409149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-136659-13	W-171031-RA-13	Total/NA	Water	8260B	
500-136659-14	W-171031-RA-14	Total/NA	Water	8260B	
500-136659-15	W-171101-RA-15	Total/NA	Water	8260B	
500-136659-16	W-171101-RA-16	Total/NA	Water	8260B	
500-136659-17	W-171101-RA-17	Total/NA	Water	8260B	
500-136659-18	W-171101-RA-18	Total/NA	Water	8260B	
500-136659-19	W-171101-RA-19	Total/NA	Water	8260B	
500-136659-20	W-171101-RA-20	Total/NA	Water	8260B	
MB 500-409149/6	Method Blank	Total/NA	Water	8260B	
LCS 500-409149/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 409332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-136659-21	W-171101-RA-21	Total/NA	Water	8260B	
500-136659-22	W-171101-RA-22	Total/NA	Water	8260B	
500-136659-23	W-171101-RA-23	Total/NA	Water	8260B	
500-136659-24	W-171101-RA-24	Total/NA	Water	8260B	
500-136659-25	W-171101-RA-25	Total/NA	Water	8260B	
500-136659-26	W-171101-RA-26	Total/NA	Water	8260B	
500-136659-27	W-171101-RA-27	Total/NA	Water	8260B	
500-136659-28	W-171101-RA-28	Total/NA	Water	8260B	
500-136659-29	Trip Blank	Total/NA	Water	8260B	
MB 500-409332/6	Method Blank	Total/NA	Water	8260B	
LCS 500-409332/4	Lab Control Sample	Total/NA	Water	8260B	

Surrogate Summary

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		12DCE (75-126)	BFB (72-124)	TOL (75-120)
500-136659-1	W-171030-RA-01	85	94	89
500-136659-2	W-171030-RA-02	84	94	88
500-136659-3	W-171030-RA-03	89	96	90
500-136659-4	W-171030-RA-04	85	92	89
500-136659-5	W-171030-RA-05	85	94	89
500-136659-6	W-171030-RA-06	82	97	90
500-136659-7	W-171031-RA-07	85	94	86
500-136659-8	W-171031-RA-08	84	95	91
500-136659-9	W-171031-RA-09	81	97	92
500-136659-9 MS	W-171031-RA-09	78	83	96
500-136659-9 MSD	W-171031-RA-09	79	86	95
500-136659-10	W-171031-RA-10	81	94	90
500-136659-11	W-171031-RA-11	79	96	94
500-136659-12	W-171031-RA-12	79	98	89
500-136659-13	W-171031-RA-13	87	93	95
500-136659-14	W-171031-RA-14	87	95	95
500-136659-15	W-171101-RA-15	86	93	94
500-136659-16	W-171101-RA-16	87	96	94
500-136659-17	W-171101-RA-17	86	95	95
500-136659-18	W-171101-RA-18	88	94	94
500-136659-19	W-171101-RA-19	86	93	95
500-136659-20	W-171101-RA-20	85	97	94
500-136659-21	W-171101-RA-21	85	91	94
500-136659-22	W-171101-RA-22	83	93	96
500-136659-23	W-171101-RA-23	86	89	95
500-136659-24	W-171101-RA-24	84	90	93
500-136659-25	W-171101-RA-25	82	93	96
500-136659-26	W-171101-RA-26	81	88	96
500-136659-27	W-171101-RA-27	83	92	96
500-136659-28	W-171101-RA-28	83	92	95
500-136659-29	Trip Blank	84	92	96
LCS 500-409145/4	Lab Control Sample	86	91	90
LCS 500-409149/4	Lab Control Sample	84	87	94
LCS 500-409332/4	Lab Control Sample	79	87	95
MB 500-409145/6	Method Blank	84	95	88
MB 500-409149/6	Method Blank	86	93	94
MB 500-409332/6	Method Blank	81	92	95

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-409145/6

Matrix: Water

Analysis Batch: 409145

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 13:04	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 13:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 13:04	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 13:04	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 13:04	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 13:04	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 13:04	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 13:04	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 13:04	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 13:04	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 13:04	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 13:04	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 13:04	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 13:04	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 13:04	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 13:04	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 13:04	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 13:04	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 13:04	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 13:04	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 13:04	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 13:04	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 13:04	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 13:04	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 13:04	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 13:04	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 13:04	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 13:04	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 13:04	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 13:04	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 13:04	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 13:04	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 13:04	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 13:04	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 13:04	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 13:04	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 13:04	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 13:04	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 13:04	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 13:04	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 13:04	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 13:04	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 13:04	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 13:04	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 13:04	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 13:04	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 13:04	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 13:04	1

TestAmerica Chicago

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-409145/6
Matrix: Water
Analysis Batch: 409145

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 13:04	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 13:04	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 13:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 126		11/09/17 13:04	1
4-Bromofluorobenzene (Surr)	95		72 - 124		11/09/17 13:04	1
Toluene-d8 (Surr)	88		75 - 120		11/09/17 13:04	1

Lab Sample ID: LCS 500-409145/4
Matrix: Water
Analysis Batch: 409145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	45.8		ug/L		92	70 - 125
1,1,1,2-Tetrachloroethane	50.0	45.5		ug/L		91	67 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	48.0		ug/L		96	70 - 123
1,1,2-Trichloroethane	50.0	43.2		ug/L		86	70 - 122
1,1-Dichloroethane	50.0	47.5		ug/L		95	70 - 125
1,1-Dichloroethene	50.0	46.1		ug/L		92	67 - 122
1,2,3-Trichlorobenzene	50.0	43.8		ug/L		88	55 - 140
1,2,4-Trichlorobenzene	50.0	42.3		ug/L		85	66 - 127
1,2,4-Trimethylbenzene	50.0	44.4		ug/L		89	70 - 123
1,2-Dibromo-3-Chloropropane	50.0	35.9		ug/L		72	56 - 123
1,2-Dichlorobenzene	50.0	44.3		ug/L		89	70 - 125
1,2-Dichloroethane	50.0	43.6		ug/L		87	68 - 127
1,2-Dichloropropane	50.0	48.8		ug/L		98	67 - 130
1,3,5-Trimethylbenzene	50.0	45.4		ug/L		91	70 - 123
1,3-Dichlorobenzene	50.0	43.8		ug/L		88	70 - 125
1,4-Dichlorobenzene	50.0	44.0		ug/L		88	70 - 120
2-Hexanone	50.0	47.1		ug/L		94	56 - 135
Bromochloromethane	50.0	46.9		ug/L		94	65 - 122
Acetone	50.0	56.4		ug/L		113	40 - 143
Benzene	50.0	49.4		ug/L		99	70 - 120
Bromoform	50.0	41.1		ug/L		82	56 - 132
Bromomethane	50.0	60.2		ug/L		120	40 - 130
Carbon disulfide	50.0	45.0		ug/L		90	66 - 120
Carbon tetrachloride	50.0	46.8		ug/L		94	65 - 122
Chlorobenzene	50.0	46.2		ug/L		92	70 - 120
Chloroethane	50.0	52.2		ug/L		104	45 - 127
Chloroform	50.0	45.1		ug/L		90	70 - 120
Chloromethane	50.0	51.1		ug/L		102	54 - 147
cis-1,2-Dichloroethene	50.0	47.5		ug/L		95	70 - 125
cis-1,3-Dichloropropene	50.0	42.2		ug/L		84	64 - 127
Dichlorobromomethane	50.0	47.8		ug/L		96	69 - 120
Dichlorodifluoromethane	50.0	44.6		ug/L		89	40 - 150
Ethylbenzene	50.0	45.4		ug/L		91	70 - 120

TestAmerica Chicago

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-409145/4

Matrix: Water

Analysis Batch: 409145

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide	50.0	44.0		ug/L		88	70 - 125
m-Xylene & p-Xylene	50.0	46.4		ug/L		93	70 - 125
Isopropylbenzene	50.0	45.3		ug/L		91	70 - 126
2-Butanone (MEK)	50.0	48.0		ug/L		96	53 - 141
4-Methyl-2-pentanone (MIBK)	50.0	46.3		ug/L		93	56 - 133
Methyl tert-butyl ether	50.0	46.3		ug/L		93	70 - 120
Methylene Chloride	50.0	49.8		ug/L		100	69 - 125
o-Xylene	50.0	46.4		ug/L		93	70 - 120
Styrene	50.0	46.6		ug/L		93	70 - 120
Tetrachloroethene	50.0	46.1		ug/L		92	70 - 128
Toluene	50.0	46.9		ug/L		94	70 - 125
trans-1,2-Dichloroethene	50.0	46.9		ug/L		94	70 - 125
trans-1,3-Dichloropropene	50.0	41.8		ug/L		84	62 - 128
Trichloroethene	50.0	49.2		ug/L		98	70 - 125
Trichlorofluoromethane	50.0	45.6		ug/L		91	70 - 126
Vinyl chloride	50.0	47.5		ug/L		95	64 - 126
Chlorodibromomethane	50.0	42.8		ug/L		86	68 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		75 - 126
4-Bromofluorobenzene (Surr)	91		72 - 124
Toluene-d8 (Surr)	90		75 - 120

Lab Sample ID: 500-136659-9 MS

Matrix: Water

Analysis Batch: 409145

Client Sample ID: W-171031-RA-09

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	<0.38		50.0	53.7		ug/L		107	70 - 125
1,1,1,2-Tetrachloroethane	<0.40		50.0	39.3		ug/L		79	67 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		50.0	57.7		ug/L		115	70 - 123
1,1,2-Trichloroethane	<0.35		50.0	41.6		ug/L		83	70 - 122
1,1-Dichloroethane	<0.41		50.0	50.8		ug/L		102	70 - 125
1,1-Dichloroethene	<0.39		50.0	53.6		ug/L		107	67 - 122
1,2,3-Trichlorobenzene	<0.46		50.0	38.5		ug/L		77	55 - 140
1,2,4-Trichlorobenzene	<0.34		50.0	41.0		ug/L		82	66 - 127
1,2,4-Trimethylbenzene	<0.36		50.0	49.8		ug/L		100	70 - 123
1,2-Dibromo-3-Chloropropane	<2.0		50.0	33.9		ug/L		68	56 - 123
1,2-Dichlorobenzene	<0.33		50.0	46.4		ug/L		93	70 - 125
1,2-Dichloroethane	<0.39		50.0	43.9		ug/L		88	68 - 127
1,2-Dichloropropane	<0.43		50.0	49.5		ug/L		99	67 - 130
1,3,5-Trimethylbenzene	<0.25		50.0	49.6		ug/L		99	70 - 123
1,3-Dichlorobenzene	<0.40		50.0	47.7		ug/L		95	70 - 125
1,4-Dichlorobenzene	<0.36		50.0	47.3		ug/L		95	70 - 120
2-Hexanone	<1.6		50.0	43.1		ug/L		86	56 - 135
Bromochloromethane	<0.43		50.0	49.5		ug/L		99	65 - 122
Acetone	<1.7		50.0	53.9		ug/L		108	40 - 143

TestAmerica Chicago

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-136659-9 MS

Matrix: Water

Analysis Batch: 409145

Client Sample ID: W-171031-RA-09

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.15		50.0	53.9		ug/L		108	70 - 120
Bromoform	<0.48		50.0	38.6		ug/L		77	56 - 132
Bromomethane	<0.80	F1	50.0	74.4	F1	ug/L		149	40 - 130
Carbon disulfide	<0.45		50.0	52.4		ug/L		105	66 - 120
Carbon tetrachloride	<0.38		50.0	53.5		ug/L		107	65 - 122
Chlorobenzene	<0.39		50.0	49.8		ug/L		100	70 - 120
Chloroethane	<0.51	F1	50.0	68.6	F1	ug/L		137	45 - 127
Chloroform	<0.37		50.0	48.8		ug/L		98	70 - 120
Chloromethane	<0.32		50.0	59.2		ug/L		118	54 - 147
cis-1,2-Dichloroethene	<0.41		50.0	52.1		ug/L		104	70 - 125
cis-1,3-Dichloropropene	<0.42		50.0	40.9		ug/L		82	64 - 127
Dichlorobromomethane	<0.37		50.0	46.0		ug/L		92	69 - 120
Dichlorodifluoromethane	<0.67		50.0	53.5		ug/L		107	40 - 150
Ethylbenzene	<0.18		50.0	48.5		ug/L		97	70 - 120
Ethylene Dibromide	<0.39		50.0	41.8		ug/L		84	70 - 125
m-Xylene & p-Xylene	<0.18		50.0	48.7		ug/L		97	70 - 125
Isopropylbenzene	<0.39		50.0	48.3		ug/L		97	70 - 126
2-Butanone (MEK)	<2.1		50.0	40.4		ug/L		81	53 - 141
4-Methyl-2-pentanone (MIBK)	<2.2		50.0	41.7		ug/L		83	56 - 133
Methyl tert-butyl ether	<0.39		50.0	44.5		ug/L		89	70 - 120
Methylene Chloride	<1.6		50.0	54.2		ug/L		108	69 - 125
o-Xylene	<0.22		50.0	51.1		ug/L		102	70 - 120
Styrene	<0.39		50.0	49.4		ug/L		99	70 - 120
Tetrachloroethene	<0.37		50.0	53.5		ug/L		107	70 - 128
Toluene	<0.15		50.0	54.4		ug/L		109	70 - 125
trans-1,2-Dichloroethene	<0.35		50.0	53.9		ug/L		108	70 - 125
trans-1,3-Dichloropropene	<0.36		50.0	40.3		ug/L		81	62 - 128
Trichloroethene	<0.16		50.0	53.2		ug/L		106	70 - 125
Trichlorofluoromethane	<0.43		50.0	54.3		ug/L		109	70 - 126
Vinyl chloride	<0.20		50.0	54.8		ug/L		110	64 - 126
Chlorodibromomethane	<0.49		50.0	40.7		ug/L		81	68 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	78		75 - 126
4-Bromofluorobenzene (Surr)	83		72 - 124
Toluene-d8 (Surr)	96		75 - 120

Lab Sample ID: 500-136659-9 MSD

Matrix: Water

Analysis Batch: 409145

Client Sample ID: W-171031-RA-09

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	<0.38		50.0	47.5		ug/L		95	70 - 125	12	20
1,1,2,2-Tetrachloroethane	<0.40		50.0	38.6		ug/L		77	67 - 127	2	20
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		50.0	51.5		ug/L		103	70 - 123	11	20
1,1,2-Trichloroethane	<0.35		50.0	37.2		ug/L		74	70 - 122	11	20
1,1-Dichloroethane	<0.41		50.0	46.8		ug/L		94	70 - 125	8	20

TestAmerica Chicago

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-136659-9 MSD

Client Sample ID: W-171031-RA-09

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 409145

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	<0.39		50.0	48.3		ug/L		97	67 - 122	11	20
1,2,3-Trichlorobenzene	<0.46		50.0	36.4		ug/L		73	55 - 140	6	20
1,2,4-Trichlorobenzene	<0.34		50.0	37.0		ug/L		74	66 - 127	10	20
1,2,4-Trimethylbenzene	<0.36		50.0	45.2		ug/L		90	70 - 123	10	20
1,2-Dibromo-3-Chloropropane	<2.0		50.0	29.0		ug/L		58	56 - 123	16	20
1,2-Dichlorobenzene	<0.33		50.0	41.8		ug/L		84	70 - 125	10	20
1,2-Dichloroethane	<0.39		50.0	38.5		ug/L		77	68 - 127	13	20
1,2-Dichloropropane	<0.43		50.0	43.3		ug/L		87	67 - 130	13	20
1,3,5-Trimethylbenzene	<0.25		50.0	46.6		ug/L		93	70 - 123	6	20
1,3-Dichlorobenzene	<0.40		50.0	42.9		ug/L		86	70 - 125	11	20
1,4-Dichlorobenzene	<0.36		50.0	43.1		ug/L		86	70 - 120	9	20
2-Hexanone	<1.6		50.0	35.6		ug/L		71	56 - 135	19	20
Bromochloromethane	<0.43		50.0	44.4		ug/L		89	65 - 122	11	20
Acetone	<1.7		50.0	42.5	F2	ug/L		85	40 - 143	24	20
Benzene	<0.15		50.0	47.4		ug/L		95	70 - 120	13	20
Bromoform	<0.48		50.0	32.7		ug/L		65	56 - 132	17	20
Bromomethane	<0.80	F1	50.0	64.4		ug/L		129	40 - 130	14	20
Carbon disulfide	<0.45		50.0	47.5		ug/L		95	66 - 120	10	20
Carbon tetrachloride	<0.38		50.0	47.1		ug/L		94	65 - 122	13	20
Chlorobenzene	<0.39		50.0	44.1		ug/L		88	70 - 120	12	20
Chloroethane	<0.51	F1	50.0	59.8		ug/L		120	45 - 127	14	20
Chloroform	<0.37		50.0	44.9		ug/L		90	70 - 120	8	20
Chloromethane	<0.32		50.0	51.9		ug/L		104	54 - 147	13	20
cis-1,2-Dichloroethene	<0.41		50.0	47.6		ug/L		95	70 - 125	9	20
cis-1,3-Dichloropropene	<0.42		50.0	37.6		ug/L		75	64 - 127	8	20
Dichlorobromomethane	<0.37		50.0	40.1		ug/L		80	69 - 120	14	20
Dichlorodifluoromethane	<0.67		50.0	45.6		ug/L		91	40 - 150	16	20
Ethylbenzene	<0.18		50.0	45.4		ug/L		91	70 - 120	7	20
Ethylene Dibromide	<0.39		50.0	36.3		ug/L		73	70 - 125	14	20
m-Xylene & p-Xylene	<0.18		50.0	46.0		ug/L		92	70 - 125	6	20
Isopropylbenzene	<0.39		50.0	46.4		ug/L		93	70 - 126	4	20
2-Butanone (MEK)	<2.1		50.0	36.8		ug/L		74	53 - 141	9	20
4-Methyl-2-pentanone (MIBK)	<2.2		50.0	37.8		ug/L		76	56 - 133	10	20
Methyl tert-butyl ether	<0.39		50.0	39.6		ug/L		79	70 - 120	12	20
Methylene Chloride	<1.6		50.0	48.7		ug/L		97	69 - 125	11	20
o-Xylene	<0.22		50.0	46.4		ug/L		93	70 - 120	10	20
Styrene	<0.39		50.0	45.1		ug/L		90	70 - 120	9	20
Tetrachloroethene	<0.37		50.0	46.9		ug/L		94	70 - 128	13	20
Toluene	<0.15		50.0	46.6		ug/L		93	70 - 125	15	20
trans-1,2-Dichloroethene	<0.35		50.0	47.7		ug/L		95	70 - 125	12	20
trans-1,3-Dichloropropene	<0.36		50.0	34.7		ug/L		69	62 - 128	15	20
Trichloroethene	<0.16		50.0	47.0		ug/L		94	70 - 125	12	20
Trichlorofluoromethane	<0.43		50.0	46.6		ug/L		93	70 - 126	15	20
Vinyl chloride	<0.20		50.0	48.9		ug/L		98	64 - 126	11	20
Chlorodibromomethane	<0.49		50.0	37.7		ug/L		75	68 - 125	8	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	79		75 - 126

TestAmerica Chicago

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-136659-9 MSD

Matrix: Water

Analysis Batch: 409145

Client Sample ID: W-171031-RA-09

Prep Type: Total/NA

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	86		72 - 124
Toluene-d8 (Surr)	95		75 - 120

Lab Sample ID: MB 500-409149/6

Matrix: Water

Analysis Batch: 409149

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/09/17 10:01	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/09/17 10:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/09/17 10:01	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/09/17 10:01	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/09/17 10:01	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/09/17 10:01	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/09/17 10:01	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/09/17 10:01	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/09/17 10:01	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/09/17 10:01	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/09/17 10:01	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/09/17 10:01	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/09/17 10:01	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/09/17 10:01	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/09/17 10:01	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/09/17 10:01	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/09/17 10:01	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/09/17 10:01	1
Acetone	<1.7		5.0	1.7	ug/L			11/09/17 10:01	1
Benzene	<0.15		0.50	0.15	ug/L			11/09/17 10:01	1
Bromoform	<0.48		1.0	0.48	ug/L			11/09/17 10:01	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/09/17 10:01	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/09/17 10:01	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/09/17 10:01	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/09/17 10:01	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/09/17 10:01	1
Chloroform	<0.37		2.0	0.37	ug/L			11/09/17 10:01	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/09/17 10:01	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/09/17 10:01	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/09/17 10:01	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/09/17 10:01	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/09/17 10:01	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/09/17 10:01	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/09/17 10:01	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/09/17 10:01	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/09/17 10:01	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/09/17 10:01	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/09/17 10:01	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/09/17 10:01	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/09/17 10:01	1

TestAmerica Chicago

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-409149/6
Matrix: Water
Analysis Batch: 409149

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.22		0.50	0.22	ug/L			11/09/17 10:01	1
Styrene	<0.39		1.0	0.39	ug/L			11/09/17 10:01	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/09/17 10:01	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/09/17 10:01	1
Toluene	<0.15		0.50	0.15	ug/L			11/09/17 10:01	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/09/17 10:01	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/09/17 10:01	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/09/17 10:01	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/09/17 10:01	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/09/17 10:01	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/09/17 10:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 126		11/09/17 10:01	1
4-Bromofluorobenzene (Surr)	93		72 - 124		11/09/17 10:01	1
Toluene-d8 (Surr)	94		75 - 120		11/09/17 10:01	1

Lab Sample ID: LCS 500-409149/4
Matrix: Water
Analysis Batch: 409149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	53.5		ug/L		107	70 - 125
1,1,1,2-Tetrachloroethane	50.0	46.8		ug/L		94	67 - 127
1,1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	51.9		ug/L		104	70 - 123
1,1,2-Trichloroethane	50.0	51.4		ug/L		103	70 - 122
1,1-Dichloroethane	50.0	54.1		ug/L		108	70 - 125
1,1-Dichloroethene	50.0	53.8		ug/L		108	67 - 122
1,2,3-Trichlorobenzene	50.0	56.7		ug/L		113	55 - 140
1,2,4-Trichlorobenzene	50.0	57.0		ug/L		114	66 - 127
1,2,4-Trimethylbenzene	50.0	51.8		ug/L		104	70 - 123
1,2-Dibromo-3-Chloropropane	50.0	43.7		ug/L		87	56 - 123
1,2-Dichlorobenzene	50.0	53.2		ug/L		106	70 - 125
1,2-Dichloroethane	50.0	49.2		ug/L		98	68 - 127
1,2-Dichloropropane	50.0	52.4		ug/L		105	67 - 130
1,3,5-Trimethylbenzene	50.0	52.4		ug/L		105	70 - 123
1,3-Dichlorobenzene	50.0	53.3		ug/L		107	70 - 125
1,4-Dichlorobenzene	50.0	53.1		ug/L		106	70 - 120
2-Hexanone	50.0	49.1		ug/L		98	56 - 135
Bromochloromethane	50.0	52.8		ug/L		106	65 - 122
Acetone	50.0	47.6		ug/L		95	40 - 143
Benzene	50.0	53.5		ug/L		107	70 - 120
Bromoform	50.0	55.6		ug/L		111	56 - 132
Bromomethane	50.0	41.7		ug/L		83	40 - 130
Carbon disulfide	50.0	56.1		ug/L		112	66 - 120
Carbon tetrachloride	50.0	53.7		ug/L		107	65 - 122
Chlorobenzene	50.0	54.3		ug/L		109	70 - 120

TestAmerica Chicago

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-409149/4
Matrix: Water
Analysis Batch: 409149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroethane	50.0	50.1		ug/L		100	45 - 127
Chloroform	50.0	51.3		ug/L		103	70 - 120
Chloromethane	50.0	43.3		ug/L		87	54 - 147
cis-1,2-Dichloroethene	50.0	53.9		ug/L		108	70 - 125
cis-1,3-Dichloropropene	50.0	50.7		ug/L		101	64 - 127
Dichlorobromomethane	50.0	50.8		ug/L		102	69 - 120
Dichlorodifluoromethane	50.0	49.3		ug/L		99	40 - 150
Ethylbenzene	50.0	54.4		ug/L		109	70 - 120
Ethylene Dibromide	50.0	49.7		ug/L		99	70 - 125
m-Xylene & p-Xylene	50.0	55.1		ug/L		110	70 - 125
Isopropylbenzene	50.0	50.3		ug/L		101	70 - 126
2-Butanone (MEK)	50.0	50.8		ug/L		102	53 - 141
4-Methyl-2-pentanone (MIBK)	50.0	47.7		ug/L		95	56 - 133
Methyl tert-butyl ether	50.0	51.1		ug/L		102	70 - 120
Methylene Chloride	50.0	53.8		ug/L		108	69 - 125
o-Xylene	50.0	55.3		ug/L		111	70 - 120
Styrene	50.0	56.3		ug/L		113	70 - 120
Tetrachloroethene	50.0	58.0		ug/L		116	70 - 128
Toluene	50.0	56.2		ug/L		112	70 - 125
trans-1,2-Dichloroethene	50.0	54.3		ug/L		109	70 - 125
trans-1,3-Dichloropropene	50.0	49.8		ug/L		100	62 - 128
Trichloroethene	50.0	53.3		ug/L		107	70 - 125
Trichlorofluoromethane	50.0	47.9		ug/L		96	70 - 126
Vinyl chloride	50.0	50.6		ug/L		101	64 - 126
Chlorodibromomethane	50.0	53.5		ug/L		107	68 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		75 - 126
4-Bromofluorobenzene (Surr)	87		72 - 124
Toluene-d8 (Surr)	94		75 - 120

Lab Sample ID: MB 500-409332/6
Matrix: Water
Analysis Batch: 409332

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/10/17 10:21	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/10/17 10:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/10/17 10:21	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/10/17 10:21	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/10/17 10:21	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/10/17 10:21	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/10/17 10:21	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/10/17 10:21	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/10/17 10:21	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/10/17 10:21	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/10/17 10:21	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/10/17 10:21	1

TestAmerica Chicago

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-409332/6
Matrix: Water
Analysis Batch: 409332

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/10/17 10:21	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/10/17 10:21	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/10/17 10:21	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/10/17 10:21	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/10/17 10:21	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/10/17 10:21	1
Acetone	<1.7		5.0	1.7	ug/L			11/10/17 10:21	1
Benzene	<0.15		0.50	0.15	ug/L			11/10/17 10:21	1
Bromoform	<0.48		1.0	0.48	ug/L			11/10/17 10:21	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/10/17 10:21	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/10/17 10:21	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/10/17 10:21	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/10/17 10:21	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/10/17 10:21	1
Chloroform	<0.37		2.0	0.37	ug/L			11/10/17 10:21	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/10/17 10:21	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/10/17 10:21	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/10/17 10:21	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/10/17 10:21	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/10/17 10:21	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/10/17 10:21	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/10/17 10:21	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/10/17 10:21	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/10/17 10:21	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/10/17 10:21	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/10/17 10:21	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/10/17 10:21	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/10/17 10:21	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/10/17 10:21	1
Styrene	<0.39		1.0	0.39	ug/L			11/10/17 10:21	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/10/17 10:21	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/10/17 10:21	1
Toluene	<0.15		0.50	0.15	ug/L			11/10/17 10:21	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/10/17 10:21	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/10/17 10:21	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/10/17 10:21	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/10/17 10:21	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			11/10/17 10:21	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/10/17 10:21	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	81		75 - 126		11/10/17 10:21	1
4-Bromofluorobenzene (Surr)	92		72 - 124		11/10/17 10:21	1
Toluene-d8 (Surr)	95		75 - 120		11/10/17 10:21	1

TestAmerica Chicago

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-409332/4

Matrix: Water

Analysis Batch: 409332

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	51.1		ug/L		102	70 - 125
1,1,1,2-Tetrachloroethane	50.0	40.2		ug/L		80	67 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	52.6		ug/L		105	70 - 123
1,1,2-Trichloroethane	50.0	45.6		ug/L		91	70 - 122
1,1-Dichloroethane	50.0	50.3		ug/L		101	70 - 125
1,1-Dichloroethene	50.0	51.7		ug/L		103	67 - 122
1,2,3-Trichlorobenzene	50.0	50.9		ug/L		102	55 - 140
1,2,4-Trichlorobenzene	50.0	54.1		ug/L		108	66 - 127
1,2,4-Trimethylbenzene	50.0	49.8		ug/L		100	70 - 123
1,2-Dibromo-3-Chloropropane	50.0	38.9		ug/L		78	56 - 123
1,2-Dichlorobenzene	50.0	48.7		ug/L		97	70 - 125
1,2-Dichloroethane	50.0	42.9		ug/L		86	68 - 127
1,2-Dichloropropane	50.0	47.1		ug/L		94	67 - 130
1,3,5-Trimethylbenzene	50.0	50.5		ug/L		101	70 - 123
1,3-Dichlorobenzene	50.0	50.2		ug/L		100	70 - 125
1,4-Dichlorobenzene	50.0	49.7		ug/L		99	70 - 120
2-Hexanone	50.0	41.6		ug/L		83	56 - 135
Bromochloromethane	50.0	47.1		ug/L		94	65 - 122
Acetone	50.0	38.4		ug/L		77	40 - 143
Benzene	50.0	50.1		ug/L		100	70 - 120
Bromoform	50.0	48.6		ug/L		97	56 - 132
Bromomethane	50.0	38.8		ug/L		78	40 - 130
Carbon disulfide	50.0	55.2		ug/L		110	66 - 120
Carbon tetrachloride	50.0	52.1		ug/L		104	65 - 122
Chlorobenzene	50.0	50.3		ug/L		101	70 - 120
Chloroethane	50.0	45.3		ug/L		91	45 - 127
Chloroform	50.0	46.8		ug/L		94	70 - 120
Chloromethane	50.0	38.9		ug/L		78	54 - 147
cis-1,2-Dichloroethene	50.0	49.8		ug/L		100	70 - 125
cis-1,3-Dichloropropene	50.0	46.2		ug/L		92	64 - 127
Dichlorobromomethane	50.0	45.4		ug/L		91	69 - 120
Dichlorodifluoromethane	50.0	41.3		ug/L		83	40 - 150
Ethylbenzene	50.0	51.6		ug/L		103	70 - 120
Ethylene Dibromide	50.0	43.9		ug/L		88	70 - 125
m-Xylene & p-Xylene	50.0	52.0		ug/L		104	70 - 125
Isopropylbenzene	50.0	48.9		ug/L		98	70 - 126
2-Butanone (MEK)	50.0	39.8		ug/L		80	53 - 141
4-Methyl-2-pentanone (MIBK)	50.0	41.3		ug/L		83	56 - 133
Methyl tert-butyl ether	50.0	44.6		ug/L		89	70 - 120
Methylene Chloride	50.0	50.4		ug/L		101	69 - 125
o-Xylene	50.0	51.3		ug/L		103	70 - 120
Styrene	50.0	51.6		ug/L		103	70 - 120
Tetrachloroethene	50.0	55.4		ug/L		111	70 - 128
Toluene	50.0	52.7		ug/L		105	70 - 125
trans-1,2-Dichloroethene	50.0	51.5		ug/L		103	70 - 125
trans-1,3-Dichloropropene	50.0	44.6		ug/L		89	62 - 128
Trichloroethene	50.0	49.8		ug/L		100	70 - 125

TestAmerica Chicago

QC Sample Results

Client: GHD Services Inc.
 Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-409332/4
Matrix: Water
Analysis Batch: 409332

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	44.2		ug/L		88	70 - 126
Vinyl chloride	50.0	47.3		ug/L		95	64 - 126
Chlorodibromomethane	50.0	47.3		ug/L		95	68 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	79		75 - 126
4-Bromofluorobenzene (Surr)	87		72 - 124
Toluene-d8 (Surr)	95		75 - 120



Lab Chronicle

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171030-RA-01

Date Collected: 10/30/17 11:50

Date Received: 11/02/17 09:00

Lab Sample ID: 500-136659-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 16:01	JJH	TAL CHI

Client Sample ID: W-171030-RA-02

Date Collected: 10/30/17 11:52

Date Received: 11/02/17 09:00

Lab Sample ID: 500-136659-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 16:26	JJH	TAL CHI

Client Sample ID: W-171030-RA-03

Date Collected: 10/30/17 12:20

Date Received: 11/02/17 09:00

Lab Sample ID: 500-136659-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 16:51	JJH	TAL CHI

Client Sample ID: W-171030-RA-04

Date Collected: 10/30/17 13:00

Date Received: 11/02/17 09:00

Lab Sample ID: 500-136659-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 17:17	JJH	TAL CHI

Client Sample ID: W-171030-RA-05

Date Collected: 10/30/17 13:54

Date Received: 11/02/17 09:00

Lab Sample ID: 500-136659-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 17:42	JJH	TAL CHI

Client Sample ID: W-171030-RA-06

Date Collected: 10/30/17 14:30

Date Received: 11/02/17 09:00

Lab Sample ID: 500-136659-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 18:07	JJH	TAL CHI

TestAmerica Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-07

Lab Sample ID: 500-136659-7

Date Collected: 10/31/17 10:07

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 18:33	JJH	TAL CHI

Client Sample ID: W-171031-RA-08

Lab Sample ID: 500-136659-8

Date Collected: 10/31/17 10:08

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 18:58	JJH	TAL CHI

Client Sample ID: W-171031-RA-09

Lab Sample ID: 500-136659-9

Date Collected: 10/31/17 11:06

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 19:23	JJH	TAL CHI

Client Sample ID: W-171031-RA-10

Lab Sample ID: 500-136659-10

Date Collected: 10/31/17 11:30

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 20:38	JJH	TAL CHI

Client Sample ID: W-171031-RA-11

Lab Sample ID: 500-136659-11

Date Collected: 10/31/17 11:49

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 21:03	JJH	TAL CHI

Client Sample ID: W-171031-RA-12

Lab Sample ID: 500-136659-12

Date Collected: 10/31/17 13:55

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409145	11/09/17 21:28	JJH	TAL CHI

TestAmerica Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171031-RA-13

Lab Sample ID: 500-136659-13

Date Collected: 10/31/17 13:56

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409149	11/09/17 13:41	JJH	TAL CHI

Client Sample ID: W-171031-RA-14

Lab Sample ID: 500-136659-14

Date Collected: 10/31/17 14:46

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409149	11/09/17 14:08	JJH	TAL CHI

Client Sample ID: W-171101-RA-15

Lab Sample ID: 500-136659-15

Date Collected: 11/01/17 09:38

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409149	11/09/17 14:36	JJH	TAL CHI

Client Sample ID: W-171101-RA-16

Lab Sample ID: 500-136659-16

Date Collected: 11/01/17 10:05

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409149	11/09/17 15:03	JJH	TAL CHI

Client Sample ID: W-171101-RA-17

Lab Sample ID: 500-136659-17

Date Collected: 11/01/17 10:25

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409149	11/09/17 15:59	JJH	TAL CHI

Client Sample ID: W-171101-RA-18

Lab Sample ID: 500-136659-18

Date Collected: 11/01/17 10:50

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409149	11/09/17 16:26	JJH	TAL CHI

TestAmerica Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-19

Lab Sample ID: 500-136659-19

Date Collected: 11/01/17 11:10

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409149	11/09/17 16:52	JJH	TAL CHI

Client Sample ID: W-171101-RA-20

Lab Sample ID: 500-136659-20

Date Collected: 11/01/17 12:10

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409149	11/09/17 17:18	JJH	TAL CHI

Client Sample ID: W-171101-RA-21

Lab Sample ID: 500-136659-21

Date Collected: 11/01/17 12:30

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409332	11/10/17 10:47	JJH	TAL CHI

Client Sample ID: W-171101-RA-22

Lab Sample ID: 500-136659-22

Date Collected: 11/01/17 12:35

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409332	11/10/17 11:13	JJH	TAL CHI

Client Sample ID: W-171101-RA-23

Lab Sample ID: 500-136659-23

Date Collected: 11/01/17 13:00

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409332	11/10/17 11:39	JJH	TAL CHI

Client Sample ID: W-171101-RA-24

Lab Sample ID: 500-136659-24

Date Collected: 11/01/17 13:15

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409332	11/10/17 12:05	JJH	TAL CHI

TestAmerica Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Client Sample ID: W-171101-RA-25

Lab Sample ID: 500-136659-25

Date Collected: 11/01/17 13:40

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409332	11/10/17 12:31	JJH	TAL CHI

Client Sample ID: W-171101-RA-26

Lab Sample ID: 500-136659-26

Date Collected: 11/01/17 14:00

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409332	11/10/17 12:57	JJH	TAL CHI

Client Sample ID: W-171101-RA-27

Lab Sample ID: 500-136659-27

Date Collected: 11/01/17 14:20

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409332	11/10/17 13:23	JJH	TAL CHI

Client Sample ID: W-171101-RA-28

Lab Sample ID: 500-136659-28

Date Collected: 11/01/17 14:25

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409332	11/10/17 13:49	JJH	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-136659-29

Date Collected: 11/01/17 00:00

Matrix: Water

Date Received: 11/02/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	409332	11/10/17 14:15	JJH	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: New Richmond LF 048038

TestAmerica Job ID: 500-136659-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18

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GUYA & ASSOCIATES
LOGA-ROVERS


CHAIN OF CUSTODY RECORD

1801 Old Highway 8 Northwest, Suite 114
 St. Paul, Minnesota 55112 United States

Phone: (651) 639-0913 Fax: (651) 639-0923

COC NO. **SP-02523**

500-136659 PAGE 1 OF 2
 (See Reverse Side for Instructions)

Project No/Phase/Task Code: 048038				Laboratory Name: Test America				Lab Location: N. Canton, OH				SSOW ID:							
Project Name: NRLF				Lab Contact:				Lab Quote No:				Cooler No:							
Project Location: New Richmond WI				SAMPLE TYPE				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)							
Chemistry Contact: Grant Anderson				Matrix Code (see back of COC) Grab (G) or Comp (C)				Unpreserved Hydrochloric Acid (HCl) Nitric Acid (HNO ₃) Sulfuric Acid (H ₂ SO ₄) Sodium Hydroxide (NaOH) Methanol/Water (Soil VOC) EnCores 3x5-g, 1x25-g Other:				Total Containers/Sample VOCs				Carrier: Fed Ex			
Sampler(s): MB/RA/KJ																Airbill No:			
SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)				DATE (mm/dd/yy)		TIME (hh:mm)						Date Shipped: 11-1-17							
												COMMENTS/ SPECIAL INSTRUCTIONS:							
1	W-171030-RA-01			10/30/17	11:50	W6 G	3					3	X					 500-136659 COC 7-14 IDIS "W-171031-RA" logged ID per bottle label 11/2/17	
2	-02				11:52		3					3	X						
3	-03				12:20		3					3	X						
4	-04				13:00		3					3	X						
5	-05				13:54		3					3	X						
6	-06				14:30		3					3	X						
7	W-171030-RA-07			10/31/17	10:07		3					3	X						
8	-08				10:08		3					3	X						
9	-09				11:06		9					9	X						
10	-10				11:30		3					3	X						
11	-11				11:49		3					3	X						
12	-12				13:55		3					3	X						
13	-13				13:56		3					3	X						
14	-14				14:46		3					3	X						
15	W-171101-RA-15			11/1/17	9:38		3					3	X						
TAT Required in business days (use separate COCs for different TATs): <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days <input type="checkbox"/> 1 Week <input checked="" type="checkbox"/> 2 Week <input type="checkbox"/> Other:							Total Number of Containers: 61				Notes/ Special Requirements: 0.8 -> 0.2								
All Samples in Cooler must be on COC																			
RELINQUISHED BY		COMPANY		DATE		TIME		RECEIVED BY		COMPANY		DATE		TIME					
1. <i>[Signature]</i>		GHD		11-1-17		16:00		1. <i>[Signature]</i>		TALME		11/02/17		0900					
2.								2.											
3.								3.											

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY



CONESTOGA-ROVERS & ASSOCIATES

CHAIN OF CUSTODY RECORD

1801 Old Highway 8 Northwest, Suite 114
St. Paul, Minnesota 55112 United States

Phone: (651) 639-0913 Fax: (651) 639-0923

COC NO.: **SP-02524**

PAGE 2 OF 2

500-136659 (See Reverse Side for Instructions)

Project No/ Phase/Task Code: 048038			Laboratory Name: TA				Lab Location: N. Lenton OH				SSOW ID:	
Project Name: NRLF			Lab Contact:				Lab Quote No:				Cooler No:	
Project Location: New Richmond WI			SAMPLE TYPE CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)				Carrier: FedEx	
Chemistry Contact: Grant Anderson											Matrix Code (see back of COC)	
Sampler(s): MB/RA/KJ			Unpreserved		Hydrochloric Acid (HCl)		Nitric Acid (HNO ₃)		Sulfuric Acid (H ₂ SO ₄)		Date Shipped: 11-1-17	
SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)			DATE (mm/dd/yy)		TIME (hh:mm)		Total Containers/Sample		COMMENTS/ SPECIAL INSTRUCTIONS:			
1	W-171101-RA-16		11-1-17	10:05	WG	G	3					
2	-17			10:25			3					
3	-18			10:50			3					
4	-19			11:10			3					
5	-20			12:10			3					
6	-21			12:30			3					
7	-22			12:35			3					
8	-23			13:00			3					
9	-24			13:15			3					
10	-25			13:40			3					
11	-26			14:00			3					
12	-27			14:20			3					
13	-28			14:25			3					
14	Trip Blank						8					
15												

TAT Required in business days (use separate COCs for different TATs):
 1 Day 2 Days 3 Days 1 Week 2 Week Other:
 Total Number of Containers: **47** Notes/ Special Requirements: **0.8 > 0.2**
 All Samples in Cooler must be on COC

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
<i>Matthew P...</i>	GHD	11-1-17	16:00	<i>Shirley Sanchez</i>	TACH	11/02/17	0900

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-136659-1

Login Number: 136659

List Source: TestAmerica Chicago

List Number: 1

Creator: Sanchez, Ariel M

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Memorandum

October 3, 2017

To: Tom Hobday, GHD

Ref. No.: 048038-70-05

From: Grant Anderson/md/29

Tel: 612-524-6836

**Subject: Analytical Results and Reduced Validation
Air Sampling Program
New Richmond Landfill Site
New Richmond, Wisconsin
February, April, and July 2017**

1. Introduction

The following document details a reduced validation of analytical results for air samples collected in support of the air sampling program at the New Richmond Landfill Site during February, April, and July 2017. Samples were submitted to TestAmerica Laboratories, Inc. (TestAmerica), located in Knoxville, Tennessee. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD Services, Inc. (GHD) report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, recovery data from surrogate spikes, laboratory control samples (LCS), and field QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 2 and applicable documents entitled:

- i) "Quality Assurance Project Plan (QAPP), New Richmond Landfill, WDNR License #2492"; April 2008, Conestoga-Rovers & Associates, Report 7
- ii) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", USEPA 540-R-99-008, October 1999

Item ii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. The sample chain of custody documents and analytical reports were used to determine sample holding times. The samples were prepared and analyzed within the required holding time.



The samples were properly preserved and stored by the laboratory at the required temperature.

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

Laboratory method blanks were analyzed at a minimum frequency of one per 20 investigative samples and/or one per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile organic compound (VOC) determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Surrogate recoveries were assessed against laboratory control limits. The surrogate recoveries met the above criteria for investigative samples.

5. Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

LCS were analyzed at a minimum frequency of one per 20 investigative samples and/or one per analytical batch.

The LCS contained all compounds of interest. LCS recoveries were assessed per the "Guidelines". With the exception of n-propylbenzene, the LCS recoveries were within the control limits. N-propylbenzene yielded a recovery slightly above the upper control limit. However, the associated sample was reported to be non-detect for n-propylbenzene; therefore, no qualification of data was necessary based on outlying LCS results.

6. Field QA/QC Samples

There were no field QA/QC samples collected for the sampling event.



7. Analyte Reporting

The laboratory reported detected results down to the reporting limit (RL). Non-detect results were presented as non-detect at the RL in Table 2.

8. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable without qualification.

Table 1

**Sample Collection and Analysis Summary
Air Sampling Events
New Richmond Landfill Site
New Richmond, Wisconsin
February, April, and July 2017**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	<u>Analysis/Parameters</u>
					VOCs
G-170214-MB-01	Blower Discharge	air	02/14/2017	14:00	X
G-170405-MB-01	Blower Discharge	air	04/05/2017	16:10	X
G-170724-MB-01	Blower Discharge	air	07/24/2017	13:10	X

Notes:

VOCs - Volatile Organic Compounds

**Validated Analytical Results
Air Sampling Events
New Richmond Landfill Site
New Richmond, Wisconsin
February, April, and July 2017**

	Location ID: Sample Name: Sample Date:	Blower Discharge G-170214-MB-01 02/14/2017	Blower Discharge G-170405-MB-01 04/05/2017	Blower Discharge G-170724-MB-01 07/24/2017
Parameters	Unit			
Volatile Organic Compounds				
1,1,1-Trichloroethane	ppbv	69	58	69
1,1,2,2-Tetrachloroethane	ppbv	0.20 U	0.40 U	0.80 U
1,1,2-Trichloroethane	ppbv	0.20 U	0.40 U	0.80 U
1,1-Dichloroethane	ppbv	56	65	68
1,1-Dichloroethene	ppbv	7.5	5.7	11
1,2,4-Trichlorobenzene	ppbv	1.0 U	2.0 U	4.0 U
1,2,4-Trimethylbenzene	ppbv	0.20 U	0.40 U	0.80 U
1,2-Dibromoethane (Ethylene dibromide)	ppbv	0.20 U	0.40 U	0.80 U
1,2-Dichlorobenzene	ppbv	0.20 U	0.40 U	0.80 U
1,2-Dichloroethane	ppbv	0.20 U	0.40 U	0.80 U
1,2-Dichloropropane	ppbv	0.41	0.40 U	0.80 U
1,2-Dichlorotetrafluoroethane (CFC 114)	ppbv	2.8	8.5	6.7
1,3,5-Trimethylbenzene	ppbv	0.20 U	0.40 U	0.80 U
1,3-Butadiene	ppbv	0.40 U	0.80 U	1.6 U
1,3-Dichlorobenzene	ppbv	0.20 U	0.40 U	0.80 U
1,4-Dichlorobenzene	ppbv	0.20	0.40 U	0.80 U
2-Butanone (Methyl ethyl ketone) (MEK)	ppbv	1.4	2.6	4.0 U
2-Hexanone	ppbv	0.50 U	1.0 U	2.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ppbv	0.50 U	1.0 U	2.0 U
Acetone	ppbv	5.0 U	11	20 U
Acetonitrile	ppbv	1.0 U	2.0 U	4.0 U
Acrolein	ppbv	1.0 U	2.0 U	4.0 U
Acrylonitrile	ppbv	2.0 U	4.0 U	8.0 U
Allyl chloride	ppbv	0.20 U	0.40 U	0.80 U
alpha-Methylstyrene	ppbv	0.40 U	0.80 U	1.6 U
Benzene	ppbv	0.50	1.2	0.80 U
Benzyl chloride	ppbv	0.40 U	0.80 U	1.6 U
Bromodichloromethane	ppbv	0.20 U	0.40 U	0.80 U
Bromoform	ppbv	0.20 U	0.40 U	0.80 U
Bromomethane (Methyl bromide)	ppbv	0.20 U	0.40 U	0.80 U
Butane	ppbv	5.3	43	10
Carbon disulfide	ppbv	0.50 U	1.0 U	2.0 U
Carbon tetrachloride	ppbv	0.20 U	0.40 U	0.80 U
Chlorobenzene	ppbv	0.24	0.53	1.1
Chlorodifluoromethane	ppbv	3.9	12	8.6
Chloroethane	ppbv	6.6	20	14
Chloroform (Trichloromethane)	ppbv	6.6	3.5	9.0
Chloromethane (Methyl chloride)	ppbv	0.50 U	1.0 U	2.0 U
cis-1,2-Dichloroethene	ppbv	6.5	8.4	15
cis-1,3-Dichloropropene	ppbv	0.20 U	0.40 U	0.80 U
Cyclohexane	ppbv	3.3	6.8	3.2
Dibromochloromethane	ppbv	0.20 U	0.40 U	0.80 U
Dibromomethane	ppbv	0.40 U	0.80 U	1.6 U
Dichlorodifluoromethane (CFC-12)	ppbv	11	37	18
Ethyl ether	ppbv	2.0 U	4.0 U	8.0 U
Ethylbenzene	ppbv	0.35	0.78	0.84
Hexachlorobutadiene	ppbv	1.0 U	2.0 U	4.0 U
Hexane	ppbv	2.4	6.0	3.0
Isopropyl benzene	ppbv	0.40 U	0.80 U	1.6 U
m&p-Xylenes	ppbv	0.45	1.1	0.84
Methyl tert butyl ether (MTBE)	ppbv	1.0 U	2.0 U	4.0 U
Methylene chloride	ppbv	0.50 U	1.0 U	2.5
N-Decane	ppbv	1.0 U	2.0 U	4.0 U
N-Dodecane	ppbv	1.0 U	2.0 U	4.0 U
N-Heptane	ppbv	1.2	2.4	2.0 U
N-Propylbenzene	ppbv	0.40 U	0.80 U	1.6 U
N-Undecane	ppbv	1.0 U	2.0 U	4.0 U

**Validated Analytical Results
Air Sampling Events
New Richmond Landfill Site
New Richmond, Wisconsin
February, April, and July 2017**

	Location ID: Sample Name: Sample Date:	Blower Discharge G-170214-MB-01 02/14/2017	Blower Discharge G-170405-MB-01 04/05/2017	Blower Discharge G-170724-MB-01 07/24/2017
Parameters	Unit			
Naphthalene	ppbv	0.50 U	1.0 U	2.0 U
Nonane	ppbv	1.2	2.0	2.0 U
o-Xylene	ppbv	0.20 U	0.40 U	0.80 U
Octane	ppbv	0.62	0.80	1.6 U
Pentane	ppbv	3.6	13	4.0 U
Styrene	ppbv	0.20 U	0.40 U	0.80 U
Tetrachloroethene	ppbv	14	17	20
Toluene	ppbv	0.20 U	0.40 U	0.80 U
trans-1,2-Dichloroethene	ppbv	0.20 U	0.40 U	0.80 U
trans-1,3-Dichloropropene	ppbv	0.20 U	0.40 U	0.80 U
Trichloroethene	ppbv	1.3	1.6	2.6
Trichlorofluoromethane (CFC-11)	ppbv	9.6	20	18
Trifluorotrichloroethane (CFC-113)	ppbv	0.20 U	0.40 U	0.80 U
Vinyl acetate	ppbv	1.0 U	2.0 U	4.0 U
Vinyl chloride	ppbv	13	57	21
1,1,1-Trichloroethane	µg/m3	380	310	370
1,1,2,2-Tetrachloroethane	µg/m3	1.4 U	2.7 U	5.5 U
1,1,2-Trichloroethane	µg/m3	1.1 U	2.2 U	4.4 U
1,1-Dichloroethane	µg/m3	230	260	280
1,1-Dichloroethene	µg/m3	30	23	44
1,2,4-Trichlorobenzene	µg/m3	7.4 U	15 U	30 U
1,2,4-Trimethylbenzene	µg/m3	0.98 U	2.0 U	3.9 U
1,2-Dibromoethane (Ethylene dibromide)	µg/m3	1.5 U	3.1 U	6.1 U
1,2-Dichlorobenzene	µg/m3	1.2 U	2.4 U	4.8 U
1,2-Dichloroethane	µg/m3	0.81 U	1.6 U	3.2 U
1,2-Dichloropropane	µg/m3	1.9	1.8 U	3.7 U
1,2-Dichlorotetrafluoroethane (CFC 114)	µg/m3	19	60	47
1,3,5-Trimethylbenzene	µg/m3	0.98 U	2.0 U	3.9 U
1,3-Butadiene	µg/m3	0.88 U	1.8 U	3.5 U
1,3-Dichlorobenzene	µg/m3	1.2 U	2.4 U	4.8 U
1,4-Dichlorobenzene	µg/m3	1.2	2.4 U	4.8 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/m3	4.0	7.8	12 U
2-Hexanone	µg/m3	2.0 U	4.1 U	8.2 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/m3	2.0 U	4.1 U	8.2 U
Acetone	µg/m3	12 U	25	48 U
Acetonitrile	µg/m3	1.7 U	3.4 U	6.7 U
Acrolein	µg/m3	2.3 U	4.6 U	9.2 U
Acrylonitrile	µg/m3	4.3 U	8.7 U	17 U
Allyl chloride	µg/m3	0.63 U	1.3 U	2.5 U
alpha-Methylstyrene	µg/m3	1.9 U	3.9 U	7.7 U
Benzene	µg/m3	1.6	3.8	2.6 U
Benzyl chloride	µg/m3	2.1 U	4.1 U	8.3 U
Bromodichloromethane	µg/m3	1.3 U	2.7 U	5.4 U
Bromoform	µg/m3	2.1 U	4.1 U	8.3 U
Bromomethane (Methyl bromide)	µg/m3	0.78 U	1.6 U	3.1 U
Butane	µg/m3	13	100	24
Carbon disulfide	µg/m3	1.6 U	3.1 U	6.2 U
Carbon tetrachloride	µg/m3	1.3 U	2.5 U	5.0 U
Chlorobenzene	µg/m3	1.1	2.4	5.0
Chlorodifluoromethane	µg/m3	14	44	30
Chloroethane	µg/m3	17	53	38
Chloroform (Trichloromethane)	µg/m3	32	17	44
Chloromethane (Methyl chloride)	µg/m3	1.0 U	2.1 U	4.1 U
cis-1,2-Dichloroethene	µg/m3	26	33	60
cis-1,3-Dichloropropene	µg/m3	0.91 U	1.8 U	3.6 U
Cyclohexane	µg/m3	11	23	11
Dibromochloromethane	µg/m3	1.7 U	3.4 U	6.8 U

**Validated Analytical Results
Air Sampling Events
New Richmond Landfill Site
New Richmond, Wisconsin
February, April, and July 2017**

	Location ID: Sample Name: Sample Date:	Blower Discharge G-170214-MB-01 02/14/2017	Blower Discharge G-170405-MB-01 04/05/2017	Blower Discharge G-170724-MB-01 07/24/2017
Parameters	Unit			
Dibromomethane	µg/m3	2.8 U	5.7 U	11 U
Dichlorodifluoromethane (CFC-12)	µg/m3	53	180	90
Ethyl ether	µg/m3	6.1 U	12 U	24 U
Ethylbenzene	µg/m3	1.5	3.4	3.6
Hexachlorobutadiene	µg/m3	11 U	21 U	43 U
Hexane	µg/m3	8.3	21	10
Isopropyl benzene	µg/m3	2.0 U	3.9 U	7.9 U
m&p-Xylenes	µg/m3	1.9	4.7	3.6
Methyl tert butyl ether (MTBE)	µg/m3	3.6 U	7.2 U	14 U
Methylene chloride	µg/m3	1.7 U	3.5 U	8.8
N-Decane	µg/m3	5.8 U	12 U	23 U
N-Dodecane	µg/m3	7.0 U	14 U	28 U
N-Heptane	µg/m3	4.8	9.9	8.2 U
N-Propylbenzene	µg/m3	2.0 U	3.9 U	7.9 U
N-Undecane	µg/m3	6.4 U	13 U	26 U
Naphthalene	µg/m3	2.6 U	5.2 U	10 U
Nonane	µg/m3	6.5	10	10 U
o-Xylene	µg/m3	0.87 U	1.7 U	3.5 U
Octane	µg/m3	2.9	3.7	7.5 U
Pentane	µg/m3	10	39	12 U
Styrene	µg/m3	0.85 U	1.7 U	3.4 U
Tetrachloroethene	µg/m3	95	120	130
Toluene	µg/m3	0.75 U	1.5 U	3.0 U
trans-1,2-Dichloroethene	µg/m3	0.79 U	1.6 U	3.2 U
trans-1,3-Dichloropropene	µg/m3	0.91 U	1.8 U	3.6 U
Trichloroethene	µg/m3	6.7	8.6	14
Trichlorofluoromethane (CFC-11)	µg/m3	54	110	100
Trifluorotrchloroethane (CFC-113)	µg/m3	1.5 U	3.1 U	6.1 U
Vinyl acetate	µg/m3	3.5 U	7.0 U	14 U
Vinyl chloride	µg/m3	34	150	53

Notes:

U - Not detected at the associated reporting limit

Table 3

**Analytical Method
Air Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
February, April, and July 2017**

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Volatile Organic Compounds (VOCs)	TO-15	Air	-	30

Notes:

Method References:

TO-15 - "Compendium of Methods for the Determination of Toxic Organic Compounds in Air", EPA-625/R-96/010b, January 1999.

TestAmerica

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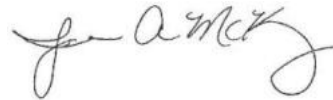
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

TestAmerica Job ID: 140-7111-1
Client Project/Site: New Richmond Landfill

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson



Authorized for release by:
2/27/2017 2:31:26 PM

Jamie McKinney, Senior Project Manager
(865)291-3000
jamie.mckinney@testamericainc.com

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- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	7
Default Detection Limits	11
Surrogate Summary	14
QC Sample Results	15
QC Association Summary	22
Lab Chronicle	23
Certification Summary	24
Method Summary	26
Sample Summary	27
Chain of Custody	28
Receipt Checklists	30

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Qualifiers

Air - GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Job ID: 140-7111-1

Laboratory: TestAmerica Knoxville

Narrative

Job Narrative
140-7111-1

Comments

No additional comments.

Receipt

The sample was received on 2/15/2017 9:40 AM; the sample arrived in good condition, properly preserved and, where required, on ice.

Air - GC/MS VOA

Method(s) TO 15 LL, TO-14A, TO-15: EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Client Sample ID: G-170214-MB-01

Lab Sample ID: 140-7111-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	62	E	0.20		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	48	E	0.20		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	7.5		0.20		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.8		0.20		ppb v/v	1		TO-15	Total/NA
1,2-Dichloropropane	0.41		0.20		ppb v/v	1		TO-15	Total/NA
1,4-Dichlorobenzene	0.20		0.20		ppb v/v	1		TO-15	Total/NA
2-Butanone (MEK)	1.4		1.0		ppb v/v	1		TO-15	Total/NA
Benzene	0.50		0.20		ppb v/v	1		TO-15	Total/NA
Butane	5.3		0.40		ppb v/v	1		TO-15	Total/NA
Chlorobenzene	0.24		0.20		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	3.9		0.20		ppb v/v	1		TO-15	Total/NA
Chloroethane	6.6		0.20		ppb v/v	1		TO-15	Total/NA
Chloroform	6.6		0.20		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	6.5		0.20		ppb v/v	1		TO-15	Total/NA
Cyclohexane	3.3		0.50		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	11		0.20		ppb v/v	1		TO-15	Total/NA
Ethylbenzene	0.35		0.20		ppb v/v	1		TO-15	Total/NA
Heptane	1.2		0.50		ppb v/v	1		TO-15	Total/NA
Hexane	2.4		0.50		ppb v/v	1		TO-15	Total/NA
m-Xylene & p-Xylene	0.45		0.20		ppb v/v	1		TO-15	Total/NA
Nonane	1.2		0.50		ppb v/v	1		TO-15	Total/NA
Octane	0.62		0.40		ppb v/v	1		TO-15	Total/NA
Pentane	3.6		1.0		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	14		0.20		ppb v/v	1		TO-15	Total/NA
Trichloroethene	1.3		0.20		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	9.6		0.20		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	13		0.20		ppb v/v	1		TO-15	Total/NA
1,1,1-Trichloroethane - DL	69		0.80		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane - DL	56		0.80		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	340	E	1.1		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	190	E	0.81		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	30		0.79		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	19		1.4		ug/m3	1		TO-15	Total/NA
1,2-Dichloropropane	1.9		0.92		ug/m3	1		TO-15	Total/NA
1,4-Dichlorobenzene	1.2		1.2		ug/m3	1		TO-15	Total/NA
2-Butanone (MEK)	4.0		2.9		ug/m3	1		TO-15	Total/NA
Benzene	1.6		0.64		ug/m3	1		TO-15	Total/NA
Butane	13		0.95		ug/m3	1		TO-15	Total/NA
Chlorobenzene	1.1		0.92		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	14		0.71		ug/m3	1		TO-15	Total/NA
Chloroethane	17		0.53		ug/m3	1		TO-15	Total/NA
Chloroform	32		0.98		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	26		0.79		ug/m3	1		TO-15	Total/NA
Cyclohexane	11		1.7		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	53		0.99		ug/m3	1		TO-15	Total/NA
Ethylbenzene	1.5		0.87		ug/m3	1		TO-15	Total/NA
Heptane	4.8		2.0		ug/m3	1		TO-15	Total/NA
Hexane	8.3		1.8		ug/m3	1		TO-15	Total/NA
m-Xylene & p-Xylene	1.9		0.87		ug/m3	1		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Knoxville

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Client Sample ID: G-170214-MB-01 (Continued)

Lab Sample ID: 140-7111-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nonane	6.5		2.6		ug/m3	1		TO-15	Total/NA
Octane	2.9		1.9		ug/m3	1		TO-15	Total/NA
Pentane	10		3.0		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	95		1.4		ug/m3	1		TO-15	Total/NA
Trichloroethene	6.7		1.1		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	54		1.1		ug/m3	1		TO-15	Total/NA
Vinyl chloride	34		0.51		ug/m3	1		TO-15	Total/NA
1,1,1-Trichloroethane - DL	380		4.4		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane - DL	230		3.2		ug/m3	1		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Client Sample ID: G-170214-MB-01

Lab Sample ID: 140-7111-1

Date Collected: 02/14/17 14:00

Matrix: Air

Date Received: 02/15/17 09:40

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	62	E	0.20		ppb v/v			02/15/17 23:31	1
1,1,2,2-Tetrachloroethane	ND		0.20		ppb v/v			02/15/17 23:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20		ppb v/v			02/15/17 23:31	1
1,1,2-Trichloroethane	ND		0.20		ppb v/v			02/15/17 23:31	1
1,1-Dichloroethane	48	E	0.20		ppb v/v			02/15/17 23:31	1
1,1-Dichloroethene	7.5		0.20		ppb v/v			02/15/17 23:31	1
1,2,4-Trichlorobenzene	ND		1.0		ppb v/v			02/15/17 23:31	1
1,2,4-Trimethylbenzene	ND		0.20		ppb v/v			02/15/17 23:31	1
1,2-Dibromoethane (EDB)	ND		0.20		ppb v/v			02/15/17 23:31	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.8		0.20		ppb v/v			02/15/17 23:31	1
1,2-Dichlorobenzene	ND		0.20		ppb v/v			02/15/17 23:31	1
1,2-Dichloroethane	ND		0.20		ppb v/v			02/15/17 23:31	1
1,2-Dichloropropane	0.41		0.20		ppb v/v			02/15/17 23:31	1
1,3,5-Trimethylbenzene	ND		0.20		ppb v/v			02/15/17 23:31	1
1,3-Butadiene	ND		0.40		ppb v/v			02/15/17 23:31	1
1,3-Dichlorobenzene	ND		0.20		ppb v/v			02/15/17 23:31	1
1,4-Dichlorobenzene	0.20		0.20		ppb v/v			02/15/17 23:31	1
2-Butanone (MEK)	1.4		1.0		ppb v/v			02/15/17 23:31	1
2-Hexanone	ND		0.50		ppb v/v			02/15/17 23:31	1
3-Chloropropene	ND		0.20		ppb v/v			02/15/17 23:31	1
4-Methyl-2-pentanone (MIBK)	ND		0.50		ppb v/v			02/15/17 23:31	1
Acetone	ND		5.0		ppb v/v			02/15/17 23:31	1
Acetonitrile	ND		1.0		ppb v/v			02/15/17 23:31	1
Acrolein	ND		1.0		ppb v/v			02/15/17 23:31	1
Acrylonitrile	ND		2.0		ppb v/v			02/15/17 23:31	1
Alpha Methyl Styrene	ND		0.40		ppb v/v			02/15/17 23:31	1
Benzene	0.50		0.20		ppb v/v			02/15/17 23:31	1
Benzyl chloride	ND		0.40		ppb v/v			02/15/17 23:31	1
Bromodichloromethane	ND		0.20		ppb v/v			02/15/17 23:31	1
Bromoform	ND		0.20		ppb v/v			02/15/17 23:31	1
Bromomethane	ND		0.20		ppb v/v			02/15/17 23:31	1
Butane	5.3		0.40		ppb v/v			02/15/17 23:31	1
Carbon disulfide	ND		0.50		ppb v/v			02/15/17 23:31	1
Carbon tetrachloride	ND		0.20		ppb v/v			02/15/17 23:31	1
Chlorobenzene	0.24		0.20		ppb v/v			02/15/17 23:31	1
Chlorodifluoromethane	3.9		0.20		ppb v/v			02/15/17 23:31	1
Chloroethane	6.6		0.20		ppb v/v			02/15/17 23:31	1
Chloroform	6.6		0.20		ppb v/v			02/15/17 23:31	1
Chloromethane	ND		0.50		ppb v/v			02/15/17 23:31	1
cis-1,2-Dichloroethene	6.5		0.20		ppb v/v			02/15/17 23:31	1
cis-1,3-Dichloropropene	ND		0.20		ppb v/v			02/15/17 23:31	1
Cumene	ND		0.40		ppb v/v			02/15/17 23:31	1
Cyclohexane	3.3		0.50		ppb v/v			02/15/17 23:31	1
Decane	ND		1.0		ppb v/v			02/15/17 23:31	1
Dibromochloromethane	ND		0.20		ppb v/v			02/15/17 23:31	1
Dibromomethane	ND		0.40		ppb v/v			02/15/17 23:31	1
Dichlorodifluoromethane	11		0.20		ppb v/v			02/15/17 23:31	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Client Sample ID: G-170214-MB-01

Lab Sample ID: 140-7111-1

Date Collected: 02/14/17 14:00

Matrix: Air

Date Received: 02/15/17 09:40

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dodecane	ND		1.0		ppb v/v			02/15/17 23:31	1
Ethyl ether	ND		2.0		ppb v/v			02/15/17 23:31	1
Ethylbenzene	0.35		0.20		ppb v/v			02/15/17 23:31	1
Heptane	1.2		0.50		ppb v/v			02/15/17 23:31	1
Hexachlorobutadiene	ND		1.0		ppb v/v			02/15/17 23:31	1
Hexane	2.4		0.50		ppb v/v			02/15/17 23:31	1
Methyl tert-butyl ether	ND		1.0		ppb v/v			02/15/17 23:31	1
Methylene Chloride	ND		0.50		ppb v/v			02/15/17 23:31	1
m-Xylene & p-Xylene	0.45		0.20		ppb v/v			02/15/17 23:31	1
Naphthalene	ND		0.50		ppb v/v			02/15/17 23:31	1
Nonane	1.2		0.50		ppb v/v			02/15/17 23:31	1
Octane	0.62		0.40		ppb v/v			02/15/17 23:31	1
o-Xylene	ND		0.20		ppb v/v			02/15/17 23:31	1
Pentane	3.6		1.0		ppb v/v			02/15/17 23:31	1
Propylbenzene	ND		0.40		ppb v/v			02/15/17 23:31	1
Styrene	ND		0.20		ppb v/v			02/15/17 23:31	1
Tetrachloroethene	14		0.20		ppb v/v			02/15/17 23:31	1
Toluene	ND		0.20		ppb v/v			02/15/17 23:31	1
trans-1,2-Dichloroethene	ND		0.20		ppb v/v			02/15/17 23:31	1
trans-1,3-Dichloropropene	ND		0.20		ppb v/v			02/15/17 23:31	1
Trichloroethene	1.3		0.20		ppb v/v			02/15/17 23:31	1
Trichlorofluoromethane	9.6		0.20		ppb v/v			02/15/17 23:31	1
Undecane	ND		1.0		ppb v/v			02/15/17 23:31	1
Vinyl acetate	ND		1.0		ppb v/v			02/15/17 23:31	1
Vinyl chloride	13		0.20		ppb v/v			02/15/17 23:31	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	340	E	1.1		ug/m3			02/15/17 23:31	1
1,1,2,2-Tetrachloroethane	ND		1.4		ug/m3			02/15/17 23:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5		ug/m3			02/15/17 23:31	1
1,1,2-Trichloroethane	ND		1.1		ug/m3			02/15/17 23:31	1
1,1-Dichloroethane	190	E	0.81		ug/m3			02/15/17 23:31	1
1,1-Dichloroethene	30		0.79		ug/m3			02/15/17 23:31	1
1,2,4-Trichlorobenzene	ND		7.4		ug/m3			02/15/17 23:31	1
1,2,4-Trimethylbenzene	ND		0.98		ug/m3			02/15/17 23:31	1
1,2-Dibromoethane (EDB)	ND		1.5		ug/m3			02/15/17 23:31	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	19		1.4		ug/m3			02/15/17 23:31	1
1,2-Dichlorobenzene	ND		1.2		ug/m3			02/15/17 23:31	1
1,2-Dichloroethane	ND		0.81		ug/m3			02/15/17 23:31	1
1,2-Dichloropropane	1.9		0.92		ug/m3			02/15/17 23:31	1
1,3,5-Trimethylbenzene	ND		0.98		ug/m3			02/15/17 23:31	1
1,3-Butadiene	ND		0.88		ug/m3			02/15/17 23:31	1
1,3-Dichlorobenzene	ND		1.2		ug/m3			02/15/17 23:31	1
1,4-Dichlorobenzene	1.2		1.2		ug/m3			02/15/17 23:31	1
2-Butanone (MEK)	4.0		2.9		ug/m3			02/15/17 23:31	1
2-Hexanone	ND		2.0		ug/m3			02/15/17 23:31	1
3-Chloropropene	ND		0.63		ug/m3			02/15/17 23:31	1
4-Methyl-2-pentanone (MIBK)	ND		2.0		ug/m3			02/15/17 23:31	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Client Sample ID: G-170214-MB-01

Lab Sample ID: 140-7111-1

Date Collected: 02/14/17 14:00

Matrix: Air

Date Received: 02/15/17 09:40

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		12		ug/m3			02/15/17 23:31	1
Acetonitrile	ND		1.7		ug/m3			02/15/17 23:31	1
Acrolein	ND		2.3		ug/m3			02/15/17 23:31	1
Acrylonitrile	ND		4.3		ug/m3			02/15/17 23:31	1
Alpha Methyl Styrene	ND		1.9		ug/m3			02/15/17 23:31	1
Benzene	1.6		0.64		ug/m3			02/15/17 23:31	1
Benzyl chloride	ND		2.1		ug/m3			02/15/17 23:31	1
Bromodichloromethane	ND		1.3		ug/m3			02/15/17 23:31	1
Bromoform	ND		2.1		ug/m3			02/15/17 23:31	1
Bromomethane	ND		0.78		ug/m3			02/15/17 23:31	1
Butane	13		0.95		ug/m3			02/15/17 23:31	1
Carbon disulfide	ND		1.6		ug/m3			02/15/17 23:31	1
Carbon tetrachloride	ND		1.3		ug/m3			02/15/17 23:31	1
Chlorobenzene	1.1		0.92		ug/m3			02/15/17 23:31	1
Chlorodifluoromethane	14		0.71		ug/m3			02/15/17 23:31	1
Chloroethane	17		0.53		ug/m3			02/15/17 23:31	1
Chloroform	32		0.98		ug/m3			02/15/17 23:31	1
Chloromethane	ND		1.0		ug/m3			02/15/17 23:31	1
cis-1,2-Dichloroethene	26		0.79		ug/m3			02/15/17 23:31	1
cis-1,3-Dichloropropene	ND		0.91		ug/m3			02/15/17 23:31	1
Cumene	ND		2.0		ug/m3			02/15/17 23:31	1
Cyclohexane	11		1.7		ug/m3			02/15/17 23:31	1
Decane	ND		5.8		ug/m3			02/15/17 23:31	1
Dibromochloromethane	ND		1.7		ug/m3			02/15/17 23:31	1
Dibromomethane	ND		2.8		ug/m3			02/15/17 23:31	1
Dichlorodifluoromethane	53		0.99		ug/m3			02/15/17 23:31	1
Dodecane	ND		7.0		ug/m3			02/15/17 23:31	1
Ethyl ether	ND		6.1		ug/m3			02/15/17 23:31	1
Ethylbenzene	1.5		0.87		ug/m3			02/15/17 23:31	1
Heptane	4.8		2.0		ug/m3			02/15/17 23:31	1
Hexachlorobutadiene	ND		11		ug/m3			02/15/17 23:31	1
Hexane	8.3		1.8		ug/m3			02/15/17 23:31	1
Methyl tert-butyl ether	ND		3.6		ug/m3			02/15/17 23:31	1
Methylene Chloride	ND		1.7		ug/m3			02/15/17 23:31	1
m-Xylene & p-Xylene	1.9		0.87		ug/m3			02/15/17 23:31	1
Naphthalene	ND		2.6		ug/m3			02/15/17 23:31	1
Nonane	6.5		2.6		ug/m3			02/15/17 23:31	1
Octane	2.9		1.9		ug/m3			02/15/17 23:31	1
o-Xylene	ND		0.87		ug/m3			02/15/17 23:31	1
Pentane	10		3.0		ug/m3			02/15/17 23:31	1
Propylbenzene	ND		2.0		ug/m3			02/15/17 23:31	1
Styrene	ND		0.85		ug/m3			02/15/17 23:31	1
Tetrachloroethene	95		1.4		ug/m3			02/15/17 23:31	1
Toluene	ND		0.75		ug/m3			02/15/17 23:31	1
trans-1,2-Dichloroethene	ND		0.79		ug/m3			02/15/17 23:31	1
trans-1,3-Dichloropropene	ND		0.91		ug/m3			02/15/17 23:31	1
Trichloroethene	6.7		1.1		ug/m3			02/15/17 23:31	1
Trichlorofluoromethane	54		1.1		ug/m3			02/15/17 23:31	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Client Sample ID: G-170214-MB-01

Lab Sample ID: 140-7111-1

Date Collected: 02/14/17 14:00

Matrix: Air

Date Received: 02/15/17 09:40

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Undecane	ND		6.4		ug/m3			02/15/17 23:31	1
Vinyl acetate	ND		3.5		ug/m3			02/15/17 23:31	1
Vinyl chloride	34		0.51		ug/m3			02/15/17 23:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		60 - 140					02/15/17 23:31	1

Method: TO-15 - Volatile Organic Compounds in Ambient Air - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	69		0.80		ppb v/v			02/16/17 09:34	1
1,1-Dichloroethane	56		0.80		ppb v/v			02/16/17 09:34	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	380		4.4		ug/m3			02/16/17 09:34	1
1,1-Dichloroethane	230		3.2		ug/m3			02/16/17 09:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		60 - 140					02/16/17 09:34	1

Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	RL	MDL	Units	Method
1,1,1-Trichloroethane	0.20	0.030	ppb v/v	TO-15
1,1,1-Trichloroethane	1.1	0.16	ug/m3	TO-15
1,1,2,2-Tetrachloroethane	0.20	0.061	ppb v/v	TO-15
1,1,2,2-Tetrachloroethane	1.4	0.42	ug/m3	TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	0.031	ppb v/v	TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane	1.5	0.24	ug/m3	TO-15
1,1,2-Trichloroethane	0.20	0.054	ppb v/v	TO-15
1,1,2-Trichloroethane	1.1	0.29	ug/m3	TO-15
1,1-Dichloroethane	0.20	0.026	ppb v/v	TO-15
1,1-Dichloroethane	0.81	0.11	ug/m3	TO-15
1,1-Dichloroethene	0.20	0.034	ppb v/v	TO-15
1,1-Dichloroethene	0.79	0.13	ug/m3	TO-15
1,2,4-Trichlorobenzene	1.0	0.098	ppb v/v	TO-15
1,2,4-Trichlorobenzene	7.4	0.73	ug/m3	TO-15
1,2,4-Trimethylbenzene	0.20	0.063	ppb v/v	TO-15
1,2,4-Trimethylbenzene	0.98	0.31	ug/m3	TO-15
1,2-Dibromoethane (EDB)	0.20	0.044	ppb v/v	TO-15
1,2-Dibromoethane (EDB)	1.5	0.34	ug/m3	TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.20	0.032	ppb v/v	TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.4	0.22	ug/m3	TO-15
1,2-Dichlorobenzene	0.20	0.070	ppb v/v	TO-15
1,2-Dichlorobenzene	1.2	0.42	ug/m3	TO-15
1,2-Dichloroethane	0.20	0.047	ppb v/v	TO-15
1,2-Dichloroethane	0.81	0.19	ug/m3	TO-15
1,2-Dichloropropane	0.20	0.052	ppb v/v	TO-15
1,2-Dichloropropane	0.92	0.24	ug/m3	TO-15
1,3,5-Trimethylbenzene	0.20	0.065	ppb v/v	TO-15
1,3,5-Trimethylbenzene	0.98	0.32	ug/m3	TO-15
1,3-Butadiene	0.40	0.064	ppb v/v	TO-15
1,3-Butadiene	0.88	0.14	ug/m3	TO-15
1,3-Dichlorobenzene	0.20	0.065	ppb v/v	TO-15
1,3-Dichlorobenzene	1.2	0.39	ug/m3	TO-15
1,4-Dichlorobenzene	0.20	0.064	ppb v/v	TO-15
1,4-Dichlorobenzene	1.2	0.38	ug/m3	TO-15
2-Butanone (MEK)	1.0	0.20	ppb v/v	TO-15
2-Butanone (MEK)	2.9	0.59	ug/m3	TO-15
2-Hexanone	0.50	0.058	ppb v/v	TO-15
2-Hexanone	2.0	0.24	ug/m3	TO-15
3-Chloropropene	0.20	0.048	ppb v/v	TO-15
3-Chloropropene	0.63	0.15	ug/m3	TO-15
4-Methyl-2-pentanone (MIBK)	0.50	0.045	ppb v/v	TO-15
4-Methyl-2-pentanone (MIBK)	2.0	0.18	ug/m3	TO-15
Acetone	5.0	1.4	ppb v/v	TO-15
Acetone	12	3.3	ug/m3	TO-15
Acetonitrile	1.0	0.33	ppb v/v	TO-15
Acetonitrile	1.7	0.55	ug/m3	TO-15
Acrolein	1.0	0.20	ppb v/v	TO-15
Acrolein	2.3	0.46	ug/m3	TO-15
Acrylonitrile	2.0	0.20	ppb v/v	TO-15
Acrylonitrile	4.3	0.43	ug/m3	TO-15
Alpha Methyl Styrene	0.40	0.078	ppb v/v	TO-15
Alpha Methyl Styrene	1.9	0.38	ug/m3	TO-15

TestAmerica Knoxville

Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	RL	MDL	Units	Method
Benzene	0.20	0.056	ppb v/v	TO-15
Benzene	0.64	0.18	ug/m3	TO-15
Benzyl chloride	0.40	0.078	ppb v/v	TO-15
Benzyl chloride	2.1	0.40	ug/m3	TO-15
Bromodichloromethane	0.20	0.044	ppb v/v	TO-15
Bromodichloromethane	1.3	0.29	ug/m3	TO-15
Bromoform	0.20	0.048	ppb v/v	TO-15
Bromoform	2.1	0.50	ug/m3	TO-15
Bromomethane	0.20	0.032	ppb v/v	TO-15
Bromomethane	0.78	0.12	ug/m3	TO-15
Butane	0.40	0.073	ppb v/v	TO-15
Butane	0.95	0.17	ug/m3	TO-15
Carbon disulfide	0.50	0.031	ppb v/v	TO-15
Carbon disulfide	1.6	0.097	ug/m3	TO-15
Carbon tetrachloride	0.20	0.038	ppb v/v	TO-15
Carbon tetrachloride	1.3	0.24	ug/m3	TO-15
Chlorobenzene	0.20	0.049	ppb v/v	TO-15
Chlorobenzene	0.92	0.23	ug/m3	TO-15
Chlorodifluoromethane	0.20	0.037	ppb v/v	TO-15
Chlorodifluoromethane	0.71	0.13	ug/m3	TO-15
Chloroethane	0.20	0.035	ppb v/v	TO-15
Chloroethane	0.53	0.092	ug/m3	TO-15
Chloroform	0.20	0.038	ppb v/v	TO-15
Chloroform	0.98	0.19	ug/m3	TO-15
Chloromethane	0.50	0.16	ppb v/v	TO-15
Chloromethane	1.0	0.33	ug/m3	TO-15
cis-1,2-Dichloroethene	0.20	0.060	ppb v/v	TO-15
cis-1,2-Dichloroethene	0.79	0.24	ug/m3	TO-15
cis-1,3-Dichloropropene	0.20	0.074	ppb v/v	TO-15
cis-1,3-Dichloropropene	0.91	0.34	ug/m3	TO-15
Cumene	0.40	0.060	ppb v/v	TO-15
Cumene	2.0	0.29	ug/m3	TO-15
Cyclohexane	0.50	0.040	ppb v/v	TO-15
Cyclohexane	1.7	0.14	ug/m3	TO-15
Decane	1.0	0.056	ppb v/v	TO-15
Decane	5.8	0.33	ug/m3	TO-15
Dibromochloromethane	0.20	0.042	ppb v/v	TO-15
Dibromochloromethane	1.7	0.36	ug/m3	TO-15
Dibromomethane	0.40	0.040	ppb v/v	TO-15
Dibromomethane	2.8	0.28	ug/m3	TO-15
Dichlorodifluoromethane	0.20	0.068	ppb v/v	TO-15
Dichlorodifluoromethane	0.99	0.34	ug/m3	TO-15
Dodecane	1.0	0.078	ppb v/v	TO-15
Dodecane	7.0	0.54	ug/m3	TO-15
Ethyl ether	2.0	0.053	ppb v/v	TO-15
Ethyl ether	6.1	0.16	ug/m3	TO-15
Ethylbenzene	0.20	0.068	ppb v/v	TO-15
Ethylbenzene	0.87	0.30	ug/m3	TO-15
Heptane	0.50	0.047	ppb v/v	TO-15
Heptane	2.0	0.19	ug/m3	TO-15
Hexachlorobutadiene	1.0	0.078	ppb v/v	TO-15
Hexachlorobutadiene	11	0.83	ug/m3	TO-15

TestAmerica Knoxville

Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	RL	MDL	Units	Method
Hexane	0.50	0.032	ppb v/v	TO-15
Hexane	1.8	0.11	ug/m3	TO-15
Methyl tert-butyl ether	1.0	0.17	ppb v/v	TO-15
Methyl tert-butyl ether	3.6	0.61	ug/m3	TO-15
Methylene Chloride	0.50	0.13	ppb v/v	TO-15
Methylene Chloride	1.7	0.45	ug/m3	TO-15
m-Xylene & p-Xylene	0.20	0.12	ppb v/v	TO-15
m-Xylene & p-Xylene	0.87	0.52	ug/m3	TO-15
Naphthalene	0.50	0.090	ppb v/v	TO-15
Naphthalene	2.6	0.47	ug/m3	TO-15
Nonane	0.50	0.043	ppb v/v	TO-15
Nonane	2.6	0.23	ug/m3	TO-15
Octane	0.40	0.036	ppb v/v	TO-15
Octane	1.9	0.17	ug/m3	TO-15
o-Xylene	0.20	0.061	ppb v/v	TO-15
o-Xylene	0.87	0.26	ug/m3	TO-15
Pentane	1.0	0.060	ppb v/v	TO-15
Pentane	3.0	0.18	ug/m3	TO-15
Propylbenzene	0.40	0.056	ppb v/v	TO-15
Propylbenzene	2.0	0.28	ug/m3	TO-15
Styrene	0.20	0.058	ppb v/v	TO-15
Styrene	0.85	0.25	ug/m3	TO-15
Tetrachloroethene	0.20	0.040	ppb v/v	TO-15
Tetrachloroethene	1.4	0.27	ug/m3	TO-15
Toluene	0.20	0.12	ppb v/v	TO-15
Toluene	0.75	0.45	ug/m3	TO-15
trans-1,2-Dichloroethene	0.20	0.050	ppb v/v	TO-15
trans-1,2-Dichloroethene	0.79	0.20	ug/m3	TO-15
trans-1,3-Dichloropropene	0.20	0.048	ppb v/v	TO-15
trans-1,3-Dichloropropene	0.91	0.22	ug/m3	TO-15
Trichloroethene	0.20	0.036	ppb v/v	TO-15
Trichloroethene	1.1	0.19	ug/m3	TO-15
Trichlorofluoromethane	0.20	0.024	ppb v/v	TO-15
Trichlorofluoromethane	1.1	0.13	ug/m3	TO-15
Undecane	1.0	0.062	ppb v/v	TO-15
Undecane	6.4	0.40	ug/m3	TO-15
Vinyl acetate	1.0	0.14	ppb v/v	TO-15
Vinyl acetate	3.5	0.49	ug/m3	TO-15
Vinyl chloride	0.20	0.071	ppb v/v	TO-15
Vinyl chloride	0.51	0.18	ug/m3	TO-15

Surrogate Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Matrix: Air

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
140-7111-1	G-170214-MB-01	109
140-7111-1 - DL	G-170214-MB-01	107
LCS 140-8561/1008	Lab Control Sample	112
MB 140-8561/10	Method Blank	107

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 140-8561/10

Matrix: Air

Analysis Batch: 8561

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.20		ppb v/v			02/15/17 16:01	1
1,1,2,2-Tetrachloroethane	ND		0.20		ppb v/v			02/15/17 16:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20		ppb v/v			02/15/17 16:01	1
1,1,2-Trichloroethane	ND		0.20		ppb v/v			02/15/17 16:01	1
1,1-Dichloroethane	ND		0.20		ppb v/v			02/15/17 16:01	1
1,1-Dichloroethene	ND		0.20		ppb v/v			02/15/17 16:01	1
1,2,4-Trichlorobenzene	ND		1.0		ppb v/v			02/15/17 16:01	1
1,2,4-Trimethylbenzene	ND		0.20		ppb v/v			02/15/17 16:01	1
1,2-Dibromoethane (EDB)	ND		0.20		ppb v/v			02/15/17 16:01	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.20		ppb v/v			02/15/17 16:01	1
1,2-Dichlorobenzene	ND		0.20		ppb v/v			02/15/17 16:01	1
1,2-Dichloroethane	ND		0.20		ppb v/v			02/15/17 16:01	1
1,2-Dichloropropane	ND		0.20		ppb v/v			02/15/17 16:01	1
1,3,5-Trimethylbenzene	ND		0.20		ppb v/v			02/15/17 16:01	1
1,3-Butadiene	ND		0.40		ppb v/v			02/15/17 16:01	1
1,3-Dichlorobenzene	ND		0.20		ppb v/v			02/15/17 16:01	1
1,4-Dichlorobenzene	ND		0.20		ppb v/v			02/15/17 16:01	1
2-Butanone (MEK)	ND		1.0		ppb v/v			02/15/17 16:01	1
2-Hexanone	ND		0.50		ppb v/v			02/15/17 16:01	1
3-Chloropropene	ND		0.20		ppb v/v			02/15/17 16:01	1
4-Methyl-2-pentanone (MIBK)	ND		0.50		ppb v/v			02/15/17 16:01	1
Acetone	ND		5.0		ppb v/v			02/15/17 16:01	1
Acetonitrile	ND		1.0		ppb v/v			02/15/17 16:01	1
Acrolein	ND		1.0		ppb v/v			02/15/17 16:01	1
Acrylonitrile	ND		2.0		ppb v/v			02/15/17 16:01	1
Alpha Methyl Styrene	ND		0.40		ppb v/v			02/15/17 16:01	1
Benzene	ND		0.20		ppb v/v			02/15/17 16:01	1
Benzyl chloride	ND		0.40		ppb v/v			02/15/17 16:01	1
Bromodichloromethane	ND		0.20		ppb v/v			02/15/17 16:01	1
Bromoform	ND		0.20		ppb v/v			02/15/17 16:01	1
Bromomethane	ND		0.20		ppb v/v			02/15/17 16:01	1
Butane	ND		0.40		ppb v/v			02/15/17 16:01	1
Carbon disulfide	ND		0.50		ppb v/v			02/15/17 16:01	1
Carbon tetrachloride	ND		0.20		ppb v/v			02/15/17 16:01	1
Chlorobenzene	ND		0.20		ppb v/v			02/15/17 16:01	1
Chlorodifluoromethane	ND		0.20		ppb v/v			02/15/17 16:01	1
Chloroethane	ND		0.20		ppb v/v			02/15/17 16:01	1
Chloroform	ND		0.20		ppb v/v			02/15/17 16:01	1
Chloromethane	ND		0.50		ppb v/v			02/15/17 16:01	1
cis-1,2-Dichloroethene	ND		0.20		ppb v/v			02/15/17 16:01	1
cis-1,3-Dichloropropene	ND		0.20		ppb v/v			02/15/17 16:01	1
Cumene	ND		0.40		ppb v/v			02/15/17 16:01	1
Cyclohexane	ND		0.50		ppb v/v			02/15/17 16:01	1
Decane	ND		1.0		ppb v/v			02/15/17 16:01	1
Dibromochloromethane	ND		0.20		ppb v/v			02/15/17 16:01	1
Dibromomethane	ND		0.40		ppb v/v			02/15/17 16:01	1
Dichlorodifluoromethane	ND		0.20		ppb v/v			02/15/17 16:01	1
Dodecane	ND		1.0		ppb v/v			02/15/17 16:01	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-8561/10
Matrix: Air
Analysis Batch: 8561

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethyl ether	ND		2.0		ppb v/v			02/15/17 16:01	1
Ethylbenzene	ND		0.20		ppb v/v			02/15/17 16:01	1
Heptane	ND		0.50		ppb v/v			02/15/17 16:01	1
Hexachlorobutadiene	ND		1.0		ppb v/v			02/15/17 16:01	1
Hexane	ND		0.50		ppb v/v			02/15/17 16:01	1
Methyl tert-butyl ether	ND		1.0		ppb v/v			02/15/17 16:01	1
Methylene Chloride	ND		0.50		ppb v/v			02/15/17 16:01	1
m-Xylene & p-Xylene	ND		0.20		ppb v/v			02/15/17 16:01	1
Naphthalene	ND		0.50		ppb v/v			02/15/17 16:01	1
Nonane	ND		0.50		ppb v/v			02/15/17 16:01	1
Octane	ND		0.40		ppb v/v			02/15/17 16:01	1
o-Xylene	ND		0.20		ppb v/v			02/15/17 16:01	1
Pentane	ND		1.0		ppb v/v			02/15/17 16:01	1
Propylbenzene	ND		0.40		ppb v/v			02/15/17 16:01	1
Styrene	ND		0.20		ppb v/v			02/15/17 16:01	1
Tetrachloroethene	ND		0.20		ppb v/v			02/15/17 16:01	1
Toluene	ND		0.20		ppb v/v			02/15/17 16:01	1
trans-1,2-Dichloroethene	ND		0.20		ppb v/v			02/15/17 16:01	1
trans-1,3-Dichloropropene	ND		0.20		ppb v/v			02/15/17 16:01	1
Trichloroethene	ND		0.20		ppb v/v			02/15/17 16:01	1
Trichlorofluoromethane	ND		0.20		ppb v/v			02/15/17 16:01	1
Undecane	ND		1.0		ppb v/v			02/15/17 16:01	1
Vinyl acetate	ND		1.0		ppb v/v			02/15/17 16:01	1
Vinyl chloride	ND		0.20		ppb v/v			02/15/17 16:01	1

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.1		ug/m3			02/15/17 16:01	1
1,1,2,2-Tetrachloroethane	ND		1.4		ug/m3			02/15/17 16:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5		ug/m3			02/15/17 16:01	1
1,1,2-Trichloroethane	ND		1.1		ug/m3			02/15/17 16:01	1
1,1-Dichloroethane	ND		0.81		ug/m3			02/15/17 16:01	1
1,1-Dichloroethene	ND		0.79		ug/m3			02/15/17 16:01	1
1,2,4-Trichlorobenzene	ND		7.4		ug/m3			02/15/17 16:01	1
1,2,4-Trimethylbenzene	ND		0.98		ug/m3			02/15/17 16:01	1
1,2-Dibromoethane (EDB)	ND		1.5		ug/m3			02/15/17 16:01	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		1.4		ug/m3			02/15/17 16:01	1
1,2-Dichlorobenzene	ND		1.2		ug/m3			02/15/17 16:01	1
1,2-Dichloroethane	ND		0.81		ug/m3			02/15/17 16:01	1
1,2-Dichloropropane	ND		0.92		ug/m3			02/15/17 16:01	1
1,3,5-Trimethylbenzene	ND		0.98		ug/m3			02/15/17 16:01	1
1,3-Butadiene	ND		0.88		ug/m3			02/15/17 16:01	1
1,3-Dichlorobenzene	ND		1.2		ug/m3			02/15/17 16:01	1
1,4-Dichlorobenzene	ND		1.2		ug/m3			02/15/17 16:01	1
2-Butanone (MEK)	ND		2.9		ug/m3			02/15/17 16:01	1
2-Hexanone	ND		2.0		ug/m3			02/15/17 16:01	1
3-Chloropropene	ND		0.63		ug/m3			02/15/17 16:01	1
4-Methyl-2-pentanone (MIBK)	ND		2.0		ug/m3			02/15/17 16:01	1
Acetone	ND		12		ug/m3			02/15/17 16:01	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-8561/10

Matrix: Air

Analysis Batch: 8561

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	ND		1.7		ug/m3			02/15/17 16:01	1
Acrolein	ND		2.3		ug/m3			02/15/17 16:01	1
Acrylonitrile	ND		4.3		ug/m3			02/15/17 16:01	1
Alpha Methyl Styrene	ND		1.9		ug/m3			02/15/17 16:01	1
Benzene	ND		0.64		ug/m3			02/15/17 16:01	1
Benzyl chloride	ND		2.1		ug/m3			02/15/17 16:01	1
Bromodichloromethane	ND		1.3		ug/m3			02/15/17 16:01	1
Bromoform	ND		2.1		ug/m3			02/15/17 16:01	1
Bromomethane	ND		0.78		ug/m3			02/15/17 16:01	1
Butane	ND		0.95		ug/m3			02/15/17 16:01	1
Carbon disulfide	ND		1.6		ug/m3			02/15/17 16:01	1
Carbon tetrachloride	ND		1.3		ug/m3			02/15/17 16:01	1
Chlorobenzene	ND		0.92		ug/m3			02/15/17 16:01	1
Chlorodifluoromethane	ND		0.71		ug/m3			02/15/17 16:01	1
Chloroethane	ND		0.53		ug/m3			02/15/17 16:01	1
Chloroform	ND		0.98		ug/m3			02/15/17 16:01	1
Chloromethane	ND		1.0		ug/m3			02/15/17 16:01	1
cis-1,2-Dichloroethene	ND		0.79		ug/m3			02/15/17 16:01	1
cis-1,3-Dichloropropene	ND		0.91		ug/m3			02/15/17 16:01	1
Cumene	ND		2.0		ug/m3			02/15/17 16:01	1
Cyclohexane	ND		1.7		ug/m3			02/15/17 16:01	1
Decane	ND		5.8		ug/m3			02/15/17 16:01	1
Dibromochloromethane	ND		1.7		ug/m3			02/15/17 16:01	1
Dibromomethane	ND		2.8		ug/m3			02/15/17 16:01	1
Dichlorodifluoromethane	ND		0.99		ug/m3			02/15/17 16:01	1
Dodecane	ND		7.0		ug/m3			02/15/17 16:01	1
Ethyl ether	ND		6.1		ug/m3			02/15/17 16:01	1
Ethylbenzene	ND		0.87		ug/m3			02/15/17 16:01	1
Heptane	ND		2.0		ug/m3			02/15/17 16:01	1
Hexachlorobutadiene	ND		11		ug/m3			02/15/17 16:01	1
Hexane	ND		1.8		ug/m3			02/15/17 16:01	1
Methyl tert-butyl ether	ND		3.6		ug/m3			02/15/17 16:01	1
Methylene Chloride	ND		1.7		ug/m3			02/15/17 16:01	1
m-Xylene & p-Xylene	ND		0.87		ug/m3			02/15/17 16:01	1
Naphthalene	ND		2.6		ug/m3			02/15/17 16:01	1
Nonane	ND		2.6		ug/m3			02/15/17 16:01	1
Octane	ND		1.9		ug/m3			02/15/17 16:01	1
o-Xylene	ND		0.87		ug/m3			02/15/17 16:01	1
Pentane	ND		3.0		ug/m3			02/15/17 16:01	1
Propylbenzene	ND		2.0		ug/m3			02/15/17 16:01	1
Styrene	ND		0.85		ug/m3			02/15/17 16:01	1
Tetrachloroethene	ND		1.4		ug/m3			02/15/17 16:01	1
Toluene	ND		0.75		ug/m3			02/15/17 16:01	1
trans-1,2-Dichloroethene	ND		0.79		ug/m3			02/15/17 16:01	1
trans-1,3-Dichloropropene	ND		0.91		ug/m3			02/15/17 16:01	1
Trichloroethene	ND		1.1		ug/m3			02/15/17 16:01	1
Trichlorofluoromethane	ND		1.1		ug/m3			02/15/17 16:01	1
Undecane	ND		6.4		ug/m3			02/15/17 16:01	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-8561/10
Matrix: Air
Analysis Batch: 8561

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	ND		3.5		ug/m3			02/15/17 16:01	1
Vinyl chloride	ND		0.51		ug/m3			02/15/17 16:01	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		60 - 140					02/15/17 16:01	1

Lab Sample ID: LCS 140-8561/1008
Matrix: Air
Analysis Batch: 8561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	2.00	2.35		ppb v/v		117	70 - 130
1,1,2,2-Tetrachloroethane	2.00	2.24		ppb v/v		112	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	2.00	2.35		ppb v/v		118	70 - 130
1,1,2-Trichloroethane	2.00	2.19		ppb v/v		109	70 - 130
1,1-Dichloroethane	2.00	2.06		ppb v/v		103	70 - 130
1,1-Dichloroethene	2.00	2.50		ppb v/v		125	70 - 130
1,2,4-Trichlorobenzene	2.00	2.21		ppb v/v		110	60 - 140
1,2,4-Trimethylbenzene	2.00	2.15		ppb v/v		107	70 - 130
1,2-Dibromoethane (EDB)	2.00	2.11		ppb v/v		106	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.00	2.17		ppb v/v		108	60 - 140
1,2-Dichlorobenzene	2.00	2.06		ppb v/v		103	70 - 130
1,2-Dichloroethane	2.00	2.25		ppb v/v		112	70 - 130
1,2-Dichloropropane	2.00	2.05		ppb v/v		102	70 - 130
1,3,5-Trimethylbenzene	2.00	1.98		ppb v/v		99	70 - 130
1,3-Butadiene	2.00	1.84		ppb v/v		92	60 - 140
1,3-Dichlorobenzene	2.00	2.07		ppb v/v		104	70 - 130
1,4-Dichlorobenzene	2.00	2.12		ppb v/v		106	70 - 130
2-Butanone (MEK)	2.00	1.82		ppb v/v		91	60 - 140
2-Hexanone	2.00	1.83		ppb v/v		92	60 - 140
3-Chloropropene	2.00	2.18		ppb v/v		109	60 - 140
4-Methyl-2-pentanone (MIBK)	2.00	1.85		ppb v/v		92	60 - 140
Acetone	6.00	5.05		ppb v/v		84	60 - 140
Acetonitrile	2.00	1.69		ppb v/v		85	60 - 140
Acrolein	2.00	1.54		ppb v/v		77	60 - 140
Acrylonitrile	2.00	1.78		ppb v/v		89	60 - 140
Alpha Methyl Styrene	2.00	2.02		ppb v/v		101	60 - 140
Benzene	2.00	2.11		ppb v/v		105	70 - 130
Benzyl chloride	2.00	2.36		ppb v/v		118	70 - 130
Bromodichloromethane	2.00	2.43		ppb v/v		121	70 - 130
Bromoform	2.00	2.17		ppb v/v		108	60 - 140
Bromomethane	2.00	2.19		ppb v/v		109	70 - 130
Butane	2.00	1.91		ppb v/v		95	60 - 140
Carbon disulfide	2.00	2.10		ppb v/v		105	70 - 130
Carbon tetrachloride	2.00	2.43		ppb v/v		121	70 - 130
Chlorobenzene	2.00	2.09		ppb v/v		105	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-8561/1008

Matrix: Air

Analysis Batch: 8561

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorodifluoromethane	2.00	2.45		ppb v/v		122	60 - 140
Chloroethane	2.00	2.11		ppb v/v		106	70 - 130
Chloroform	2.00	2.27		ppb v/v		113	70 - 130
Chloromethane	2.00	1.73		ppb v/v		87	60 - 140
cis-1,2-Dichloroethene	2.00	2.07		ppb v/v		104	70 - 130
cis-1,3-Dichloropropene	2.00	2.33		ppb v/v		116	70 - 130
Cumene	2.00	2.09		ppb v/v		104	70 - 130
Cyclohexane	2.00	2.30		ppb v/v		115	70 - 130
Decane	2.00	2.21		ppb v/v		111	60 - 140
Dibromochloromethane	2.00	2.22		ppb v/v		111	70 - 130
Dibromomethane	2.00	2.20		ppb v/v		110	70 - 130
Dichlorodifluoromethane	2.00	2.38		ppb v/v		119	60 - 140
Dodecane	2.00	2.08		ppb v/v		104	60 - 140
Ethyl ether	2.00	2.12		ppb v/v		106	60 - 140
Ethylbenzene	2.00	2.20		ppb v/v		110	70 - 130
Heptane	2.00	2.33		ppb v/v		117	70 - 130
Hexachlorobutadiene	2.00	1.79		ppb v/v		89	60 - 140
Hexane	2.00	1.91		ppb v/v		95	70 - 130
Methyl tert-butyl ether	2.00	2.09		ppb v/v		104	60 - 140
Methylene Chloride	2.00	2.35		ppb v/v		117	70 - 130
m-Xylene & p-Xylene	4.00	4.49		ppb v/v		112	70 - 130
Naphthalene	2.00	2.39		ppb v/v		119	60 - 140
Nonane	2.00	2.19		ppb v/v		109	60 - 140
Octane	2.00	2.25		ppb v/v		113	70 - 130
o-Xylene	2.00	2.18		ppb v/v		109	70 - 130
Pentane	2.00	2.46		ppb v/v		123	70 - 130
Propylbenzene	2.00	1.98		ppb v/v		99	70 - 130
Styrene	2.00	2.23		ppb v/v		112	70 - 130
Tetrachloroethene	2.00	2.15		ppb v/v		107	70 - 130
Toluene	2.00	2.11		ppb v/v		106	70 - 130
trans-1,2-Dichloroethene	2.00	2.04		ppb v/v		102	70 - 130
trans-1,3-Dichloropropene	2.00	2.30		ppb v/v		115	70 - 130
Trichloroethene	2.00	2.15		ppb v/v		108	70 - 130
Trichlorofluoromethane	2.00	2.45		ppb v/v		122	60 - 140
Undecane	2.00	2.16		ppb v/v		108	60 - 140
Vinyl acetate	2.00	1.65		ppb v/v		82	60 - 140
Vinyl chloride	2.00	2.16		ppb v/v		108	70 - 130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	11	12.8		ug/m3		117	70 - 130
1,1,2,2-Tetrachloroethane	14	15.4		ug/m3		112	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	15	18.0		ug/m3		118	70 - 130
1,1,2-Trichloroethane	11	11.9		ug/m3		109	70 - 130
1,1-Dichloroethane	8.1	8.34		ug/m3		103	70 - 130
1,1-Dichloroethene	7.9	9.93		ug/m3		125	70 - 130
1,2,4-Trichlorobenzene	15	16.4		ug/m3		110	60 - 140
1,2,4-Trimethylbenzene	9.8	10.6		ug/m3		107	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-8561/1008

Matrix: Air

Analysis Batch: 8561

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	15	16.2		ug/m3		106	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	14	15.2		ug/m3		108	60 - 140
1,2-Dichlorobenzene	12	12.4		ug/m3		103	70 - 130
1,2-Dichloroethane	8.1	9.10		ug/m3		112	70 - 130
1,2-Dichloropropane	9.2	9.47		ug/m3		102	70 - 130
1,3,5-Trimethylbenzene	9.8	9.76		ug/m3		99	70 - 130
1,3-Butadiene	4.4	4.07		ug/m3		92	60 - 140
1,3-Dichlorobenzene	12	12.5		ug/m3		104	70 - 130
1,4-Dichlorobenzene	12	12.7		ug/m3		106	70 - 130
2-Butanone (MEK)	5.9	5.36		ug/m3		91	60 - 140
2-Hexanone	8.2	7.51		ug/m3		92	60 - 140
3-Chloropropene	6.3	6.82		ug/m3		109	60 - 140
4-Methyl-2-pentanone (MIBK)	8.2	7.57		ug/m3		92	60 - 140
Acetone	14	12.0		ug/m3		84	60 - 140
Acetonitrile	3.4	2.84		ug/m3		85	60 - 140
Acrolein	4.6	3.53		ug/m3		77	60 - 140
Acrylonitrile	4.3	3.85		ug/m3		89	60 - 140
Alpha Methyl Styrene	9.7	9.77		ug/m3		101	60 - 140
Benzene	6.4	6.74		ug/m3		105	70 - 130
Benzyl chloride	10	12.2		ug/m3		118	70 - 130
Bromodichloromethane	13	16.3		ug/m3		121	70 - 130
Bromoform	21	22.4		ug/m3		108	60 - 140
Bromomethane	7.8	8.49		ug/m3		109	70 - 130
Butane	4.8	4.54		ug/m3		95	60 - 140
Carbon disulfide	6.2	6.55		ug/m3		105	70 - 130
Carbon tetrachloride	13	15.3		ug/m3		121	70 - 130
Chlorobenzene	9.2	9.64		ug/m3		105	70 - 130
Chlorodifluoromethane	7.1	8.67		ug/m3		122	60 - 140
Chloroethane	5.3	5.57		ug/m3		106	70 - 130
Chloroform	9.8	11.1		ug/m3		113	70 - 130
Chloromethane	4.1	3.58		ug/m3		87	60 - 140
cis-1,2-Dichloroethene	7.9	8.21		ug/m3		104	70 - 130
cis-1,3-Dichloropropene	9.1	10.6		ug/m3		116	70 - 130
Cumene	9.8	10.3		ug/m3		104	70 - 130
Cyclohexane	6.9	7.91		ug/m3		115	70 - 130
Decane	12	12.9		ug/m3		111	60 - 140
Dibromochloromethane	17	18.9		ug/m3		111	70 - 130
Dibromomethane	14	15.6		ug/m3		110	70 - 130
Dichlorodifluoromethane	9.9	11.8		ug/m3		119	60 - 140
Dodecane	14	14.5		ug/m3		104	60 - 140
Ethyl ether	6.1	6.41		ug/m3		106	60 - 140
Ethylbenzene	8.7	9.56		ug/m3		110	70 - 130
Heptane	8.2	9.56		ug/m3		117	70 - 130
Hexachlorobutadiene	21	19.1		ug/m3		89	60 - 140
Hexane	7.1	6.73		ug/m3		95	70 - 130
Methyl tert-butyl ether	7.2	7.52		ug/m3		104	60 - 140
Methylene Chloride	7.0	8.15		ug/m3		117	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-8561/1008

Matrix: Air

Analysis Batch: 8561

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Xylene & p-Xylene	17	19.5		ug/m3		112	70 - 130
Naphthalene	10	12.5		ug/m3		119	60 - 140
Nonane	10	11.5		ug/m3		109	60 - 140
Octane	9.3	10.5		ug/m3		113	70 - 130
o-Xylene	8.7	9.48		ug/m3		109	70 - 130
Pentane	5.9	7.26		ug/m3		123	70 - 130
Propylbenzene	9.8	9.75		ug/m3		99	70 - 130
Styrene	8.5	9.51		ug/m3		112	70 - 130
Tetrachloroethene	14	14.6		ug/m3		107	70 - 130
Toluene	7.5	7.97		ug/m3		106	70 - 130
trans-1,2-Dichloroethene	7.9	8.10		ug/m3		102	70 - 130
trans-1,3-Dichloropropene	9.1	10.5		ug/m3		115	70 - 130
Trichloroethene	11	11.6		ug/m3		108	70 - 130
Trichlorofluoromethane	11	13.8		ug/m3		122	60 - 140
Undecane	13	13.8		ug/m3		108	60 - 140
Vinyl acetate	7.0	5.79		ug/m3		82	60 - 140
Vinyl chloride	5.1	5.52		ug/m3		108	70 - 130
Surrogate		LCS	LCS				
		%Recovery	Qualifier				Limits
4-Bromofluorobenzene (Surr)		112					60 - 140

QC Association Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Air - GC/MS VOA

Analysis Batch: 8561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-7111-1	G-170214-MB-01	Total/NA	Air	TO-15	
140-7111-1 - DL	G-170214-MB-01	Total/NA	Air	TO-15	
MB 140-8561/10	Method Blank	Total/NA	Air	TO-15	
LCS 140-8561/1008	Lab Control Sample	Total/NA	Air	TO-15	

- 1
- 2
- 3
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- 15
- 16

Lab Chronicle

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Client Sample ID: G-170214-MB-01

Date Collected: 02/14/17 14:00

Date Received: 02/15/17 09:40

Lab Sample ID: 140-7111-1

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	200 mL	500 mL	8561	02/15/17 23:31	HMT	TAL KNX
		Instrument ID: MG								
Total/NA	Analysis	TO-15	DL	1	50 mL	500 mL	8561	02/16/17 09:34	HMT	TAL KNX
		Instrument ID: MG								

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 140-8561/10

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	200 mL	500 mL	8561	02/15/17 16:01	HMT	TAL KNX
		Instrument ID: MG								

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 140-8561/1008

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	500 mL	500 mL	8561	02/15/17 14:05	HMT	TAL KNX
		Instrument ID: MG								

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Certification Summary

Client: GHD Services Inc.
 Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Laboratory: TestAmerica Knoxville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	998044300	08-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
TO-15		Air	1,1,1-Trichloroethane
TO-15		Air	1,1,2,2-Tetrachloroethane
TO-15		Air	1,1,2-Trichloro-1,2,2-trifluoroethane
TO-15		Air	1,1,2-Trichloroethane
TO-15		Air	1,1-Dichloroethane
TO-15		Air	1,1-Dichloroethene
TO-15		Air	1,2,4-Trichlorobenzene
TO-15		Air	1,2,4-Trimethylbenzene
TO-15		Air	1,2-Dibromoethane (EDB)
TO-15		Air	1,2-Dichloro-1,1,2,2-tetrafluoroethane
TO-15		Air	1,2-Dichlorobenzene
TO-15		Air	1,2-Dichloroethane
TO-15		Air	1,2-Dichloropropane
TO-15		Air	1,3,5-Trimethylbenzene
TO-15		Air	1,3-Butadiene
TO-15		Air	1,3-Dichlorobenzene
TO-15		Air	1,4-Dichlorobenzene
TO-15		Air	2-Butanone (MEK)
TO-15		Air	2-Hexanone
TO-15		Air	3-Chloropropene
TO-15		Air	4-Methyl-2-pentanone (MIBK)
TO-15		Air	Acetone
TO-15		Air	Acetonitrile
TO-15		Air	Acrolein
TO-15		Air	Acrylonitrile
TO-15		Air	Alpha Methyl Styrene
TO-15		Air	Benzene
TO-15		Air	Benzyl chloride
TO-15		Air	Bromodichloromethane
TO-15		Air	Bromoform
TO-15		Air	Bromomethane
TO-15		Air	Butane
TO-15		Air	Carbon disulfide
TO-15		Air	Carbon tetrachloride
TO-15		Air	Chlorobenzene
TO-15		Air	Chlorodifluoromethane
TO-15		Air	Chloroethane
TO-15		Air	Chloroform
TO-15		Air	Chloromethane
TO-15		Air	cis-1,2-Dichloroethene
TO-15		Air	cis-1,3-Dichloropropene
TO-15		Air	Cumene
TO-15		Air	Cyclohexane
TO-15		Air	Decane
TO-15		Air	Dibromochloromethane
TO-15		Air	Dibromomethane

Certification Summary

Client: GHD Services Inc.
 Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Laboratory: TestAmerica Knoxville (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	998044300	08-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
TO-15		Air	Dichlorodifluoromethane
TO-15		Air	Dodecane
TO-15		Air	Ethyl ether
TO-15		Air	Ethylbenzene
TO-15		Air	Heptane
TO-15		Air	Hexachlorobutadiene
TO-15		Air	Hexane
TO-15		Air	Methyl tert-butyl ether
TO-15		Air	Methylene Chloride
TO-15		Air	m-Xylene & p-Xylene
TO-15		Air	Naphthalene
TO-15		Air	Nonane
TO-15		Air	Octane
TO-15		Air	o-Xylene
TO-15		Air	Pentane
TO-15		Air	Propylbenzene
TO-15		Air	Styrene
TO-15		Air	Tetrachloroethene
TO-15		Air	Toluene
TO-15		Air	trans-1,2-Dichloroethene
TO-15		Air	trans-1,3-Dichloropropene
TO-15		Air	Trichloroethene
TO-15		Air	Trichlorofluoromethane
TO-15		Air	Undecane
TO-15		Air	Vinyl acetate
TO-15		Air	Vinyl chloride



Method Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Method	Method Description	Protocol	Laboratory
TO-15	Volatile Organic Compounds in Ambient Air	EPA	TAL KNX

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

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- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Sample Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7111-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-7111-1	G-170214-MB-01	Air	02/14/17 14:00	02/15/17 09:40

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CHAIN OF CUSTODY RECORD

1801 Old Highway 8 Northwest, Suite 114
St. Paul, Minnesota 55112 United States

Phone: (651) 639-0913

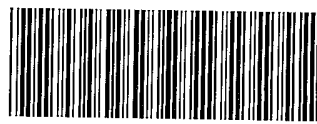
Fax: (651) 639-0923

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 048038-70-05				Laboratory Name: Test America				Lab Location: Knoxville, TN				SSOW ID:							
Project Name: New Richmond Landfill				Lab Contact:				Lab Quote No:				Cooler No:							
Project Location: New Richmond, WI				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)				Carrier: FedEx							
Chemistry Contact: Grant Anderson				SAMPLE TYPE	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	MS/MSD Request	Airbill No:		
Sampler(s): M. Barnes																	Date Shipped: 2/14/17		
Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)			DATE (mm/dd/yy)	TIME (hh:mm)											COMMENTS/ SPECIAL INSTRUCTIONS:			
1	G-170214-MB-01			2/14/17	14:00	GE	G	1											
2																			
3																			
4																			
5	Received @ ambient, 1 box																		
6	Fedex PO, trk# 7784 2852 7294																		
7	Custody, real intact, KW 2/15/17																		
8																			
9	1 can, 1 gauge																		
10																			
11																			
12																			
13																			
14																			
15																			
16																			
TAT Required in business days (use separate COCs for different TATs):						Total Number of Containers: 1				Notes/ Special Requirements:									
<input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days <input type="checkbox"/> 1 Week <input checked="" type="checkbox"/> 2 Week <input type="checkbox"/> Other:						All Samples in Cooler must be on COC													
RELINQUISHED BY		COMPANY		DATE		TIME		RECEIVED BY		COMPANY		DATE		TIME					
1. <i>Matthew [Signature]</i>		GHD		2/14/17		16:00		1. <i>KL</i>		TA		2/15/17		0940					
2.								2.											
3.								3.											

Page 26 of 30

2/27/2017



140-7111 Chain of Custody

Call Grant Anderson w/ Questions

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY



TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	/			<input type="checkbox"/> Containers, Broken	
2. Were ambient air containers received intact?			/	<input checked="" type="checkbox"/> Checked in lab	
3. The coolers/containers custody seal if present, is it intact?	/			<input type="checkbox"/> Yes <input type="checkbox"/> NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6°C, VOST: 10°C) Thermometer ID : _____ Correction factor: _____	/			<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	/			<input type="checkbox"/> Containers, Broken	
6. Were samples received in appropriate containers?	/			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	/			<input type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input type="checkbox"/> COC Not Received	
8. Were all of the samples listed on the COC received?	/			<input type="checkbox"/> Sample Received, Not on COC <input type="checkbox"/> Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	/			<input type="checkbox"/> COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?	/			<input type="checkbox"/> Sampler Not Listed on COC	Labeling Verified by: _____ Date: _____
11. Is the client and project name/# identified?	/			<input type="checkbox"/> COC Incorrect/Incomplete	pH test strip lot number: _____
12. Are tests/parameters listed for each sample?	/			<input type="checkbox"/> COC No tests on COC	
13. Is the matrix of the samples noted?	/			<input type="checkbox"/> COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	/			<input type="checkbox"/> COC Incorrect/Incomplete	Box 16A: pH Preservation Box 18A: Residual Chlorine
15. Were samples received within holding time?	/			<input type="checkbox"/> Holding Time - Receipt	Preservative: _____
16. Were samples received with correct chemical preservative (excluding Encore)?			/	<input type="checkbox"/> pH Adjusted, pH Included (See box 16A) <input type="checkbox"/> Incorrect Preservative	Lot Number: _____
17. Were VOA samples received without headspace?			/	<input type="checkbox"/> Headspace (VOA only)	Exp Date: _____
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: _____			/	<input type="checkbox"/> Residual Chlorine	Analyst: _____
19. For 1613B water samples is pH<9?			/	<input type="checkbox"/> If no, lab will adjust	Date: _____
20. For rad samples was sample activity info. Provided?			/	<input type="checkbox"/> Project missing info	Time: _____
Project #: <u>14001850</u> PM Instructions: _____					

Sample Receiving Associate: KU

Date: 2/15/17

QA026R30.doc, 080916

140-7111



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

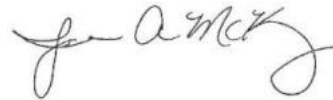
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

TestAmerica Job ID: 140-7754-1
Client Project/Site: New Richmond Landfill

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson



Authorized for release by:
4/20/2017 2:32:37 PM

Jamie McKinney, Senior Project Manager
(865)291-3000
jamie.mckinney@testamericainc.com

LINKS

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Have a Question?



Visit us at:
www.testamericainc.com

This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	7
Default Detection Limits	11
Surrogate Summary	14
QC Sample Results	15
QC Association Summary	22
Lab Chronicle	23
Certification Summary	24
Method Summary	26
Sample Summary	27
Chain of Custody	28
Receipt Checklists	30

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Job ID: 140-7754-1

Laboratory: TestAmerica Knoxville

Narrative

**Job Narrative
140-7754-1**

Comments

No additional comments.

Receipt

The sample was received on 4/10/2017 10:15 AM; the sample arrived in good condition, properly preserved and, where required, on ice.

Air - GC/MS VOA

Method(s) TO 15 LL, TO-14A, TO-15: EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Client Sample ID: G-170405-MB-01

Lab Sample ID: 140-7754-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	58		0.40		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	65		0.40		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	5.7		0.40		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	8.5		0.40		ppb v/v	1		TO-15	Total/NA
2-Butanone (MEK)	2.6		2.0		ppb v/v	1		TO-15	Total/NA
Acetone	11		10		ppb v/v	1		TO-15	Total/NA
Benzene	1.2		0.40		ppb v/v	1		TO-15	Total/NA
Butane	43		0.80		ppb v/v	1		TO-15	Total/NA
Chlorobenzene	0.53		0.40		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	12		0.40		ppb v/v	1		TO-15	Total/NA
Chloroethane	20		0.40		ppb v/v	1		TO-15	Total/NA
Chloroform	3.5		0.40		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	8.4		0.40		ppb v/v	1		TO-15	Total/NA
Cyclohexane	6.8		1.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	37		0.40		ppb v/v	1		TO-15	Total/NA
Ethylbenzene	0.78		0.40		ppb v/v	1		TO-15	Total/NA
Heptane	2.4		1.0		ppb v/v	1		TO-15	Total/NA
Hexane	6.0		1.0		ppb v/v	1		TO-15	Total/NA
m-Xylene & p-Xylene	1.1		0.40		ppb v/v	1		TO-15	Total/NA
Nonane	2.0		1.0		ppb v/v	1		TO-15	Total/NA
Octane	0.80		0.80		ppb v/v	1		TO-15	Total/NA
Pentane	13		2.0		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	17		0.40		ppb v/v	1		TO-15	Total/NA
Trichloroethene	1.6		0.40		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	20		0.40		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	57		0.40		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	310		2.2		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	260		1.6		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	23		1.6		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	60		2.8		ug/m3	1		TO-15	Total/NA
2-Butanone (MEK)	7.8		5.9		ug/m3	1		TO-15	Total/NA
Acetone	25		24		ug/m3	1		TO-15	Total/NA
Benzene	3.8		1.3		ug/m3	1		TO-15	Total/NA
Butane	100		1.9		ug/m3	1		TO-15	Total/NA
Chlorobenzene	2.4		1.8		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	44		1.4		ug/m3	1		TO-15	Total/NA
Chloroethane	53		1.1		ug/m3	1		TO-15	Total/NA
Chloroform	17		2.0		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	33		1.6		ug/m3	1		TO-15	Total/NA
Cyclohexane	23		3.4		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	180		2.0		ug/m3	1		TO-15	Total/NA
Ethylbenzene	3.4		1.7		ug/m3	1		TO-15	Total/NA
Heptane	9.9		4.1		ug/m3	1		TO-15	Total/NA
Hexane	21		3.5		ug/m3	1		TO-15	Total/NA
m-Xylene & p-Xylene	4.7		1.7		ug/m3	1		TO-15	Total/NA
Nonane	10		5.2		ug/m3	1		TO-15	Total/NA
Octane	3.7		3.7		ug/m3	1		TO-15	Total/NA
Pentane	39		5.9		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	120		2.7		ug/m3	1		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Knoxville

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Client Sample ID: G-170405-MB-01 (Continued)

Lab Sample ID: 140-7754-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	8.6		2.1		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	110		2.2		ug/m3	1		TO-15	Total/NA
Vinyl chloride	150		1.0		ug/m3	1		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Knoxville



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Client Sample ID: G-170405-MB-01

Lab Sample ID: 140-7754-1

Date Collected: 04/05/17 16:10

Matrix: Air

Date Received: 04/10/17 10:15

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	58		0.40		ppb v/v			04/18/17 03:32	1
1,1,2,2-Tetrachloroethane	ND		0.40		ppb v/v			04/18/17 03:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.40		ppb v/v			04/18/17 03:32	1
1,1,2-Trichloroethane	ND		0.40		ppb v/v			04/18/17 03:32	1
1,1-Dichloroethane	65		0.40		ppb v/v			04/18/17 03:32	1
1,1-Dichloroethene	5.7		0.40		ppb v/v			04/18/17 03:32	1
1,2,4-Trichlorobenzene	ND		2.0		ppb v/v			04/18/17 03:32	1
1,2,4-Trimethylbenzene	ND		0.40		ppb v/v			04/18/17 03:32	1
1,2-Dibromoethane (EDB)	ND		0.40		ppb v/v			04/18/17 03:32	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	8.5		0.40		ppb v/v			04/18/17 03:32	1
1,2-Dichlorobenzene	ND		0.40		ppb v/v			04/18/17 03:32	1
1,2-Dichloroethane	ND		0.40		ppb v/v			04/18/17 03:32	1
1,2-Dichloropropane	ND		0.40		ppb v/v			04/18/17 03:32	1
1,3,5-Trimethylbenzene	ND		0.40		ppb v/v			04/18/17 03:32	1
1,3-Butadiene	ND		0.80		ppb v/v			04/18/17 03:32	1
1,3-Dichlorobenzene	ND		0.40		ppb v/v			04/18/17 03:32	1
1,4-Dichlorobenzene	ND		0.40		ppb v/v			04/18/17 03:32	1
2-Butanone (MEK)	2.6		2.0		ppb v/v			04/18/17 03:32	1
2-Hexanone	ND		1.0		ppb v/v			04/18/17 03:32	1
3-Chloropropene	ND		0.40		ppb v/v			04/18/17 03:32	1
4-Methyl-2-pentanone (MIBK)	ND		1.0		ppb v/v			04/18/17 03:32	1
Acetone	11		10		ppb v/v			04/18/17 03:32	1
Acetonitrile	ND		2.0		ppb v/v			04/18/17 03:32	1
Acrolein	ND		2.0		ppb v/v			04/18/17 03:32	1
Acrylonitrile	ND		4.0		ppb v/v			04/18/17 03:32	1
Alpha Methyl Styrene	ND		0.80		ppb v/v			04/18/17 03:32	1
Benzene	1.2		0.40		ppb v/v			04/18/17 03:32	1
Benzyl chloride	ND		0.80		ppb v/v			04/18/17 03:32	1
Bromodichloromethane	ND		0.40		ppb v/v			04/18/17 03:32	1
Bromoform	ND		0.40		ppb v/v			04/18/17 03:32	1
Bromomethane	ND		0.40		ppb v/v			04/18/17 03:32	1
Butane	43		0.80		ppb v/v			04/18/17 03:32	1
Carbon disulfide	ND		1.0		ppb v/v			04/18/17 03:32	1
Carbon tetrachloride	ND		0.40		ppb v/v			04/18/17 03:32	1
Chlorobenzene	0.53		0.40		ppb v/v			04/18/17 03:32	1
Chlorodifluoromethane	12		0.40		ppb v/v			04/18/17 03:32	1
Chloroethane	20		0.40		ppb v/v			04/18/17 03:32	1
Chloroform	3.5		0.40		ppb v/v			04/18/17 03:32	1
Chloromethane	ND		1.0		ppb v/v			04/18/17 03:32	1
cis-1,2-Dichloroethene	8.4		0.40		ppb v/v			04/18/17 03:32	1
cis-1,3-Dichloropropene	ND		0.40		ppb v/v			04/18/17 03:32	1
Cumene	ND		0.80		ppb v/v			04/18/17 03:32	1
Cyclohexane	6.8		1.0		ppb v/v			04/18/17 03:32	1
Decane	ND		2.0		ppb v/v			04/18/17 03:32	1
Dibromochloromethane	ND		0.40		ppb v/v			04/18/17 03:32	1
Dibromomethane	ND		0.80		ppb v/v			04/18/17 03:32	1
Dichlorodifluoromethane	37		0.40		ppb v/v			04/18/17 03:32	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Client Sample ID: G-170405-MB-01

Lab Sample ID: 140-7754-1

Date Collected: 04/05/17 16:10

Matrix: Air

Date Received: 04/10/17 10:15

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dodecane	ND		2.0		ppb v/v			04/18/17 03:32	1
Ethyl ether	ND		4.0		ppb v/v			04/18/17 03:32	1
Ethylbenzene	0.78		0.40		ppb v/v			04/18/17 03:32	1
Heptane	2.4		1.0		ppb v/v			04/18/17 03:32	1
Hexachlorobutadiene	ND		2.0		ppb v/v			04/18/17 03:32	1
Hexane	6.0		1.0		ppb v/v			04/18/17 03:32	1
Methyl tert-butyl ether	ND		2.0		ppb v/v			04/18/17 03:32	1
Methylene Chloride	ND		1.0		ppb v/v			04/18/17 03:32	1
m-Xylene & p-Xylene	1.1		0.40		ppb v/v			04/18/17 03:32	1
Naphthalene	ND		1.0		ppb v/v			04/18/17 03:32	1
Nonane	2.0		1.0		ppb v/v			04/18/17 03:32	1
Octane	0.80		0.80		ppb v/v			04/18/17 03:32	1
o-Xylene	ND		0.40		ppb v/v			04/18/17 03:32	1
Pentane	13		2.0		ppb v/v			04/18/17 03:32	1
Propylbenzene	ND		0.80		ppb v/v			04/18/17 03:32	1
Styrene	ND		0.40		ppb v/v			04/18/17 03:32	1
Tetrachloroethene	17		0.40		ppb v/v			04/18/17 03:32	1
Toluene	ND		0.40		ppb v/v			04/18/17 03:32	1
trans-1,2-Dichloroethene	ND		0.40		ppb v/v			04/18/17 03:32	1
trans-1,3-Dichloropropene	ND		0.40		ppb v/v			04/18/17 03:32	1
Trichloroethene	1.6		0.40		ppb v/v			04/18/17 03:32	1
Trichlorofluoromethane	20		0.40		ppb v/v			04/18/17 03:32	1
Undecane	ND		2.0		ppb v/v			04/18/17 03:32	1
Vinyl acetate	ND		2.0		ppb v/v			04/18/17 03:32	1
Vinyl chloride	57		0.40		ppb v/v			04/18/17 03:32	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	310		2.2		ug/m3			04/18/17 03:32	1
1,1,2,2-Tetrachloroethane	ND		2.7		ug/m3			04/18/17 03:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		3.1		ug/m3			04/18/17 03:32	1
1,1,2-Trichloroethane	ND		2.2		ug/m3			04/18/17 03:32	1
1,1-Dichloroethane	260		1.6		ug/m3			04/18/17 03:32	1
1,1-Dichloroethene	23		1.6		ug/m3			04/18/17 03:32	1
1,2,4-Trichlorobenzene	ND		15		ug/m3			04/18/17 03:32	1
1,2,4-Trimethylbenzene	ND		2.0		ug/m3			04/18/17 03:32	1
1,2-Dibromoethane (EDB)	ND		3.1		ug/m3			04/18/17 03:32	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	60		2.8		ug/m3			04/18/17 03:32	1
1,2-Dichlorobenzene	ND		2.4		ug/m3			04/18/17 03:32	1
1,2-Dichloroethane	ND		1.6		ug/m3			04/18/17 03:32	1
1,2-Dichloropropane	ND		1.8		ug/m3			04/18/17 03:32	1
1,3,5-Trimethylbenzene	ND		2.0		ug/m3			04/18/17 03:32	1
1,3-Butadiene	ND		1.8		ug/m3			04/18/17 03:32	1
1,3-Dichlorobenzene	ND		2.4		ug/m3			04/18/17 03:32	1
1,4-Dichlorobenzene	ND		2.4		ug/m3			04/18/17 03:32	1
2-Butanone (MEK)	7.8		5.9		ug/m3			04/18/17 03:32	1
2-Hexanone	ND		4.1		ug/m3			04/18/17 03:32	1
3-Chloropropene	ND		1.3		ug/m3			04/18/17 03:32	1
4-Methyl-2-pentanone (MIBK)	ND		4.1		ug/m3			04/18/17 03:32	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Client Sample ID: G-170405-MB-01

Lab Sample ID: 140-7754-1

Date Collected: 04/05/17 16:10

Matrix: Air

Date Received: 04/10/17 10:15

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25		24		ug/m3			04/18/17 03:32	1
Acetonitrile	ND		3.4		ug/m3			04/18/17 03:32	1
Acrolein	ND		4.6		ug/m3			04/18/17 03:32	1
Acrylonitrile	ND		8.7		ug/m3			04/18/17 03:32	1
Alpha Methyl Styrene	ND		3.9		ug/m3			04/18/17 03:32	1
Benzene	3.8		1.3		ug/m3			04/18/17 03:32	1
Benzyl chloride	ND		4.1		ug/m3			04/18/17 03:32	1
Bromodichloromethane	ND		2.7		ug/m3			04/18/17 03:32	1
Bromoform	ND		4.1		ug/m3			04/18/17 03:32	1
Bromomethane	ND		1.6		ug/m3			04/18/17 03:32	1
Butane	100		1.9		ug/m3			04/18/17 03:32	1
Carbon disulfide	ND		3.1		ug/m3			04/18/17 03:32	1
Carbon tetrachloride	ND		2.5		ug/m3			04/18/17 03:32	1
Chlorobenzene	2.4		1.8		ug/m3			04/18/17 03:32	1
Chlorodifluoromethane	44		1.4		ug/m3			04/18/17 03:32	1
Chloroethane	53		1.1		ug/m3			04/18/17 03:32	1
Chloroform	17		2.0		ug/m3			04/18/17 03:32	1
Chloromethane	ND		2.1		ug/m3			04/18/17 03:32	1
cis-1,2-Dichloroethene	33		1.6		ug/m3			04/18/17 03:32	1
cis-1,3-Dichloropropene	ND		1.8		ug/m3			04/18/17 03:32	1
Cumene	ND		3.9		ug/m3			04/18/17 03:32	1
Cyclohexane	23		3.4		ug/m3			04/18/17 03:32	1
Decane	ND		12		ug/m3			04/18/17 03:32	1
Dibromochloromethane	ND		3.4		ug/m3			04/18/17 03:32	1
Dibromomethane	ND		5.7		ug/m3			04/18/17 03:32	1
Dichlorodifluoromethane	180		2.0		ug/m3			04/18/17 03:32	1
Dodecane	ND		14		ug/m3			04/18/17 03:32	1
Ethyl ether	ND		12		ug/m3			04/18/17 03:32	1
Ethylbenzene	3.4		1.7		ug/m3			04/18/17 03:32	1
Heptane	9.9		4.1		ug/m3			04/18/17 03:32	1
Hexachlorobutadiene	ND		21		ug/m3			04/18/17 03:32	1
Hexane	21		3.5		ug/m3			04/18/17 03:32	1
Methyl tert-butyl ether	ND		7.2		ug/m3			04/18/17 03:32	1
Methylene Chloride	ND		3.5		ug/m3			04/18/17 03:32	1
m-Xylene & p-Xylene	4.7		1.7		ug/m3			04/18/17 03:32	1
Naphthalene	ND		5.2		ug/m3			04/18/17 03:32	1
Nonane	10		5.2		ug/m3			04/18/17 03:32	1
Octane	3.7		3.7		ug/m3			04/18/17 03:32	1
o-Xylene	ND		1.7		ug/m3			04/18/17 03:32	1
Pentane	39		5.9		ug/m3			04/18/17 03:32	1
Propylbenzene	ND		3.9		ug/m3			04/18/17 03:32	1
Styrene	ND		1.7		ug/m3			04/18/17 03:32	1
Tetrachloroethene	120		2.7		ug/m3			04/18/17 03:32	1
Toluene	ND		1.5		ug/m3			04/18/17 03:32	1
trans-1,2-Dichloroethene	ND		1.6		ug/m3			04/18/17 03:32	1
trans-1,3-Dichloropropene	ND		1.8		ug/m3			04/18/17 03:32	1
Trichloroethene	8.6		2.1		ug/m3			04/18/17 03:32	1
Trichlorofluoromethane	110		2.2		ug/m3			04/18/17 03:32	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Client Sample ID: G-170405-MB-01

Lab Sample ID: 140-7754-1

Date Collected: 04/05/17 16:10

Matrix: Air

Date Received: 04/10/17 10:15

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Undecane	ND		13		ug/m3			04/18/17 03:32	1
Vinyl acetate	ND		7.0		ug/m3			04/18/17 03:32	1
Vinyl chloride	150		1.0		ug/m3			04/18/17 03:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		60 - 140					04/18/17 03:32	1



Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	RL	MDL	Units	Method
1,1,1-Trichloroethane	0.20	0.030	ppb v/v	TO-15
1,1,1-Trichloroethane	1.1	0.16	ug/m3	TO-15
1,1,2,2-Tetrachloroethane	0.20	0.061	ppb v/v	TO-15
1,1,2,2-Tetrachloroethane	1.4	0.42	ug/m3	TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	0.031	ppb v/v	TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane	1.5	0.24	ug/m3	TO-15
1,1,2-Trichloroethane	0.20	0.054	ppb v/v	TO-15
1,1,2-Trichloroethane	1.1	0.29	ug/m3	TO-15
1,1-Dichloroethane	0.20	0.026	ppb v/v	TO-15
1,1-Dichloroethane	0.81	0.11	ug/m3	TO-15
1,1-Dichloroethene	0.20	0.034	ppb v/v	TO-15
1,1-Dichloroethene	0.79	0.13	ug/m3	TO-15
1,2,4-Trichlorobenzene	1.0	0.098	ppb v/v	TO-15
1,2,4-Trichlorobenzene	7.4	0.73	ug/m3	TO-15
1,2,4-Trimethylbenzene	0.20	0.063	ppb v/v	TO-15
1,2,4-Trimethylbenzene	0.98	0.31	ug/m3	TO-15
1,2-Dibromoethane (EDB)	0.20	0.044	ppb v/v	TO-15
1,2-Dibromoethane (EDB)	1.5	0.34	ug/m3	TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.20	0.032	ppb v/v	TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.4	0.22	ug/m3	TO-15
1,2-Dichlorobenzene	0.20	0.070	ppb v/v	TO-15
1,2-Dichlorobenzene	1.2	0.42	ug/m3	TO-15
1,2-Dichloroethane	0.20	0.047	ppb v/v	TO-15
1,2-Dichloroethane	0.81	0.19	ug/m3	TO-15
1,2-Dichloropropane	0.20	0.052	ppb v/v	TO-15
1,2-Dichloropropane	0.92	0.24	ug/m3	TO-15
1,3,5-Trimethylbenzene	0.20	0.065	ppb v/v	TO-15
1,3,5-Trimethylbenzene	0.98	0.32	ug/m3	TO-15
1,3-Butadiene	0.40	0.064	ppb v/v	TO-15
1,3-Butadiene	0.88	0.14	ug/m3	TO-15
1,3-Dichlorobenzene	0.20	0.065	ppb v/v	TO-15
1,3-Dichlorobenzene	1.2	0.39	ug/m3	TO-15
1,4-Dichlorobenzene	0.20	0.064	ppb v/v	TO-15
1,4-Dichlorobenzene	1.2	0.38	ug/m3	TO-15
2-Butanone (MEK)	1.0	0.20	ppb v/v	TO-15
2-Butanone (MEK)	2.9	0.59	ug/m3	TO-15
2-Hexanone	0.50	0.058	ppb v/v	TO-15
2-Hexanone	2.0	0.24	ug/m3	TO-15
3-Chloropropene	0.20	0.048	ppb v/v	TO-15
3-Chloropropene	0.63	0.15	ug/m3	TO-15
4-Methyl-2-pentanone (MIBK)	0.50	0.20	ppb v/v	TO-15
4-Methyl-2-pentanone (MIBK)	2.0	0.80	ug/m3	TO-15
Acetone	5.0	1.4	ppb v/v	TO-15
Acetone	12	3.3	ug/m3	TO-15
Acetonitrile	1.0	0.33	ppb v/v	TO-15
Acetonitrile	1.7	0.55	ug/m3	TO-15
Acrolein	1.0	0.20	ppb v/v	TO-15
Acrolein	2.3	0.46	ug/m3	TO-15
Acrylonitrile	2.0	0.20	ppb v/v	TO-15
Acrylonitrile	4.3	0.43	ug/m3	TO-15
Alpha Methyl Styrene	0.40	0.078	ppb v/v	TO-15
Alpha Methyl Styrene	1.9	0.38	ug/m3	TO-15

TestAmerica Knoxville

Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	RL	MDL	Units	Method
Benzene	0.20	0.056	ppb v/v	TO-15
Benzene	0.64	0.18	ug/m3	TO-15
Benzyl chloride	0.40	0.078	ppb v/v	TO-15
Benzyl chloride	2.1	0.40	ug/m3	TO-15
Bromodichloromethane	0.20	0.044	ppb v/v	TO-15
Bromodichloromethane	1.3	0.29	ug/m3	TO-15
Bromoform	0.20	0.048	ppb v/v	TO-15
Bromoform	2.1	0.50	ug/m3	TO-15
Bromomethane	0.20	0.032	ppb v/v	TO-15
Bromomethane	0.78	0.12	ug/m3	TO-15
Butane	0.40	0.073	ppb v/v	TO-15
Butane	0.95	0.17	ug/m3	TO-15
Carbon disulfide	0.50	0.031	ppb v/v	TO-15
Carbon disulfide	1.6	0.097	ug/m3	TO-15
Carbon tetrachloride	0.20	0.038	ppb v/v	TO-15
Carbon tetrachloride	1.3	0.24	ug/m3	TO-15
Chlorobenzene	0.20	0.049	ppb v/v	TO-15
Chlorobenzene	0.92	0.23	ug/m3	TO-15
Chlorodifluoromethane	0.20	0.037	ppb v/v	TO-15
Chlorodifluoromethane	0.71	0.13	ug/m3	TO-15
Chloroethane	0.20	0.035	ppb v/v	TO-15
Chloroethane	0.53	0.092	ug/m3	TO-15
Chloroform	0.20	0.038	ppb v/v	TO-15
Chloroform	0.98	0.19	ug/m3	TO-15
Chloromethane	0.50	0.16	ppb v/v	TO-15
Chloromethane	1.0	0.33	ug/m3	TO-15
cis-1,2-Dichloroethene	0.20	0.060	ppb v/v	TO-15
cis-1,2-Dichloroethene	0.79	0.24	ug/m3	TO-15
cis-1,3-Dichloropropene	0.20	0.074	ppb v/v	TO-15
cis-1,3-Dichloropropene	0.91	0.34	ug/m3	TO-15
Cumene	0.40	0.060	ppb v/v	TO-15
Cumene	2.0	0.29	ug/m3	TO-15
Cyclohexane	0.50	0.040	ppb v/v	TO-15
Cyclohexane	1.7	0.14	ug/m3	TO-15
Decane	1.0	0.056	ppb v/v	TO-15
Decane	5.8	0.33	ug/m3	TO-15
Dibromochloromethane	0.20	0.042	ppb v/v	TO-15
Dibromochloromethane	1.7	0.36	ug/m3	TO-15
Dibromomethane	0.40	0.040	ppb v/v	TO-15
Dibromomethane	2.8	0.28	ug/m3	TO-15
Dichlorodifluoromethane	0.20	0.068	ppb v/v	TO-15
Dichlorodifluoromethane	0.99	0.34	ug/m3	TO-15
Dodecane	1.0	0.078	ppb v/v	TO-15
Dodecane	7.0	0.54	ug/m3	TO-15
Ethyl ether	2.0	0.053	ppb v/v	TO-15
Ethyl ether	6.1	0.16	ug/m3	TO-15
Ethylbenzene	0.20	0.068	ppb v/v	TO-15
Ethylbenzene	0.87	0.30	ug/m3	TO-15
Heptane	0.50	0.047	ppb v/v	TO-15
Heptane	2.0	0.19	ug/m3	TO-15
Hexachlorobutadiene	1.0	0.078	ppb v/v	TO-15
Hexachlorobutadiene	11	0.83	ug/m3	TO-15

TestAmerica Knoxville

Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	RL	MDL	Units	Method
Hexane	0.50	0.032	ppb v/v	TO-15
Hexane	1.8	0.11	ug/m3	TO-15
Methyl tert-butyl ether	1.0	0.17	ppb v/v	TO-15
Methyl tert-butyl ether	3.6	0.61	ug/m3	TO-15
Methylene Chloride	0.50	0.13	ppb v/v	TO-15
Methylene Chloride	1.7	0.45	ug/m3	TO-15
m-Xylene & p-Xylene	0.20	0.12	ppb v/v	TO-15
m-Xylene & p-Xylene	0.87	0.52	ug/m3	TO-15
Naphthalene	0.50	0.090	ppb v/v	TO-15
Naphthalene	2.6	0.47	ug/m3	TO-15
Nonane	0.50	0.043	ppb v/v	TO-15
Nonane	2.6	0.23	ug/m3	TO-15
Octane	0.40	0.036	ppb v/v	TO-15
Octane	1.9	0.17	ug/m3	TO-15
o-Xylene	0.20	0.061	ppb v/v	TO-15
o-Xylene	0.87	0.26	ug/m3	TO-15
Pentane	1.0	0.060	ppb v/v	TO-15
Pentane	3.0	0.18	ug/m3	TO-15
Propylbenzene	0.40	0.056	ppb v/v	TO-15
Propylbenzene	2.0	0.28	ug/m3	TO-15
Styrene	0.20	0.058	ppb v/v	TO-15
Styrene	0.85	0.25	ug/m3	TO-15
Tetrachloroethene	0.20	0.040	ppb v/v	TO-15
Tetrachloroethene	1.4	0.27	ug/m3	TO-15
Toluene	0.20	0.12	ppb v/v	TO-15
Toluene	0.75	0.45	ug/m3	TO-15
trans-1,2-Dichloroethene	0.20	0.050	ppb v/v	TO-15
trans-1,2-Dichloroethene	0.79	0.20	ug/m3	TO-15
trans-1,3-Dichloropropene	0.20	0.048	ppb v/v	TO-15
trans-1,3-Dichloropropene	0.91	0.22	ug/m3	TO-15
Trichloroethene	0.20	0.036	ppb v/v	TO-15
Trichloroethene	1.1	0.19	ug/m3	TO-15
Trichlorofluoromethane	0.20	0.024	ppb v/v	TO-15
Trichlorofluoromethane	1.1	0.13	ug/m3	TO-15
Undecane	1.0	0.062	ppb v/v	TO-15
Undecane	6.4	0.40	ug/m3	TO-15
Vinyl acetate	1.0	0.14	ppb v/v	TO-15
Vinyl acetate	3.5	0.49	ug/m3	TO-15
Vinyl chloride	0.20	0.071	ppb v/v	TO-15
Vinyl chloride	0.51	0.18	ug/m3	TO-15

Surrogate Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Matrix: Air

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
140-7754-1	G-170405-MB-01	108
LCS 140-10551/1013	Lab Control Sample	100
MB 140-10551/17	Method Blank	91

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 140-10551/17

Matrix: Air

Analysis Batch: 10551

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.20		ppb v/v			04/17/17 23:02	1
1,1,2,2-Tetrachloroethane	ND		0.20		ppb v/v			04/17/17 23:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20		ppb v/v			04/17/17 23:02	1
1,1,2-Trichloroethane	ND		0.20		ppb v/v			04/17/17 23:02	1
1,1-Dichloroethane	ND		0.20		ppb v/v			04/17/17 23:02	1
1,1-Dichloroethene	ND		0.20		ppb v/v			04/17/17 23:02	1
1,2,4-Trichlorobenzene	ND		1.0		ppb v/v			04/17/17 23:02	1
1,2,4-Trimethylbenzene	ND		0.20		ppb v/v			04/17/17 23:02	1
1,2-Dibromoethane (EDB)	ND		0.20		ppb v/v			04/17/17 23:02	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.20		ppb v/v			04/17/17 23:02	1
1,2-Dichlorobenzene	ND		0.20		ppb v/v			04/17/17 23:02	1
1,2-Dichloroethane	ND		0.20		ppb v/v			04/17/17 23:02	1
1,2-Dichloropropane	ND		0.20		ppb v/v			04/17/17 23:02	1
1,3,5-Trimethylbenzene	ND		0.20		ppb v/v			04/17/17 23:02	1
1,3-Butadiene	ND		0.40		ppb v/v			04/17/17 23:02	1
1,3-Dichlorobenzene	ND		0.20		ppb v/v			04/17/17 23:02	1
1,4-Dichlorobenzene	ND		0.20		ppb v/v			04/17/17 23:02	1
2-Butanone (MEK)	ND		1.0		ppb v/v			04/17/17 23:02	1
2-Hexanone	ND		0.50		ppb v/v			04/17/17 23:02	1
3-Chloropropene	ND		0.20		ppb v/v			04/17/17 23:02	1
4-Methyl-2-pentanone (MIBK)	ND		0.50		ppb v/v			04/17/17 23:02	1
Acetone	ND		5.0		ppb v/v			04/17/17 23:02	1
Acetonitrile	ND		1.0		ppb v/v			04/17/17 23:02	1
Acrolein	ND		1.0		ppb v/v			04/17/17 23:02	1
Acrylonitrile	ND		2.0		ppb v/v			04/17/17 23:02	1
Alpha Methyl Styrene	ND		0.40		ppb v/v			04/17/17 23:02	1
Benzene	ND		0.20		ppb v/v			04/17/17 23:02	1
Benzyl chloride	ND		0.40		ppb v/v			04/17/17 23:02	1
Bromodichloromethane	ND		0.20		ppb v/v			04/17/17 23:02	1
Bromoform	ND		0.20		ppb v/v			04/17/17 23:02	1
Bromomethane	ND		0.20		ppb v/v			04/17/17 23:02	1
Butane	ND		0.40		ppb v/v			04/17/17 23:02	1
Carbon disulfide	ND		0.50		ppb v/v			04/17/17 23:02	1
Carbon tetrachloride	ND		0.20		ppb v/v			04/17/17 23:02	1
Chlorobenzene	ND		0.20		ppb v/v			04/17/17 23:02	1
Chlorodifluoromethane	ND		0.20		ppb v/v			04/17/17 23:02	1
Chloroethane	ND		0.20		ppb v/v			04/17/17 23:02	1
Chloroform	ND		0.20		ppb v/v			04/17/17 23:02	1
Chloromethane	ND		0.50		ppb v/v			04/17/17 23:02	1
cis-1,2-Dichloroethene	ND		0.20		ppb v/v			04/17/17 23:02	1
cis-1,3-Dichloropropene	ND		0.20		ppb v/v			04/17/17 23:02	1
Cumene	ND		0.40		ppb v/v			04/17/17 23:02	1
Cyclohexane	ND		0.50		ppb v/v			04/17/17 23:02	1
Decane	ND		1.0		ppb v/v			04/17/17 23:02	1
Dibromochloromethane	ND		0.20		ppb v/v			04/17/17 23:02	1
Dibromomethane	ND		0.40		ppb v/v			04/17/17 23:02	1
Dichlorodifluoromethane	ND		0.20		ppb v/v			04/17/17 23:02	1
Dodecane	ND		1.0		ppb v/v			04/17/17 23:02	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-10551/17
Matrix: Air
Analysis Batch: 10551

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethyl ether	ND		2.0		ppb v/v			04/17/17 23:02	1
Ethylbenzene	ND		0.20		ppb v/v			04/17/17 23:02	1
Heptane	ND		0.50		ppb v/v			04/17/17 23:02	1
Hexachlorobutadiene	ND		1.0		ppb v/v			04/17/17 23:02	1
Hexane	ND		0.50		ppb v/v			04/17/17 23:02	1
Methyl tert-butyl ether	ND		1.0		ppb v/v			04/17/17 23:02	1
Methylene Chloride	ND		0.50		ppb v/v			04/17/17 23:02	1
m-Xylene & p-Xylene	ND		0.20		ppb v/v			04/17/17 23:02	1
Naphthalene	ND		0.50		ppb v/v			04/17/17 23:02	1
Nonane	ND		0.50		ppb v/v			04/17/17 23:02	1
Octane	ND		0.40		ppb v/v			04/17/17 23:02	1
o-Xylene	ND		0.20		ppb v/v			04/17/17 23:02	1
Pentane	ND		1.0		ppb v/v			04/17/17 23:02	1
Propylbenzene	ND		0.40		ppb v/v			04/17/17 23:02	1
Styrene	ND		0.20		ppb v/v			04/17/17 23:02	1
Tetrachloroethene	ND		0.20		ppb v/v			04/17/17 23:02	1
Toluene	ND		0.20		ppb v/v			04/17/17 23:02	1
trans-1,2-Dichloroethene	ND		0.20		ppb v/v			04/17/17 23:02	1
trans-1,3-Dichloropropene	ND		0.20		ppb v/v			04/17/17 23:02	1
Trichloroethene	ND		0.20		ppb v/v			04/17/17 23:02	1
Trichlorofluoromethane	ND		0.20		ppb v/v			04/17/17 23:02	1
Undecane	ND		1.0		ppb v/v			04/17/17 23:02	1
Vinyl acetate	ND		1.0		ppb v/v			04/17/17 23:02	1
Vinyl chloride	ND		0.20		ppb v/v			04/17/17 23:02	1

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.1		ug/m3			04/17/17 23:02	1
1,1,2,2-Tetrachloroethane	ND		1.4		ug/m3			04/17/17 23:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5		ug/m3			04/17/17 23:02	1
1,1,2-Trichloroethane	ND		1.1		ug/m3			04/17/17 23:02	1
1,1-Dichloroethane	ND		0.81		ug/m3			04/17/17 23:02	1
1,1-Dichloroethene	ND		0.79		ug/m3			04/17/17 23:02	1
1,2,4-Trichlorobenzene	ND		7.4		ug/m3			04/17/17 23:02	1
1,2,4-Trimethylbenzene	ND		0.98		ug/m3			04/17/17 23:02	1
1,2-Dibromoethane (EDB)	ND		1.5		ug/m3			04/17/17 23:02	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		1.4		ug/m3			04/17/17 23:02	1
1,2-Dichlorobenzene	ND		1.2		ug/m3			04/17/17 23:02	1
1,2-Dichloroethane	ND		0.81		ug/m3			04/17/17 23:02	1
1,2-Dichloropropane	ND		0.92		ug/m3			04/17/17 23:02	1
1,3,5-Trimethylbenzene	ND		0.98		ug/m3			04/17/17 23:02	1
1,3-Butadiene	ND		0.88		ug/m3			04/17/17 23:02	1
1,3-Dichlorobenzene	ND		1.2		ug/m3			04/17/17 23:02	1
1,4-Dichlorobenzene	ND		1.2		ug/m3			04/17/17 23:02	1
2-Butanone (MEK)	ND		2.9		ug/m3			04/17/17 23:02	1
2-Hexanone	ND		2.0		ug/m3			04/17/17 23:02	1
3-Chloropropene	ND		0.63		ug/m3			04/17/17 23:02	1
4-Methyl-2-pentanone (MIBK)	ND		2.0		ug/m3			04/17/17 23:02	1
Acetone	ND		12		ug/m3			04/17/17 23:02	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-10551/17
Matrix: Air
Analysis Batch: 10551

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	ND		1.7		ug/m3			04/17/17 23:02	1
Acrolein	ND		2.3		ug/m3			04/17/17 23:02	1
Acrylonitrile	ND		4.3		ug/m3			04/17/17 23:02	1
Alpha Methyl Styrene	ND		1.9		ug/m3			04/17/17 23:02	1
Benzene	ND		0.64		ug/m3			04/17/17 23:02	1
Benzyl chloride	ND		2.1		ug/m3			04/17/17 23:02	1
Bromodichloromethane	ND		1.3		ug/m3			04/17/17 23:02	1
Bromoform	ND		2.1		ug/m3			04/17/17 23:02	1
Bromomethane	ND		0.78		ug/m3			04/17/17 23:02	1
Butane	ND		0.95		ug/m3			04/17/17 23:02	1
Carbon disulfide	ND		1.6		ug/m3			04/17/17 23:02	1
Carbon tetrachloride	ND		1.3		ug/m3			04/17/17 23:02	1
Chlorobenzene	ND		0.92		ug/m3			04/17/17 23:02	1
Chlorodifluoromethane	ND		0.71		ug/m3			04/17/17 23:02	1
Chloroethane	ND		0.53		ug/m3			04/17/17 23:02	1
Chloroform	ND		0.98		ug/m3			04/17/17 23:02	1
Chloromethane	ND		1.0		ug/m3			04/17/17 23:02	1
cis-1,2-Dichloroethene	ND		0.79		ug/m3			04/17/17 23:02	1
cis-1,3-Dichloropropene	ND		0.91		ug/m3			04/17/17 23:02	1
Cumene	ND		2.0		ug/m3			04/17/17 23:02	1
Cyclohexane	ND		1.7		ug/m3			04/17/17 23:02	1
Decane	ND		5.8		ug/m3			04/17/17 23:02	1
Dibromochloromethane	ND		1.7		ug/m3			04/17/17 23:02	1
Dibromomethane	ND		2.8		ug/m3			04/17/17 23:02	1
Dichlorodifluoromethane	ND		0.99		ug/m3			04/17/17 23:02	1
Dodecane	ND		7.0		ug/m3			04/17/17 23:02	1
Ethyl ether	ND		6.1		ug/m3			04/17/17 23:02	1
Ethylbenzene	ND		0.87		ug/m3			04/17/17 23:02	1
Heptane	ND		2.0		ug/m3			04/17/17 23:02	1
Hexachlorobutadiene	ND		11		ug/m3			04/17/17 23:02	1
Hexane	ND		1.8		ug/m3			04/17/17 23:02	1
Methyl tert-butyl ether	ND		3.6		ug/m3			04/17/17 23:02	1
Methylene Chloride	ND		1.7		ug/m3			04/17/17 23:02	1
m-Xylene & p-Xylene	ND		0.87		ug/m3			04/17/17 23:02	1
Naphthalene	ND		2.6		ug/m3			04/17/17 23:02	1
Nonane	ND		2.6		ug/m3			04/17/17 23:02	1
Octane	ND		1.9		ug/m3			04/17/17 23:02	1
o-Xylene	ND		0.87		ug/m3			04/17/17 23:02	1
Pentane	ND		3.0		ug/m3			04/17/17 23:02	1
Propylbenzene	ND		2.0		ug/m3			04/17/17 23:02	1
Styrene	ND		0.85		ug/m3			04/17/17 23:02	1
Tetrachloroethene	ND		1.4		ug/m3			04/17/17 23:02	1
Toluene	ND		0.75		ug/m3			04/17/17 23:02	1
trans-1,2-Dichloroethene	ND		0.79		ug/m3			04/17/17 23:02	1
trans-1,3-Dichloropropene	ND		0.91		ug/m3			04/17/17 23:02	1
Trichloroethene	ND		1.1		ug/m3			04/17/17 23:02	1
Trichlorofluoromethane	ND		1.1		ug/m3			04/17/17 23:02	1
Undecane	ND		6.4		ug/m3			04/17/17 23:02	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-10551/17
Matrix: Air
Analysis Batch: 10551

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	ND		3.5		ug/m3			04/17/17 23:02	1
Vinyl chloride	ND		0.51		ug/m3			04/17/17 23:02	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		60 - 140					04/17/17 23:02	1

Lab Sample ID: LCS 140-10551/1013
Matrix: Air
Analysis Batch: 10551

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	2.00	2.03		ppb v/v		102	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.62		ppb v/v		81	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	2.00	2.10		ppb v/v		105	70 - 130
1,1,2-Trichloroethane	2.00	1.74		ppb v/v		87	70 - 130
1,1-Dichloroethane	2.00	2.06		ppb v/v		103	70 - 130
1,1-Dichloroethene	2.00	2.15		ppb v/v		108	70 - 130
1,2,4-Trichlorobenzene	2.00	2.12		ppb v/v		106	60 - 140
1,2,4-Trimethylbenzene	2.00	1.74		ppb v/v		87	70 - 130
1,2-Dibromoethane (EDB)	2.00	1.86		ppb v/v		93	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.00	2.34		ppb v/v		117	60 - 140
1,2-Dichlorobenzene	2.00	1.57		ppb v/v		79	70 - 130
1,2-Dichloroethane	2.00	2.11		ppb v/v		105	70 - 130
1,2-Dichloropropane	2.00	1.97		ppb v/v		99	70 - 130
1,3,5-Trimethylbenzene	2.00	1.74		ppb v/v		87	70 - 130
1,3-Butadiene	2.00	2.22		ppb v/v		111	60 - 140
1,3-Dichlorobenzene	2.00	1.65		ppb v/v		82	70 - 130
1,4-Dichlorobenzene	2.00	1.72		ppb v/v		86	70 - 130
2-Butanone (MEK)	2.00	1.58		ppb v/v		79	60 - 140
2-Hexanone	2.00	2.05		ppb v/v		103	60 - 140
3-Chloropropene	2.00	2.19		ppb v/v		109	60 - 140
4-Methyl-2-pentanone (MIBK)	2.00	2.08		ppb v/v		104	60 - 140
Acetone	6.00	3.94		ppb v/v		66	60 - 140
Acetonitrile	2.00	1.49		ppb v/v		75	60 - 140
Acrolein	2.00	1.79		ppb v/v		90	60 - 140
Acrylonitrile	2.00	1.50		ppb v/v		75	60 - 140
Alpha Methyl Styrene	2.00	1.69		ppb v/v		84	60 - 140
Benzene	2.00	2.06		ppb v/v		103	70 - 130
Benzyl chloride	2.00	1.82		ppb v/v		91	70 - 130
Bromodichloromethane	2.00	2.19		ppb v/v		109	70 - 130
Bromoform	2.00	2.40		ppb v/v		120	60 - 140
Bromomethane	2.00	2.21		ppb v/v		111	70 - 130
Butane	2.00	2.37		ppb v/v		118	60 - 140
Carbon disulfide	2.00	2.36		ppb v/v		118	70 - 130
Carbon tetrachloride	2.00	2.09		ppb v/v		105	70 - 130
Chlorobenzene	2.00	1.90		ppb v/v		95	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-10551/1013

Matrix: Air

Analysis Batch: 10551

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorodifluoromethane	2.00	2.31		ppb v/v		115	60 - 140
Chloroethane	2.00	2.19		ppb v/v		109	70 - 130
Chloroform	2.00	2.03		ppb v/v		101	70 - 130
Chloromethane	2.00	1.94		ppb v/v		97	60 - 140
cis-1,2-Dichloroethene	2.00	2.14		ppb v/v		107	70 - 130
cis-1,3-Dichloropropene	2.00	2.21		ppb v/v		111	70 - 130
Cumene	2.00	1.53		ppb v/v		77	70 - 130
Cyclohexane	2.00	2.14		ppb v/v		107	70 - 130
Decane	2.00	1.74		ppb v/v		87	60 - 140
Dibromochloromethane	2.00	2.35		ppb v/v		118	70 - 130
Dibromomethane	2.00	2.04		ppb v/v		102	70 - 130
Dichlorodifluoromethane	2.00	2.40		ppb v/v		120	60 - 140
Dodecane	2.00	2.03		ppb v/v		102	60 - 140
Ethyl ether	2.00	1.71		ppb v/v		85	60 - 140
Ethylbenzene	2.00	1.61		ppb v/v		80	70 - 130
Heptane	2.00	2.14		ppb v/v		107	70 - 130
Hexachlorobutadiene	2.00	1.77		ppb v/v		88	60 - 140
Hexane	2.00	2.07		ppb v/v		104	70 - 130
Methyl tert-butyl ether	2.00	1.64		ppb v/v		82	60 - 140
Methylene Chloride	2.00	2.04		ppb v/v		102	70 - 130
m-Xylene & p-Xylene	4.00	3.36		ppb v/v		84	70 - 130
Naphthalene	2.00	2.28		ppb v/v		114	60 - 140
Nonane	2.00	2.06		ppb v/v		103	60 - 140
Octane	2.00	2.03		ppb v/v		101	70 - 130
o-Xylene	2.00	1.53		ppb v/v		76	70 - 130
Pentane	2.00	2.36		ppb v/v		118	70 - 130
Propylbenzene	2.00	1.66		ppb v/v		83	70 - 130
Styrene	2.00	1.91		ppb v/v		95	70 - 130
Tetrachloroethene	2.00	1.91		ppb v/v		96	70 - 130
Toluene	2.00	1.77		ppb v/v		89	70 - 130
trans-1,2-Dichloroethene	2.00	2.07		ppb v/v		104	70 - 130
trans-1,3-Dichloropropene	2.00	1.82		ppb v/v		91	70 - 130
Trichloroethene	2.00	2.01		ppb v/v		101	70 - 130
Trichlorofluoromethane	2.00	2.34		ppb v/v		117	60 - 140
Undecane	2.00	1.80		ppb v/v		90	60 - 140
Vinyl acetate	2.00	1.48		ppb v/v		74	60 - 140
Vinyl chloride	2.00	2.34		ppb v/v		117	70 - 130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	11	11.1		ug/m3		102	70 - 130
1,1,2,2-Tetrachloroethane	14	11.1		ug/m3		81	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	15	16.1		ug/m3		105	70 - 130
1,1,2-Trichloroethane	11	9.50		ug/m3		87	70 - 130
1,1-Dichloroethane	8.1	8.33		ug/m3		103	70 - 130
1,1-Dichloroethene	7.9	8.53		ug/m3		108	70 - 130
1,2,4-Trichlorobenzene	15	15.7		ug/m3		106	60 - 140
1,2,4-Trimethylbenzene	9.8	8.57		ug/m3		87	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-10551/1013

Matrix: Air

Analysis Batch: 10551

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	15	14.3		ug/m3		93	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	14	16.4		ug/m3		117	60 - 140
1,2-Dichlorobenzene	12	9.46		ug/m3		79	70 - 130
1,2-Dichloroethane	8.1	8.53		ug/m3		105	70 - 130
1,2-Dichloropropane	9.2	9.10		ug/m3		99	70 - 130
1,3,5-Trimethylbenzene	9.8	8.57		ug/m3		87	70 - 130
1,3-Butadiene	4.4	4.91		ug/m3		111	60 - 140
1,3-Dichlorobenzene	12	9.91		ug/m3		82	70 - 130
1,4-Dichlorobenzene	12	10.3		ug/m3		86	70 - 130
2-Butanone (MEK)	5.9	4.66		ug/m3		79	60 - 140
2-Hexanone	8.2	8.41		ug/m3		103	60 - 140
3-Chloropropene	6.3	6.85		ug/m3		109	60 - 140
4-Methyl-2-pentanone (MIBK)	8.2	8.52		ug/m3		104	60 - 140
Acetone	14	9.36		ug/m3		66	60 - 140
Acetonitrile	3.4	2.51		ug/m3		75	60 - 140
Acrolein	4.6	4.11		ug/m3		90	60 - 140
Acrylonitrile	4.3	3.25		ug/m3		75	60 - 140
Alpha Methyl Styrene	9.7	8.16		ug/m3		84	60 - 140
Benzene	6.4	6.58		ug/m3		103	70 - 130
Benzyl chloride	10	9.41		ug/m3		91	70 - 130
Bromodichloromethane	13	14.7		ug/m3		109	70 - 130
Bromoform	21	24.8		ug/m3		120	60 - 140
Bromomethane	7.8	8.58		ug/m3		111	70 - 130
Butane	4.8	5.63		ug/m3		118	60 - 140
Carbon disulfide	6.2	7.34		ug/m3		118	70 - 130
Carbon tetrachloride	13	13.2		ug/m3		105	70 - 130
Chlorobenzene	9.2	8.75		ug/m3		95	70 - 130
Chlorodifluoromethane	7.1	8.16		ug/m3		115	60 - 140
Chloroethane	5.3	5.77		ug/m3		109	70 - 130
Chloroform	9.8	9.90		ug/m3		101	70 - 130
Chloromethane	4.1	4.01		ug/m3		97	60 - 140
cis-1,2-Dichloroethene	7.9	8.47		ug/m3		107	70 - 130
cis-1,3-Dichloropropene	9.1	10.0		ug/m3		111	70 - 130
Cumene	9.8	7.54		ug/m3		77	70 - 130
Cyclohexane	6.9	7.35		ug/m3		107	70 - 130
Decane	12	10.1		ug/m3		87	60 - 140
Dibromochloromethane	17	20.0		ug/m3		118	70 - 130
Dibromomethane	14	14.5		ug/m3		102	70 - 130
Dichlorodifluoromethane	9.9	11.9		ug/m3		120	60 - 140
Dodecane	14	14.1		ug/m3		102	60 - 140
Ethyl ether	6.1	5.17		ug/m3		85	60 - 140
Ethylbenzene	8.7	6.99		ug/m3		80	70 - 130
Heptane	8.2	8.78		ug/m3		107	70 - 130
Hexachlorobutadiene	21	18.8		ug/m3		88	60 - 140
Hexane	7.0	7.30		ug/m3		104	70 - 130
Methyl tert-butyl ether	7.2	5.91		ug/m3		82	60 - 140
Methylene Chloride	6.9	7.10		ug/m3		102	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-10551/1013

Matrix: Air

Analysis Batch: 10551

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Xylene & p-Xylene	17	14.6		ug/m3		84	70 - 130
Naphthalene	10	11.9		ug/m3		114	60 - 140
Nonane	10	10.8		ug/m3		103	60 - 140
Octane	9.3	9.48		ug/m3		101	70 - 130
o-Xylene	8.7	6.63		ug/m3		76	70 - 130
Pentane	5.9	6.98		ug/m3		118	70 - 130
Propylbenzene	9.8	8.16		ug/m3		83	70 - 130
Styrene	8.5	8.13		ug/m3		95	70 - 130
Tetrachloroethene	14	13.0		ug/m3		96	70 - 130
Toluene	7.5	6.68		ug/m3		89	70 - 130
trans-1,2-Dichloroethene	7.9	8.21		ug/m3		104	70 - 130
trans-1,3-Dichloropropene	9.1	8.26		ug/m3		91	70 - 130
Trichloroethene	11	10.8		ug/m3		101	70 - 130
Trichlorofluoromethane	11	13.2		ug/m3		117	60 - 140
Undecane	13	11.5		ug/m3		90	60 - 140
Vinyl acetate	7.0	5.20		ug/m3		74	60 - 140
Vinyl chloride	5.1	5.98		ug/m3		117	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		60 - 140

QC Association Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Air - GC/MS VOA

Analysis Batch: 10551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-7754-1	G-170405-MB-01	Total/NA	Air	TO-15	
MB 140-10551/17	Method Blank	Total/NA	Air	TO-15	
LCS 140-10551/1013	Lab Control Sample	Total/NA	Air	TO-15	

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Lab Chronicle

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Client Sample ID: G-170405-MB-01

Date Collected: 04/05/17 16:10

Date Received: 04/10/17 10:15

Lab Sample ID: 140-7754-1

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	100 mL	500 mL	10551	04/18/17 03:32	HMT	TAL KNX
Instrument ID: MJ										

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 140-10551/17

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	200 mL	500 mL	10551	04/17/17 23:02	HMT	TAL KNX
Instrument ID: MJ										

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 140-10551/1013

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	500 mL	500 mL	10551	04/17/17 20:20	HMT	TAL KNX
Instrument ID: MJ										

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Laboratory: TestAmerica Knoxville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	998044300	08-31-17

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
TO-15		Air	1,1,1-Trichloroethane
TO-15		Air	1,1,2,2-Tetrachloroethane
TO-15		Air	1,1,2-Trichloro-1,2,2-trifluoroethane
TO-15		Air	1,1,2-Trichloroethane
TO-15		Air	1,1-Dichloroethane
TO-15		Air	1,1-Dichloroethene
TO-15		Air	1,2,4-Trichlorobenzene
TO-15		Air	1,2,4-Trimethylbenzene
TO-15		Air	1,2-Dibromoethane (EDB)
TO-15		Air	1,2-Dichloro-1,1,2,2-tetrafluoroethane
TO-15		Air	1,2-Dichlorobenzene
TO-15		Air	1,2-Dichloroethane
TO-15		Air	1,2-Dichloropropane
TO-15		Air	1,3,5-Trimethylbenzene
TO-15		Air	1,3-Butadiene
TO-15		Air	1,3-Dichlorobenzene
TO-15		Air	1,4-Dichlorobenzene
TO-15		Air	2-Butanone (MEK)
TO-15		Air	2-Hexanone
TO-15		Air	3-Chloropropene
TO-15		Air	4-Methyl-2-pentanone (MIBK)
TO-15		Air	Acetone
TO-15		Air	Acetonitrile
TO-15		Air	Acrolein
TO-15		Air	Acrylonitrile
TO-15		Air	Alpha Methyl Styrene
TO-15		Air	Benzene
TO-15		Air	Benzyl chloride
TO-15		Air	Bromodichloromethane
TO-15		Air	Bromoform
TO-15		Air	Bromomethane
TO-15		Air	Butane
TO-15		Air	Carbon disulfide
TO-15		Air	Carbon tetrachloride
TO-15		Air	Chlorobenzene
TO-15		Air	Chlorodifluoromethane
TO-15		Air	Chloroethane
TO-15		Air	Chloroform
TO-15		Air	Chloromethane
TO-15		Air	cis-1,2-Dichloroethene
TO-15		Air	cis-1,3-Dichloropropene
TO-15		Air	Cumene
TO-15		Air	Cyclohexane
TO-15		Air	Decane
TO-15		Air	Dibromochloromethane
TO-15		Air	Dibromomethane

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Laboratory: TestAmerica Knoxville (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	998044300	08-31-17

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
TO-15		Air	Dichlorodifluoromethane
TO-15		Air	Dodecane
TO-15		Air	Ethyl ether
TO-15		Air	Ethylbenzene
TO-15		Air	Heptane
TO-15		Air	Hexachlorobutadiene
TO-15		Air	Hexane
TO-15		Air	Methyl tert-butyl ether
TO-15		Air	Methylene Chloride
TO-15		Air	m-Xylene & p-Xylene
TO-15		Air	Naphthalene
TO-15		Air	Nonane
TO-15		Air	Octane
TO-15		Air	o-Xylene
TO-15		Air	Pentane
TO-15		Air	Propylbenzene
TO-15		Air	Styrene
TO-15		Air	Tetrachloroethene
TO-15		Air	Toluene
TO-15		Air	trans-1,2-Dichloroethene
TO-15		Air	trans-1,3-Dichloropropene
TO-15		Air	Trichloroethene
TO-15		Air	Trichlorofluoromethane
TO-15		Air	Undecane
TO-15		Air	Vinyl acetate
TO-15		Air	Vinyl chloride

Method Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Method	Method Description	Protocol	Laboratory
TO-15	Volatile Organic Compounds in Ambient Air	EPA	TAL KNX

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000



Sample Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-7754-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-7754-1	G-170405-MB-01	Air	04/05/17 16:10	04/10/17 10:15

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GHD Services Inc.

CONESTOGA-ROVERS & ASSOCIATES

CHAIN OF CUSTODY RECORD

1801 Old Highway 8 Northwest, Suite 114
St. Paul, Minnesota 55112 United States

Phone: (651) 639-0913

Fax: (651) 639-0923

COC NO.: **SP-02068**

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 048038-70-05				Laboratory Name: Test America				Lab Location: Knoxville, TN				SSOW ID:																																																																																																																																																																																																																																																																																										
Project Name: New Richmond Landfill				Lab Contact:				Lab Quote No:				Cooler No:																																																																																																																																																																																																																																																																																										
Project Location: New Richmond, WI				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)				Carrier: FedEx																																																																																																																																																																																																																																																																																										
Chemistry Contact: Grant Anderson				<table border="1"> <tr> <th>SAMPLE TYPE</th> <th>Matrix Code (see back of COC)</th> <th>Grab (G) or Comp (C)</th> <th>Unpreserved</th> <th>Hydrochloric Acid (HCl)</th> <th>Nitric Acid (HNO₃)</th> <th>Sulfuric Acid (H₂SO₄)</th> <th>Sodium Hydroxide (NaOH)</th> <th>Methanol/Water (Soil VOC)</th> <th>EnCores 3x5-g, 1x25-g</th> <th>Other:</th> <th>Total Containers/Sample</th> <th rowspan="2">MS/MSD Request</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>70-01</td> </tr> </table>				SAMPLE TYPE	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	MS/MSD Request												70-01	Airbill No:																																																																																																																																																																																																																																																																					
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Sampler(s): M. Barnes												Date Shipped: 4/6/17																																																																																																																																																																																																																																																																																										
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TAT Required in business days (use separate COCs for different TATs): <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days <input type="checkbox"/> 1 Week <input checked="" type="checkbox"/> 2 Week <input type="checkbox"/> Other:				Total Number of Containers: 1				Notes/ Special Requirements:				All Samples in Cooler must be on COC																																																																																																																																																																																																																																																																																										
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1. <i>Matt Barnes</i>		GHD		4/6/17		16:00		1. <i>Rita Hancock</i>		TA KNOX		4/10/17		10:15																																																																																																																																																																																																																																																																																								
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Page 29 of 30



THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE - Fully Executed Copy (CRA) YELLOW - Receiving Laboratory Copy PINK - Shipper GOLDENROD - Sampling Crew CRA Form: COC-10A (20110804)



TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	✓			<input type="checkbox"/> Containers, Broken	
2. Were ambient air containers received intact?			✓	<input checked="" type="checkbox"/> Checked in lab	
3. The coolers/containers custody seal if present, is it intact?	✓			<input type="checkbox"/> Yes <input type="checkbox"/> NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6°C, VOST: 10°C) Thermometer ID : _____ Correction factor: _____			✓	<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	✓			<input type="checkbox"/> Containers, Broken	
6. Were samples received in appropriate containers?	✓			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			<input type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input type="checkbox"/> COC Not Received	
8. Were all of the samples listed on the COC received?	✓			<input type="checkbox"/> Sample Received, Not on COC <input type="checkbox"/> Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	✓			<input type="checkbox"/> COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?	✓			<input type="checkbox"/> Sampler Not Listed on COC	Labeling Verified by: _____ Date: _____
11. Is the client and project name/# identified?	✓			<input type="checkbox"/> COC Incorrect/Incomplete	pH test strip lot number: _____
12. Are tests/parameters listed for each sample?	✓			<input type="checkbox"/> COC No tests on COC	
13. Is the matrix of the samples noted?	✓			<input type="checkbox"/> COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	✓			<input type="checkbox"/> COC Incorrect/Incomplete	Box 16A: pH Preservation Box 18A: Residual Chlorine
15. Were samples received within holding time?	✓			<input type="checkbox"/> Holding Time - Receipt	Preservative: _____ Lot Number: _____ Exp Date: _____ Analyst: _____ Date: _____ Time: _____
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	<input type="checkbox"/> pH Adjusted, pH Included (See box 16A) <input type="checkbox"/> Incorrect Preservative	
17. Were VOA samples received without headspace?			✓	<input type="checkbox"/> Headspace (VOA only)	
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: _____			✓	<input type="checkbox"/> Residual Chlorine	
19. For 1613B water samples is pH<9?			✓	<input type="checkbox"/> If no, lab will adjust	
20. For rad samples was sample activity info. Provided?			✓	<input type="checkbox"/> Project missing info	
Project #: <u>1401850</u> PM Instructions: <u>NA</u>					

Sample Receiving Associate: Rita Hancock Date: 4/10/17



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

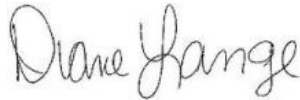
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

TestAmerica Job ID: 140-8813-1
Client Project/Site: New Richmond Landfill

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson



Authorized for release by:
8/7/2017 10:23:53 AM
Diana Lange, Project Management Assistant II
diane.lange@testamericainc.com

Designee for
Jamie McKinney, Senior Project Manager
(865)291-3000
jamie.mckinney@testamericainc.com

LINKS

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- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	6
Default Detection Limits	10
Surrogate Summary	13
QC Sample Results	14
QC Association Summary	21
Lab Chronicle	22
Certification Summary	23
Method Summary	25
Sample Summary	26
Chain of Custody	27
Receipt Checklists	29

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Qualifiers

Air - GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Job ID: 140-8813-1

Laboratory: TestAmerica Knoxville

Narrative

Job Narrative 140-8813-1

Comments

No additional comments.

Receipt

The sample was received on 7/26/2017 10:15 AM; the sample arrived in good condition, properly preserved and, where required, on ice.

Air - GC/MS VOA

Method(s) D1946, TO 15 LL, TO-15: EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

Method(s) TO-15: The continuing calibration verification (CCV) associated with batch 140-12951 recovered above the upper control limit for Propylbenzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) TO-15: The laboratory control sample (LCS) for analytical batch 140-12951 recovered outside control limits for the following analytes: Propylbenzene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Client Sample ID: G-170724-MB-01

Lab Sample ID: 140-8813-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	69		0.80		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	68		0.80		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	11		0.80		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	6.7		0.80		ppb v/v	1		TO-15	Total/NA
Butane	10		1.6		ppb v/v	1		TO-15	Total/NA
Chlorobenzene	1.1		0.80		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	8.6		0.80		ppb v/v	1		TO-15	Total/NA
Chloroethane	14		0.80		ppb v/v	1		TO-15	Total/NA
Chloroform	9.0		0.80		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	15		0.80		ppb v/v	1		TO-15	Total/NA
Cyclohexane	3.2		2.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	18		0.80		ppb v/v	1		TO-15	Total/NA
Ethylbenzene	0.84		0.80		ppb v/v	1		TO-15	Total/NA
Hexane	3.0		2.0		ppb v/v	1		TO-15	Total/NA
Methylene Chloride	2.5		2.0		ppb v/v	1		TO-15	Total/NA
m-Xylene & p-Xylene	0.84		0.80		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	20		0.80		ppb v/v	1		TO-15	Total/NA
Trichloroethene	2.6		0.80		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	18		0.80		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	21		0.80		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	370		4.4		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	280		3.2		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	44		3.2		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	47		5.6		ug/m3	1		TO-15	Total/NA
Butane	24		3.8		ug/m3	1		TO-15	Total/NA
Chlorobenzene	5.0		3.7		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	30		2.8		ug/m3	1		TO-15	Total/NA
Chloroethane	38		2.1		ug/m3	1		TO-15	Total/NA
Chloroform	44		3.9		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	60		3.2		ug/m3	1		TO-15	Total/NA
Cyclohexane	11		6.9		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	90		4.0		ug/m3	1		TO-15	Total/NA
Ethylbenzene	3.6		3.5		ug/m3	1		TO-15	Total/NA
Hexane	10		7.0		ug/m3	1		TO-15	Total/NA
Methylene Chloride	8.8		6.9		ug/m3	1		TO-15	Total/NA
m-Xylene & p-Xylene	3.6		3.5		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	130		5.4		ug/m3	1		TO-15	Total/NA
Trichloroethene	14		4.3		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	100		4.5		ug/m3	1		TO-15	Total/NA
Vinyl chloride	53		2.0		ug/m3	1		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Client Sample ID: G-170724-MB-01

Lab Sample ID: 140-8813-1

Date Collected: 07/24/17 13:10

Matrix: Air

Date Received: 07/26/17 10:15

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	69		0.80		ppb v/v			07/27/17 20:20	1
1,1,2,2-Tetrachloroethane	ND		0.80		ppb v/v			07/27/17 20:20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.80		ppb v/v			07/27/17 20:20	1
1,1,2-Trichloroethane	ND		0.80		ppb v/v			07/27/17 20:20	1
1,1-Dichloroethane	68		0.80		ppb v/v			07/27/17 20:20	1
1,1-Dichloroethene	11		0.80		ppb v/v			07/27/17 20:20	1
1,2,4-Trichlorobenzene	ND		4.0		ppb v/v			07/27/17 20:20	1
1,2,4-Trimethylbenzene	ND		0.80		ppb v/v			07/27/17 20:20	1
1,2-Dibromoethane (EDB)	ND		0.80		ppb v/v			07/27/17 20:20	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	6.7		0.80		ppb v/v			07/27/17 20:20	1
1,2-Dichlorobenzene	ND		0.80		ppb v/v			07/27/17 20:20	1
1,2-Dichloroethane	ND		0.80		ppb v/v			07/27/17 20:20	1
1,2-Dichloropropane	ND		0.80		ppb v/v			07/27/17 20:20	1
1,3,5-Trimethylbenzene	ND		0.80		ppb v/v			07/27/17 20:20	1
1,3-Butadiene	ND		1.6		ppb v/v			07/27/17 20:20	1
1,3-Dichlorobenzene	ND		0.80		ppb v/v			07/27/17 20:20	1
1,4-Dichlorobenzene	ND		0.80		ppb v/v			07/27/17 20:20	1
2-Butanone (MEK)	ND		4.0		ppb v/v			07/27/17 20:20	1
2-Hexanone	ND		2.0		ppb v/v			07/27/17 20:20	1
3-Chloropropene	ND		0.80		ppb v/v			07/27/17 20:20	1
4-Methyl-2-pentanone (MIBK)	ND		2.0		ppb v/v			07/27/17 20:20	1
Acetone	ND		20		ppb v/v			07/27/17 20:20	1
Acetonitrile	ND		4.0		ppb v/v			07/27/17 20:20	1
Acrolein	ND		4.0		ppb v/v			07/27/17 20:20	1
Acrylonitrile	ND		8.0		ppb v/v			07/27/17 20:20	1
Alpha Methyl Styrene	ND		1.6		ppb v/v			07/27/17 20:20	1
Benzene	ND		0.80		ppb v/v			07/27/17 20:20	1
Benzyl chloride	ND		1.6		ppb v/v			07/27/17 20:20	1
Bromodichloromethane	ND		0.80		ppb v/v			07/27/17 20:20	1
Bromoform	ND		0.80		ppb v/v			07/27/17 20:20	1
Bromomethane	ND		0.80		ppb v/v			07/27/17 20:20	1
Butane	10		1.6		ppb v/v			07/27/17 20:20	1
Carbon disulfide	ND		2.0		ppb v/v			07/27/17 20:20	1
Carbon tetrachloride	ND		0.80		ppb v/v			07/27/17 20:20	1
Chlorobenzene	1.1		0.80		ppb v/v			07/27/17 20:20	1
Chlorodifluoromethane	8.6		0.80		ppb v/v			07/27/17 20:20	1
Chloroethane	14		0.80		ppb v/v			07/27/17 20:20	1
Chloroform	9.0		0.80		ppb v/v			07/27/17 20:20	1
Chloromethane	ND		2.0		ppb v/v			07/27/17 20:20	1
cis-1,2-Dichloroethene	15		0.80		ppb v/v			07/27/17 20:20	1
cis-1,3-Dichloropropene	ND		0.80		ppb v/v			07/27/17 20:20	1
Cumene	ND		1.6		ppb v/v			07/27/17 20:20	1
Cyclohexane	3.2		2.0		ppb v/v			07/27/17 20:20	1
Decane	ND		4.0		ppb v/v			07/27/17 20:20	1
Dibromochloromethane	ND		0.80		ppb v/v			07/27/17 20:20	1
Dibromomethane	ND		1.6		ppb v/v			07/27/17 20:20	1
Dichlorodifluoromethane	18		0.80		ppb v/v			07/27/17 20:20	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Client Sample ID: G-170724-MB-01

Lab Sample ID: 140-8813-1

Date Collected: 07/24/17 13:10

Matrix: Air

Date Received: 07/26/17 10:15

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dodecane	ND		4.0		ppb v/v			07/27/17 20:20	1
Ethyl ether	ND		8.0		ppb v/v			07/27/17 20:20	1
Ethylbenzene	0.84		0.80		ppb v/v			07/27/17 20:20	1
Heptane	ND		2.0		ppb v/v			07/27/17 20:20	1
Hexachlorobutadiene	ND		4.0		ppb v/v			07/27/17 20:20	1
Hexane	3.0		2.0		ppb v/v			07/27/17 20:20	1
Methyl tert-butyl ether	ND		4.0		ppb v/v			07/27/17 20:20	1
Methylene Chloride	2.5		2.0		ppb v/v			07/27/17 20:20	1
m-Xylene & p-Xylene	0.84		0.80		ppb v/v			07/27/17 20:20	1
Naphthalene	ND		2.0		ppb v/v			07/27/17 20:20	1
Nonane	ND		2.0		ppb v/v			07/27/17 20:20	1
Octane	ND		1.6		ppb v/v			07/27/17 20:20	1
o-Xylene	ND		0.80		ppb v/v			07/27/17 20:20	1
Pentane	ND		4.0		ppb v/v			07/27/17 20:20	1
Propylbenzene	ND *		1.6		ppb v/v			07/27/17 20:20	1
Styrene	ND		0.80		ppb v/v			07/27/17 20:20	1
Tetrachloroethene	20		0.80		ppb v/v			07/27/17 20:20	1
Toluene	ND		0.80		ppb v/v			07/27/17 20:20	1
trans-1,2-Dichloroethene	ND		0.80		ppb v/v			07/27/17 20:20	1
trans-1,3-Dichloropropene	ND		0.80		ppb v/v			07/27/17 20:20	1
Trichloroethene	2.6		0.80		ppb v/v			07/27/17 20:20	1
Trichlorofluoromethane	18		0.80		ppb v/v			07/27/17 20:20	1
Undecane	ND		4.0		ppb v/v			07/27/17 20:20	1
Vinyl acetate	ND		4.0		ppb v/v			07/27/17 20:20	1
Vinyl chloride	21		0.80		ppb v/v			07/27/17 20:20	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	370		4.4		ug/m3			07/27/17 20:20	1
1,1,2,2-Tetrachloroethane	ND		5.5		ug/m3			07/27/17 20:20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.1		ug/m3			07/27/17 20:20	1
1,1,2-Trichloroethane	ND		4.4		ug/m3			07/27/17 20:20	1
1,1-Dichloroethane	280		3.2		ug/m3			07/27/17 20:20	1
1,1-Dichloroethene	44		3.2		ug/m3			07/27/17 20:20	1
1,2,4-Trichlorobenzene	ND		30		ug/m3			07/27/17 20:20	1
1,2,4-Trimethylbenzene	ND		3.9		ug/m3			07/27/17 20:20	1
1,2-Dibromoethane (EDB)	ND		6.1		ug/m3			07/27/17 20:20	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	47		5.6		ug/m3			07/27/17 20:20	1
1,2-Dichlorobenzene	ND		4.8		ug/m3			07/27/17 20:20	1
1,2-Dichloroethane	ND		3.2		ug/m3			07/27/17 20:20	1
1,2-Dichloropropane	ND		3.7		ug/m3			07/27/17 20:20	1
1,3,5-Trimethylbenzene	ND		3.9		ug/m3			07/27/17 20:20	1
1,3-Butadiene	ND		3.5		ug/m3			07/27/17 20:20	1
1,3-Dichlorobenzene	ND		4.8		ug/m3			07/27/17 20:20	1
1,4-Dichlorobenzene	ND		4.8		ug/m3			07/27/17 20:20	1
2-Butanone (MEK)	ND		12		ug/m3			07/27/17 20:20	1
2-Hexanone	ND		8.2		ug/m3			07/27/17 20:20	1
3-Chloropropene	ND		2.5		ug/m3			07/27/17 20:20	1
4-Methyl-2-pentanone (MIBK)	ND		8.2		ug/m3			07/27/17 20:20	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Client Sample ID: G-170724-MB-01

Lab Sample ID: 140-8813-1

Date Collected: 07/24/17 13:10

Matrix: Air

Date Received: 07/26/17 10:15

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		48		ug/m3			07/27/17 20:20	1
Acetonitrile	ND		6.7		ug/m3			07/27/17 20:20	1
Acrolein	ND		9.2		ug/m3			07/27/17 20:20	1
Acrylonitrile	ND		17		ug/m3			07/27/17 20:20	1
Alpha Methyl Styrene	ND		7.7		ug/m3			07/27/17 20:20	1
Benzene	ND		2.6		ug/m3			07/27/17 20:20	1
Benzyl chloride	ND		8.3		ug/m3			07/27/17 20:20	1
Bromodichloromethane	ND		5.4		ug/m3			07/27/17 20:20	1
Bromoform	ND		8.3		ug/m3			07/27/17 20:20	1
Bromomethane	ND		3.1		ug/m3			07/27/17 20:20	1
Butane	24		3.8		ug/m3			07/27/17 20:20	1
Carbon disulfide	ND		6.2		ug/m3			07/27/17 20:20	1
Carbon tetrachloride	ND		5.0		ug/m3			07/27/17 20:20	1
Chlorobenzene	5.0		3.7		ug/m3			07/27/17 20:20	1
Chlorodifluoromethane	30		2.8		ug/m3			07/27/17 20:20	1
Chloroethane	38		2.1		ug/m3			07/27/17 20:20	1
Chloroform	44		3.9		ug/m3			07/27/17 20:20	1
Chloromethane	ND		4.1		ug/m3			07/27/17 20:20	1
cis-1,2-Dichloroethene	60		3.2		ug/m3			07/27/17 20:20	1
cis-1,3-Dichloropropene	ND		3.6		ug/m3			07/27/17 20:20	1
Cumene	ND		7.9		ug/m3			07/27/17 20:20	1
Cyclohexane	11		6.9		ug/m3			07/27/17 20:20	1
Decane	ND		23		ug/m3			07/27/17 20:20	1
Dibromochloromethane	ND		6.8		ug/m3			07/27/17 20:20	1
Dibromomethane	ND		11		ug/m3			07/27/17 20:20	1
Dichlorodifluoromethane	90		4.0		ug/m3			07/27/17 20:20	1
Dodecane	ND		28		ug/m3			07/27/17 20:20	1
Ethyl ether	ND		24		ug/m3			07/27/17 20:20	1
Ethylbenzene	3.6		3.5		ug/m3			07/27/17 20:20	1
Heptane	ND		8.2		ug/m3			07/27/17 20:20	1
Hexachlorobutadiene	ND		43		ug/m3			07/27/17 20:20	1
Hexane	10		7.0		ug/m3			07/27/17 20:20	1
Methyl tert-butyl ether	ND		14		ug/m3			07/27/17 20:20	1
Methylene Chloride	8.8		6.9		ug/m3			07/27/17 20:20	1
m-Xylene & p-Xylene	3.6		3.5		ug/m3			07/27/17 20:20	1
Naphthalene	ND		10		ug/m3			07/27/17 20:20	1
Nonane	ND		10		ug/m3			07/27/17 20:20	1
Octane	ND		7.5		ug/m3			07/27/17 20:20	1
o-Xylene	ND		3.5		ug/m3			07/27/17 20:20	1
Pentane	ND		12		ug/m3			07/27/17 20:20	1
Propylbenzene	ND *		7.9		ug/m3			07/27/17 20:20	1
Styrene	ND		3.4		ug/m3			07/27/17 20:20	1
Tetrachloroethene	130		5.4		ug/m3			07/27/17 20:20	1
Toluene	ND		3.0		ug/m3			07/27/17 20:20	1
trans-1,2-Dichloroethene	ND		3.2		ug/m3			07/27/17 20:20	1
trans-1,3-Dichloropropene	ND		3.6		ug/m3			07/27/17 20:20	1
Trichloroethene	14		4.3		ug/m3			07/27/17 20:20	1
Trichlorofluoromethane	100		4.5		ug/m3			07/27/17 20:20	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Client Sample ID: G-170724-MB-01

Lab Sample ID: 140-8813-1

Date Collected: 07/24/17 13:10

Matrix: Air

Date Received: 07/26/17 10:15

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Undecane	ND		26		ug/m3			07/27/17 20:20	1
Vinyl acetate	ND		14		ug/m3			07/27/17 20:20	1
Vinyl chloride	53		2.0		ug/m3			07/27/17 20:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		60 - 140					07/27/17 20:20	1



Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	RL	MDL	Units	Method
1,1,1-Trichloroethane	0.20	0.030	ppb v/v	TO-15
1,1,1-Trichloroethane	1.1	0.16	ug/m3	TO-15
1,1,2,2-Tetrachloroethane	0.20	0.061	ppb v/v	TO-15
1,1,2,2-Tetrachloroethane	1.4	0.42	ug/m3	TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	0.031	ppb v/v	TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane	1.5	0.24	ug/m3	TO-15
1,1,2-Trichloroethane	0.20	0.054	ppb v/v	TO-15
1,1,2-Trichloroethane	1.1	0.29	ug/m3	TO-15
1,1-Dichloroethane	0.20	0.026	ppb v/v	TO-15
1,1-Dichloroethane	0.81	0.11	ug/m3	TO-15
1,1-Dichloroethene	0.20	0.034	ppb v/v	TO-15
1,1-Dichloroethene	0.79	0.13	ug/m3	TO-15
1,2,4-Trichlorobenzene	1.0	0.098	ppb v/v	TO-15
1,2,4-Trichlorobenzene	7.4	0.73	ug/m3	TO-15
1,2,4-Trimethylbenzene	0.20	0.063	ppb v/v	TO-15
1,2,4-Trimethylbenzene	0.98	0.31	ug/m3	TO-15
1,2-Dibromoethane (EDB)	0.20	0.044	ppb v/v	TO-15
1,2-Dibromoethane (EDB)	1.5	0.34	ug/m3	TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.20	0.032	ppb v/v	TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.4	0.22	ug/m3	TO-15
1,2-Dichlorobenzene	0.20	0.070	ppb v/v	TO-15
1,2-Dichlorobenzene	1.2	0.42	ug/m3	TO-15
1,2-Dichloroethane	0.20	0.047	ppb v/v	TO-15
1,2-Dichloroethane	0.81	0.19	ug/m3	TO-15
1,2-Dichloropropane	0.20	0.052	ppb v/v	TO-15
1,2-Dichloropropane	0.92	0.24	ug/m3	TO-15
1,3,5-Trimethylbenzene	0.20	0.065	ppb v/v	TO-15
1,3,5-Trimethylbenzene	0.98	0.32	ug/m3	TO-15
1,3-Butadiene	0.40	0.064	ppb v/v	TO-15
1,3-Butadiene	0.88	0.14	ug/m3	TO-15
1,3-Dichlorobenzene	0.20	0.065	ppb v/v	TO-15
1,3-Dichlorobenzene	1.2	0.39	ug/m3	TO-15
1,4-Dichlorobenzene	0.20	0.064	ppb v/v	TO-15
1,4-Dichlorobenzene	1.2	0.38	ug/m3	TO-15
2-Butanone (MEK)	1.0	0.20	ppb v/v	TO-15
2-Butanone (MEK)	2.9	0.59	ug/m3	TO-15
2-Hexanone	0.50	0.058	ppb v/v	TO-15
2-Hexanone	2.0	0.24	ug/m3	TO-15
3-Chloropropene	0.20	0.048	ppb v/v	TO-15
3-Chloropropene	0.63	0.15	ug/m3	TO-15
4-Methyl-2-pentanone (MIBK)	0.50	0.20	ppb v/v	TO-15
4-Methyl-2-pentanone (MIBK)	2.0	0.80	ug/m3	TO-15
Acetone	5.0	1.4	ppb v/v	TO-15
Acetone	12	3.3	ug/m3	TO-15
Acetonitrile	1.0	0.33	ppb v/v	TO-15
Acetonitrile	1.7	0.55	ug/m3	TO-15
Acrolein	1.0	0.20	ppb v/v	TO-15
Acrolein	2.3	0.46	ug/m3	TO-15
Acrylonitrile	2.0	0.20	ppb v/v	TO-15
Acrylonitrile	4.3	0.43	ug/m3	TO-15
Alpha Methyl Styrene	0.40	0.078	ppb v/v	TO-15
Alpha Methyl Styrene	1.9	0.38	ug/m3	TO-15

TestAmerica Knoxville

Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	RL	MDL	Units	Method
Benzene	0.20	0.056	ppb v/v	TO-15
Benzene	0.64	0.18	ug/m3	TO-15
Benzyl chloride	0.40	0.078	ppb v/v	TO-15
Benzyl chloride	2.1	0.40	ug/m3	TO-15
Bromodichloromethane	0.20	0.044	ppb v/v	TO-15
Bromodichloromethane	1.3	0.29	ug/m3	TO-15
Bromoform	0.20	0.048	ppb v/v	TO-15
Bromoform	2.1	0.50	ug/m3	TO-15
Bromomethane	0.20	0.032	ppb v/v	TO-15
Bromomethane	0.78	0.12	ug/m3	TO-15
Butane	0.40	0.073	ppb v/v	TO-15
Butane	0.95	0.17	ug/m3	TO-15
Carbon disulfide	0.50	0.031	ppb v/v	TO-15
Carbon disulfide	1.6	0.097	ug/m3	TO-15
Carbon tetrachloride	0.20	0.038	ppb v/v	TO-15
Carbon tetrachloride	1.3	0.24	ug/m3	TO-15
Chlorobenzene	0.20	0.049	ppb v/v	TO-15
Chlorobenzene	0.92	0.23	ug/m3	TO-15
Chlorodifluoromethane	0.20	0.037	ppb v/v	TO-15
Chlorodifluoromethane	0.71	0.13	ug/m3	TO-15
Chloroethane	0.20	0.035	ppb v/v	TO-15
Chloroethane	0.53	0.092	ug/m3	TO-15
Chloroform	0.20	0.038	ppb v/v	TO-15
Chloroform	0.98	0.19	ug/m3	TO-15
Chloromethane	0.50	0.16	ppb v/v	TO-15
Chloromethane	1.0	0.33	ug/m3	TO-15
cis-1,2-Dichloroethene	0.20	0.060	ppb v/v	TO-15
cis-1,2-Dichloroethene	0.79	0.24	ug/m3	TO-15
cis-1,3-Dichloropropene	0.20	0.074	ppb v/v	TO-15
cis-1,3-Dichloropropene	0.91	0.34	ug/m3	TO-15
Cumene	0.40	0.060	ppb v/v	TO-15
Cumene	2.0	0.29	ug/m3	TO-15
Cyclohexane	0.50	0.040	ppb v/v	TO-15
Cyclohexane	1.7	0.14	ug/m3	TO-15
Decane	1.0	0.056	ppb v/v	TO-15
Decane	5.8	0.33	ug/m3	TO-15
Dibromochloromethane	0.20	0.042	ppb v/v	TO-15
Dibromochloromethane	1.7	0.36	ug/m3	TO-15
Dibromomethane	0.40	0.040	ppb v/v	TO-15
Dibromomethane	2.8	0.28	ug/m3	TO-15
Dichlorodifluoromethane	0.20	0.068	ppb v/v	TO-15
Dichlorodifluoromethane	0.99	0.34	ug/m3	TO-15
Dodecane	1.0	0.078	ppb v/v	TO-15
Dodecane	7.0	0.54	ug/m3	TO-15
Ethyl ether	2.0	0.053	ppb v/v	TO-15
Ethyl ether	6.1	0.16	ug/m3	TO-15
Ethylbenzene	0.20	0.068	ppb v/v	TO-15
Ethylbenzene	0.87	0.30	ug/m3	TO-15
Heptane	0.50	0.047	ppb v/v	TO-15
Heptane	2.0	0.19	ug/m3	TO-15
Hexachlorobutadiene	1.0	0.078	ppb v/v	TO-15
Hexachlorobutadiene	11	0.83	ug/m3	TO-15

TestAmerica Knoxville

Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	RL	MDL	Units	Method
Hexane	0.50	0.032	ppb v/v	TO-15
Hexane	1.8	0.11	ug/m3	TO-15
Methyl tert-butyl ether	1.0	0.17	ppb v/v	TO-15
Methyl tert-butyl ether	3.6	0.61	ug/m3	TO-15
Methylene Chloride	0.50	0.13	ppb v/v	TO-15
Methylene Chloride	1.7	0.45	ug/m3	TO-15
m-Xylene & p-Xylene	0.20	0.12	ppb v/v	TO-15
m-Xylene & p-Xylene	0.87	0.52	ug/m3	TO-15
Naphthalene	0.50	0.090	ppb v/v	TO-15
Naphthalene	2.6	0.47	ug/m3	TO-15
Nonane	0.50	0.043	ppb v/v	TO-15
Nonane	2.6	0.23	ug/m3	TO-15
Octane	0.40	0.036	ppb v/v	TO-15
Octane	1.9	0.17	ug/m3	TO-15
o-Xylene	0.20	0.061	ppb v/v	TO-15
o-Xylene	0.87	0.26	ug/m3	TO-15
Pentane	1.0	0.40	ppb v/v	TO-15
Pentane	3.0	1.2	ug/m3	TO-15
Propylbenzene	0.40	0.056	ppb v/v	TO-15
Propylbenzene	2.0	0.28	ug/m3	TO-15
Styrene	0.20	0.058	ppb v/v	TO-15
Styrene	0.85	0.25	ug/m3	TO-15
Tetrachloroethene	0.20	0.040	ppb v/v	TO-15
Tetrachloroethene	1.4	0.27	ug/m3	TO-15
Toluene	0.20	0.12	ppb v/v	TO-15
Toluene	0.75	0.45	ug/m3	TO-15
trans-1,2-Dichloroethene	0.20	0.050	ppb v/v	TO-15
trans-1,2-Dichloroethene	0.79	0.20	ug/m3	TO-15
trans-1,3-Dichloropropene	0.20	0.048	ppb v/v	TO-15
trans-1,3-Dichloropropene	0.91	0.22	ug/m3	TO-15
Trichloroethene	0.20	0.036	ppb v/v	TO-15
Trichloroethene	1.1	0.19	ug/m3	TO-15
Trichlorofluoromethane	0.20	0.024	ppb v/v	TO-15
Trichlorofluoromethane	1.1	0.13	ug/m3	TO-15
Undecane	1.0	0.062	ppb v/v	TO-15
Undecane	6.4	0.40	ug/m3	TO-15
Vinyl acetate	1.0	0.14	ppb v/v	TO-15
Vinyl acetate	3.5	0.49	ug/m3	TO-15
Vinyl chloride	0.20	0.071	ppb v/v	TO-15
Vinyl chloride	0.51	0.18	ug/m3	TO-15

Surrogate Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Matrix: Air

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
140-8813-1	G-170724-MB-01	112
LCS 140-12951/1006	Lab Control Sample	102
MB 140-12951/10	Method Blank	99

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 140-12951/10

Matrix: Air

Analysis Batch: 12951

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.20		ppb v/v			07/27/17 13:18	1
1,1,2,2-Tetrachloroethane	ND		0.20		ppb v/v			07/27/17 13:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20		ppb v/v			07/27/17 13:18	1
1,1,2-Trichloroethane	ND		0.20		ppb v/v			07/27/17 13:18	1
1,1-Dichloroethane	ND		0.20		ppb v/v			07/27/17 13:18	1
1,1-Dichloroethene	ND		0.20		ppb v/v			07/27/17 13:18	1
1,2,4-Trichlorobenzene	ND		1.0		ppb v/v			07/27/17 13:18	1
1,2,4-Trimethylbenzene	ND		0.20		ppb v/v			07/27/17 13:18	1
1,2-Dibromoethane (EDB)	ND		0.20		ppb v/v			07/27/17 13:18	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.20		ppb v/v			07/27/17 13:18	1
1,2-Dichlorobenzene	ND		0.20		ppb v/v			07/27/17 13:18	1
1,2-Dichloroethane	ND		0.20		ppb v/v			07/27/17 13:18	1
1,2-Dichloropropane	ND		0.20		ppb v/v			07/27/17 13:18	1
1,3,5-Trimethylbenzene	ND		0.20		ppb v/v			07/27/17 13:18	1
1,3-Butadiene	ND		0.40		ppb v/v			07/27/17 13:18	1
1,3-Dichlorobenzene	ND		0.20		ppb v/v			07/27/17 13:18	1
1,4-Dichlorobenzene	ND		0.20		ppb v/v			07/27/17 13:18	1
2-Butanone (MEK)	ND		1.0		ppb v/v			07/27/17 13:18	1
2-Hexanone	ND		0.50		ppb v/v			07/27/17 13:18	1
3-Chloropropene	ND		0.20		ppb v/v			07/27/17 13:18	1
4-Methyl-2-pentanone (MIBK)	ND		0.50		ppb v/v			07/27/17 13:18	1
Acetone	ND		5.0		ppb v/v			07/27/17 13:18	1
Acetonitrile	ND		1.0		ppb v/v			07/27/17 13:18	1
Acrolein	ND		1.0		ppb v/v			07/27/17 13:18	1
Acrylonitrile	ND		2.0		ppb v/v			07/27/17 13:18	1
Alpha Methyl Styrene	ND		0.40		ppb v/v			07/27/17 13:18	1
Benzene	ND		0.20		ppb v/v			07/27/17 13:18	1
Benzyl chloride	ND		0.40		ppb v/v			07/27/17 13:18	1
Bromodichloromethane	ND		0.20		ppb v/v			07/27/17 13:18	1
Bromoform	ND		0.20		ppb v/v			07/27/17 13:18	1
Bromomethane	ND		0.20		ppb v/v			07/27/17 13:18	1
Butane	ND		0.40		ppb v/v			07/27/17 13:18	1
Carbon disulfide	ND		0.50		ppb v/v			07/27/17 13:18	1
Carbon tetrachloride	ND		0.20		ppb v/v			07/27/17 13:18	1
Chlorobenzene	ND		0.20		ppb v/v			07/27/17 13:18	1
Chlorodifluoromethane	ND		0.20		ppb v/v			07/27/17 13:18	1
Chloroethane	ND		0.20		ppb v/v			07/27/17 13:18	1
Chloroform	ND		0.20		ppb v/v			07/27/17 13:18	1
Chloromethane	ND		0.50		ppb v/v			07/27/17 13:18	1
cis-1,2-Dichloroethene	ND		0.20		ppb v/v			07/27/17 13:18	1
cis-1,3-Dichloropropene	ND		0.20		ppb v/v			07/27/17 13:18	1
Cumene	ND		0.40		ppb v/v			07/27/17 13:18	1
Cyclohexane	ND		0.50		ppb v/v			07/27/17 13:18	1
Decane	ND		1.0		ppb v/v			07/27/17 13:18	1
Dibromochloromethane	ND		0.20		ppb v/v			07/27/17 13:18	1
Dibromomethane	ND		0.40		ppb v/v			07/27/17 13:18	1
Dichlorodifluoromethane	ND		0.20		ppb v/v			07/27/17 13:18	1
Dodecane	ND		1.0		ppb v/v			07/27/17 13:18	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-12951/10
Matrix: Air
Analysis Batch: 12951

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethyl ether	ND		2.0		ppb v/v			07/27/17 13:18	1
Ethylbenzene	ND		0.20		ppb v/v			07/27/17 13:18	1
Heptane	ND		0.50		ppb v/v			07/27/17 13:18	1
Hexachlorobutadiene	ND		1.0		ppb v/v			07/27/17 13:18	1
Hexane	ND		0.50		ppb v/v			07/27/17 13:18	1
Methyl tert-butyl ether	ND		1.0		ppb v/v			07/27/17 13:18	1
Methylene Chloride	ND		0.50		ppb v/v			07/27/17 13:18	1
m-Xylene & p-Xylene	ND		0.20		ppb v/v			07/27/17 13:18	1
Naphthalene	ND		0.50		ppb v/v			07/27/17 13:18	1
Nonane	ND		0.50		ppb v/v			07/27/17 13:18	1
Octane	ND		0.40		ppb v/v			07/27/17 13:18	1
o-Xylene	ND		0.20		ppb v/v			07/27/17 13:18	1
Pentane	ND		1.0		ppb v/v			07/27/17 13:18	1
Propylbenzene	ND		0.40		ppb v/v			07/27/17 13:18	1
Styrene	ND		0.20		ppb v/v			07/27/17 13:18	1
Tetrachloroethene	ND		0.20		ppb v/v			07/27/17 13:18	1
Toluene	ND		0.20		ppb v/v			07/27/17 13:18	1
trans-1,2-Dichloroethene	ND		0.20		ppb v/v			07/27/17 13:18	1
trans-1,3-Dichloropropene	ND		0.20		ppb v/v			07/27/17 13:18	1
Trichloroethene	ND		0.20		ppb v/v			07/27/17 13:18	1
Trichlorofluoromethane	ND		0.20		ppb v/v			07/27/17 13:18	1
Undecane	ND		1.0		ppb v/v			07/27/17 13:18	1
Vinyl acetate	ND		1.0		ppb v/v			07/27/17 13:18	1
Vinyl chloride	ND		0.20		ppb v/v			07/27/17 13:18	1

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.1		ug/m3			07/27/17 13:18	1
1,1,2,2-Tetrachloroethane	ND		1.4		ug/m3			07/27/17 13:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5		ug/m3			07/27/17 13:18	1
1,1,2-Trichloroethane	ND		1.1		ug/m3			07/27/17 13:18	1
1,1-Dichloroethane	ND		0.81		ug/m3			07/27/17 13:18	1
1,1-Dichloroethene	ND		0.79		ug/m3			07/27/17 13:18	1
1,2,4-Trichlorobenzene	ND		7.4		ug/m3			07/27/17 13:18	1
1,2,4-Trimethylbenzene	ND		0.98		ug/m3			07/27/17 13:18	1
1,2-Dibromoethane (EDB)	ND		1.5		ug/m3			07/27/17 13:18	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		1.4		ug/m3			07/27/17 13:18	1
1,2-Dichlorobenzene	ND		1.2		ug/m3			07/27/17 13:18	1
1,2-Dichloroethane	ND		0.81		ug/m3			07/27/17 13:18	1
1,2-Dichloropropane	ND		0.92		ug/m3			07/27/17 13:18	1
1,3,5-Trimethylbenzene	ND		0.98		ug/m3			07/27/17 13:18	1
1,3-Butadiene	ND		0.88		ug/m3			07/27/17 13:18	1
1,3-Dichlorobenzene	ND		1.2		ug/m3			07/27/17 13:18	1
1,4-Dichlorobenzene	ND		1.2		ug/m3			07/27/17 13:18	1
2-Butanone (MEK)	ND		2.9		ug/m3			07/27/17 13:18	1
2-Hexanone	ND		2.0		ug/m3			07/27/17 13:18	1
3-Chloropropene	ND		0.63		ug/m3			07/27/17 13:18	1
4-Methyl-2-pentanone (MIBK)	ND		2.0		ug/m3			07/27/17 13:18	1
Acetone	ND		12		ug/m3			07/27/17 13:18	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-12951/10
Matrix: Air
Analysis Batch: 12951

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	ND		1.7		ug/m3			07/27/17 13:18	1
Acrolein	ND		2.3		ug/m3			07/27/17 13:18	1
Acrylonitrile	ND		4.3		ug/m3			07/27/17 13:18	1
Alpha Methyl Styrene	ND		1.9		ug/m3			07/27/17 13:18	1
Benzene	ND		0.64		ug/m3			07/27/17 13:18	1
Benzyl chloride	ND		2.1		ug/m3			07/27/17 13:18	1
Bromodichloromethane	ND		1.3		ug/m3			07/27/17 13:18	1
Bromoform	ND		2.1		ug/m3			07/27/17 13:18	1
Bromomethane	ND		0.78		ug/m3			07/27/17 13:18	1
Butane	ND		0.95		ug/m3			07/27/17 13:18	1
Carbon disulfide	ND		1.6		ug/m3			07/27/17 13:18	1
Carbon tetrachloride	ND		1.3		ug/m3			07/27/17 13:18	1
Chlorobenzene	ND		0.92		ug/m3			07/27/17 13:18	1
Chlorodifluoromethane	ND		0.71		ug/m3			07/27/17 13:18	1
Chloroethane	ND		0.53		ug/m3			07/27/17 13:18	1
Chloroform	ND		0.98		ug/m3			07/27/17 13:18	1
Chloromethane	ND		1.0		ug/m3			07/27/17 13:18	1
cis-1,2-Dichloroethene	ND		0.79		ug/m3			07/27/17 13:18	1
cis-1,3-Dichloropropene	ND		0.91		ug/m3			07/27/17 13:18	1
Cumene	ND		2.0		ug/m3			07/27/17 13:18	1
Cyclohexane	ND		1.7		ug/m3			07/27/17 13:18	1
Decane	ND		5.8		ug/m3			07/27/17 13:18	1
Dibromochloromethane	ND		1.7		ug/m3			07/27/17 13:18	1
Dibromomethane	ND		2.8		ug/m3			07/27/17 13:18	1
Dichlorodifluoromethane	ND		0.99		ug/m3			07/27/17 13:18	1
Dodecane	ND		7.0		ug/m3			07/27/17 13:18	1
Ethyl ether	ND		6.1		ug/m3			07/27/17 13:18	1
Ethylbenzene	ND		0.87		ug/m3			07/27/17 13:18	1
Heptane	ND		2.0		ug/m3			07/27/17 13:18	1
Hexachlorobutadiene	ND		11		ug/m3			07/27/17 13:18	1
Hexane	ND		1.8		ug/m3			07/27/17 13:18	1
Methyl tert-butyl ether	ND		3.6		ug/m3			07/27/17 13:18	1
Methylene Chloride	ND		1.7		ug/m3			07/27/17 13:18	1
m-Xylene & p-Xylene	ND		0.87		ug/m3			07/27/17 13:18	1
Naphthalene	ND		2.6		ug/m3			07/27/17 13:18	1
Nonane	ND		2.6		ug/m3			07/27/17 13:18	1
Octane	ND		1.9		ug/m3			07/27/17 13:18	1
o-Xylene	ND		0.87		ug/m3			07/27/17 13:18	1
Pentane	ND		3.0		ug/m3			07/27/17 13:18	1
Propylbenzene	ND		2.0		ug/m3			07/27/17 13:18	1
Styrene	ND		0.85		ug/m3			07/27/17 13:18	1
Tetrachloroethene	ND		1.4		ug/m3			07/27/17 13:18	1
Toluene	ND		0.75		ug/m3			07/27/17 13:18	1
trans-1,2-Dichloroethene	ND		0.79		ug/m3			07/27/17 13:18	1
trans-1,3-Dichloropropene	ND		0.91		ug/m3			07/27/17 13:18	1
Trichloroethene	ND		1.1		ug/m3			07/27/17 13:18	1
Trichlorofluoromethane	ND		1.1		ug/m3			07/27/17 13:18	1
Undecane	ND		6.4		ug/m3			07/27/17 13:18	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-12951/10
Matrix: Air
Analysis Batch: 12951

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	ND		3.5		ug/m3			07/27/17 13:18	1
Vinyl chloride	ND		0.51		ug/m3			07/27/17 13:18	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		60 - 140					07/27/17 13:18	1

Lab Sample ID: LCS 140-12951/1006
Matrix: Air
Analysis Batch: 12951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	2.00	2.35		ppb v/v		117	70 - 130
1,1,2,2-Tetrachloroethane	2.00	2.36		ppb v/v		118	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	2.00	2.28		ppb v/v		114	70 - 130
1,1,2-Trichloroethane	2.00	2.27		ppb v/v		113	70 - 130
1,1-Dichloroethane	2.00	2.20		ppb v/v		110	70 - 130
1,1-Dichloroethene	2.00	2.22		ppb v/v		111	70 - 130
1,2,4-Trichlorobenzene	2.00	2.18		ppb v/v		109	60 - 140
1,2,4-Trimethylbenzene	2.00	2.57		ppb v/v		129	70 - 130
1,2-Dibromoethane (EDB)	2.00	2.40		ppb v/v		120	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.00	2.22		ppb v/v		111	60 - 140
1,2-Dichlorobenzene	2.00	2.45		ppb v/v		123	70 - 130
1,2-Dichloroethane	2.00	2.33		ppb v/v		117	70 - 130
1,2-Dichloropropane	2.00	2.23		ppb v/v		112	70 - 130
1,3,5-Trimethylbenzene	2.00	2.55		ppb v/v		128	70 - 130
1,3-Butadiene	2.00	2.06		ppb v/v		103	60 - 140
1,3-Dichlorobenzene	2.00	2.48		ppb v/v		124	70 - 130
1,4-Dichlorobenzene	2.00	2.46		ppb v/v		123	70 - 130
2-Butanone (MEK)	2.00	2.14		ppb v/v		107	60 - 140
2-Hexanone	2.00	2.24		ppb v/v		112	60 - 140
3-Chloropropene	2.00	2.27		ppb v/v		114	60 - 140
4-Methyl-2-pentanone (MIBK)	2.00	2.24		ppb v/v		112	60 - 140
Acetone	6.00	6.93		ppb v/v		116	60 - 140
Acetonitrile	2.00	2.05		ppb v/v		103	60 - 140
Acrolein	2.00	1.99		ppb v/v		99	60 - 140
Acrylonitrile	2.00	2.19		ppb v/v		109	60 - 140
Alpha Methyl Styrene	2.00	2.58		ppb v/v		129	60 - 140
Benzene	2.00	2.32		ppb v/v		116	70 - 130
Benzyl chloride	2.00	2.55		ppb v/v		128	70 - 130
Bromodichloromethane	2.00	2.46		ppb v/v		123	70 - 130
Bromoform	2.00	2.61		ppb v/v		130	60 - 140
Bromomethane	2.00	2.14		ppb v/v		107	70 - 130
Butane	2.00	2.10		ppb v/v		105	60 - 140
Carbon disulfide	2.00	2.19		ppb v/v		109	70 - 130
Carbon tetrachloride	2.00	2.52		ppb v/v		126	70 - 130
Chlorobenzene	2.00	2.40		ppb v/v		120	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-12951/1006

Matrix: Air

Analysis Batch: 12951

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorodifluoromethane	2.00	2.29		ppb v/v		114	60 - 140
Chloroethane	2.00	2.14		ppb v/v		107	70 - 130
Chloroform	2.00	2.28		ppb v/v		114	70 - 130
Chloromethane	2.00	1.93		ppb v/v		97	60 - 140
cis-1,2-Dichloroethene	2.00	2.33		ppb v/v		117	70 - 130
cis-1,3-Dichloropropene	2.00	2.50		ppb v/v		125	70 - 130
Cumene	2.00	2.36		ppb v/v		118	70 - 130
Cyclohexane	2.00	2.39		ppb v/v		119	70 - 130
Decane	2.00	2.39		ppb v/v		119	60 - 140
Dibromochloromethane	2.00	2.54		ppb v/v		127	70 - 130
Dibromomethane	2.00	2.37		ppb v/v		119	70 - 130
Dichlorodifluoromethane	2.00	2.44		ppb v/v		122	60 - 140
Dodecane	2.00	2.15		ppb v/v		108	60 - 140
Ethyl ether	2.00	2.02		ppb v/v		101	60 - 140
Ethylbenzene	2.00	2.47		ppb v/v		124	70 - 130
Heptane	2.00	2.34		ppb v/v		117	70 - 130
Hexachlorobutadiene	2.00	2.11		ppb v/v		106	60 - 140
Hexane	2.00	2.19		ppb v/v		109	70 - 130
Methyl tert-butyl ether	2.00	2.32		ppb v/v		116	60 - 140
Methylene Chloride	2.00	1.88		ppb v/v		94	70 - 130
m-Xylene & p-Xylene	4.00	5.05		ppb v/v		126	70 - 130
Naphthalene	2.00	2.21		ppb v/v		111	60 - 140
Nonane	2.00	2.39		ppb v/v		119	60 - 140
Octane	2.00	2.46		ppb v/v		123	70 - 130
o-Xylene	2.00	2.48		ppb v/v		124	70 - 130
Pentane	2.00	2.23		ppb v/v		112	70 - 130
Propylbenzene	2.00	2.63	*	ppb v/v		131	70 - 130
Styrene	2.00	2.60		ppb v/v		130	70 - 130
Tetrachloroethene	2.00	2.35		ppb v/v		118	70 - 130
Toluene	2.00	2.44		ppb v/v		122	70 - 130
trans-1,2-Dichloroethene	2.00	2.22		ppb v/v		111	70 - 130
trans-1,3-Dichloropropene	2.00	2.45		ppb v/v		122	70 - 130
Trichloroethene	2.00	2.35		ppb v/v		117	70 - 130
Trichlorofluoromethane	2.00	2.23		ppb v/v		111	60 - 140
Undecane	2.00	2.31		ppb v/v		115	60 - 140
Vinyl acetate	2.00	2.30		ppb v/v		115	60 - 140
Vinyl chloride	2.00	2.16		ppb v/v		108	70 - 130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	11	12.8		ug/m3		117	70 - 130
1,1,2,2-Tetrachloroethane	14	16.2		ug/m3		118	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	15	17.5		ug/m3		114	70 - 130
1,1,2-Trichloroethane	11	12.4		ug/m3		113	70 - 130
1,1-Dichloroethane	8.1	8.89		ug/m3		110	70 - 130
1,1-Dichloroethene	7.9	8.80		ug/m3		111	70 - 130
1,2,4-Trichlorobenzene	15	16.2		ug/m3		109	60 - 140
1,2,4-Trimethylbenzene	9.8	12.6		ug/m3		129	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-12951/1006

Matrix: Air

Analysis Batch: 12951

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	15	18.4		ug/m3		120	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	14	15.5		ug/m3		111	60 - 140
1,2-Dichlorobenzene	12	14.8		ug/m3		123	70 - 130
1,2-Dichloroethane	8.1	9.43		ug/m3		117	70 - 130
1,2-Dichloropropane	9.2	10.3		ug/m3		112	70 - 130
1,3,5-Trimethylbenzene	9.8	12.5		ug/m3		128	70 - 130
1,3-Butadiene	4.4	4.56		ug/m3		103	60 - 140
1,3-Dichlorobenzene	12	14.9		ug/m3		124	70 - 130
1,4-Dichlorobenzene	12	14.8		ug/m3		123	70 - 130
2-Butanone (MEK)	5.9	6.31		ug/m3		107	60 - 140
2-Hexanone	8.2	9.17		ug/m3		112	60 - 140
3-Chloropropene	6.3	7.11		ug/m3		114	60 - 140
4-Methyl-2-pentanone (MIBK)	8.2	9.17		ug/m3		112	60 - 140
Acetone	14	16.5		ug/m3		116	60 - 140
Acetonitrile	3.4	3.45		ug/m3		103	60 - 140
Acrolein	4.6	4.55		ug/m3		99	60 - 140
Acrylonitrile	4.3	4.75		ug/m3		109	60 - 140
Alpha Methyl Styrene	9.7	12.4		ug/m3		129	60 - 140
Benzene	6.4	7.41		ug/m3		116	70 - 130
Benzyl chloride	10	13.2		ug/m3		128	70 - 130
Bromodichloromethane	13	16.5		ug/m3		123	70 - 130
Bromoform	21	27.0		ug/m3		130	60 - 140
Bromomethane	7.8	8.31		ug/m3		107	70 - 130
Butane	4.8	4.98		ug/m3		105	60 - 140
Carbon disulfide	6.2	6.81		ug/m3		109	70 - 130
Carbon tetrachloride	13	15.8		ug/m3		126	70 - 130
Chlorobenzene	9.2	11.1		ug/m3		120	70 - 130
Chlorodifluoromethane	7.1	8.10		ug/m3		114	60 - 140
Chloroethane	5.3	5.64		ug/m3		107	70 - 130
Chloroform	9.8	11.1		ug/m3		114	70 - 130
Chloromethane	4.1	3.99		ug/m3		97	60 - 140
cis-1,2-Dichloroethene	7.9	9.25		ug/m3		117	70 - 130
cis-1,3-Dichloropropene	9.1	11.4		ug/m3		125	70 - 130
Cumene	9.8	11.6		ug/m3		118	70 - 130
Cyclohexane	6.9	8.21		ug/m3		119	70 - 130
Decane	12	13.9		ug/m3		119	60 - 140
Dibromochloromethane	17	21.6		ug/m3		127	70 - 130
Dibromomethane	14	16.9		ug/m3		119	70 - 130
Dichlorodifluoromethane	9.9	12.1		ug/m3		122	60 - 140
Dodecane	14	15.0		ug/m3		108	60 - 140
Ethyl ether	6.1	6.13		ug/m3		101	60 - 140
Ethylbenzene	8.7	10.7		ug/m3		124	70 - 130
Heptane	8.2	9.60		ug/m3		117	70 - 130
Hexachlorobutadiene	21	22.5		ug/m3		106	60 - 140
Hexane	7.0	7.71		ug/m3		109	70 - 130
Methyl tert-butyl ether	7.2	8.38		ug/m3		116	60 - 140
Methylene Chloride	6.9	6.54		ug/m3		94	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-12951/1006

Matrix: Air

Analysis Batch: 12951

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Xylene & p-Xylene	17	21.9		ug/m3		126	70 - 130
Naphthalene	10	11.6		ug/m3		111	60 - 140
Nonane	10	12.5		ug/m3		119	60 - 140
Octane	9.3	11.5		ug/m3		123	70 - 130
o-Xylene	8.7	10.8		ug/m3		124	70 - 130
Pentane	5.9	6.58		ug/m3		112	70 - 130
Propylbenzene	9.8	12.9	*	ug/m3		131	70 - 130
Styrene	8.5	11.1		ug/m3		130	70 - 130
Tetrachloroethene	14	16.0		ug/m3		118	70 - 130
Toluene	7.5	9.19		ug/m3		122	70 - 130
trans-1,2-Dichloroethene	7.9	8.78		ug/m3		111	70 - 130
trans-1,3-Dichloropropene	9.1	11.1		ug/m3		122	70 - 130
Trichloroethene	11	12.6		ug/m3		117	70 - 130
Trichlorofluoromethane	11	12.5		ug/m3		111	60 - 140
Undecane	13	14.7		ug/m3		115	60 - 140
Vinyl acetate	7.0	8.10		ug/m3		115	60 - 140
Vinyl chloride	5.1	5.52		ug/m3		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		60 - 140

QC Association Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Air - GC/MS VOA

Analysis Batch: 12951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-8813-1	G-170724-MB-01	Total/NA	Air	TO-15	
MB 140-12951/10	Method Blank	Total/NA	Air	TO-15	
LCS 140-12951/1006	Lab Control Sample	Total/NA	Air	TO-15	

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Lab Chronicle

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Client Sample ID: G-170724-MB-01

Date Collected: 07/24/17 13:10

Date Received: 07/26/17 10:15

Lab Sample ID: 140-8813-1

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	50 mL	500 mL	12951	07/27/17 20:20	HMT	TAL KNX
Instrument ID: MR										

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 140-12951/10

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	200 mL	500 mL	12951	07/27/17 13:18	HMT	TAL KNX
Instrument ID: MR										

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 140-12951/1006

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	500 mL	500 mL	12951	07/27/17 11:01	HMT	TAL KNX
Instrument ID: MR										

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Laboratory: TestAmerica Knoxville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	998044300	08-31-17

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
TO-15		Air	1,1,1-Trichloroethane
TO-15		Air	1,1,2,2-Tetrachloroethane
TO-15		Air	1,1,2-Trichloro-1,2,2-trifluoroethane
TO-15		Air	1,1,2-Trichloroethane
TO-15		Air	1,1-Dichloroethane
TO-15		Air	1,1-Dichloroethene
TO-15		Air	1,2,4-Trichlorobenzene
TO-15		Air	1,2,4-Trimethylbenzene
TO-15		Air	1,2-Dibromoethane (EDB)
TO-15		Air	1,2-Dichloro-1,1,2,2-tetrafluoroethane
TO-15		Air	1,2-Dichlorobenzene
TO-15		Air	1,2-Dichloroethane
TO-15		Air	1,2-Dichloropropane
TO-15		Air	1,3,5-Trimethylbenzene
TO-15		Air	1,3-Butadiene
TO-15		Air	1,3-Dichlorobenzene
TO-15		Air	1,4-Dichlorobenzene
TO-15		Air	2-Butanone (MEK)
TO-15		Air	2-Hexanone
TO-15		Air	3-Chloropropene
TO-15		Air	4-Methyl-2-pentanone (MIBK)
TO-15		Air	Acetone
TO-15		Air	Acetonitrile
TO-15		Air	Acrolein
TO-15		Air	Acrylonitrile
TO-15		Air	Alpha Methyl Styrene
TO-15		Air	Benzene
TO-15		Air	Benzyl chloride
TO-15		Air	Bromodichloromethane
TO-15		Air	Bromoform
TO-15		Air	Bromomethane
TO-15		Air	Butane
TO-15		Air	Carbon disulfide
TO-15		Air	Carbon tetrachloride
TO-15		Air	Chlorobenzene
TO-15		Air	Chlorodifluoromethane
TO-15		Air	Chloroethane
TO-15		Air	Chloroform
TO-15		Air	Chloromethane
TO-15		Air	cis-1,2-Dichloroethene
TO-15		Air	cis-1,3-Dichloropropene
TO-15		Air	Cumene
TO-15		Air	Cyclohexane
TO-15		Air	Decane
TO-15		Air	Dibromochloromethane
TO-15		Air	Dibromomethane

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Laboratory: TestAmerica Knoxville (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	998044300	08-31-17

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
TO-15		Air	Dichlorodifluoromethane
TO-15		Air	Dodecane
TO-15		Air	Ethyl ether
TO-15		Air	Ethylbenzene
TO-15		Air	Heptane
TO-15		Air	Hexachlorobutadiene
TO-15		Air	Hexane
TO-15		Air	Methyl tert-butyl ether
TO-15		Air	Methylene Chloride
TO-15		Air	m-Xylene & p-Xylene
TO-15		Air	Naphthalene
TO-15		Air	Nonane
TO-15		Air	Octane
TO-15		Air	o-Xylene
TO-15		Air	Pentane
TO-15		Air	Propylbenzene
TO-15		Air	Styrene
TO-15		Air	Tetrachloroethene
TO-15		Air	Toluene
TO-15		Air	trans-1,2-Dichloroethene
TO-15		Air	trans-1,3-Dichloropropene
TO-15		Air	Trichloroethene
TO-15		Air	Trichlorofluoromethane
TO-15		Air	Undecane
TO-15		Air	Vinyl acetate
TO-15		Air	Vinyl chloride

Method Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Method	Method Description	Protocol	Laboratory
TO-15	Volatile Organic Compounds in Ambient Air	EPA	TAL KNX

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000



Sample Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-8813-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-8813-1	G-170724-MB-01	Air	07/24/17 13:10	07/26/17 10:15

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CHAIN OF CUSTODY RECORD

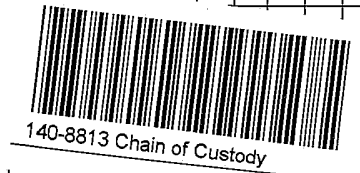
1801 Old Highway 8 Northwest, Suite 114
 St. Paul, Minnesota 55112 United States
 Phone: (651) 639-0913 Fax: (651) 639-0923

COC NO. **SP-02431**

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 048038-70-05				Laboratory Name: Test America				Lab Location: Knoxville TN				SSOW ID:							
Project Name: NRLF				Lab Contact:				Lab Quote No:				Cooler No:							
Project Location: New Richmond WI				SAMPLE TYPE				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)							
Chemistry Contact: Grant Anderson				Matrix Code (see back of COC) Grab (G) or Comp (C)				Unpreserved Hydrochloric Acid (HCl) Nitric Acid (HNO ₃) Sulfuric Acid (H ₂ SO ₄) Sodium Hydroxide (NaOH) Methanol/Water (Soil VOC) EnCores 3x5-g, 1x25-g Other:				Total Containers/Sample 1				Carrier: FedEx			
Sampler(s): M. Barnes																Airbill No:			
DATE: 7/24/17				TIME: 13:10				MS/MSD Request				Date Shipped: 7/25/17							
SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)				DATE (mm/dd/yy)				TIME (hh:mm)				COMMENTS/ SPECIAL INSTRUCTIONS:							
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Page 2 of 20

8/7/2017

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	/			<input type="checkbox"/> Containers, Broken	
2. Were ambient air containers received intact?			/	<input checked="" type="checkbox"/> Checked in lab	
3. The coolers/containers custody seal if present, is it intact?	/			<input type="checkbox"/> Yes <input type="checkbox"/> NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : _____ Correction factor: _____			/	<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	/			<input type="checkbox"/> Containers, Broken	
6. Were samples received in appropriate containers?	/			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	/			<input type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input type="checkbox"/> COC Not Received	
8. Were all of the samples listed on the COC received?	/			<input type="checkbox"/> Sample Received, Not on COC <input type="checkbox"/> Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	/			<input type="checkbox"/> COC; No Date/Time; Client Contacted	Labeling Verified by: _____ Date: _____
10. Was the sampler identified on the COC?	/			<input type="checkbox"/> Sampler Not Listed on COC	pH test strip lot number: _____
11. Is the client and project name/# identified?	/			<input type="checkbox"/> COC Incorrect/Incomplete	
12. Are tests/parameters listed for each sample?	/			<input type="checkbox"/> COC No tests on COC	
13. Is the matrix of the samples noted?	/			<input type="checkbox"/> COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	/			<input type="checkbox"/> COC Incorrect/Incomplete	Box 16A: pH Preservation Box 18A: Residual Chlorine
15. Were samples received within holding time?	/			<input type="checkbox"/> Holding Time - Receipt	Preservative: _____
16. Were samples received with correct chemical preservative (excluding Encore)?			/	<input type="checkbox"/> pH Adjusted, pH Included (See box 16A) <input type="checkbox"/> Incorrect Preservative	Lot Number: _____
17. Were VOA samples received without headspace?			/	<input type="checkbox"/> Headspace (VOA only)	Exp Date: _____
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: _____			/	<input type="checkbox"/> Residual Chlorine	Analyst: _____
19. For 1613B water samples is pH<9?			/	<input type="checkbox"/> If no, lab will adjust	Date: _____
20. For rad samples was sample activity info. Provided?			/	<input type="checkbox"/> Project missing info	Time: _____
Project #: <u>14001850</u> PM Instructions: _____					

Sample Receiving Associate: [Signature]

Date: 7/26/17

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

TestAmerica Job ID: 140-9768-1
Client Project/Site: New Richmond Landfill

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson



Authorized for release by:
11/14/2017 11:14:04 AM
Diana Lange, Project Management Assistant II
diane.lange@testamericainc.com

Designee for
Jamie McKinney, Senior Project Manager
(865)291-3000
jamie.mckinney@testamericainc.com

LINKS

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- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	9
Default Detection Limits	29
Surrogate Summary	32
QC Sample Results	33
QC Association Summary	40
Lab Chronicle	41
Certification Summary	43
Method Summary	45
Sample Summary	46
Chain of Custody	47
Receipt Checklists	49

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Job ID: 140-9768-1

Laboratory: TestAmerica Knoxville

Narrative

Job Narrative 140-9768-1

Comments

No additional comments.

Receipt

The samples were received on 11/2/2017 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice.

Air - GC/MS VOA

Method(s) TO 15 LL, TO-15: EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

Method(s) TO-15: The continuing calibration verification (CCV) associated with batch 140-15734 exhibited % difference of > 30% for the following analyte(s) Bromoform; however, the results were within the LCS acceptance limits. The EPA method requires that all target analytes in the continuing calibration verification standard be within 30% difference from the initial calibration. According to the laboratory standard operating procedure, the continuing calibration is acceptable if it meets the laboratory control sample acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-01

Lab Sample ID: 140-9768-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	33		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	63		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	5.5		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	13		2.0		ppb v/v	1		TO-15	Total/NA
Butane	28		4.0		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	13		2.0		ppb v/v	1		TO-15	Total/NA
Chloroethane	42		2.0		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	17		2.0		ppb v/v	1		TO-15	Total/NA
Cyclohexane	6.9		5.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	21		2.0		ppb v/v	1		TO-15	Total/NA
Hexane	15		5.0		ppb v/v	1		TO-15	Total/NA
Methylene Chloride	6.8		5.0		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	3.9		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	4.0		2.0		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	21		2.0		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	180		11		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	250		8.1		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	22		7.9		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	92		14		ug/m3	1		TO-15	Total/NA
Butane	66		9.5		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	47		7.1		ug/m3	1		TO-15	Total/NA
Chloroethane	110		5.3		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	66		7.9		ug/m3	1		TO-15	Total/NA
Cyclohexane	24		17		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	110		9.9		ug/m3	1		TO-15	Total/NA
Hexane	53		18		ug/m3	1		TO-15	Total/NA
Methylene Chloride	24		17		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	26		14		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	22		11		ug/m3	1		TO-15	Total/NA
Vinyl chloride	53		5.1		ug/m3	1		TO-15	Total/NA

Client Sample ID: G-171030-MB-02

Lab Sample ID: 140-9768-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	190		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	170		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	41		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	7.3		2.0		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	3.2		2.0		ppb v/v	1		TO-15	Total/NA
Chloroethane	3.0		2.0		ppb v/v	1		TO-15	Total/NA
Chloroform	7.6		2.0		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	2.2		2.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	29		2.0		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	13		2.0		ppb v/v	1		TO-15	Total/NA
Trichloroethene	2.4		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	3.6		2.0		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	2.1		2.0		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	1100		11		ug/m3	1		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Knoxville

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-02 (Continued)

Lab Sample ID: 140-9768-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	680		8.1		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	160		7.9		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	51		14		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	11		7.1		ug/m3	1		TO-15	Total/NA
Chloroethane	7.8		5.3		ug/m3	1		TO-15	Total/NA
Chloroform	37		9.8		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	8.8		7.9		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	140		9.9		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	86		14		ug/m3	1		TO-15	Total/NA
Trichloroethene	13		11		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	20		11		ug/m3	1		TO-15	Total/NA
Vinyl chloride	5.3		5.1		ug/m3	1		TO-15	Total/NA

Client Sample ID: G-171030-MB-03

Lab Sample ID: 140-9768-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	32		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	14		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	5.4		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	7.7		2.0		ppb v/v	1		TO-15	Total/NA
Benzene	2.2		2.0		ppb v/v	1		TO-15	Total/NA
Butane	37		4.0		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	23		2.0		ppb v/v	1		TO-15	Total/NA
Chloroethane	21		2.0		ppb v/v	1		TO-15	Total/NA
Chloroform	17		2.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	130		2.0		ppb v/v	1		TO-15	Total/NA
Pentane	10		10		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	3.3		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	41		2.0		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	23		2.0		ppb v/v	1		TO-15	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	180		11		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	56		8.1		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	22		7.9		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	54		14		ug/m3	1		TO-15	Total/NA
Benzene	7.0		6.4		ug/m3	1		TO-15	Total/NA
Butane	88		9.5		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	82		7.1		ug/m3	1		TO-15	Total/NA
Chloroethane	54		5.3		ug/m3	1		TO-15	Total/NA
Chloroform	83		9.8		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	670		9.9		ug/m3	1		TO-15	Total/NA
Pentane	31		30		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	22		14		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	230		11		ug/m3	1		TO-15	Total/NA
Vinyl chloride	58		5.1		ug/m3	1		TO-15	Total/NA

Client Sample ID: G-171030-MB-04

Lab Sample ID: 140-9768-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	30		2.0		ppb v/v	1		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Knoxville

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-04 (Continued)

Lab Sample ID: 140-9768-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	22		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	3.0		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	13		2.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	66		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	2.1		2.0		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	160		11		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	91		8.1		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	12		7.9		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	94		14		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	320		9.9		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	12		11		ug/m3	1		TO-15	Total/NA

Client Sample ID: G-171030-MB-05

Lab Sample ID: 140-9768-5

No Detections.

Client Sample ID: G-171030-MB-06

Lab Sample ID: 140-9768-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	61		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	70		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	8.4		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	8.8		2.0		ppb v/v	1		TO-15	Total/NA
Butane	29		4.0		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	14		2.0		ppb v/v	1		TO-15	Total/NA
Chloroethane	18		2.0		ppb v/v	1		TO-15	Total/NA
Chloroform	6.8		2.0		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	8.8		2.0		ppb v/v	1		TO-15	Total/NA
Cyclohexane	6.7		5.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	57		2.0		ppb v/v	1		TO-15	Total/NA
Hexane	7.6		5.0		ppb v/v	1		TO-15	Total/NA
m-Xylene & p-Xylene	2.1		2.0		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	17		2.0		ppb v/v	1		TO-15	Total/NA
Trichloroethene	2.4		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	25		2.0		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	33		2.0		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	330		11		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	280		8.1		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	33		7.9		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	62		14		ug/m3	1		TO-15	Total/NA
Butane	69		9.5		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	49		7.1		ug/m3	1		TO-15	Total/NA
Chloroethane	48		5.3		ug/m3	1		TO-15	Total/NA
Chloroform	33		9.8		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	35		7.9		ug/m3	1		TO-15	Total/NA
Cyclohexane	23		17		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	280		9.9		ug/m3	1		TO-15	Total/NA
Hexane	27		18		ug/m3	1		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Knoxville

Detection Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-06 (Continued)

Lab Sample ID: 140-9768-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
m-Xylene & p-Xylene	9.1		8.7		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	120		14		ug/m3	1		TO-15	Total/NA
Trichloroethene	13		11		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	140		11		ug/m3	1		TO-15	Total/NA
Vinyl chloride	84		5.1		ug/m3	1		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Knoxville



Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-01

Lab Sample ID: 140-9768-1

Date Collected: 10/30/17 16:21

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	33		2.0		ppb v/v			11/06/17 19:11	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/06/17 19:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/06/17 19:11	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/06/17 19:11	1
1,1-Dichloroethane	63		2.0		ppb v/v			11/06/17 19:11	1
1,1-Dichloroethene	5.5		2.0		ppb v/v			11/06/17 19:11	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/06/17 19:11	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 19:11	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/06/17 19:11	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	13		2.0		ppb v/v			11/06/17 19:11	1
1,2-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 19:11	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/06/17 19:11	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/06/17 19:11	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 19:11	1
1,3-Butadiene	ND		4.0		ppb v/v			11/06/17 19:11	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 19:11	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 19:11	1
2-Butanone (MEK)	ND		10		ppb v/v			11/06/17 19:11	1
2-Hexanone	ND		5.0		ppb v/v			11/06/17 19:11	1
3-Chloropropene	ND		2.0		ppb v/v			11/06/17 19:11	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ppb v/v			11/06/17 19:11	1
Acetone	ND		50		ppb v/v			11/06/17 19:11	1
Acetonitrile	ND		10		ppb v/v			11/06/17 19:11	1
Acrolein	ND		10		ppb v/v			11/06/17 19:11	1
Acrylonitrile	ND		20		ppb v/v			11/06/17 19:11	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/06/17 19:11	1
Benzene	ND		2.0		ppb v/v			11/06/17 19:11	1
Benzyl chloride	ND		4.0		ppb v/v			11/06/17 19:11	1
Bromodichloromethane	ND		2.0		ppb v/v			11/06/17 19:11	1
Bromoform	ND		2.0		ppb v/v			11/06/17 19:11	1
Bromomethane	ND		2.0		ppb v/v			11/06/17 19:11	1
Butane	28		4.0		ppb v/v			11/06/17 19:11	1
Carbon disulfide	ND		5.0		ppb v/v			11/06/17 19:11	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/06/17 19:11	1
Chlorobenzene	ND		2.0		ppb v/v			11/06/17 19:11	1
Chlorodifluoromethane	13		2.0		ppb v/v			11/06/17 19:11	1
Chloroethane	42		2.0		ppb v/v			11/06/17 19:11	1
Chloroform	ND		2.0		ppb v/v			11/06/17 19:11	1
Chloromethane	ND		5.0		ppb v/v			11/06/17 19:11	1
cis-1,2-Dichloroethene	17		2.0		ppb v/v			11/06/17 19:11	1
cis-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 19:11	1
Cumene	ND		4.0		ppb v/v			11/06/17 19:11	1
Cyclohexane	6.9		5.0		ppb v/v			11/06/17 19:11	1
Decane	ND		10		ppb v/v			11/06/17 19:11	1
Dibromochloromethane	ND		2.0		ppb v/v			11/06/17 19:11	1
Dibromomethane	ND		4.0		ppb v/v			11/06/17 19:11	1
Dichlorodifluoromethane	21		2.0		ppb v/v			11/06/17 19:11	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-01

Lab Sample ID: 140-9768-1

Date Collected: 10/30/17 16:21

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dodecane	ND		10		ppb v/v			11/06/17 19:11	1
Ethyl ether	ND		20		ppb v/v			11/06/17 19:11	1
Ethylbenzene	ND		2.0		ppb v/v			11/06/17 19:11	1
Heptane	ND		5.0		ppb v/v			11/06/17 19:11	1
Hexachlorobutadiene	ND		10		ppb v/v			11/06/17 19:11	1
Hexane	15		5.0		ppb v/v			11/06/17 19:11	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/06/17 19:11	1
Methylene Chloride	6.8		5.0		ppb v/v			11/06/17 19:11	1
m-Xylene & p-Xylene	ND		2.0		ppb v/v			11/06/17 19:11	1
Naphthalene	ND		5.0		ppb v/v			11/06/17 19:11	1
Nonane	ND		5.0		ppb v/v			11/06/17 19:11	1
Octane	ND		4.0		ppb v/v			11/06/17 19:11	1
o-Xylene	ND		2.0		ppb v/v			11/06/17 19:11	1
Pentane	ND		10		ppb v/v			11/06/17 19:11	1
Propylbenzene	ND		4.0		ppb v/v			11/06/17 19:11	1
Styrene	ND		2.0		ppb v/v			11/06/17 19:11	1
Tetrachloroethene	3.9		2.0		ppb v/v			11/06/17 19:11	1
Toluene	ND		2.0		ppb v/v			11/06/17 19:11	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/06/17 19:11	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 19:11	1
Trichloroethene	ND		2.0		ppb v/v			11/06/17 19:11	1
Trichlorofluoromethane	4.0		2.0		ppb v/v			11/06/17 19:11	1
Undecane	ND		10		ppb v/v			11/06/17 19:11	1
Vinyl acetate	ND		10		ppb v/v			11/06/17 19:11	1
Vinyl chloride	21		2.0		ppb v/v			11/06/17 19:11	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	180		11		ug/m3			11/06/17 19:11	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/06/17 19:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/06/17 19:11	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/06/17 19:11	1
1,1-Dichloroethane	250		8.1		ug/m3			11/06/17 19:11	1
1,1-Dichloroethene	22		7.9		ug/m3			11/06/17 19:11	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/06/17 19:11	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 19:11	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/06/17 19:11	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	92		14		ug/m3			11/06/17 19:11	1
1,2-Dichlorobenzene	ND		12		ug/m3			11/06/17 19:11	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/06/17 19:11	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/06/17 19:11	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 19:11	1
1,3-Butadiene	ND		8.8		ug/m3			11/06/17 19:11	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/06/17 19:11	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/06/17 19:11	1
2-Butanone (MEK)	ND		29		ug/m3			11/06/17 19:11	1
2-Hexanone	ND		20		ug/m3			11/06/17 19:11	1
3-Chloropropene	ND		6.3		ug/m3			11/06/17 19:11	1
4-Methyl-2-pentanone (MIBK)	ND		20		ug/m3			11/06/17 19:11	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-01

Lab Sample ID: 140-9768-1

Date Collected: 10/30/17 16:21

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		120		ug/m3			11/06/17 19:11	1
Acetonitrile	ND		17		ug/m3			11/06/17 19:11	1
Acrolein	ND		23		ug/m3			11/06/17 19:11	1
Acrylonitrile	ND		43		ug/m3			11/06/17 19:11	1
Alpha Methyl Styrene	ND		19		ug/m3			11/06/17 19:11	1
Benzene	ND		6.4		ug/m3			11/06/17 19:11	1
Benzyl chloride	ND		21		ug/m3			11/06/17 19:11	1
Bromodichloromethane	ND		13		ug/m3			11/06/17 19:11	1
Bromoform	ND		21		ug/m3			11/06/17 19:11	1
Bromomethane	ND		7.8		ug/m3			11/06/17 19:11	1
Butane	66		9.5		ug/m3			11/06/17 19:11	1
Carbon disulfide	ND		16		ug/m3			11/06/17 19:11	1
Carbon tetrachloride	ND		13		ug/m3			11/06/17 19:11	1
Chlorobenzene	ND		9.2		ug/m3			11/06/17 19:11	1
Chlorodifluoromethane	47		7.1		ug/m3			11/06/17 19:11	1
Chloroethane	110		5.3		ug/m3			11/06/17 19:11	1
Chloroform	ND		9.8		ug/m3			11/06/17 19:11	1
Chloromethane	ND		10		ug/m3			11/06/17 19:11	1
cis-1,2-Dichloroethene	66		7.9		ug/m3			11/06/17 19:11	1
cis-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 19:11	1
Cumene	ND		20		ug/m3			11/06/17 19:11	1
Cyclohexane	24		17		ug/m3			11/06/17 19:11	1
Decane	ND		58		ug/m3			11/06/17 19:11	1
Dibromochloromethane	ND		17		ug/m3			11/06/17 19:11	1
Dibromomethane	ND		28		ug/m3			11/06/17 19:11	1
Dichlorodifluoromethane	110		9.9		ug/m3			11/06/17 19:11	1
Dodecane	ND		70		ug/m3			11/06/17 19:11	1
Ethyl ether	ND		61		ug/m3			11/06/17 19:11	1
Ethylbenzene	ND		8.7		ug/m3			11/06/17 19:11	1
Heptane	ND		20		ug/m3			11/06/17 19:11	1
Hexachlorobutadiene	ND		110		ug/m3			11/06/17 19:11	1
Hexane	53		18		ug/m3			11/06/17 19:11	1
Methyl tert-butyl ether	ND		36		ug/m3			11/06/17 19:11	1
Methylene Chloride	24		17		ug/m3			11/06/17 19:11	1
m-Xylene & p-Xylene	ND		8.7		ug/m3			11/06/17 19:11	1
Naphthalene	ND		26		ug/m3			11/06/17 19:11	1
Nonane	ND		26		ug/m3			11/06/17 19:11	1
Octane	ND		19		ug/m3			11/06/17 19:11	1
o-Xylene	ND		8.7		ug/m3			11/06/17 19:11	1
Pentane	ND		30		ug/m3			11/06/17 19:11	1
Propylbenzene	ND		20		ug/m3			11/06/17 19:11	1
Styrene	ND		8.5		ug/m3			11/06/17 19:11	1
Tetrachloroethene	26		14		ug/m3			11/06/17 19:11	1
Toluene	ND		7.5		ug/m3			11/06/17 19:11	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/06/17 19:11	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 19:11	1
Trichloroethene	ND		11		ug/m3			11/06/17 19:11	1
Trichlorofluoromethane	22		11		ug/m3			11/06/17 19:11	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-01

Lab Sample ID: 140-9768-1

Date Collected: 10/30/17 16:21

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Undecane	ND		64		ug/m3			11/06/17 19:11	1
Vinyl acetate	ND		35		ug/m3			11/06/17 19:11	1
Vinyl chloride	53		5.1		ug/m3			11/06/17 19:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		60 - 140					11/06/17 19:11	1

Client Sample ID: G-171030-MB-02

Lab Sample ID: 140-9768-2

Date Collected: 10/30/17 16:29

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	190		2.0		ppb v/v			11/06/17 19:57	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/06/17 19:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/06/17 19:57	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/06/17 19:57	1
1,1-Dichloroethane	170		2.0		ppb v/v			11/06/17 19:57	1
1,1-Dichloroethene	41		2.0		ppb v/v			11/06/17 19:57	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/06/17 19:57	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 19:57	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/06/17 19:57	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	7.3		2.0		ppb v/v			11/06/17 19:57	1
1,2-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 19:57	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/06/17 19:57	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/06/17 19:57	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 19:57	1
1,3-Butadiene	ND		4.0		ppb v/v			11/06/17 19:57	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 19:57	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 19:57	1
2-Butanone (MEK)	ND		10		ppb v/v			11/06/17 19:57	1
2-Hexanone	ND		5.0		ppb v/v			11/06/17 19:57	1
3-Chloropropene	ND		2.0		ppb v/v			11/06/17 19:57	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ppb v/v			11/06/17 19:57	1
Acetone	ND		50		ppb v/v			11/06/17 19:57	1
Acetonitrile	ND		10		ppb v/v			11/06/17 19:57	1
Acrolein	ND		10		ppb v/v			11/06/17 19:57	1
Acrylonitrile	ND		20		ppb v/v			11/06/17 19:57	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/06/17 19:57	1
Benzene	ND		2.0		ppb v/v			11/06/17 19:57	1
Benzyl chloride	ND		4.0		ppb v/v			11/06/17 19:57	1
Bromodichloromethane	ND		2.0		ppb v/v			11/06/17 19:57	1
Bromoform	ND		2.0		ppb v/v			11/06/17 19:57	1
Bromomethane	ND		2.0		ppb v/v			11/06/17 19:57	1
Butane	ND		4.0		ppb v/v			11/06/17 19:57	1
Carbon disulfide	ND		5.0		ppb v/v			11/06/17 19:57	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/06/17 19:57	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-02

Lab Sample ID: 140-9768-2

Date Collected: 10/30/17 16:29

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		2.0		ppb v/v			11/06/17 19:57	1
Chlorodifluoromethane	3.2		2.0		ppb v/v			11/06/17 19:57	1
Chloroethane	3.0		2.0		ppb v/v			11/06/17 19:57	1
Chloroform	7.6		2.0		ppb v/v			11/06/17 19:57	1
Chloromethane	ND		5.0		ppb v/v			11/06/17 19:57	1
cis-1,2-Dichloroethene	2.2		2.0		ppb v/v			11/06/17 19:57	1
cis-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 19:57	1
Cumene	ND		4.0		ppb v/v			11/06/17 19:57	1
Cyclohexane	ND		5.0		ppb v/v			11/06/17 19:57	1
Decane	ND		10		ppb v/v			11/06/17 19:57	1
Dibromochloromethane	ND		2.0		ppb v/v			11/06/17 19:57	1
Dibromomethane	ND		4.0		ppb v/v			11/06/17 19:57	1
Dichlorodifluoromethane	29		2.0		ppb v/v			11/06/17 19:57	1
Dodecane	ND		10		ppb v/v			11/06/17 19:57	1
Ethyl ether	ND		20		ppb v/v			11/06/17 19:57	1
Ethylbenzene	ND		2.0		ppb v/v			11/06/17 19:57	1
Heptane	ND		5.0		ppb v/v			11/06/17 19:57	1
Hexachlorobutadiene	ND		10		ppb v/v			11/06/17 19:57	1
Hexane	ND		5.0		ppb v/v			11/06/17 19:57	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/06/17 19:57	1
Methylene Chloride	ND		5.0		ppb v/v			11/06/17 19:57	1
m-Xylene & p-Xylene	ND		2.0		ppb v/v			11/06/17 19:57	1
Naphthalene	ND		5.0		ppb v/v			11/06/17 19:57	1
Nonane	ND		5.0		ppb v/v			11/06/17 19:57	1
Octane	ND		4.0		ppb v/v			11/06/17 19:57	1
o-Xylene	ND		2.0		ppb v/v			11/06/17 19:57	1
Pentane	ND		10		ppb v/v			11/06/17 19:57	1
Propylbenzene	ND		4.0		ppb v/v			11/06/17 19:57	1
Styrene	ND		2.0		ppb v/v			11/06/17 19:57	1
Tetrachloroethene	13		2.0		ppb v/v			11/06/17 19:57	1
Toluene	ND		2.0		ppb v/v			11/06/17 19:57	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/06/17 19:57	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 19:57	1
Trichloroethene	2.4		2.0		ppb v/v			11/06/17 19:57	1
Trichlorofluoromethane	3.6		2.0		ppb v/v			11/06/17 19:57	1
Undecane	ND		10		ppb v/v			11/06/17 19:57	1
Vinyl acetate	ND		10		ppb v/v			11/06/17 19:57	1
Vinyl chloride	2.1		2.0		ppb v/v			11/06/17 19:57	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1100		11		ug/m3			11/06/17 19:57	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/06/17 19:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/06/17 19:57	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/06/17 19:57	1
1,1-Dichloroethane	680		8.1		ug/m3			11/06/17 19:57	1
1,1-Dichloroethene	160		7.9		ug/m3			11/06/17 19:57	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/06/17 19:57	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 19:57	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/06/17 19:57	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-02

Lab Sample ID: 140-9768-2

Date Collected: 10/30/17 16:29

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloro-1,1,2,2-tetrafluoroethane	51		14		ug/m3			11/06/17 19:57	1
1,2-Dichlorobenzene	ND		12		ug/m3			11/06/17 19:57	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/06/17 19:57	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/06/17 19:57	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 19:57	1
1,3-Butadiene	ND		8.8		ug/m3			11/06/17 19:57	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/06/17 19:57	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/06/17 19:57	1
2-Butanone (MEK)	ND		29		ug/m3			11/06/17 19:57	1
2-Hexanone	ND		20		ug/m3			11/06/17 19:57	1
3-Chloropropene	ND		6.3		ug/m3			11/06/17 19:57	1
4-Methyl-2-pentanone (MIBK)	ND		20		ug/m3			11/06/17 19:57	1
Acetone	ND		120		ug/m3			11/06/17 19:57	1
Acetonitrile	ND		17		ug/m3			11/06/17 19:57	1
Acrolein	ND		23		ug/m3			11/06/17 19:57	1
Acrylonitrile	ND		43		ug/m3			11/06/17 19:57	1
Alpha Methyl Styrene	ND		19		ug/m3			11/06/17 19:57	1
Benzene	ND		6.4		ug/m3			11/06/17 19:57	1
Benzyl chloride	ND		21		ug/m3			11/06/17 19:57	1
Bromodichloromethane	ND		13		ug/m3			11/06/17 19:57	1
Bromoform	ND		21		ug/m3			11/06/17 19:57	1
Bromomethane	ND		7.8		ug/m3			11/06/17 19:57	1
Butane	ND		9.5		ug/m3			11/06/17 19:57	1
Carbon disulfide	ND		16		ug/m3			11/06/17 19:57	1
Carbon tetrachloride	ND		13		ug/m3			11/06/17 19:57	1
Chlorobenzene	ND		9.2		ug/m3			11/06/17 19:57	1
Chlorodifluoromethane	11		7.1		ug/m3			11/06/17 19:57	1
Chloroethane	7.8		5.3		ug/m3			11/06/17 19:57	1
Chloroform	37		9.8		ug/m3			11/06/17 19:57	1
Chloromethane	ND		10		ug/m3			11/06/17 19:57	1
cis-1,2-Dichloroethene	8.8		7.9		ug/m3			11/06/17 19:57	1
cis-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 19:57	1
Cumene	ND		20		ug/m3			11/06/17 19:57	1
Cyclohexane	ND		17		ug/m3			11/06/17 19:57	1
Decane	ND		58		ug/m3			11/06/17 19:57	1
Dibromochloromethane	ND		17		ug/m3			11/06/17 19:57	1
Dibromomethane	ND		28		ug/m3			11/06/17 19:57	1
Dichlorodifluoromethane	140		9.9		ug/m3			11/06/17 19:57	1
Dodecane	ND		70		ug/m3			11/06/17 19:57	1
Ethyl ether	ND		61		ug/m3			11/06/17 19:57	1
Ethylbenzene	ND		8.7		ug/m3			11/06/17 19:57	1
Heptane	ND		20		ug/m3			11/06/17 19:57	1
Hexachlorobutadiene	ND		110		ug/m3			11/06/17 19:57	1
Hexane	ND		18		ug/m3			11/06/17 19:57	1
Methyl tert-butyl ether	ND		36		ug/m3			11/06/17 19:57	1
Methylene Chloride	ND		17		ug/m3			11/06/17 19:57	1
m-Xylene & p-Xylene	ND		8.7		ug/m3			11/06/17 19:57	1
Naphthalene	ND		26		ug/m3			11/06/17 19:57	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-02

Lab Sample ID: 140-9768-2

Date Collected: 10/30/17 16:29

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nonane	ND		26		ug/m3			11/06/17 19:57	1
Octane	ND		19		ug/m3			11/06/17 19:57	1
o-Xylene	ND		8.7		ug/m3			11/06/17 19:57	1
Pentane	ND		30		ug/m3			11/06/17 19:57	1
Propylbenzene	ND		20		ug/m3			11/06/17 19:57	1
Styrene	ND		8.5		ug/m3			11/06/17 19:57	1
Tetrachloroethene	86		14		ug/m3			11/06/17 19:57	1
Toluene	ND		7.5		ug/m3			11/06/17 19:57	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/06/17 19:57	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 19:57	1
Trichloroethene	13		11		ug/m3			11/06/17 19:57	1
Trichlorofluoromethane	20		11		ug/m3			11/06/17 19:57	1
Undecane	ND		64		ug/m3			11/06/17 19:57	1
Vinyl acetate	ND		35		ug/m3			11/06/17 19:57	1
Vinyl chloride	5.3		5.1		ug/m3			11/06/17 19:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		60 - 140					11/06/17 19:57	1

Client Sample ID: G-171030-MB-03

Lab Sample ID: 140-9768-3

Date Collected: 10/30/17 16:37

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	32		2.0		ppb v/v			11/06/17 20:44	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/06/17 20:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/06/17 20:44	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/06/17 20:44	1
1,1-Dichloroethane	14		2.0		ppb v/v			11/06/17 20:44	1
1,1-Dichloroethene	5.4		2.0		ppb v/v			11/06/17 20:44	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/06/17 20:44	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 20:44	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/06/17 20:44	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	7.7		2.0		ppb v/v			11/06/17 20:44	1
1,2-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 20:44	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/06/17 20:44	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/06/17 20:44	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 20:44	1
1,3-Butadiene	ND		4.0		ppb v/v			11/06/17 20:44	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 20:44	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 20:44	1
2-Butanone (MEK)	ND		10		ppb v/v			11/06/17 20:44	1
2-Hexanone	ND		5.0		ppb v/v			11/06/17 20:44	1
3-Chloropropene	ND		2.0		ppb v/v			11/06/17 20:44	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ppb v/v			11/06/17 20:44	1
Acetone	ND		50		ppb v/v			11/06/17 20:44	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-03

Lab Sample ID: 140-9768-3

Date Collected: 10/30/17 16:37

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	ND		10		ppb v/v			11/06/17 20:44	1
Acrolein	ND		10		ppb v/v			11/06/17 20:44	1
Acrylonitrile	ND		20		ppb v/v			11/06/17 20:44	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/06/17 20:44	1
Benzene	2.2		2.0		ppb v/v			11/06/17 20:44	1
Benzyl chloride	ND		4.0		ppb v/v			11/06/17 20:44	1
Bromodichloromethane	ND		2.0		ppb v/v			11/06/17 20:44	1
Bromoform	ND		2.0		ppb v/v			11/06/17 20:44	1
Bromomethane	ND		2.0		ppb v/v			11/06/17 20:44	1
Butane	37		4.0		ppb v/v			11/06/17 20:44	1
Carbon disulfide	ND		5.0		ppb v/v			11/06/17 20:44	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/06/17 20:44	1
Chlorobenzene	ND		2.0		ppb v/v			11/06/17 20:44	1
Chlorodifluoromethane	23		2.0		ppb v/v			11/06/17 20:44	1
Chloroethane	21		2.0		ppb v/v			11/06/17 20:44	1
Chloroform	17		2.0		ppb v/v			11/06/17 20:44	1
Chloromethane	ND		5.0		ppb v/v			11/06/17 20:44	1
cis-1,2-Dichloroethene	ND		2.0		ppb v/v			11/06/17 20:44	1
cis-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 20:44	1
Cumene	ND		4.0		ppb v/v			11/06/17 20:44	1
Cyclohexane	ND		5.0		ppb v/v			11/06/17 20:44	1
Decane	ND		10		ppb v/v			11/06/17 20:44	1
Dibromochloromethane	ND		2.0		ppb v/v			11/06/17 20:44	1
Dibromomethane	ND		4.0		ppb v/v			11/06/17 20:44	1
Dichlorodifluoromethane	130		2.0		ppb v/v			11/06/17 20:44	1
Dodecane	ND		10		ppb v/v			11/06/17 20:44	1
Ethyl ether	ND		20		ppb v/v			11/06/17 20:44	1
Ethylbenzene	ND		2.0		ppb v/v			11/06/17 20:44	1
Heptane	ND		5.0		ppb v/v			11/06/17 20:44	1
Hexachlorobutadiene	ND		10		ppb v/v			11/06/17 20:44	1
Hexane	ND		5.0		ppb v/v			11/06/17 20:44	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/06/17 20:44	1
Methylene Chloride	ND		5.0		ppb v/v			11/06/17 20:44	1
m-Xylene & p-Xylene	ND		2.0		ppb v/v			11/06/17 20:44	1
Naphthalene	ND		5.0		ppb v/v			11/06/17 20:44	1
Nonane	ND		5.0		ppb v/v			11/06/17 20:44	1
Octane	ND		4.0		ppb v/v			11/06/17 20:44	1
o-Xylene	ND		2.0		ppb v/v			11/06/17 20:44	1
Pentane	10		10		ppb v/v			11/06/17 20:44	1
Propylbenzene	ND		4.0		ppb v/v			11/06/17 20:44	1
Styrene	ND		2.0		ppb v/v			11/06/17 20:44	1
Tetrachloroethene	3.3		2.0		ppb v/v			11/06/17 20:44	1
Toluene	ND		2.0		ppb v/v			11/06/17 20:44	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/06/17 20:44	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 20:44	1
Trichloroethene	ND		2.0		ppb v/v			11/06/17 20:44	1
Trichlorofluoromethane	41		2.0		ppb v/v			11/06/17 20:44	1
Undecane	ND		10		ppb v/v			11/06/17 20:44	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-03

Lab Sample ID: 140-9768-3

Date Collected: 10/30/17 16:37

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	ND		10		ppb v/v			11/06/17 20:44	1
Vinyl chloride	23		2.0		ppb v/v			11/06/17 20:44	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	180		11		ug/m3			11/06/17 20:44	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/06/17 20:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/06/17 20:44	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/06/17 20:44	1
1,1-Dichloroethane	56		8.1		ug/m3			11/06/17 20:44	1
1,1-Dichloroethene	22		7.9		ug/m3			11/06/17 20:44	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/06/17 20:44	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 20:44	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/06/17 20:44	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	54		14		ug/m3			11/06/17 20:44	1
1,2-Dichlorobenzene	ND		12		ug/m3			11/06/17 20:44	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/06/17 20:44	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/06/17 20:44	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 20:44	1
1,3-Butadiene	ND		8.8		ug/m3			11/06/17 20:44	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/06/17 20:44	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/06/17 20:44	1
2-Butanone (MEK)	ND		29		ug/m3			11/06/17 20:44	1
2-Hexanone	ND		20		ug/m3			11/06/17 20:44	1
3-Chloropropene	ND		6.3		ug/m3			11/06/17 20:44	1
4-Methyl-2-pentanone (MIBK)	ND		20		ug/m3			11/06/17 20:44	1
Acetone	ND		120		ug/m3			11/06/17 20:44	1
Acetonitrile	ND		17		ug/m3			11/06/17 20:44	1
Acrolein	ND		23		ug/m3			11/06/17 20:44	1
Acrylonitrile	ND		43		ug/m3			11/06/17 20:44	1
Alpha Methyl Styrene	ND		19		ug/m3			11/06/17 20:44	1
Benzene	7.0		6.4		ug/m3			11/06/17 20:44	1
Benzyl chloride	ND		21		ug/m3			11/06/17 20:44	1
Bromodichloromethane	ND		13		ug/m3			11/06/17 20:44	1
Bromoform	ND		21		ug/m3			11/06/17 20:44	1
Bromomethane	ND		7.8		ug/m3			11/06/17 20:44	1
Butane	88		9.5		ug/m3			11/06/17 20:44	1
Carbon disulfide	ND		16		ug/m3			11/06/17 20:44	1
Carbon tetrachloride	ND		13		ug/m3			11/06/17 20:44	1
Chlorobenzene	ND		9.2		ug/m3			11/06/17 20:44	1
Chlorodifluoromethane	82		7.1		ug/m3			11/06/17 20:44	1
Chloroethane	54		5.3		ug/m3			11/06/17 20:44	1
Chloroform	83		9.8		ug/m3			11/06/17 20:44	1
Chloromethane	ND		10		ug/m3			11/06/17 20:44	1
cis-1,2-Dichloroethene	ND		7.9		ug/m3			11/06/17 20:44	1
cis-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 20:44	1
Cumene	ND		20		ug/m3			11/06/17 20:44	1
Cyclohexane	ND		17		ug/m3			11/06/17 20:44	1
Decane	ND		58		ug/m3			11/06/17 20:44	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-03

Lab Sample ID: 140-9768-3

Date Collected: 10/30/17 16:37

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		17		ug/m3			11/06/17 20:44	1
Dibromomethane	ND		28		ug/m3			11/06/17 20:44	1
Dichlorodifluoromethane	670		9.9		ug/m3			11/06/17 20:44	1
Dodecane	ND		70		ug/m3			11/06/17 20:44	1
Ethyl ether	ND		61		ug/m3			11/06/17 20:44	1
Ethylbenzene	ND		8.7		ug/m3			11/06/17 20:44	1
Heptane	ND		20		ug/m3			11/06/17 20:44	1
Hexachlorobutadiene	ND		110		ug/m3			11/06/17 20:44	1
Hexane	ND		18		ug/m3			11/06/17 20:44	1
Methyl tert-butyl ether	ND		36		ug/m3			11/06/17 20:44	1
Methylene Chloride	ND		17		ug/m3			11/06/17 20:44	1
m-Xylene & p-Xylene	ND		8.7		ug/m3			11/06/17 20:44	1
Naphthalene	ND		26		ug/m3			11/06/17 20:44	1
Nonane	ND		26		ug/m3			11/06/17 20:44	1
Octane	ND		19		ug/m3			11/06/17 20:44	1
o-Xylene	ND		8.7		ug/m3			11/06/17 20:44	1
Pentane	31		30		ug/m3			11/06/17 20:44	1
Propylbenzene	ND		20		ug/m3			11/06/17 20:44	1
Styrene	ND		8.5		ug/m3			11/06/17 20:44	1
Tetrachloroethene	22		14		ug/m3			11/06/17 20:44	1
Toluene	ND		7.5		ug/m3			11/06/17 20:44	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/06/17 20:44	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 20:44	1
Trichloroethene	ND		11		ug/m3			11/06/17 20:44	1
Trichlorofluoromethane	230		11		ug/m3			11/06/17 20:44	1
Undecane	ND		64		ug/m3			11/06/17 20:44	1
Vinyl acetate	ND		35		ug/m3			11/06/17 20:44	1
Vinyl chloride	58		5.1		ug/m3			11/06/17 20:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		60 - 140					11/06/17 20:44	1

Client Sample ID: G-171030-MB-04

Lab Sample ID: 140-9768-4

Date Collected: 10/30/17 16:44

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	30		2.0		ppb v/v			11/06/17 21:31	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/06/17 21:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/06/17 21:31	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/06/17 21:31	1
1,1-Dichloroethane	22		2.0		ppb v/v			11/06/17 21:31	1
1,1-Dichloroethene	3.0		2.0		ppb v/v			11/06/17 21:31	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/06/17 21:31	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 21:31	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/06/17 21:31	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-04

Lab Sample ID: 140-9768-4

Date Collected: 10/30/17 16:44

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloro-1,1,2,2-tetrafluoroethane	13		2.0		ppb v/v			11/06/17 21:31	1
1,2-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 21:31	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/06/17 21:31	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/06/17 21:31	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 21:31	1
1,3-Butadiene	ND		4.0		ppb v/v			11/06/17 21:31	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 21:31	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 21:31	1
2-Butanone (MEK)	ND		10		ppb v/v			11/06/17 21:31	1
2-Hexanone	ND		5.0		ppb v/v			11/06/17 21:31	1
3-Chloropropene	ND		2.0		ppb v/v			11/06/17 21:31	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ppb v/v			11/06/17 21:31	1
Acetone	ND		50		ppb v/v			11/06/17 21:31	1
Acetonitrile	ND		10		ppb v/v			11/06/17 21:31	1
Acrolein	ND		10		ppb v/v			11/06/17 21:31	1
Acrylonitrile	ND		20		ppb v/v			11/06/17 21:31	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/06/17 21:31	1
Benzene	ND		2.0		ppb v/v			11/06/17 21:31	1
Benzyl chloride	ND		4.0		ppb v/v			11/06/17 21:31	1
Bromodichloromethane	ND		2.0		ppb v/v			11/06/17 21:31	1
Bromoform	ND		2.0		ppb v/v			11/06/17 21:31	1
Bromomethane	ND		2.0		ppb v/v			11/06/17 21:31	1
Butane	ND		4.0		ppb v/v			11/06/17 21:31	1
Carbon disulfide	ND		5.0		ppb v/v			11/06/17 21:31	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/06/17 21:31	1
Chlorobenzene	ND		2.0		ppb v/v			11/06/17 21:31	1
Chlorodifluoromethane	ND		2.0		ppb v/v			11/06/17 21:31	1
Chloroethane	ND		2.0		ppb v/v			11/06/17 21:31	1
Chloroform	ND		2.0		ppb v/v			11/06/17 21:31	1
Chloromethane	ND		5.0		ppb v/v			11/06/17 21:31	1
cis-1,2-Dichloroethene	ND		2.0		ppb v/v			11/06/17 21:31	1
cis-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 21:31	1
Cumene	ND		4.0		ppb v/v			11/06/17 21:31	1
Cyclohexane	ND		5.0		ppb v/v			11/06/17 21:31	1
Decane	ND		10		ppb v/v			11/06/17 21:31	1
Dibromochloromethane	ND		2.0		ppb v/v			11/06/17 21:31	1
Dibromomethane	ND		4.0		ppb v/v			11/06/17 21:31	1
Dichlorodifluoromethane	66		2.0		ppb v/v			11/06/17 21:31	1
Dodecane	ND		10		ppb v/v			11/06/17 21:31	1
Ethyl ether	ND		20		ppb v/v			11/06/17 21:31	1
Ethylbenzene	ND		2.0		ppb v/v			11/06/17 21:31	1
Heptane	ND		5.0		ppb v/v			11/06/17 21:31	1
Hexachlorobutadiene	ND		10		ppb v/v			11/06/17 21:31	1
Hexane	ND		5.0		ppb v/v			11/06/17 21:31	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/06/17 21:31	1
Methylene Chloride	ND		5.0		ppb v/v			11/06/17 21:31	1
m-Xylene & p-Xylene	ND		2.0		ppb v/v			11/06/17 21:31	1
Naphthalene	ND		5.0		ppb v/v			11/06/17 21:31	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-04

Lab Sample ID: 140-9768-4

Date Collected: 10/30/17 16:44

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nonane	ND		5.0		ppb v/v			11/06/17 21:31	1
Octane	ND		4.0		ppb v/v			11/06/17 21:31	1
o-Xylene	ND		2.0		ppb v/v			11/06/17 21:31	1
Pentane	ND		10		ppb v/v			11/06/17 21:31	1
Propylbenzene	ND		4.0		ppb v/v			11/06/17 21:31	1
Styrene	ND		2.0		ppb v/v			11/06/17 21:31	1
Tetrachloroethene	ND		2.0		ppb v/v			11/06/17 21:31	1
Toluene	ND		2.0		ppb v/v			11/06/17 21:31	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/06/17 21:31	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 21:31	1
Trichloroethene	ND		2.0		ppb v/v			11/06/17 21:31	1
Trichlorofluoromethane	2.1		2.0		ppb v/v			11/06/17 21:31	1
Undecane	ND		10		ppb v/v			11/06/17 21:31	1
Vinyl acetate	ND		10		ppb v/v			11/06/17 21:31	1
Vinyl chloride	ND		2.0		ppb v/v			11/06/17 21:31	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	160		11		ug/m3			11/06/17 21:31	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/06/17 21:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/06/17 21:31	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/06/17 21:31	1
1,1-Dichloroethane	91		8.1		ug/m3			11/06/17 21:31	1
1,1-Dichloroethene	12		7.9		ug/m3			11/06/17 21:31	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/06/17 21:31	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 21:31	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/06/17 21:31	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	94		14		ug/m3			11/06/17 21:31	1
1,2-Dichlorobenzene	ND		12		ug/m3			11/06/17 21:31	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/06/17 21:31	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/06/17 21:31	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 21:31	1
1,3-Butadiene	ND		8.8		ug/m3			11/06/17 21:31	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/06/17 21:31	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/06/17 21:31	1
2-Butanone (MEK)	ND		29		ug/m3			11/06/17 21:31	1
2-Hexanone	ND		20		ug/m3			11/06/17 21:31	1
3-Chloropropene	ND		6.3		ug/m3			11/06/17 21:31	1
4-Methyl-2-pentanone (MIBK)	ND		20		ug/m3			11/06/17 21:31	1
Acetone	ND		120		ug/m3			11/06/17 21:31	1
Acetonitrile	ND		17		ug/m3			11/06/17 21:31	1
Acrolein	ND		23		ug/m3			11/06/17 21:31	1
Acrylonitrile	ND		43		ug/m3			11/06/17 21:31	1
Alpha Methyl Styrene	ND		19		ug/m3			11/06/17 21:31	1
Benzene	ND		6.4		ug/m3			11/06/17 21:31	1
Benzyl chloride	ND		21		ug/m3			11/06/17 21:31	1
Bromodichloromethane	ND		13		ug/m3			11/06/17 21:31	1
Bromoform	ND		21		ug/m3			11/06/17 21:31	1
Bromomethane	ND		7.8		ug/m3			11/06/17 21:31	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-04

Lab Sample ID: 140-9768-4

Date Collected: 10/30/17 16:44

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Butane	ND		9.5		ug/m3			11/06/17 21:31	1
Carbon disulfide	ND		16		ug/m3			11/06/17 21:31	1
Carbon tetrachloride	ND		13		ug/m3			11/06/17 21:31	1
Chlorobenzene	ND		9.2		ug/m3			11/06/17 21:31	1
Chlorodifluoromethane	ND		7.1		ug/m3			11/06/17 21:31	1
Chloroethane	ND		5.3		ug/m3			11/06/17 21:31	1
Chloroform	ND		9.8		ug/m3			11/06/17 21:31	1
Chloromethane	ND		10		ug/m3			11/06/17 21:31	1
cis-1,2-Dichloroethene	ND		7.9		ug/m3			11/06/17 21:31	1
cis-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 21:31	1
Cumene	ND		20		ug/m3			11/06/17 21:31	1
Cyclohexane	ND		17		ug/m3			11/06/17 21:31	1
Decane	ND		58		ug/m3			11/06/17 21:31	1
Dibromochloromethane	ND		17		ug/m3			11/06/17 21:31	1
Dibromomethane	ND		28		ug/m3			11/06/17 21:31	1
Dichlorodifluoromethane	320		9.9		ug/m3			11/06/17 21:31	1
Dodecane	ND		70		ug/m3			11/06/17 21:31	1
Ethyl ether	ND		61		ug/m3			11/06/17 21:31	1
Ethylbenzene	ND		8.7		ug/m3			11/06/17 21:31	1
Heptane	ND		20		ug/m3			11/06/17 21:31	1
Hexachlorobutadiene	ND		110		ug/m3			11/06/17 21:31	1
Hexane	ND		18		ug/m3			11/06/17 21:31	1
Methyl tert-butyl ether	ND		36		ug/m3			11/06/17 21:31	1
Methylene Chloride	ND		17		ug/m3			11/06/17 21:31	1
m-Xylene & p-Xylene	ND		8.7		ug/m3			11/06/17 21:31	1
Naphthalene	ND		26		ug/m3			11/06/17 21:31	1
Nonane	ND		26		ug/m3			11/06/17 21:31	1
Octane	ND		19		ug/m3			11/06/17 21:31	1
o-Xylene	ND		8.7		ug/m3			11/06/17 21:31	1
Pentane	ND		30		ug/m3			11/06/17 21:31	1
Propylbenzene	ND		20		ug/m3			11/06/17 21:31	1
Styrene	ND		8.5		ug/m3			11/06/17 21:31	1
Tetrachloroethene	ND		14		ug/m3			11/06/17 21:31	1
Toluene	ND		7.5		ug/m3			11/06/17 21:31	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/06/17 21:31	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 21:31	1
Trichloroethene	ND		11		ug/m3			11/06/17 21:31	1
Trichlorofluoromethane	12		11		ug/m3			11/06/17 21:31	1
Undecane	ND		64		ug/m3			11/06/17 21:31	1
Vinyl acetate	ND		35		ug/m3			11/06/17 21:31	1
Vinyl chloride	ND		5.1		ug/m3			11/06/17 21:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		60 - 140					11/06/17 21:31	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-05

Lab Sample ID: 140-9768-5

Date Collected: 10/30/17 16:53

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0		ppb v/v			11/06/17 22:18	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/06/17 22:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/06/17 22:18	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/06/17 22:18	1
1,1-Dichloroethane	ND		2.0		ppb v/v			11/06/17 22:18	1
1,1-Dichloroethene	ND		2.0		ppb v/v			11/06/17 22:18	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/06/17 22:18	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 22:18	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/06/17 22:18	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		2.0		ppb v/v			11/06/17 22:18	1
1,2-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 22:18	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/06/17 22:18	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/06/17 22:18	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 22:18	1
1,3-Butadiene	ND		4.0		ppb v/v			11/06/17 22:18	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 22:18	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 22:18	1
2-Butanone (MEK)	ND		10		ppb v/v			11/06/17 22:18	1
2-Hexanone	ND		5.0		ppb v/v			11/06/17 22:18	1
3-Chloropropene	ND		2.0		ppb v/v			11/06/17 22:18	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ppb v/v			11/06/17 22:18	1
Acetone	ND		50		ppb v/v			11/06/17 22:18	1
Acetonitrile	ND		10		ppb v/v			11/06/17 22:18	1
Acrolein	ND		10		ppb v/v			11/06/17 22:18	1
Acrylonitrile	ND		20		ppb v/v			11/06/17 22:18	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/06/17 22:18	1
Benzene	ND		2.0		ppb v/v			11/06/17 22:18	1
Benzyl chloride	ND		4.0		ppb v/v			11/06/17 22:18	1
Bromodichloromethane	ND		2.0		ppb v/v			11/06/17 22:18	1
Bromoform	ND		2.0		ppb v/v			11/06/17 22:18	1
Bromomethane	ND		2.0		ppb v/v			11/06/17 22:18	1
Butane	ND		4.0		ppb v/v			11/06/17 22:18	1
Carbon disulfide	ND		5.0		ppb v/v			11/06/17 22:18	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/06/17 22:18	1
Chlorobenzene	ND		2.0		ppb v/v			11/06/17 22:18	1
Chlorodifluoromethane	ND		2.0		ppb v/v			11/06/17 22:18	1
Chloroethane	ND		2.0		ppb v/v			11/06/17 22:18	1
Chloroform	ND		2.0		ppb v/v			11/06/17 22:18	1
Chloromethane	ND		5.0		ppb v/v			11/06/17 22:18	1
cis-1,2-Dichloroethene	ND		2.0		ppb v/v			11/06/17 22:18	1
cis-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 22:18	1
Cumene	ND		4.0		ppb v/v			11/06/17 22:18	1
Cyclohexane	ND		5.0		ppb v/v			11/06/17 22:18	1
Decane	ND		10		ppb v/v			11/06/17 22:18	1
Dibromochloromethane	ND		2.0		ppb v/v			11/06/17 22:18	1
Dibromomethane	ND		4.0		ppb v/v			11/06/17 22:18	1
Dichlorodifluoromethane	ND		2.0		ppb v/v			11/06/17 22:18	1
Dodecane	ND		10		ppb v/v			11/06/17 22:18	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-05

Lab Sample ID: 140-9768-5

Date Collected: 10/30/17 16:53

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethyl ether	ND		20		ppb v/v			11/06/17 22:18	1
Ethylbenzene	ND		2.0		ppb v/v			11/06/17 22:18	1
Heptane	ND		5.0		ppb v/v			11/06/17 22:18	1
Hexachlorobutadiene	ND		10		ppb v/v			11/06/17 22:18	1
Hexane	ND		5.0		ppb v/v			11/06/17 22:18	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/06/17 22:18	1
Methylene Chloride	ND		5.0		ppb v/v			11/06/17 22:18	1
m-Xylene & p-Xylene	ND		2.0		ppb v/v			11/06/17 22:18	1
Naphthalene	ND		5.0		ppb v/v			11/06/17 22:18	1
Nonane	ND		5.0		ppb v/v			11/06/17 22:18	1
Octane	ND		4.0		ppb v/v			11/06/17 22:18	1
o-Xylene	ND		2.0		ppb v/v			11/06/17 22:18	1
Pentane	ND		10		ppb v/v			11/06/17 22:18	1
Propylbenzene	ND		4.0		ppb v/v			11/06/17 22:18	1
Styrene	ND		2.0		ppb v/v			11/06/17 22:18	1
Tetrachloroethene	ND		2.0		ppb v/v			11/06/17 22:18	1
Toluene	ND		2.0		ppb v/v			11/06/17 22:18	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/06/17 22:18	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 22:18	1
Trichloroethene	ND		2.0		ppb v/v			11/06/17 22:18	1
Trichlorofluoromethane	ND		2.0		ppb v/v			11/06/17 22:18	1
Undecane	ND		10		ppb v/v			11/06/17 22:18	1
Vinyl acetate	ND		10		ppb v/v			11/06/17 22:18	1
Vinyl chloride	ND		2.0		ppb v/v			11/06/17 22:18	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		11		ug/m3			11/06/17 22:18	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/06/17 22:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/06/17 22:18	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/06/17 22:18	1
1,1-Dichloroethane	ND		8.1		ug/m3			11/06/17 22:18	1
1,1-Dichloroethene	ND		7.9		ug/m3			11/06/17 22:18	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/06/17 22:18	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 22:18	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/06/17 22:18	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		14		ug/m3			11/06/17 22:18	1
1,2-Dichlorobenzene	ND		12		ug/m3			11/06/17 22:18	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/06/17 22:18	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/06/17 22:18	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 22:18	1
1,3-Butadiene	ND		8.8		ug/m3			11/06/17 22:18	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/06/17 22:18	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/06/17 22:18	1
2-Butanone (MEK)	ND		29		ug/m3			11/06/17 22:18	1
2-Hexanone	ND		20		ug/m3			11/06/17 22:18	1
3-Chloropropene	ND		6.3		ug/m3			11/06/17 22:18	1
4-Methyl-2-pentanone (MIBK)	ND		20		ug/m3			11/06/17 22:18	1
Acetone	ND		120		ug/m3			11/06/17 22:18	1
Acetonitrile	ND		17		ug/m3			11/06/17 22:18	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-05

Lab Sample ID: 140-9768-5

Date Collected: 10/30/17 16:53

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND		23		ug/m3			11/06/17 22:18	1
Acrylonitrile	ND		43		ug/m3			11/06/17 22:18	1
Alpha Methyl Styrene	ND		19		ug/m3			11/06/17 22:18	1
Benzene	ND		6.4		ug/m3			11/06/17 22:18	1
Benzyl chloride	ND		21		ug/m3			11/06/17 22:18	1
Bromodichloromethane	ND		13		ug/m3			11/06/17 22:18	1
Bromoform	ND		21		ug/m3			11/06/17 22:18	1
Bromomethane	ND		7.8		ug/m3			11/06/17 22:18	1
Butane	ND		9.5		ug/m3			11/06/17 22:18	1
Carbon disulfide	ND		16		ug/m3			11/06/17 22:18	1
Carbon tetrachloride	ND		13		ug/m3			11/06/17 22:18	1
Chlorobenzene	ND		9.2		ug/m3			11/06/17 22:18	1
Chlorodifluoromethane	ND		7.1		ug/m3			11/06/17 22:18	1
Chloroethane	ND		5.3		ug/m3			11/06/17 22:18	1
Chloroform	ND		9.8		ug/m3			11/06/17 22:18	1
Chloromethane	ND		10		ug/m3			11/06/17 22:18	1
cis-1,2-Dichloroethene	ND		7.9		ug/m3			11/06/17 22:18	1
cis-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 22:18	1
Cumene	ND		20		ug/m3			11/06/17 22:18	1
Cyclohexane	ND		17		ug/m3			11/06/17 22:18	1
Decane	ND		58		ug/m3			11/06/17 22:18	1
Dibromochloromethane	ND		17		ug/m3			11/06/17 22:18	1
Dibromomethane	ND		28		ug/m3			11/06/17 22:18	1
Dichlorodifluoromethane	ND		9.9		ug/m3			11/06/17 22:18	1
Dodecane	ND		70		ug/m3			11/06/17 22:18	1
Ethyl ether	ND		61		ug/m3			11/06/17 22:18	1
Ethylbenzene	ND		8.7		ug/m3			11/06/17 22:18	1
Heptane	ND		20		ug/m3			11/06/17 22:18	1
Hexachlorobutadiene	ND		110		ug/m3			11/06/17 22:18	1
Hexane	ND		18		ug/m3			11/06/17 22:18	1
Methyl tert-butyl ether	ND		36		ug/m3			11/06/17 22:18	1
Methylene Chloride	ND		17		ug/m3			11/06/17 22:18	1
m-Xylene & p-Xylene	ND		8.7		ug/m3			11/06/17 22:18	1
Naphthalene	ND		26		ug/m3			11/06/17 22:18	1
Nonane	ND		26		ug/m3			11/06/17 22:18	1
Octane	ND		19		ug/m3			11/06/17 22:18	1
o-Xylene	ND		8.7		ug/m3			11/06/17 22:18	1
Pentane	ND		30		ug/m3			11/06/17 22:18	1
Propylbenzene	ND		20		ug/m3			11/06/17 22:18	1
Styrene	ND		8.5		ug/m3			11/06/17 22:18	1
Tetrachloroethene	ND		14		ug/m3			11/06/17 22:18	1
Toluene	ND		7.5		ug/m3			11/06/17 22:18	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/06/17 22:18	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 22:18	1
Trichloroethene	ND		11		ug/m3			11/06/17 22:18	1
Trichlorofluoromethane	ND		11		ug/m3			11/06/17 22:18	1
Undecane	ND		64		ug/m3			11/06/17 22:18	1
Vinyl acetate	ND		35		ug/m3			11/06/17 22:18	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-05

Lab Sample ID: 140-9768-5

Date Collected: 10/30/17 16:53

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		5.1		ug/m3			11/06/17 22:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		60 - 140					11/06/17 22:18	1

Client Sample ID: G-171030-MB-06

Lab Sample ID: 140-9768-6

Date Collected: 10/30/17 17:10

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	61		2.0		ppb v/v			11/06/17 23:05	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/06/17 23:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/06/17 23:05	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/06/17 23:05	1
1,1-Dichloroethane	70		2.0		ppb v/v			11/06/17 23:05	1
1,1-Dichloroethene	8.4		2.0		ppb v/v			11/06/17 23:05	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/06/17 23:05	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 23:05	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/06/17 23:05	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	8.8		2.0		ppb v/v			11/06/17 23:05	1
1,2-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 23:05	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/06/17 23:05	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/06/17 23:05	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/06/17 23:05	1
1,3-Butadiene	ND		4.0		ppb v/v			11/06/17 23:05	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 23:05	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/06/17 23:05	1
2-Butanone (MEK)	ND		10		ppb v/v			11/06/17 23:05	1
2-Hexanone	ND		5.0		ppb v/v			11/06/17 23:05	1
3-Chloropropene	ND		2.0		ppb v/v			11/06/17 23:05	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ppb v/v			11/06/17 23:05	1
Acetone	ND		50		ppb v/v			11/06/17 23:05	1
Acetonitrile	ND		10		ppb v/v			11/06/17 23:05	1
Acrolein	ND		10		ppb v/v			11/06/17 23:05	1
Acrylonitrile	ND		20		ppb v/v			11/06/17 23:05	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/06/17 23:05	1
Benzene	ND		2.0		ppb v/v			11/06/17 23:05	1
Benzyl chloride	ND		4.0		ppb v/v			11/06/17 23:05	1
Bromodichloromethane	ND		2.0		ppb v/v			11/06/17 23:05	1
Bromoform	ND		2.0		ppb v/v			11/06/17 23:05	1
Bromomethane	ND		2.0		ppb v/v			11/06/17 23:05	1
Butane	29		4.0		ppb v/v			11/06/17 23:05	1
Carbon disulfide	ND		5.0		ppb v/v			11/06/17 23:05	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/06/17 23:05	1
Chlorobenzene	ND		2.0		ppb v/v			11/06/17 23:05	1
Chlorodifluoromethane	14		2.0		ppb v/v			11/06/17 23:05	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-06

Lab Sample ID: 140-9768-6

Date Collected: 10/30/17 17:10

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	18		2.0		ppb v/v			11/06/17 23:05	1
Chloroform	6.8		2.0		ppb v/v			11/06/17 23:05	1
Chloromethane	ND		5.0		ppb v/v			11/06/17 23:05	1
cis-1,2-Dichloroethene	8.8		2.0		ppb v/v			11/06/17 23:05	1
cis-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 23:05	1
Cumene	ND		4.0		ppb v/v			11/06/17 23:05	1
Cyclohexane	6.7		5.0		ppb v/v			11/06/17 23:05	1
Decane	ND		10		ppb v/v			11/06/17 23:05	1
Dibromochloromethane	ND		2.0		ppb v/v			11/06/17 23:05	1
Dibromomethane	ND		4.0		ppb v/v			11/06/17 23:05	1
Dichlorodifluoromethane	57		2.0		ppb v/v			11/06/17 23:05	1
Dodecane	ND		10		ppb v/v			11/06/17 23:05	1
Ethyl ether	ND		20		ppb v/v			11/06/17 23:05	1
Ethylbenzene	ND		2.0		ppb v/v			11/06/17 23:05	1
Heptane	ND		5.0		ppb v/v			11/06/17 23:05	1
Hexachlorobutadiene	ND		10		ppb v/v			11/06/17 23:05	1
Hexane	7.6		5.0		ppb v/v			11/06/17 23:05	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/06/17 23:05	1
Methylene Chloride	ND		5.0		ppb v/v			11/06/17 23:05	1
m-Xylene & p-Xylene	2.1		2.0		ppb v/v			11/06/17 23:05	1
Naphthalene	ND		5.0		ppb v/v			11/06/17 23:05	1
Nonane	ND		5.0		ppb v/v			11/06/17 23:05	1
Octane	ND		4.0		ppb v/v			11/06/17 23:05	1
o-Xylene	ND		2.0		ppb v/v			11/06/17 23:05	1
Pentane	ND		10		ppb v/v			11/06/17 23:05	1
Propylbenzene	ND		4.0		ppb v/v			11/06/17 23:05	1
Styrene	ND		2.0		ppb v/v			11/06/17 23:05	1
Tetrachloroethene	17		2.0		ppb v/v			11/06/17 23:05	1
Toluene	ND		2.0		ppb v/v			11/06/17 23:05	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/06/17 23:05	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/06/17 23:05	1
Trichloroethene	2.4		2.0		ppb v/v			11/06/17 23:05	1
Trichlorofluoromethane	25		2.0		ppb v/v			11/06/17 23:05	1
Undecane	ND		10		ppb v/v			11/06/17 23:05	1
Vinyl acetate	ND		10		ppb v/v			11/06/17 23:05	1
Vinyl chloride	33		2.0		ppb v/v			11/06/17 23:05	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	330		11		ug/m3			11/06/17 23:05	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/06/17 23:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/06/17 23:05	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/06/17 23:05	1
1,1-Dichloroethane	280		8.1		ug/m3			11/06/17 23:05	1
1,1-Dichloroethene	33		7.9		ug/m3			11/06/17 23:05	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/06/17 23:05	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 23:05	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/06/17 23:05	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	62		14		ug/m3			11/06/17 23:05	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-06

Lab Sample ID: 140-9768-6

Date Collected: 10/30/17 17:10

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		12		ug/m3			11/06/17 23:05	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/06/17 23:05	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/06/17 23:05	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/06/17 23:05	1
1,3-Butadiene	ND		8.8		ug/m3			11/06/17 23:05	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/06/17 23:05	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/06/17 23:05	1
2-Butanone (MEK)	ND		29		ug/m3			11/06/17 23:05	1
2-Hexanone	ND		20		ug/m3			11/06/17 23:05	1
3-Chloropropene	ND		6.3		ug/m3			11/06/17 23:05	1
4-Methyl-2-pentanone (MIBK)	ND		20		ug/m3			11/06/17 23:05	1
Acetone	ND		120		ug/m3			11/06/17 23:05	1
Acetonitrile	ND		17		ug/m3			11/06/17 23:05	1
Acrolein	ND		23		ug/m3			11/06/17 23:05	1
Acrylonitrile	ND		43		ug/m3			11/06/17 23:05	1
Alpha Methyl Styrene	ND		19		ug/m3			11/06/17 23:05	1
Benzene	ND		6.4		ug/m3			11/06/17 23:05	1
Benzyl chloride	ND		21		ug/m3			11/06/17 23:05	1
Bromodichloromethane	ND		13		ug/m3			11/06/17 23:05	1
Bromoform	ND		21		ug/m3			11/06/17 23:05	1
Bromomethane	ND		7.8		ug/m3			11/06/17 23:05	1
Butane	69		9.5		ug/m3			11/06/17 23:05	1
Carbon disulfide	ND		16		ug/m3			11/06/17 23:05	1
Carbon tetrachloride	ND		13		ug/m3			11/06/17 23:05	1
Chlorobenzene	ND		9.2		ug/m3			11/06/17 23:05	1
Chlorodifluoromethane	49		7.1		ug/m3			11/06/17 23:05	1
Chloroethane	48		5.3		ug/m3			11/06/17 23:05	1
Chloroform	33		9.8		ug/m3			11/06/17 23:05	1
Chloromethane	ND		10		ug/m3			11/06/17 23:05	1
cis-1,2-Dichloroethene	35		7.9		ug/m3			11/06/17 23:05	1
cis-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 23:05	1
Cumene	ND		20		ug/m3			11/06/17 23:05	1
Cyclohexane	23		17		ug/m3			11/06/17 23:05	1
Decane	ND		58		ug/m3			11/06/17 23:05	1
Dibromochloromethane	ND		17		ug/m3			11/06/17 23:05	1
Dibromomethane	ND		28		ug/m3			11/06/17 23:05	1
Dichlorodifluoromethane	280		9.9		ug/m3			11/06/17 23:05	1
Dodecane	ND		70		ug/m3			11/06/17 23:05	1
Ethyl ether	ND		61		ug/m3			11/06/17 23:05	1
Ethylbenzene	ND		8.7		ug/m3			11/06/17 23:05	1
Heptane	ND		20		ug/m3			11/06/17 23:05	1
Hexachlorobutadiene	ND		110		ug/m3			11/06/17 23:05	1
Hexane	27		18		ug/m3			11/06/17 23:05	1
Methyl tert-butyl ether	ND		36		ug/m3			11/06/17 23:05	1
Methylene Chloride	ND		17		ug/m3			11/06/17 23:05	1
m-Xylene & p-Xylene	9.1		8.7		ug/m3			11/06/17 23:05	1
Naphthalene	ND		26		ug/m3			11/06/17 23:05	1
Nonane	ND		26		ug/m3			11/06/17 23:05	1

TestAmerica Knoxville

Client Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-06

Lab Sample ID: 140-9768-6

Date Collected: 10/30/17 17:10

Matrix: Air

Date Received: 11/02/17 09:50

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Octane	ND		19		ug/m3			11/06/17 23:05	1
o-Xylene	ND		8.7		ug/m3			11/06/17 23:05	1
Pentane	ND		30		ug/m3			11/06/17 23:05	1
Propylbenzene	ND		20		ug/m3			11/06/17 23:05	1
Styrene	ND		8.5		ug/m3			11/06/17 23:05	1
Tetrachloroethene	120		14		ug/m3			11/06/17 23:05	1
Toluene	ND		7.5		ug/m3			11/06/17 23:05	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/06/17 23:05	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/06/17 23:05	1
Trichloroethene	13		11		ug/m3			11/06/17 23:05	1
Trichlorofluoromethane	140		11		ug/m3			11/06/17 23:05	1
Undecane	ND		64		ug/m3			11/06/17 23:05	1
Vinyl acetate	ND		35		ug/m3			11/06/17 23:05	1
Vinyl chloride	84		5.1		ug/m3			11/06/17 23:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		60 - 140					11/06/17 23:05	1

Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	RL	MDL	Units	Method
1,1,1-Trichloroethane	0.20	0.030	ppb v/v	TO-15
1,1,1-Trichloroethane	1.1	0.16	ug/m3	TO-15
1,1,2,2-Tetrachloroethane	0.20	0.061	ppb v/v	TO-15
1,1,2,2-Tetrachloroethane	1.4	0.42	ug/m3	TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	0.031	ppb v/v	TO-15
1,1,2-Trichloro-1,2,2-trifluoroethane	1.5	0.24	ug/m3	TO-15
1,1,2-Trichloroethane	0.20	0.054	ppb v/v	TO-15
1,1,2-Trichloroethane	1.1	0.29	ug/m3	TO-15
1,1-Dichloroethane	0.20	0.026	ppb v/v	TO-15
1,1-Dichloroethane	0.81	0.11	ug/m3	TO-15
1,1-Dichloroethene	0.20	0.034	ppb v/v	TO-15
1,1-Dichloroethene	0.79	0.13	ug/m3	TO-15
1,2,4-Trichlorobenzene	1.0	0.098	ppb v/v	TO-15
1,2,4-Trichlorobenzene	7.4	0.73	ug/m3	TO-15
1,2,4-Trimethylbenzene	0.20	0.063	ppb v/v	TO-15
1,2,4-Trimethylbenzene	0.98	0.31	ug/m3	TO-15
1,2-Dibromoethane (EDB)	0.20	0.044	ppb v/v	TO-15
1,2-Dibromoethane (EDB)	1.5	0.34	ug/m3	TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.20	0.032	ppb v/v	TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	1.4	0.22	ug/m3	TO-15
1,2-Dichlorobenzene	0.20	0.070	ppb v/v	TO-15
1,2-Dichlorobenzene	1.2	0.42	ug/m3	TO-15
1,2-Dichloroethane	0.20	0.047	ppb v/v	TO-15
1,2-Dichloroethane	0.81	0.19	ug/m3	TO-15
1,2-Dichloropropane	0.20	0.052	ppb v/v	TO-15
1,2-Dichloropropane	0.92	0.24	ug/m3	TO-15
1,3,5-Trimethylbenzene	0.20	0.065	ppb v/v	TO-15
1,3,5-Trimethylbenzene	0.98	0.32	ug/m3	TO-15
1,3-Butadiene	0.40	0.064	ppb v/v	TO-15
1,3-Butadiene	0.88	0.14	ug/m3	TO-15
1,3-Dichlorobenzene	0.20	0.065	ppb v/v	TO-15
1,3-Dichlorobenzene	1.2	0.39	ug/m3	TO-15
1,4-Dichlorobenzene	0.20	0.064	ppb v/v	TO-15
1,4-Dichlorobenzene	1.2	0.38	ug/m3	TO-15
2-Butanone (MEK)	1.0	0.20	ppb v/v	TO-15
2-Butanone (MEK)	2.9	0.59	ug/m3	TO-15
2-Hexanone	0.50	0.058	ppb v/v	TO-15
2-Hexanone	2.0	0.24	ug/m3	TO-15
3-Chloropropene	0.20	0.048	ppb v/v	TO-15
3-Chloropropene	0.63	0.15	ug/m3	TO-15
4-Methyl-2-pentanone (MIBK)	0.50	0.20	ppb v/v	TO-15
4-Methyl-2-pentanone (MIBK)	2.0	0.80	ug/m3	TO-15
Acetone	5.0	1.4	ppb v/v	TO-15
Acetone	12	3.3	ug/m3	TO-15
Acetonitrile	1.0	0.33	ppb v/v	TO-15
Acetonitrile	1.7	0.55	ug/m3	TO-15
Acrolein	1.0	0.20	ppb v/v	TO-15
Acrolein	2.3	0.46	ug/m3	TO-15
Acrylonitrile	2.0	0.20	ppb v/v	TO-15
Acrylonitrile	4.3	0.43	ug/m3	TO-15
Alpha Methyl Styrene	0.40	0.078	ppb v/v	TO-15
Alpha Methyl Styrene	1.9	0.38	ug/m3	TO-15

TestAmerica Knoxville

Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	RL	MDL	Units	Method
Benzene	0.20	0.056	ppb v/v	TO-15
Benzene	0.64	0.18	ug/m3	TO-15
Benzyl chloride	0.40	0.078	ppb v/v	TO-15
Benzyl chloride	2.1	0.40	ug/m3	TO-15
Bromodichloromethane	0.20	0.044	ppb v/v	TO-15
Bromodichloromethane	1.3	0.29	ug/m3	TO-15
Bromoform	0.20	0.048	ppb v/v	TO-15
Bromoform	2.1	0.50	ug/m3	TO-15
Bromomethane	0.20	0.032	ppb v/v	TO-15
Bromomethane	0.78	0.12	ug/m3	TO-15
Butane	0.40	0.073	ppb v/v	TO-15
Butane	0.95	0.17	ug/m3	TO-15
Carbon disulfide	0.50	0.031	ppb v/v	TO-15
Carbon disulfide	1.6	0.097	ug/m3	TO-15
Carbon tetrachloride	0.20	0.038	ppb v/v	TO-15
Carbon tetrachloride	1.3	0.24	ug/m3	TO-15
Chlorobenzene	0.20	0.049	ppb v/v	TO-15
Chlorobenzene	0.92	0.23	ug/m3	TO-15
Chlorodifluoromethane	0.20	0.037	ppb v/v	TO-15
Chlorodifluoromethane	0.71	0.13	ug/m3	TO-15
Chloroethane	0.20	0.035	ppb v/v	TO-15
Chloroethane	0.53	0.092	ug/m3	TO-15
Chloroform	0.20	0.038	ppb v/v	TO-15
Chloroform	0.98	0.19	ug/m3	TO-15
Chloromethane	0.50	0.16	ppb v/v	TO-15
Chloromethane	1.0	0.33	ug/m3	TO-15
cis-1,2-Dichloroethene	0.20	0.060	ppb v/v	TO-15
cis-1,2-Dichloroethene	0.79	0.24	ug/m3	TO-15
cis-1,3-Dichloropropene	0.20	0.074	ppb v/v	TO-15
cis-1,3-Dichloropropene	0.91	0.34	ug/m3	TO-15
Cumene	0.40	0.060	ppb v/v	TO-15
Cumene	2.0	0.29	ug/m3	TO-15
Cyclohexane	0.50	0.040	ppb v/v	TO-15
Cyclohexane	1.7	0.14	ug/m3	TO-15
Decane	1.0	0.056	ppb v/v	TO-15
Decane	5.8	0.33	ug/m3	TO-15
Dibromochloromethane	0.20	0.042	ppb v/v	TO-15
Dibromochloromethane	1.7	0.36	ug/m3	TO-15
Dibromomethane	0.40	0.040	ppb v/v	TO-15
Dibromomethane	2.8	0.28	ug/m3	TO-15
Dichlorodifluoromethane	0.20	0.068	ppb v/v	TO-15
Dichlorodifluoromethane	0.99	0.34	ug/m3	TO-15
Dodecane	1.0	0.078	ppb v/v	TO-15
Dodecane	7.0	0.54	ug/m3	TO-15
Ethyl ether	2.0	0.053	ppb v/v	TO-15
Ethyl ether	6.1	0.16	ug/m3	TO-15
Ethylbenzene	0.20	0.068	ppb v/v	TO-15
Ethylbenzene	0.87	0.30	ug/m3	TO-15
Heptane	0.50	0.047	ppb v/v	TO-15
Heptane	2.0	0.19	ug/m3	TO-15
Hexachlorobutadiene	1.0	0.078	ppb v/v	TO-15
Hexachlorobutadiene	11	0.83	ug/m3	TO-15

TestAmerica Knoxville

Default Detection Limits

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	RL	MDL	Units	Method
Hexane	0.50	0.032	ppb v/v	TO-15
Hexane	1.8	0.11	ug/m3	TO-15
Methyl tert-butyl ether	1.0	0.17	ppb v/v	TO-15
Methyl tert-butyl ether	3.6	0.61	ug/m3	TO-15
Methylene Chloride	0.50	0.32	ppb v/v	TO-15
Methylene Chloride	1.7	1.1	ug/m3	TO-15
m-Xylene & p-Xylene	0.20	0.12	ppb v/v	TO-15
m-Xylene & p-Xylene	0.87	0.52	ug/m3	TO-15
Naphthalene	0.50	0.090	ppb v/v	TO-15
Naphthalene	2.6	0.47	ug/m3	TO-15
Nonane	0.50	0.043	ppb v/v	TO-15
Nonane	2.6	0.23	ug/m3	TO-15
Octane	0.40	0.036	ppb v/v	TO-15
Octane	1.9	0.17	ug/m3	TO-15
o-Xylene	0.20	0.061	ppb v/v	TO-15
o-Xylene	0.87	0.26	ug/m3	TO-15
Pentane	1.0	0.40	ppb v/v	TO-15
Pentane	3.0	1.2	ug/m3	TO-15
Propylbenzene	0.40	0.056	ppb v/v	TO-15
Propylbenzene	2.0	0.28	ug/m3	TO-15
Styrene	0.20	0.058	ppb v/v	TO-15
Styrene	0.85	0.25	ug/m3	TO-15
Tetrachloroethene	0.20	0.040	ppb v/v	TO-15
Tetrachloroethene	1.4	0.27	ug/m3	TO-15
Toluene	0.20	0.12	ppb v/v	TO-15
Toluene	0.75	0.45	ug/m3	TO-15
trans-1,2-Dichloroethene	0.20	0.050	ppb v/v	TO-15
trans-1,2-Dichloroethene	0.79	0.20	ug/m3	TO-15
trans-1,3-Dichloropropene	0.20	0.048	ppb v/v	TO-15
trans-1,3-Dichloropropene	0.91	0.22	ug/m3	TO-15
Trichloroethene	0.20	0.036	ppb v/v	TO-15
Trichloroethene	1.1	0.19	ug/m3	TO-15
Trichlorofluoromethane	0.20	0.024	ppb v/v	TO-15
Trichlorofluoromethane	1.1	0.13	ug/m3	TO-15
Undecane	1.0	0.062	ppb v/v	TO-15
Undecane	6.4	0.40	ug/m3	TO-15
Vinyl acetate	1.0	0.14	ppb v/v	TO-15
Vinyl acetate	3.5	0.49	ug/m3	TO-15
Vinyl chloride	0.20	0.071	ppb v/v	TO-15
Vinyl chloride	0.51	0.18	ug/m3	TO-15

Surrogate Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Matrix: Air

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
140-9768-1	G-171030-MB-01	101
140-9768-2	G-171030-MB-02	103
140-9768-3	G-171030-MB-03	103
140-9768-4	G-171030-MB-04	103
140-9768-5	G-171030-MB-05	103
140-9768-6	G-171030-MB-06	104
LCS 140-15734/1002	Lab Control Sample	105
MB 140-15734/6	Method Blank	103

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 140-15734/6
Matrix: Air
Analysis Batch: 15734

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.20		ppb v/v			11/06/17 13:18	1
1,1,2,2-Tetrachloroethane	ND		0.20		ppb v/v			11/06/17 13:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20		ppb v/v			11/06/17 13:18	1
1,1,2-Trichloroethane	ND		0.20		ppb v/v			11/06/17 13:18	1
1,1-Dichloroethane	ND		0.20		ppb v/v			11/06/17 13:18	1
1,1-Dichloroethene	ND		0.20		ppb v/v			11/06/17 13:18	1
1,2,4-Trichlorobenzene	ND		1.0		ppb v/v			11/06/17 13:18	1
1,2,4-Trimethylbenzene	ND		0.20		ppb v/v			11/06/17 13:18	1
1,2-Dibromoethane (EDB)	ND		0.20		ppb v/v			11/06/17 13:18	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.20		ppb v/v			11/06/17 13:18	1
1,2-Dichlorobenzene	ND		0.20		ppb v/v			11/06/17 13:18	1
1,2-Dichloroethane	ND		0.20		ppb v/v			11/06/17 13:18	1
1,2-Dichloropropane	ND		0.20		ppb v/v			11/06/17 13:18	1
1,3,5-Trimethylbenzene	ND		0.20		ppb v/v			11/06/17 13:18	1
1,3-Butadiene	ND		0.40		ppb v/v			11/06/17 13:18	1
1,3-Dichlorobenzene	ND		0.20		ppb v/v			11/06/17 13:18	1
1,4-Dichlorobenzene	ND		0.20		ppb v/v			11/06/17 13:18	1
2-Butanone (MEK)	ND		1.0		ppb v/v			11/06/17 13:18	1
2-Hexanone	ND		0.50		ppb v/v			11/06/17 13:18	1
3-Chloropropene	ND		0.20		ppb v/v			11/06/17 13:18	1
4-Methyl-2-pentanone (MIBK)	ND		0.50		ppb v/v			11/06/17 13:18	1
Acetone	ND		5.0		ppb v/v			11/06/17 13:18	1
Acetonitrile	ND		1.0		ppb v/v			11/06/17 13:18	1
Acrolein	ND		1.0		ppb v/v			11/06/17 13:18	1
Acrylonitrile	ND		2.0		ppb v/v			11/06/17 13:18	1
Alpha Methyl Styrene	ND		0.40		ppb v/v			11/06/17 13:18	1
Benzene	ND		0.20		ppb v/v			11/06/17 13:18	1
Benzyl chloride	ND		0.40		ppb v/v			11/06/17 13:18	1
Bromodichloromethane	ND		0.20		ppb v/v			11/06/17 13:18	1
Bromoform	ND		0.20		ppb v/v			11/06/17 13:18	1
Bromomethane	ND		0.20		ppb v/v			11/06/17 13:18	1
Butane	ND		0.40		ppb v/v			11/06/17 13:18	1
Carbon disulfide	ND		0.50		ppb v/v			11/06/17 13:18	1
Carbon tetrachloride	ND		0.20		ppb v/v			11/06/17 13:18	1
Chlorobenzene	ND		0.20		ppb v/v			11/06/17 13:18	1
Chlorodifluoromethane	ND		0.20		ppb v/v			11/06/17 13:18	1
Chloroethane	ND		0.20		ppb v/v			11/06/17 13:18	1
Chloroform	ND		0.20		ppb v/v			11/06/17 13:18	1
Chloromethane	ND		0.50		ppb v/v			11/06/17 13:18	1
cis-1,2-Dichloroethene	ND		0.20		ppb v/v			11/06/17 13:18	1
cis-1,3-Dichloropropene	ND		0.20		ppb v/v			11/06/17 13:18	1
Cumene	ND		0.40		ppb v/v			11/06/17 13:18	1
Cyclohexane	ND		0.50		ppb v/v			11/06/17 13:18	1
Decane	ND		1.0		ppb v/v			11/06/17 13:18	1
Dibromochloromethane	ND		0.20		ppb v/v			11/06/17 13:18	1
Dibromomethane	ND		0.40		ppb v/v			11/06/17 13:18	1
Dichlorodifluoromethane	ND		0.20		ppb v/v			11/06/17 13:18	1
Dodecane	ND		1.0		ppb v/v			11/06/17 13:18	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-15734/6
Matrix: Air
Analysis Batch: 15734

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethyl ether	ND		2.0		ppb v/v			11/06/17 13:18	1
Ethylbenzene	ND		0.20		ppb v/v			11/06/17 13:18	1
Heptane	ND		0.50		ppb v/v			11/06/17 13:18	1
Hexachlorobutadiene	ND		1.0		ppb v/v			11/06/17 13:18	1
Hexane	ND		0.50		ppb v/v			11/06/17 13:18	1
Methyl tert-butyl ether	ND		1.0		ppb v/v			11/06/17 13:18	1
Methylene Chloride	ND		0.50		ppb v/v			11/06/17 13:18	1
m-Xylene & p-Xylene	ND		0.20		ppb v/v			11/06/17 13:18	1
Naphthalene	ND		0.50		ppb v/v			11/06/17 13:18	1
Nonane	ND		0.50		ppb v/v			11/06/17 13:18	1
Octane	ND		0.40		ppb v/v			11/06/17 13:18	1
o-Xylene	ND		0.20		ppb v/v			11/06/17 13:18	1
Pentane	ND		1.0		ppb v/v			11/06/17 13:18	1
Propylbenzene	ND		0.40		ppb v/v			11/06/17 13:18	1
Styrene	ND		0.20		ppb v/v			11/06/17 13:18	1
Tetrachloroethene	ND		0.20		ppb v/v			11/06/17 13:18	1
Toluene	ND		0.20		ppb v/v			11/06/17 13:18	1
trans-1,2-Dichloroethene	ND		0.20		ppb v/v			11/06/17 13:18	1
trans-1,3-Dichloropropene	ND		0.20		ppb v/v			11/06/17 13:18	1
Trichloroethene	ND		0.20		ppb v/v			11/06/17 13:18	1
Trichlorofluoromethane	ND		0.20		ppb v/v			11/06/17 13:18	1
Undecane	ND		1.0		ppb v/v			11/06/17 13:18	1
Vinyl acetate	ND		1.0		ppb v/v			11/06/17 13:18	1
Vinyl chloride	ND		0.20		ppb v/v			11/06/17 13:18	1

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.1		ug/m3			11/06/17 13:18	1
1,1,2,2-Tetrachloroethane	ND		1.4		ug/m3			11/06/17 13:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5		ug/m3			11/06/17 13:18	1
1,1,2-Trichloroethane	ND		1.1		ug/m3			11/06/17 13:18	1
1,1-Dichloroethane	ND		0.81		ug/m3			11/06/17 13:18	1
1,1-Dichloroethene	ND		0.79		ug/m3			11/06/17 13:18	1
1,2,4-Trichlorobenzene	ND		7.4		ug/m3			11/06/17 13:18	1
1,2,4-Trimethylbenzene	ND		0.98		ug/m3			11/06/17 13:18	1
1,2-Dibromoethane (EDB)	ND		1.5		ug/m3			11/06/17 13:18	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		1.4		ug/m3			11/06/17 13:18	1
1,2-Dichlorobenzene	ND		1.2		ug/m3			11/06/17 13:18	1
1,2-Dichloroethane	ND		0.81		ug/m3			11/06/17 13:18	1
1,2-Dichloropropane	ND		0.92		ug/m3			11/06/17 13:18	1
1,3,5-Trimethylbenzene	ND		0.98		ug/m3			11/06/17 13:18	1
1,3-Butadiene	ND		0.88		ug/m3			11/06/17 13:18	1
1,3-Dichlorobenzene	ND		1.2		ug/m3			11/06/17 13:18	1
1,4-Dichlorobenzene	ND		1.2		ug/m3			11/06/17 13:18	1
2-Butanone (MEK)	ND		2.9		ug/m3			11/06/17 13:18	1
2-Hexanone	ND		2.0		ug/m3			11/06/17 13:18	1
3-Chloropropene	ND		0.63		ug/m3			11/06/17 13:18	1
4-Methyl-2-pentanone (MIBK)	ND		2.0		ug/m3			11/06/17 13:18	1
Acetone	ND		12		ug/m3			11/06/17 13:18	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-15734/6
Matrix: Air
Analysis Batch: 15734

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	ND		1.7		ug/m3			11/06/17 13:18	1
Acrolein	ND		2.3		ug/m3			11/06/17 13:18	1
Acrylonitrile	ND		4.3		ug/m3			11/06/17 13:18	1
Alpha Methyl Styrene	ND		1.9		ug/m3			11/06/17 13:18	1
Benzene	ND		0.64		ug/m3			11/06/17 13:18	1
Benzyl chloride	ND		2.1		ug/m3			11/06/17 13:18	1
Bromodichloromethane	ND		1.3		ug/m3			11/06/17 13:18	1
Bromoform	ND		2.1		ug/m3			11/06/17 13:18	1
Bromomethane	ND		0.78		ug/m3			11/06/17 13:18	1
Butane	ND		0.95		ug/m3			11/06/17 13:18	1
Carbon disulfide	ND		1.6		ug/m3			11/06/17 13:18	1
Carbon tetrachloride	ND		1.3		ug/m3			11/06/17 13:18	1
Chlorobenzene	ND		0.92		ug/m3			11/06/17 13:18	1
Chlorodifluoromethane	ND		0.71		ug/m3			11/06/17 13:18	1
Chloroethane	ND		0.53		ug/m3			11/06/17 13:18	1
Chloroform	ND		0.98		ug/m3			11/06/17 13:18	1
Chloromethane	ND		1.0		ug/m3			11/06/17 13:18	1
cis-1,2-Dichloroethene	ND		0.79		ug/m3			11/06/17 13:18	1
cis-1,3-Dichloropropene	ND		0.91		ug/m3			11/06/17 13:18	1
Cumene	ND		2.0		ug/m3			11/06/17 13:18	1
Cyclohexane	ND		1.7		ug/m3			11/06/17 13:18	1
Decane	ND		5.8		ug/m3			11/06/17 13:18	1
Dibromochloromethane	ND		1.7		ug/m3			11/06/17 13:18	1
Dibromomethane	ND		2.8		ug/m3			11/06/17 13:18	1
Dichlorodifluoromethane	ND		0.99		ug/m3			11/06/17 13:18	1
Dodecane	ND		7.0		ug/m3			11/06/17 13:18	1
Ethyl ether	ND		6.1		ug/m3			11/06/17 13:18	1
Ethylbenzene	ND		0.87		ug/m3			11/06/17 13:18	1
Heptane	ND		2.0		ug/m3			11/06/17 13:18	1
Hexachlorobutadiene	ND		11		ug/m3			11/06/17 13:18	1
Hexane	ND		1.8		ug/m3			11/06/17 13:18	1
Methyl tert-butyl ether	ND		3.6		ug/m3			11/06/17 13:18	1
Methylene Chloride	ND		1.7		ug/m3			11/06/17 13:18	1
m-Xylene & p-Xylene	ND		0.87		ug/m3			11/06/17 13:18	1
Naphthalene	ND		2.6		ug/m3			11/06/17 13:18	1
Nonane	ND		2.6		ug/m3			11/06/17 13:18	1
Octane	ND		1.9		ug/m3			11/06/17 13:18	1
o-Xylene	ND		0.87		ug/m3			11/06/17 13:18	1
Pentane	ND		3.0		ug/m3			11/06/17 13:18	1
Propylbenzene	ND		2.0		ug/m3			11/06/17 13:18	1
Styrene	ND		0.85		ug/m3			11/06/17 13:18	1
Tetrachloroethene	ND		1.4		ug/m3			11/06/17 13:18	1
Toluene	ND		0.75		ug/m3			11/06/17 13:18	1
trans-1,2-Dichloroethene	ND		0.79		ug/m3			11/06/17 13:18	1
trans-1,3-Dichloropropene	ND		0.91		ug/m3			11/06/17 13:18	1
Trichloroethene	ND		1.1		ug/m3			11/06/17 13:18	1
Trichlorofluoromethane	ND		1.1		ug/m3			11/06/17 13:18	1
Undecane	ND		6.4		ug/m3			11/06/17 13:18	1

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-15734/6

Matrix: Air

Analysis Batch: 15734

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	ND		3.5		ug/m3			11/06/17 13:18	1
Vinyl chloride	ND		0.51		ug/m3			11/06/17 13:18	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		60 - 140					11/06/17 13:18	1

Lab Sample ID: LCS 140-15734/1002

Matrix: Air

Analysis Batch: 15734

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	2.00	2.30		ppb v/v		115	70 - 130
1,1,2,2-Tetrachloroethane	2.00	2.28		ppb v/v		114	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	2.00	2.24		ppb v/v		112	70 - 130
1,1,2-Trichloroethane	2.00	2.21		ppb v/v		111	70 - 130
1,1-Dichloroethane	2.00	2.18		ppb v/v		109	70 - 130
1,1-Dichloroethene	2.00	2.13		ppb v/v		106	70 - 130
1,2,4-Trichlorobenzene	2.00	2.39		ppb v/v		119	60 - 140
1,2,4-Trimethylbenzene	2.00	2.47		ppb v/v		124	70 - 130
1,2-Dibromoethane (EDB)	2.00	2.28		ppb v/v		114	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.00	2.31		ppb v/v		115	60 - 140
1,2-Dichlorobenzene	2.00	2.35		ppb v/v		118	70 - 130
1,2-Dichloroethane	2.00	2.36		ppb v/v		118	70 - 130
1,2-Dichloropropane	2.00	2.16		ppb v/v		108	70 - 130
1,3,5-Trimethylbenzene	2.00	2.43		ppb v/v		121	70 - 130
1,3-Butadiene	2.00	2.23		ppb v/v		111	60 - 140
1,3-Dichlorobenzene	2.00	2.36		ppb v/v		118	70 - 130
1,4-Dichlorobenzene	2.00	2.34		ppb v/v		117	70 - 130
2-Butanone (MEK)	2.00	2.18		ppb v/v		109	60 - 140
2-Hexanone	2.00	2.34		ppb v/v		117	60 - 140
3-Chloropropene	2.00	2.36		ppb v/v		118	60 - 140
4-Methyl-2-pentanone (MIBK)	2.00	2.29		ppb v/v		114	60 - 140
Acetone	6.00	6.41		ppb v/v		107	60 - 140
Acetonitrile	2.00	2.53		ppb v/v		126	60 - 140
Acrolein	2.00	2.32		ppb v/v		116	60 - 140
Acrylonitrile	2.00	2.28		ppb v/v		114	60 - 140
Alpha Methyl Styrene	2.00	2.46		ppb v/v		123	60 - 140
Benzene	2.00	2.21		ppb v/v		110	70 - 130
Benzyl chloride	2.00	2.47		ppb v/v		123	70 - 130
Bromodichloromethane	2.00	2.42		ppb v/v		121	70 - 130
Bromoform	2.00	2.66		ppb v/v		133	60 - 140
Bromomethane	2.00	2.31		ppb v/v		115	70 - 130
Butane	2.00	2.31		ppb v/v		115	60 - 140
Carbon disulfide	2.00	2.16		ppb v/v		108	70 - 130
Carbon tetrachloride	2.00	2.51		ppb v/v		125	70 - 130
Chlorobenzene	2.00	2.23		ppb v/v		111	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-15734/1002

Matrix: Air

Analysis Batch: 15734

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorodifluoromethane	2.00	2.38		ppb v/v		119	60 - 140
Chloroethane	2.00	2.28		ppb v/v		114	70 - 130
Chloroform	2.00	2.21		ppb v/v		111	70 - 130
Chloromethane	2.00	2.11		ppb v/v		105	60 - 140
cis-1,2-Dichloroethene	2.00	2.16		ppb v/v		108	70 - 130
cis-1,3-Dichloropropene	2.00	2.46		ppb v/v		123	70 - 130
Cumene	2.00	2.33		ppb v/v		117	70 - 130
Cyclohexane	2.00	2.30		ppb v/v		115	70 - 130
Decane	2.00	2.41		ppb v/v		120	60 - 140
Dibromochloromethane	2.00	2.55		ppb v/v		128	70 - 130
Dibromomethane	2.00	2.24		ppb v/v		112	70 - 130
Dichlorodifluoromethane	2.00	2.46		ppb v/v		123	60 - 140
Dodecane	2.00	2.42		ppb v/v		121	60 - 140
Ethyl ether	2.00	2.25		ppb v/v		112	60 - 140
Ethylbenzene	2.00	2.35		ppb v/v		117	70 - 130
Heptane	2.00	2.23		ppb v/v		111	70 - 130
Hexachlorobutadiene	2.00	2.36		ppb v/v		118	60 - 140
Hexane	2.00	2.17		ppb v/v		108	70 - 130
Methyl tert-butyl ether	2.00	2.29		ppb v/v		115	60 - 140
Methylene Chloride	2.00	1.96		ppb v/v		98	70 - 130
m-Xylene & p-Xylene	4.00	4.88		ppb v/v		122	70 - 130
Naphthalene	2.00	2.35		ppb v/v		118	60 - 140
Nonane	2.00	2.32		ppb v/v		116	60 - 140
Octane	2.00	2.30		ppb v/v		115	70 - 130
o-Xylene	2.00	2.34		ppb v/v		117	70 - 130
Pentane	2.00	2.21		ppb v/v		110	70 - 130
Propylbenzene	2.00	2.45		ppb v/v		122	70 - 130
Styrene	2.00	2.49		ppb v/v		124	70 - 130
Tetrachloroethene	2.00	2.26		ppb v/v		113	70 - 130
Toluene	2.00	2.24		ppb v/v		112	70 - 130
trans-1,2-Dichloroethene	2.00	2.10		ppb v/v		105	70 - 130
trans-1,3-Dichloropropene	2.00	2.48		ppb v/v		124	70 - 130
Trichloroethene	2.00	2.25		ppb v/v		112	70 - 130
Trichlorofluoromethane	2.00	2.41		ppb v/v		120	60 - 140
Undecane	2.00	2.43		ppb v/v		121	60 - 140
Vinyl acetate	2.00	2.41		ppb v/v		120	60 - 140
Vinyl chloride	2.00	2.21		ppb v/v		111	70 - 130
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	11	12.6		ug/m3		115	70 - 130
1,1,2,2-Tetrachloroethane	14	15.6		ug/m3		114	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	15	17.2		ug/m3		112	70 - 130
1,1,2-Trichloroethane	11	12.1		ug/m3		111	70 - 130
1,1-Dichloroethane	8.1	8.84		ug/m3		109	70 - 130
1,1-Dichloroethene	7.9	8.43		ug/m3		106	70 - 130
1,2,4-Trichlorobenzene	15	17.7		ug/m3		119	60 - 140
1,2,4-Trimethylbenzene	9.8	12.2		ug/m3		124	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-15734/1002

Matrix: Air

Analysis Batch: 15734

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	15	17.5		ug/m3		114	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	14	16.1		ug/m3		115	60 - 140
1,2-Dichlorobenzene	12	14.2		ug/m3		118	70 - 130
1,2-Dichloroethane	8.1	9.56		ug/m3		118	70 - 130
1,2-Dichloropropane	9.2	9.98		ug/m3		108	70 - 130
1,3,5-Trimethylbenzene	9.8	11.9		ug/m3		121	70 - 130
1,3-Butadiene	4.4	4.92		ug/m3		111	60 - 140
1,3-Dichlorobenzene	12	14.2		ug/m3		118	70 - 130
1,4-Dichlorobenzene	12	14.1		ug/m3		117	70 - 130
2-Butanone (MEK)	5.9	6.44		ug/m3		109	60 - 140
2-Hexanone	8.2	9.61		ug/m3		117	60 - 140
3-Chloropropene	6.3	7.39		ug/m3		118	60 - 140
4-Methyl-2-pentanone (MIBK)	8.2	9.37		ug/m3		114	60 - 140
Acetone	14	15.2		ug/m3		107	60 - 140
Acetonitrile	3.4	4.25		ug/m3		126	60 - 140
Acrolein	4.6	5.31		ug/m3		116	60 - 140
Acrylonitrile	4.3	4.94		ug/m3		114	60 - 140
Alpha Methyl Styrene	9.7	11.9		ug/m3		123	60 - 140
Benzene	6.4	7.05		ug/m3		110	70 - 130
Benzyl chloride	10	12.8		ug/m3		123	70 - 130
Bromodichloromethane	13	16.2		ug/m3		121	70 - 130
Bromoform	21	27.5		ug/m3		133	60 - 140
Bromomethane	7.8	8.96		ug/m3		115	70 - 130
Butane	4.8	5.48		ug/m3		115	60 - 140
Carbon disulfide	6.2	6.71		ug/m3		108	70 - 130
Carbon tetrachloride	13	15.8		ug/m3		125	70 - 130
Chlorobenzene	9.2	10.3		ug/m3		111	70 - 130
Chlorodifluoromethane	7.1	8.42		ug/m3		119	60 - 140
Chloroethane	5.3	6.03		ug/m3		114	70 - 130
Chloroform	9.8	10.8		ug/m3		111	70 - 130
Chloromethane	4.1	4.36		ug/m3		105	60 - 140
cis-1,2-Dichloroethene	7.9	8.56		ug/m3		108	70 - 130
cis-1,3-Dichloropropene	9.1	11.1		ug/m3		123	70 - 130
Cumene	9.8	11.5		ug/m3		117	70 - 130
Cyclohexane	6.9	7.91		ug/m3		115	70 - 130
Decane	12	14.0		ug/m3		120	60 - 140
Dibromochloromethane	17	21.7		ug/m3		128	70 - 130
Dibromomethane	14	15.9		ug/m3		112	70 - 130
Dichlorodifluoromethane	9.9	12.2		ug/m3		123	60 - 140
Dodecane	14	16.8		ug/m3		121	60 - 140
Ethyl ether	6.1	6.82		ug/m3		112	60 - 140
Ethylbenzene	8.7	10.2		ug/m3		117	70 - 130
Heptane	8.2	9.14		ug/m3		111	70 - 130
Hexachlorobutadiene	21	25.1		ug/m3		118	60 - 140
Hexane	7.1	7.64		ug/m3		108	70 - 130
Methyl tert-butyl ether	7.2	8.27		ug/m3		115	60 - 140
Methylene Chloride	7.0	6.81		ug/m3		98	70 - 130

TestAmerica Knoxville

QC Sample Results

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-15734/1002

Matrix: Air

Analysis Batch: 15734

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Xylene & p-Xylene	17	21.2		ug/m3		122	70 - 130
Naphthalene	10	12.3		ug/m3		118	60 - 140
Nonane	10	12.2		ug/m3		116	60 - 140
Octane	9.3	10.7		ug/m3		115	70 - 130
o-Xylene	8.7	10.2		ug/m3		117	70 - 130
Pentane	5.9	6.51		ug/m3		110	70 - 130
Propylbenzene	9.8	12.0		ug/m3		122	70 - 130
Styrene	8.5	10.6		ug/m3		124	70 - 130
Tetrachloroethene	14	15.4		ug/m3		113	70 - 130
Toluene	7.5	8.43		ug/m3		112	70 - 130
trans-1,2-Dichloroethene	7.9	8.33		ug/m3		105	70 - 130
trans-1,3-Dichloropropene	9.1	11.3		ug/m3		124	70 - 130
Trichloroethene	11	12.1		ug/m3		112	70 - 130
Trichlorofluoromethane	11	13.5		ug/m3		120	60 - 140
Undecane	13	15.5		ug/m3		121	60 - 140
Vinyl acetate	7.0	8.49		ug/m3		120	60 - 140
Vinyl chloride	5.1	5.66		ug/m3		111	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	105		60 - 140

QC Association Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Air - GC/MS VOA

Analysis Batch: 15734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-9768-1	G-171030-MB-01	Total/NA	Air	TO-15	
140-9768-2	G-171030-MB-02	Total/NA	Air	TO-15	
140-9768-3	G-171030-MB-03	Total/NA	Air	TO-15	
140-9768-4	G-171030-MB-04	Total/NA	Air	TO-15	
140-9768-5	G-171030-MB-05	Total/NA	Air	TO-15	
140-9768-6	G-171030-MB-06	Total/NA	Air	TO-15	
MB 140-15734/6	Method Blank	Total/NA	Air	TO-15	
LCS 140-15734/1002	Lab Control Sample	Total/NA	Air	TO-15	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: G-171030-MB-01

Date Collected: 10/30/17 16:21

Date Received: 11/02/17 09:50

Lab Sample ID: 140-9768-1

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	20 mL	500 mL	15734	11/06/17 19:11	HMT	TAL KNX
Instrument ID: MR										

Client Sample ID: G-171030-MB-02

Date Collected: 10/30/17 16:29

Date Received: 11/02/17 09:50

Lab Sample ID: 140-9768-2

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	20 mL	500 mL	15734	11/06/17 19:57	HMT	TAL KNX
Instrument ID: MR										

Client Sample ID: G-171030-MB-03

Date Collected: 10/30/17 16:37

Date Received: 11/02/17 09:50

Lab Sample ID: 140-9768-3

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	20 mL	500 mL	15734	11/06/17 20:44	HMT	TAL KNX
Instrument ID: MR										

Client Sample ID: G-171030-MB-04

Date Collected: 10/30/17 16:44

Date Received: 11/02/17 09:50

Lab Sample ID: 140-9768-4

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	20 mL	500 mL	15734	11/06/17 21:31	HMT	TAL KNX
Instrument ID: MR										

Client Sample ID: G-171030-MB-05

Date Collected: 10/30/17 16:53

Date Received: 11/02/17 09:50

Lab Sample ID: 140-9768-5

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	20 mL	500 mL	15734	11/06/17 22:18	HMT	TAL KNX
Instrument ID: MR										

Client Sample ID: G-171030-MB-06

Date Collected: 10/30/17 17:10

Date Received: 11/02/17 09:50

Lab Sample ID: 140-9768-6

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	20 mL	500 mL	15734	11/06/17 23:05	HMT	TAL KNX
Instrument ID: MR										

TestAmerica Knoxville

Lab Chronicle

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Client Sample ID: Method Blank

Lab Sample ID: MB 140-15734/6

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	200 mL	500 mL	15734	11/06/17 13:18	HMT	TAL KNX
Instrument ID: MR										

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-15734/1002

Date Collected: N/A

Matrix: Air

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	500 mL	500 mL	15734	11/06/17 09:58	HMT	TAL KNX
Instrument ID: MR										

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Laboratory: TestAmerica Knoxville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	998044300	08-31-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
TO-15		Air	1,1,1-Trichloroethane
TO-15		Air	1,1,2,2-Tetrachloroethane
TO-15		Air	1,1,2-Trichloro-1,2,2-trifluoroethane
TO-15		Air	1,1,2-Trichloroethane
TO-15		Air	1,1-Dichloroethane
TO-15		Air	1,1-Dichloroethene
TO-15		Air	1,2,4-Trichlorobenzene
TO-15		Air	1,2,4-Trimethylbenzene
TO-15		Air	1,2-Dibromoethane (EDB)
TO-15		Air	1,2-Dichloro-1,1,2,2-tetrafluoroethane
TO-15		Air	1,2-Dichlorobenzene
TO-15		Air	1,2-Dichloroethane
TO-15		Air	1,2-Dichloropropane
TO-15		Air	1,3,5-Trimethylbenzene
TO-15		Air	1,3-Butadiene
TO-15		Air	1,3-Dichlorobenzene
TO-15		Air	1,4-Dichlorobenzene
TO-15		Air	2-Butanone (MEK)
TO-15		Air	2-Hexanone
TO-15		Air	3-Chloropropene
TO-15		Air	4-Methyl-2-pentanone (MIBK)
TO-15		Air	Acetone
TO-15		Air	Acetonitrile
TO-15		Air	Acrolein
TO-15		Air	Acrylonitrile
TO-15		Air	Alpha Methyl Styrene
TO-15		Air	Benzene
TO-15		Air	Benzyl chloride
TO-15		Air	Bromodichloromethane
TO-15		Air	Bromoform
TO-15		Air	Bromomethane
TO-15		Air	Butane
TO-15		Air	Carbon disulfide
TO-15		Air	Carbon tetrachloride
TO-15		Air	Chlorobenzene
TO-15		Air	Chlorodifluoromethane
TO-15		Air	Chloroethane
TO-15		Air	Chloroform
TO-15		Air	Chloromethane
TO-15		Air	cis-1,2-Dichloroethene
TO-15		Air	cis-1,3-Dichloropropene
TO-15		Air	Cumene
TO-15		Air	Cyclohexane
TO-15		Air	Decane
TO-15		Air	Dibromochloromethane
TO-15		Air	Dibromomethane

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Laboratory: TestAmerica Knoxville (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	998044300	08-31-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
TO-15		Air	Dichlorodifluoromethane
TO-15		Air	Dodecane
TO-15		Air	Ethyl ether
TO-15		Air	Ethylbenzene
TO-15		Air	Heptane
TO-15		Air	Hexachlorobutadiene
TO-15		Air	Hexane
TO-15		Air	Methyl tert-butyl ether
TO-15		Air	Methylene Chloride
TO-15		Air	m-Xylene & p-Xylene
TO-15		Air	Naphthalene
TO-15		Air	Nonane
TO-15		Air	Octane
TO-15		Air	o-Xylene
TO-15		Air	Pentane
TO-15		Air	Propylbenzene
TO-15		Air	Styrene
TO-15		Air	Tetrachloroethene
TO-15		Air	Toluene
TO-15		Air	trans-1,2-Dichloroethene
TO-15		Air	trans-1,3-Dichloropropene
TO-15		Air	Trichloroethene
TO-15		Air	Trichlorofluoromethane
TO-15		Air	Undecane
TO-15		Air	Vinyl acetate
TO-15		Air	Vinyl chloride

Method Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Method	Method Description	Protocol	Laboratory
TO-15	Volatile Organic Compounds in Ambient Air	EPA	TAL KNX

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000



Sample Summary

Client: GHD Services Inc.
Project/Site: New Richmond Landfill

TestAmerica Job ID: 140-9768-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-9768-1	G-171030-MB-01	Air	10/30/17 16:21	11/02/17 09:50
140-9768-2	G-171030-MB-02	Air	10/30/17 16:29	11/02/17 09:50
140-9768-3	G-171030-MB-03	Air	10/30/17 16:37	11/02/17 09:50
140-9768-4	G-171030-MB-04	Air	10/30/17 16:44	11/02/17 09:50
140-9768-5	G-171030-MB-05	Air	10/30/17 16:53	11/02/17 09:50
140-9768-6	G-171030-MB-06	Air	10/30/17 17:10	11/02/17 09:50

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- 16



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COC NO.: **SP-02522**

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 048038-70-05				Laboratory Name: Test America				Lab Location: Knoxville, TN				SSOW ID:																																																																																																																										
Project Name: New Richmond Landfill				Lab Contact:				Lab Quote No:				Cooler No:																																																																																																																										
Project Location: New Richmond WI				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)				Carrier: FedEx																																																																																																																										
Chemistry Contact: Grant Anderson				<table border="1"> <tr> <th>SAMPLE TYPE</th> <th>Matrix Code (see back of COC)</th> <th>Grab (G) or Comp (C)</th> <th>Unpreserved</th> <th>Hydrochloric Acid (HCl)</th> <th>Nitric Acid (HNO₃)</th> <th>Sulfuric Acid (H₂SO₄)</th> <th>Sodium Hydroxide (NaOH)</th> <th>Methane/Water (Soil VOC)</th> <th>EnCores 3x5-g, 1x25-g</th> <th>Other: Summa</th> <th>Total Containers/Sample</th> <th rowspan="2">MS/MSD Request</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				SAMPLE TYPE	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methane/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other: Summa	Total Containers/Sample	MS/MSD Request													Airbill No:																																																																																																					
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Sampler(s): M. Barnes												Date Shipped: 10/31/17																																																																																																																										
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6	-06		17:10	GE	G									1																																																																																																																								
<p>Received @ ambient, 1 box Fedex 2 Day, trk # 7706 2829 7362 Counted & seal intact, KW 11/2/17</p> <p>6 cans, 1 gauge</p>												 140-9768 Chain of Custody																																																																																																																										
TAT Required in business days (use separate COCs for different TATs):						Total Number of Containers: 6						Notes/ Special Requirements:																																																																																																																										
<input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days <input type="checkbox"/> 1 Week <input checked="" type="checkbox"/> 2 Week <input type="checkbox"/> Other:						All Samples in Cooler must be on COC																																																																																																																																
RELINQUISHED BY		COMPANY		DATE		TIME		RECEIVED BY		COMPANY		DATE		TIME																																																																																																																								
1. <i>Matthew Barnes</i>		GHD		10/31/17		16:00		1. <i>Ke W</i>		TA		11/2/17		0950																																																																																																																								
2.								2.																																																																																																																														
3.								3.																																																																																																																														

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY



Page 47 of 49

11/14/2017

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	/			<input type="checkbox"/> Containers, Broken	
2. Were ambient air containers received intact?			/	<input checked="" type="checkbox"/> Checked in lab	
3. The coolers/containers custody seal if present, is it intact?	/			<input type="checkbox"/> Yes <input type="checkbox"/> NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : _____ Correction factor: _____			/	<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	/			<input type="checkbox"/> Containers, Broken	
6. Were samples received in appropriate containers?	/			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	/			<input type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input type="checkbox"/> COC Not Received	
8. Were all of the samples listed on the COC received?	/			<input type="checkbox"/> Sample Received, Not on COC <input type="checkbox"/> Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	/			<input type="checkbox"/> COC; No Date/Time; Client Contacted	Labeling Verified by: _____ Date: _____
10. Was the sampler identified on the COC?	/			<input type="checkbox"/> Sampler Not Listed on COC	pH test strip lot number: _____
11. Is the client and project name/# identified?	/			<input type="checkbox"/> COC Incorrect/Incomplete	
12. Are tests/parameters listed for each sample?	/			<input type="checkbox"/> COC No tests on COC	
13. Is the matrix of the samples noted?	/			<input type="checkbox"/> COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	/			<input type="checkbox"/> COC Incorrect/Incomplete	Box 16A: pH Preservation Box 18A: Residual Chlorine
15. Were samples received within holding time?	/			<input type="checkbox"/> Holding Time - Receipt	Preservative: _____
16. Were samples received with correct chemical preservative (excluding Encore)?			/	<input type="checkbox"/> pH Adjusted, pH Included (See box 16A) <input type="checkbox"/> Incorrect Preservative	Lot Number: _____
17. Were VOA samples received without headspace?			/	<input type="checkbox"/> Headspace (VOA only)	Exp Date: _____
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: _____			/	<input type="checkbox"/> Residual Chlorine	Analyst: _____
19. For 1613B water samples is pH<9?			/	<input type="checkbox"/> If no, lab will adjust	Date: _____
20. For rad samples was sample activity info. Provided?			/	<input type="checkbox"/> Project missing info	Time: _____
Project #: <u>19001850</u> PM Instructions: _____					

Sample Receiving Associate: Ke W Date: 11/2/17

QA026R30.doc, 080916



Appendix C

Historical Groundwater Monitoring Analytical Results

**Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane	1,1,1-Trichloroethane	1,1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromo-3-chloropropane	1,2-Dichloroethane	1,2-Dichloropropane	Benzene	Bromodichloromethane	Carbon tetrachloride	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	4-Methyl-2-pentanone (Methyl isobutyl ketone)	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	trans-1,3-Dichloropropene	Trichloroethene	Vinyl chloride
				200 40 ug/L	5 0.5 ug/L	850 85 ug/L	7 0.7 ug/L	0.2 0.02 ug/L	5 0.5 ug/L	5 0.5 ug/L	5 0.5 ug/L	0.6 0.06 ug/L	5 0.5 ug/L	400 80 ug/L	6 0.6 ug/L	30 3 ug/L	70 7 ug/L	500 50 ug/L	5 0.5 ug/L	5 0.5 ug/L	50 10 ug/L	0.4 0.04 ug/L	5 0.5 ug/L	0.2 0.02 ug/L
MW.2	4/26/99			460	< 3	82	33	12	< 1.8	< 1.7	< 1.4	< 1.5	< 1.7	< 2.7	13	< 3	< 1.4		2.6	60		< 2.1	2.1	< 1
MW.2	10/13/99			300	< 0.94	74	< 0.94	< 2.5	< 1.1	0.81	< 0.88	< 0.82	< 1.8	< 1.3	10	< 0.88	< 0.92		1.1	35		< 0.52	1.9	< 0.34
MW.2	9/20/00			290	< 0.94	80	20	< 2.5	< 1.1	1.2	< 0.88	< 0.82	< 1.8	< 1.3	11	< 0.88	< 0.92		< 0.76	34		< 0.52	1.7	< 0.34
MW.2	12/20/00			396	< 0.9	107	32.2	< 2.5	< 1.5	< 1.5	< 1.5	< 0.6	38.7	< 1.5	13.5	< 1.7	< 1.5		< 5	53.5		< 0.9	2.82	< 1.2
MW.2	3/21/01			320	< 0.94	77	22	< 2.5	< 1.1	1.3	< 0.88	< 0.82	< 1.8	< 1.3	8.1	< 0.88	< 0.92		< 0.76	30		< 0.52	1.6	< 0.34
MW1	4/26/99			170	< 6.1	1100	77	< 4.1	< 3.7	< 3.5	< 2.7	< 3	< 3.4	420	< 3.5	< 6.1	200		18	5.5		< 4.3	< 3.7	12
MW1	10/13/99			35	< 4.7	860	< 4.7	< 12	6.9	< 3.4	< 4.4	< 4.1	< 9	450	< 4.1	< 4.4	130		12	< 4.1		< 2.6	< 4.9	8.8
MW1	9/20/00			52	< 2.3	690	49	< 6.2	6.8	3.4	2.2	< 2	< 4.5	510	< 2	< 2.2	110		7.9	2.1		< 1.3	3.5	7.5
MW1	12/20/00			119	< 9	606	56.7	< 25	< 15	< 15	< 15	< 6	< 15	565	< 7	< 17	128		< 50	< 15		< 9	< 10	< 12
MW1	3/21/01			62	< 2.3	600	44	< 6.2	7.1	3.6	2.2	< 2	< 4.5	410	< 2	3	130		4.9	2.8		< 1.3	5.5	11
MW1	12/4/03			79	< 3.4	310	17	< 5.2	< 5	< 4.8	< 5.6	< 4.8	< 4.4	530	< 5.3	< 4.5	30	53	6.2	< 4.5	< 16	< 5.8	< 5.4	< 4.4
MW1	12/4/03		D	85	< 3.4	320	18	< 5.2	< 5	< 4.8	< 5.6	< 4.8	< 4.4	550	< 5.3	< 4.5	31	< 11	< 5.9	< 4.5	< 16	48	< 5.4	< 4.4
MW1	9/24/04			24	< 3.5	300	< 6	< 6.2	< 3.3	< 3.1	3.6	< 4.7	< 3.8	520	< 3.1	21	10	92	5.9	< 3.4	21	< 3.7	< 2.9	< 4.1
MW1	9/24/04		D	25	< 3.5	330	6.1	< 6.2	< 3.3	< 3.1	< 2.9	< 4.7	< 3.8	560	< 3.1	< 3	10	97	5	< 3.4	< 13	< 3.7	< 2.9	< 4.1
MW1	8/10/05			27	< 4.9	140	5.2	< 7.6	< 4.8	< 3.7	< 3.6	< 3.5	< 3.7	510	< 2.6	< 4.4	4.9	270	10	< 4.4	37	< 6	< 3.2	< 5
MW1	9/28/05			21	< 4.9	130	< 4.8	< 7.6	< 4.8	< 3.7	< 3.6	< 3.5	< 3.7	610	< 2.6	< 4.4	< 4.5	260	< 6.4	< 4.4	36	< 6	< 3.2	< 5
MW1	4/12/07			76	< 5.1	470	< 5.2	< 14	< 4.7	< 6	< 2.7	< 6.4	< 5.4	< 37	< 4.2	< 12	< 6.5	62	< 10	< 6.6	< 21	< 4.9	< 9.6	< 4.5
MW1	2/19/09			2.8	J < 4	140	< 4	< 8	< 4	1.2	J < 4	< 4	< 4	63	< 4	< 4	< 4	< 40	1.8	J < 4	7.6	J < 4	< 4	< 4
MW1	5/4/09			0.86	< 3.3	120	< 3.3	< 6.7	< 3.3	1.2	< 3.3	< 3.3	< 3.3	56	< 3.3	< 3.3	< 3.3	< 33	< 3.3	< 3.3	8.5	< 3.3	< 3.3	< 3.3
MW1	8/10/09			1.2	< 1	33	< 1	< 2	< 1	0.46	J < 1	< 1	< 1	4.2	< 1	< 1	< 1	< 10	< 1	< 1	5.2	< 1	0.4	J < 1
MW1	11/5/14			6	< 1.4	36	1	J < 2.9	< 1.4	0.36	J < 1.4	< 1.4	< 1.4	< 1.4	1.9	< 1.4	< 1.4	< 14	< 1.4	0.54	J 1.8	J < 1.4	0.64	J < 1.4
MW1	5/13/15			3.9	< 1	16	0.71	J < 2	< 1	< 1	< 1	< 1	< 1	< 1	1.6	< 1	< 1	< 10	< 1	< 1	< 5	< 1	0.24	J < 1
MW1	11/5/15			5.1	< 1	12	0.95	J < 2	< 1	< 1	< 1	< 1	< 1	< 1	J 1.7	< 1	< 1	< 10	< 1	0.43	J < 5	< 1	0.25	J < 1
MW1	11/7/16			6.3	< 1	6.4	0.92	J < 2	< 1	< 1	< 1	< 1	< 1	< 1	1.6	< 1	< 1	< 10	< 1	0.46	J < 5	< 1	< 1	< 1
MW1	5/18/2017			7	< 1	7.6	0.92	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.2	< 1	< 1	< 10	< 1	0.45	J < 5	< 1	< 1	< 1
MW1	10/30/2017			4.7	< 1	6	0.6	J < 5	< 1	< 1	< 0.5	< 1	< 1	< 1	1.8	J < 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW1A	12/4/03			4	< 1.4	110	< 2.6	< 2.1	2.1	< 1.9	< 2.3	< 1.9	< 1.8	84	< 2.1	< 1.8	< 2.2	100	< 2.4	< 1.8	34	< 2.3	< 2.2	< 1.8
MW1A	9/24/04			1.1	< 0.14	1.8	< 0.24	< 0.25	< 0.13	< 0.13	< 0.12	< 0.19	< 0.15	3.9	< 0.12	< 0.12	< 0.13	4.8	0.13	< 0.13	< 0.53	< 0.15	< 0.12	< 0.16
MW1A	8/10/05			1.6	< 2	23	< 1.9	< 3	< 1.9	< 1.5	< 1.4	< 1.4	< 1.5	47	< 1	< 1.7	< 1.8	60	4.9	< 1.8	19	< 2.4	< 1.3	< 2
MW1A	4/5/07			< 1.8	< 2.1	9.7	< 2.1	< 5.6	< 1.9	< 2.4	< 1.1	< 2.5	< 2.2	< 15	< 1.7	< 4.7	< 2.6	39	< 4	< 2.6	78	< 1.9	< 3.8	< 1.8
MW1A	7/19/07			< 5	< 5	6.1	< 5	< 10	< 5	< 5	< 5	< 5	< 5	46	< 5	< 5	< 5	69	< 5	< 5	34	< 5	< 5	< 5
MW1A	5/9/08			< 1	< 1	0.34	J < 1	< 2	< 1	< 1	< 1	< 1	< 1	5.9	< 1	< 1	< 1	7.9	J < 1	< 1	3.6	J < 1	< 1	< 1
MW1A	8/7/08			< 2	< 2	5.9	< 2	< 4	0.68	J 0.37	J < 2	< 2	< 2	34	< 2	< 2	< 2	39	< 2	< 2	< 20	U < 2	< 2	< 2
MW1A	11/13/08			< 1	< 1	0.41	J < 1	< 2	< 1	< 1	< 1	< 1	< 1	3.8	< 1	< 1	< 1	4.1	J < 1	< 1	0.8	J < 1	< 1	< 1
MW1A	2/19/09			< 1	< 1	0.22	J < 1	< 2	< 1	< 1	< 1	< 1	< 1	1.7	< 1	< 1	< 1	2.1	J < 1	< 1	0.95	J < 1	< 1	< 1
MW1A	5/6/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	0.73	< 1	< 1	< 1	0.71	< 1	< 1	0.51	< 1	< 1	< 1
MW1A	8/12/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.2	J < 1	< 1	< 5	< 1	< 1	< 1
MW1A	11/12/09			< 2.5	< 2.5	1.7	J < 2.5	< 5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	11	J < 2.5	< 2.5	< 2.5	24	J < 2.5	< 2.5	3.5	J < 2.5	< 2.5	< 2.5
MW1A	2/16/10			< 17	< 17	6.2	J < 17	< 33	< 17	< 17	< 17	< 17	< 17	30	< 17	< 17	< 17	61	J < 17	U < 17	20	J < 17	UJ < 17	< 17
MW1A	5/5/10			< 5	< 5	2.9	J < 5	< 10	< 5	< 5	< 5	< 5	< 5	30	< 5	< 5	< 5	100	< 5	< 5	44	< 5	< 5	< 5
MW1A	11/17/10			< 1	< 1	3.4	< 1	< 2	0.77	J 0.31	J < 1	< 1	< 1	< 1	< 1	< 1	< 1	61	< 1	< 1	29	< 1	< 1	< 1

**Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,1,2-Trichloroethane 5 0.5 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3- chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L
MW1A	5/11/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	0.32 J	1.3	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW1A	11/9/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.2	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW1A	5/10/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW1A	11/7/12			< 1	< 1	1.2	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.7	< 1	< 1	< 1	< 10	< 1	< 1	1.7 J	< 1	< 1	< 1
MW1A	11/1/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW1B	10/21/03	156-160		1.9	< 0.42	3	< 0.41	< 0.33	< 0.34	< 0.35	< 0.29	< 0.32	< 0.3	< 1.7	0.54	< 0.24	< 0.4	< 0.53	< 0.43	< 0.31	< 0.64	< 0.32	< 0.25	< 0.11
MW1B	10/21/03	166-170		< 0.57	< 0.34	< 0.54	< 0.66	< 0.52	< 0.5	< 0.48	< 0.56	< 0.48	< 0.44	< 2.5	< 0.53	< 0.45	< 0.54	< 1.1	< 0.59	< 0.45	< 1.6	< 0.58	< 0.54	< 0.44
MW1B	12/4/03			0.27	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW1B	9/24/04			0.61	< 0.14	0.15	< 0.24	< 0.25	< 0.13	< 0.13	0.36	< 0.19	< 0.15	< 0.68	< 0.12	0.41	< 0.13	0.53	< 0.1	< 0.13	< 0.53	< 0.15	< 0.12	< 0.16
MW1B	8/10/05			0.55	< 0.39	4.5	< 0.38	< 0.61	< 0.39	< 0.29	< 0.28	< 0.28	< 0.29	15	< 0.2	< 0.35	< 0.36	11	0.84	< 0.35	6.9	< 0.48	< 0.25	< 0.4
MW1B	4/5/07			< 0.37	< 0.41	< 0.25	< 0.42	< 1.1	1.1	< 0.48	< 0.21	< 0.51	< 0.43	< 3	< 0.34	< 0.95	< 0.52	71	0.83	< 0.52	40	< 0.39	< 0.76	< 0.36
MW1B	7/23/07			< 1.7	< 1.7	< 1.7	< 1.7	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	48	< 1.7	< 1.7	< 1.7	94	< 1.7	< 1.7	47	< 1.7	< 1.7	< 1.7
MW1B	5/9/08			< 1	< 1	< 1	< 1	< 2	0.22 J	< 1	< 1	< 1	< 1	12	< 1	< 1	< 1	13	< 1	< 1	8.4	< 1	< 1	< 1
MW1B	8/7/08			< 1.7	< 1.7	< 1.7	< 1.7	< 3.3	0.68 J	< 1.7	< 1.7	< 1.7	< 1.7	41	< 1.7	< 1.7	< 1.7	79	< 1.7	< 1.7	34	< 1.7	< 1.7	< 1.7
MW1B	11/13/08			< 1	< 1	< 1	< 1	< 2	0.23 J	< 1	< 1	< 1	< 1	15	< 1	< 1	< 1	23	< 1 U	< 1	7.6	< 1	< 1	< 1
MW1B	2/27/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1.5	1.2	< 1	< 1	1 J	0.73 J	< 1	0.57 J	< 1	< 1	< 1
MW1B	5/4/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	1.4	0.74	< 1	< 1	0.34	< 1	< 1	0.59	< 1	< 1	< 1
MW1B	8/12/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	2.7	1.1	< 1	< 1	3.2 J	< 1.5 U	< 1	2.3 J	< 1	< 1	< 1
MW1B	11/12/09			< 1	< 1	< 1	< 1	< 2	0.5 J	< 1	< 1	< 1	< 1	14 J	0.75 J	< 1	< 1	44	< 1	< 1	16	< 1	< 1	< 1
MW1B	2/16/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	16	< 1	< 1	< 1	16	< 1 U	< 1	19	< 1 UJ	< 1	< 1
MW1B	5/5/10			< 1	< 1	< 1	< 1	< 2	0.22 J	< 1	< 1	< 1	< 1	3.8	1.1	< 1	< 1	1.9 J	0.35 J	< 1	< 5	< 1	< 1	< 1
MW1B	11/17/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	0.38 J	1.5	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW1B	5/11/11			< 1	< 1	2.6	< 1	< 2	0.36 J	< 1	< 1	< 1	< 1	11	< 1	< 1	< 1	19	< 1	< 1	12	< 1	< 1	< 1
MW1B	11/9/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW1B	5/9/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.31	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW1B	11/6/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW1B	11/1/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW2A	12/4/03			< 0.23	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW2A	12/4/03		D	< 0.23	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	0.24	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW2A	9/23/04			< 0.14	< 0.14	< 0.13	< 0.24	< 0.25	< 0.13	< 0.13	0.21	< 0.19	< 0.15	< 0.68	< 0.12	0.43	< 0.13	0.9	< 0.1	< 0.13	< 0.53	< 0.15	< 0.12	< 0.16
MW2A	8/8/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.19	< 0.51	< 0.24	< 0.13	< 0.2
MW2A	4/5/07			< 0.18	< 0.16	< 0.21	< 0.24	< 0.17	< 0.15	< 0.23	< 0.21	< 0.17	< 0.22	< 0.88	< 0.2	< 0.15	< 0.21	< 0.24	< 0.4	< 0.21	< 0.47	< 0.15	< 0.2	< 0.17
MW2A	7/19/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	5/9/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	5/9/08		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	8/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	11/13/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	2/19/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	5/6/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	8/12/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	11/12/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1 UJ	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1

**Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,1,2-Trichloroethane 5 0.5 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3- chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L
MW2A	2/17/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1 UJ	< 1	< 1
MW2A	5/5/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	11/17/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	5/11/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	11/9/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	5/10/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	11/7/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	10/23/03	156-160		1.5	< 0.14	0.3	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	0.61	< 0.18	< 1	1	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW2B	10/23/03	166-170		30	< 0.34	0.8	1.7	< 0.52	< 0.5	< 0.48	< 0.56	< 0.48	< 0.44	< 2.5	< 0.53	< 0.45	< 0.54	< 1.1	< 0.59	0.66	< 1.6	< 0.58	< 0.54	< 0.44
MW2B	10/23/03	176-180		4.2	< 0.34	2.7	< 0.66	< 0.52	< 0.5	< 0.48	< 0.56	< 0.48	< 0.44	< 2.5	0.79	< 0.45	< 0.54	< 1.1	< 0.59	< 0.45	< 1.6	< 0.58	< 0.54	< 0.44
MW2B	10/24/03	186-190		0.8	< 0.14	0.63	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	0.35	< 0.18	< 1	0.51	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW2B	12/4/03			< 0.23	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW2B	9/23/04			< 0.14	< 0.14	< 0.13	< 0.24	< 0.25	< 0.13	< 0.13	0.28	< 0.19	< 0.15	< 0.68	< 0.12	0.86	< 0.13	< 0.28	< 0.1	< 0.13	< 0.53	< 0.15	< 0.12	< 0.16
MW2B	8/8/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.19	< 0.51	< 0.24	< 0.13	< 0.2
MW2B	4/5/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	< 0.4	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW2B	7/19/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	5/9/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	8/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	11/13/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	11/13/08		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	2/19/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	5/6/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	8/12/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1 U	< 1	< 5	< 1	< 1	< 1
MW2B	11/12/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1 UJ	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	2/17/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1 UJ	< 1	< 1
MW2B	5/5/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	11/17/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	5/11/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	11/9/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	5/10/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	11/7/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	11/1/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW2R	6/16/05			25	< 2	110	< 1.9	< 3	< 1.9	< 1.5	< 1.4	< 1.4	< 1.5	27	2	< 1.7	< 1.8	< 6.9	< 2.5	< 1.8	27	< 2.4	< 1.3	< 2
MW2R	8/8/05			9.5	< 2	20	< 1.9	< 3	< 1.9	< 1.5	< 1.4	< 1.4	< 1.5	8.9	< 1	< 1.7	< 1.8	< 6.9	3.8	< 1.8	11	< 2.4	< 1.3	< 2
MW2R	9/28/05			29	< 2	170	3.3	< 3	< 1.9	1.5	< 1.4	< 1.4	< 1.5	63	2	< 1.7	< 1.8	< 6.9	< 2.5	< 1.8	35	< 2.4	< 1.3	< 2
MW2R	4/5/07			22	< 1.6	140	< 2.4	< 1.7	< 1.5	< 2.3	< 2.1	< 1.7	< 2.2	49	< 2	< 1.5	< 2.1	6	< 4	< 2.1	34	< 1.5	< 2	< 1.7
MW2R	7/19/07			23	< 5	120	1.6 J	< 10	< 5	1.1 J	< 5	< 5	< 5	26	< 5 U	< 5	< 5	3.2 J	< 5	< 5	26	< 5	1.8 J	< 5
MW2R	5/9/08			11	1.4 J	76	< 2.5	< 5	0.59 J	0.89 J	< 2.5	< 2.5	< 2.5	15	0.73 J	< 2.5	1.2 J	< 25	< 2.5 U	< 2.5	25	< 2.5	< 2.5	< 2.5
MW2R	8/6/08			22	1.7 J	140	1.5 J	< 10	1.3 J	1.6 J	< 5	< 5	< 5	58	3.1 J	< 5	2.3 J	< 50	< 5	< 5	47	< 5	< 5	< 5
MW2R	11/13/08			24	2 J	130	1.7 J	< 8	0.96 J	1 J	< 4	< 4	< 4	36	2.5 J	< 4	1.3 J	< 40	< 4 U	< 4	20	< 4	< 4	< 4
MW2R	2/19/09			10	1.6 J	72	1.3 J	< 5	0.98 J	0.94 J	< 2.5	< 2.5	< 2.5	19	< 2.5 U	< 2.5	0.77 J	< 25	< 2.5	< 2.5	22	< 2.5	< 2.5	< 2.5

**Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,2-Trichloroethane 5 0.5 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3- chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L
MW2R	5/6/09			7	2.1	68	0.73	< 4	0.96	0.88	< 2	< 2	< 2	7.1	1.8	< 2	0.5	< 20	< 2	< 2	32	< 2	0.63	< 2
MW2R	8/12/09			3.8	1.5	33	0.43 J	< 2	0.81 J	0.57 J	< 1	< 1	< 1	7.8	1.2	< 1	0.32 J	< 10	< 1 U	< 1	29	< 1	0.55 J	< 1
MW2R	11/12/09			3.3	0.59 J	14	0.57 J	< 2	0.46 J	0.26 J	< 1	< 1	< 1	5.1 J	0.58 J	< 1	< 1	< 10	< 1	< 1	12	< 1	0.39 J	< 1
MW2R	2/17/10			3.5	0.49 J	9.5	0.57 J	< 2	< 1	0.21 J	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	14	< 1 UJ	< 1	< 1
MW2R	5/5/10			4.2	0.37 J	8.8	0.56 J	< 2	< 1	0.18 J	< 1	< 1	< 1	< 1	0.33 J	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2R	11/17/10			2.9	< 1	2.3	0.69 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.17 J	< 1	< 1	< 10	< 1	< 1	< 5 U	< 1	< 1	< 1
MW2R	5/11/11			0.34 J	0.27 J	2.1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2R	11/9/11			0.83 J	< 1	4.2	0.25 J	< 2	0.24 J	< 1	< 1	< 1	< 1	0.53 J	< 1	< 1	< 1	< 10	< 1	< 1	1.2 J	< 1	0.28 J	< 1
MW2R	5/9/12			0.75	< 1	3	0.26	< 2	< 1	< 1	< 1	< 1	< 1	0.64	< 1	< 1	< 1	< 10	< 1	< 1	0.91	< 1	0.26	< 1
MW2R	11/7/12			0.53 J	< 1	2.4	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	0.19 J	< 1
MW2R	11/6/13			0.42 J	< 1	1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2R	11/5/14			2.7	< 1	2.7	0.52 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.35 J	< 1	< 1	< 10	< 1	0.31 J	0.71 J	< 1	< 1	< 1
MW2R	11/5/15			< 1	< 1	2.4	< 1	< 2	< 1	< 1	< 1	< 1	< 1	0.39 J	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	0.28 J	< 1
MW2R	11/7/16			0.52 J	< 1	1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2R	11/1/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	1.1 J	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW3	4/26/99			68	< 0.61	49	3.4	< 0.41	< 0.37	2	< 0.27	< 0.3	< 0.34	< 0.54	0.64	< 0.61	3.1		< 0.36	12		< 0.43	0.87	< 0.2
MW3	10/13/99			55	< 0.47	31	< 0.47	< 1.2	< 0.54	< 0.34	< 0.44	< 0.41	< 0.9	< 0.63	< 0.41	< 0.44	1.8		0.64	11		< 0.26	0.78	< 0.17
MW3	9/20/00			55	< 0.47	30	2.4	< 1.2	< 0.54	1.5	< 0.44	< 0.41	< 0.9	< 0.63	0.49	< 0.44	1.3		< 0.38	9.1		< 0.26	0.8	< 0.17
MW3	12/20/00			52.7	< 0.09	30.6	2.3	< 0.25	< 0.15	1.5	< 0.15	< 0.06	5.04	< 0.15	< 0.07	< 0.17	1.19		< 0.5	9.87		< 0.09	0.82	< 0.12
MW3	3/21/01			63	< 0.47	40	2.3	< 1.2	< 0.54	2.2	< 0.44	< 0.41	< 0.9	< 0.63	0.55	0.53	1.4		< 0.38	9.9		< 0.26	1	< 0.17
MW3	12/3/03			13	< 0.14	9.8	0.33	< 0.21	< 0.2	0.53	0.29	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	1.2	< 0.65	< 0.23	< 0.22	< 0.18
MW3	8/10/05			22	< 0.39	11	1.1	< 0.61	< 0.39	0.58	< 0.28	< 0.28	< 0.29	< 1.3	< 0.2	< 0.35	< 0.36	< 1.4	< 0.51	2.7	1.1	< 0.48	< 0.25	< 0.4
MW3	8/10/05		D	21	< 0.2	13	1.3	< 0.3	< 0.19	0.57	< 0.14	< 0.14	< 0.15	< 0.63	0.21	< 0.17	0.19	< 0.69	< 0.25	< 0.19	1.3	< 0.24	< 0.13	< 0.2
MW3	4/12/07			18	< 0.41	13	1.1	< 1.1	< 0.37	0.8	< 0.21	< 0.51	< 0.43	< 3	< 0.34	< 0.95	< 0.52	< 0.29	< 0.8	4.3	< 1.7	< 0.39	< 0.76	< 0.36
MW3	7/19/07			15	< 1	9.2	1.1	< 2	< 1	0.5 J	< 1	< 1	< 1	< 1	< 1 U	< 1	< 1	< 10	< 1	4.3	< 5	< 1	0.31 J	< 1
MW3	7/19/07		D	15	< 1	9.2	1.2	< 2	< 1	0.49 J	< 1	< 1	< 1	< 1	< 1 U	< 1	< 1	< 10	< 1	4.4	< 5	< 1	0.34 J	< 1
MW3	5/6/08			10	< 1	7.1	0.75 J	< 2	< 1	0.39 J	< 1	< 1	< 1	< 1	0.19 J	< 1	< 1	< 10	< 1	3	0.57 J	< 1	< 1	< 1
MW3	8/7/08			8.4	< 1	3.4	0.64 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	2.4	< 5	< 1	< 1	< 1
MW3	11/13/08			9	< 1	3.9	0.84 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	1.8	< 5	< 1	< 1	< 1
MW3	2/18/09			6.7	< 1	3.2	0.57 J	< 2	< 1	0.18 J	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	1.8	< 5	< 1	< 1	< 1
MW3	5/4/09			5.5	< 1	2.7	0.48	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	1.2	< 5	< 1	< 1	< 1
MW3	8/10/09			5	< 1	1.9	0.34 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.91 J	< 5	< 1	< 1	< 1
MW3	8/10/09		D	5.2	< 1	1.9	0.49 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	1.1	< 5	< 1	< 1	< 1
MW3	11/11/09			3.8	< 1	1.5	0.41 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1 UJ	< 1	< 1	< 1	< 10	< 1	0.8 J	< 5	< 1	< 1	< 1
MW3	2/16/10			3.1	< 1	1.6	0.39 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.56 J	< 5	< 1 UJ	< 1	< 1
MW3	2/16/10		D	3.1	< 1	1.6	0.43 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1 U	0.53 J	< 5	< 1 UJ	< 1	< 1
MW3	5/6/10			2.8	< 1	1.3	0.25 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.49 J	< 5	< 1	< 1	< 1
MW3	11/18/10			1.6	< 1	0.68 J	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.33 J	< 5	< 1	< 1	< 1
MW3	5/11/11			1.2	< 1	0.45 J	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW3	11/9/11			0.9 J	< 1	0.39 J	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW3	5/10/12			0.76	< 1	0.41	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1

**Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,1,2-Trichloroethane 5 0.5 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3-chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L
MW3	11/8/12			0.59 J	< 1	0.21 J	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW3	11/1/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 21	< 1	< 10	< 1	< 0.5	< 0.5
MW4	4/26/99			< 0.3	< 0.61	< 0.35	< 0.43	< 0.41	< 0.37	< 0.35	< 0.27	< 0.3	< 0.34	< 0.54	< 0.35	< 0.61	< 0.28		< 0.36	< 0.43		< 0.43	< 0.37	< 0.2
MW4	12/20/00			< 0.15	< 0.09	< 0.15	< 0.15	< 0.25	< 0.15	< 0.15	< 0.15	< 0.06	< 0.15	< 0.15	< 0.07	< 0.17	< 0.15		< 0.5	< 0.15		< 0.09	< 0.1	< 0.12
MW4	3/21/01			< 0.53	< 0.47	< 0.61	< 0.47	< 1.2	< 0.54	< 0.34	< 0.44	< 0.41	< 0.9	< 0.63	< 0.41	< 0.44	< 0.46		< 0.38	< 0.41		< 0.26	< 0.49	< 0.17
MW4	12/1/03			0.62	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW4	8/10/05			0.4	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.19	0.93	< 0.24	< 0.13	< 0.2
MW4	4/12/07			0.22	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	< 0.4	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW4	7/18/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW4	5/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW5	4/26/99			0.93	< 0.61	< 0.35	< 0.43	< 0.41	< 0.37	< 0.35	< 0.27	< 0.3	< 0.34	< 0.54	< 0.35	< 0.61	< 0.28		< 0.36	< 0.43		< 0.43	< 0.37	< 0.2
MW5	12/20/00			< 0.15	< 0.09	< 0.15	< 0.15	< 0.25	< 0.15	< 0.15	< 0.15	< 0.06	< 0.15	< 0.15	< 0.07	< 0.17	< 0.15		< 0.5	< 0.15		< 0.09	< 0.1	< 0.12
MW5	3/21/01			< 0.53	< 0.47	< 0.61	< 0.47	< 1.2	< 0.54	< 0.34	< 0.44	< 0.41	< 0.9	< 0.63	< 0.41	< 0.44	< 0.46		< 0.38	< 0.41		< 0.26	< 0.49	< 0.17
MW5	12/1/03			< 0.23	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW5	8/10/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.19	< 0.51	< 0.24	< 0.13	< 0.2
MW5	4/12/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	< 0.4	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW5	7/18/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW5	5/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	4/26/99			< 0.3	< 0.61	< 0.35	< 0.43	< 0.41	< 0.37	< 0.35	< 0.27	< 0.3	< 0.34	< 0.54	< 0.35	< 0.61	< 0.28		< 0.36	< 0.43		< 0.43	< 0.37	< 0.2
MW6	9/20/00			< 0.53	< 0.47	< 0.61	< 0.47	< 1.2	< 0.54	< 0.34	< 0.44	< 0.41	< 0.9	< 0.63	< 0.41	< 0.44	< 0.46		< 0.38	< 0.41		< 0.26	< 0.49	< 0.17
MW6	12/20/00			< 0.15	< 0.09	< 0.15	< 0.15	< 0.25	< 0.15	< 0.15	< 0.15	< 0.06	< 0.15	< 0.15	< 0.07	< 0.17	< 0.15		< 0.5	< 0.15		< 0.09	< 0.1	< 0.12
MW6	3/21/01			< 0.53	< 0.47	< 0.61	< 0.47	< 1.2	< 0.54	< 0.34	< 0.44	< 0.41	< 0.9	< 0.63	< 0.41	< 0.44	< 0.46		< 0.38	< 0.41		< 0.26	< 0.49	< 0.17
MW6	12/1/03			< 0.23	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW6	8/10/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.19	< 0.51	< 0.24	< 0.13	< 0.2
MW6	4/12/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	< 0.4	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW6	7/18/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	5/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	5/6/08		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	8/4/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	11/11/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	2/17/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	5/5/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	8/11/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	11/11/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1 UJ	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	2/16/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1 UJ	< 1	< 1
MW6	5/5/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	5/10/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	11/9/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	5/9/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	11/6/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	11/6/13			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1

Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,1,2-Trichloroethane 5 0.5 ug/L	1,1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3-chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L
MW6	11/5/14			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	11/3/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	11/7/16			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	10/30/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW7	10/13/99			2.2	< 0.47	< 0.61	< 0.47	< 1.2	< 0.54	< 0.34	< 0.44	< 0.41	< 0.9	< 0.63	< 0.41	< 0.44	< 0.46		< 0.38	< 0.41		< 0.26	< 0.49	< 0.17
MW7	12/20/00			40.1	< 0.09	0.48	2.65	< 0.25	< 0.15	< 0.15	< 0.15	< 0.06	4.1	< 0.15	< 0.07	< 0.17	< 0.15		< 0.5	0.34		< 0.09	< 0.1	< 0.12
MW7	3/21/01			28	< 0.47	< 0.61	1.2	< 1.2	< 0.54	< 0.34	< 0.44	< 0.41	< 0.9	< 0.63	< 0.41	< 0.44	< 0.46		< 0.38	< 0.41		< 0.26	< 0.49	< 0.17
MW8	12/2/03			0.82	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW8	9/23/04			0.18	< 0.14	< 0.13	< 0.24	< 0.25	< 0.13	< 0.13	0.16	< 0.19	< 0.15	< 0.68	< 0.12	0.12	< 0.13	< 0.28	< 0.1	< 0.13	< 0.53	< 0.15	< 0.12	< 0.16
MW8	8/10/05			0.45	< 0.2	0.47	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.19	0.96	< 0.24	< 0.13	< 0.2
MW8	4/5/07			< 0.18	< 0.16	< 0.21	< 0.24	< 0.17	< 0.15	< 0.23	< 0.21	< 0.17	< 0.22	< 0.88	< 0.2	< 0.15	< 0.21	< 0.24	< 0.4	< 0.21	< 0.47	< 0.15	< 0.2	< 0.17
MW8	7/18/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW8	7/18/07		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW8	5/7/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW8A	10/15/03	175		< 0.23	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	0.2	< 0.18	< 1	0.25	< 0.18	< 0.22	< 0.46	< 0.24	4.5	< 0.65	< 0.23	< 0.22	< 0.18
MW8A	12/2/03			< 0.23	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	0.24	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	0.86	< 0.65	< 0.23	< 0.22	< 0.18
MW8A	9/23/04			< 0.14	< 0.14	< 0.13	< 0.24	< 0.25	< 0.13	< 0.13	0.36	< 0.19	< 0.15	< 0.68	< 0.12	< 0.12	< 0.13	1.5	< 0.1	< 0.13	< 0.53	< 0.15	< 0.12	< 0.16
MW8A	8/10/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.19	< 0.51	< 0.24	< 0.13	< 0.2
MW8A	4/5/07			< 0.18	< 0.16	< 0.21	< 0.24	< 0.17	< 0.15	< 0.23	< 0.21	< 0.17	< 0.22	< 0.88	< 0.2	< 0.15	< 0.21	< 0.24	< 0.4	< 0.21	< 0.47	< 0.15	< 0.2	< 0.17
MW8A	7/18/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW8A	5/7/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW9	10/17/03	145		< 0.23	< 0.14	0.41	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	0.25	< 0.18	< 1	0.34	< 0.18	< 0.22	< 0.46	< 0.24	0.36	< 0.65	< 0.23	0.95	< 0.18
MW9	12/2/03			310	< 3.4	220	< 6.6	< 5.2	< 5	< 4.8	< 5.6	< 4.8	< 4.4	< 25	9.1	< 4.5	13	< 11	< 5.9	31	< 16	< 5.8	< 5.4	< 4.4
MW9	9/24/04			350	< 3.5	460	30	< 6.2	< 3.3	< 3.1	< 2.9	< 4.7	< 3.8	< 17	16	< 3	40	< 7	< 2.6	35	< 13	< 3.7	< 2.9	< 4.1
MW9	8/10/05			410	< 4.9	700	41	< 7.6	< 4.8	< 3.7	< 3.6	< 3.5	< 3.7	< 16	13	< 4.4	46	< 17	< 6.4	29	< 13	< 6	< 3.2	< 5
MW9	4/12/07			260	< 10	420	29	< 28	< 9.4	< 12	< 5.3	< 13	< 11	< 75	15	< 24	29	< 7.3	< 20	26	< 43	< 9.7	< 19	< 9
MW9	7/18/07			37	< 4	110	2.7 J	< 8	< 4	< 4	< 4	< 4	< 4	< 4	< 4 U	< 4	4.4	< 40	< 4	< 4	5.8 J	< 4	< 4	< 4
MW9	5/7/08			150	< 8	190	16	< 16	< 8	1.4 J	< 8	< 8	< 8	< 8	4 J	< 8	12	< 80	< 8 U	24	3.7 J	< 8	2.4 J	< 8
MW9	8/6/08			140	< 5	170	12	< 10	< 5	1.1 J	< 5	< 5	< 5	< 5	7.5	< 5	8.5	< 50	< 5	23	< 25	< 5	2.3 J	< 5
MW9	11/11/08			86	< 5	120	9.6	< 10	< 5	< 5	< 5	< 5	< 5	< 5	4.7 J	< 5	6.2	< 50	< 5 U	12	< 25	< 5	1.5 J	< 5
MW9	2/19/09			120	< 5	170	19	< 10	< 5	< 5	< 5	< 5	< 5	< 5	< 6.3 U	< 5	7.6	< 50	< 5	22	2.5 J	< 5	2.1 J	< 5
MW9	5/6/09			82	< 6.7	140	9.8	< 13	< 6.7	< 6.7	< 6.7	< 6.7	< 6.7	< 6.7	5.9	< 6.7	5.6	< 67	< 6.7	11	< 33	< 6.7	< 6.7	< 6.7
MW9	8/12/09			160	< 8	230	19	< 16	< 8	1.6 J	< 8	< 8	< 8	< 8	10	< 8	10	< 80	< 8 U	18	4.1 J	< 8	2.3 J	< 8
MW9	11/11/09			120	< 10	190	18	< 20	< 10	< 10	< 10	< 10	< 10	< 10	8.8 J	< 10	11	< 100	< 10	19	< 50	< 10	< 10	< 10
MW9	2/15/10			88	< 0.5	190	16	< 0.5	< 0.5	1.3 J	< 0.5	< 0.5	< 0.5	< 0.5	7.3	< 1	9.3	< 0.5	2.6 J	15	< 0.5	< 0.5 UJ	1.9 J	< 0.5
MW9	5/6/10			120	< 6.7	230	21	< 13	< 6.7	1.4 J	< 6.7	< 6.7	< 6.7	< 6.7	7.6	< 6.7	13	< 67	< 6.7	16	7.3 J	< 6.7	1.9 J	< 6.7
MW9	11/18/10			76	< 5.7	150	11	< 11	< 5.7	< 5.7	< 5.7	< 5.7	< 5.7	< 5.7	4.9 J	< 5.7	9.1	< 57	< 5.7	11	3 J	< 5.7	< 5.7	< 5.7
MW9	11/18/10		D	77	< 5.7	150	11	< 11	< 5.7	< 5.7	< 5.7	< 5.7	< 5.7	< 5.7	4.9 J	< 5.7	8.7	< 57	< 5.7	11	3.7 J	< 5.7	< 5.7	< 5.7
MW9	5/11/11			35	< 1.7	58	4.4	< 3.3	< 1.7	0.39 J	< 1.7	< 1.7	< 1.7	< 1.7	2.7	< 1.7	2.5	< 17	< 1.7	5.2	< 8.4	< 1.7	0.63 J	< 1.7
MW9	11/9/11			29	< 1	33	3.2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.8	< 1	1.5	< 10	< 1	5.1	< 5	< 1	0.37 J	< 1
MW9	5/9/12			29	< 1	35	4.2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.8	< 1	1.7	< 10	< 1	4.7	0.66	< 1	0.49	< 1

Historical Groundwater Monitoring Analytical Results (Detected Compounds)
 New Richmond Landfill (#2492)
 New Richmond, Wisconsin

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,1,2-Trichloroethane 5 0.5 ug/L	1,1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3-chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L
MW9	11/6/12			27	< 1.4	38	5.6	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	2.1	< 1.4	1.8	< 14	< 1.4 U	4	< 7.2	< 1.4	0.5 J	< 1.4
MW9	11/6/13			9.9	< 1	13	2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.92 J	< 1	0.72 J	< 10	< 1	2.4	< 5	< 1	0.21 J	< 1
MW9	11/6/13		D	11	< 1	14	2.2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.97 J	< 1	0.77 J	< 10	< 1	2.5	< 5	< 1	0.22 J	< 1
MW9	11/5/14			9.4	< 1	7.9	1.5	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.85 J	< 1	0.5 J	< 10	< 1	1.6	< 5	< 1	0.17 J	< 1
MW9	11/5/14		D	9.1	< 1	8.1	1.5	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.83 J	< 1	0.47 J	< 10	< 1	1.6	< 5	< 1	0.17 J	< 1
MW9	11/3/15			15	< 1	20	2.8	< 2	< 1	< 1	< 1	< 1	< 1 J	2	< 1	1.1	< 10	< 1	2.5	< 5	< 1	0.34 J	< 1	
MW9	11/3/15		D	16	< 1	22	2.9	< 2	< 1	< 1	< 1	< 1	< 1 J	2.1	< 1	1.2	< 10	< 1	2.7	< 5	< 1	0.31 J	< 1	
MW9	11/7/16			7.1	< 1	7.2	1.5	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.87 J	< 1	0.49 J	< 10	< 1	1.5	< 5	< 1	< 1	< 1
MW9	10/31/17			7.2	< 1	7.9	1.6	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	1.2 J	< 1	0.6 J	< 5	< 5	1.4	< 10	< 1	< 0.5	< 0.5
MW9A	12/3/03			< 0.23	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW9A	9/24/04			< 0.23	< 0.14	1	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	< 0.19	< 0.18	< 1	< 0.21	< 0.18	< 0.22	< 0.46	< 0.24	< 0.18	< 0.65	< 0.23	< 0.22	< 0.18
MW9A	8/10/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.19	< 0.51	< 0.24	< 0.13	< 0.2
MW9A	4/12/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	< 0.4	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW9A	7/18/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	< 1
MW9A	5/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1	< 1	< 10	< 1	< 1	0.77 J	< 1	< 1	< 1	< 1
MW9A	8/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	< 1
MW9A	8/6/08		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	< 1
APPLE RIVER DOWN	5/4/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	< 1
APPLE RIVER UP	5/4/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	< 1
MW10	6/15/05			16	< 0.39	4	1.6	< 0.61	< 0.39	< 0.29	< 0.28	< 0.28	< 0.29	< 1.3	< 0.2	< 0.35	0.54	< 1.4	< 0.51	0.44	< 1	< 0.48	< 0.25	< 0.4
MW10	8/8/05			23	< 0.39	5.8	< 0.38	< 0.61	< 0.39	< 0.29	< 0.28	< 0.28	< 0.29	< 1.3	< 0.2	< 0.35	< 0.36	< 1.4	< 0.51	0.52	< 1	< 0.48	< 0.25	< 0.4
MW10	4/4/07			37	< 0.41	17	6.1	< 1.1	< 0.37	< 0.48	< 0.21	< 0.51	< 0.43	< 3	< 0.34	< 0.95	1.5	< 0.29	3	2	< 1.7	< 0.39	< 0.76	< 0.36
MW10	7/19/07			33	< 1	18	5.9	< 2	< 1	< 1	< 1	< 1	< 1	0.49 J	< 1 U	< 1	1.5	< 10	< 1	1.6	0.44 J	< 1	< 1	< 1
MW10	5/8/08			17	< 1	14	2.5	< 2	< 1	< 1	< 1	< 1	< 1	0.54 J	< 1	< 1	0.94 J	< 10	< 1	0.87 J	0.66 J	< 1	< 1	< 1
MW10	8/5/08			11	< 1	10	1.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0.3 J	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW10	11/12/08			31	< 1	26	5.6	< 2	< 1	< 1	< 1	< 1	< 1	0.93 J	0.4 J	0.32 J	1.5	< 10	< 1	1.2	< 5	< 1	0.32 J	< 1
MW10	2/18/09			35	< 1.4	25	8.5	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	0.68 J	< 1.4 U	< 1.4	1.4	< 14	< 1.4	1.9	< 7.2	< 1.4	0.41 J	< 1.4
MW10	5/4/09			42 J	< 1	31	7.1	< 2	< 1	< 1	< 1	< 1	< 1	0.81	0.5	< 1	1.5	< 10	< 1	2	0.7	< 1	0.43	< 1
MW10	5/4/09		D	22	< 1.4	18	4	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	0.62	0.28	< 1.4	0.91	< 14	< 1.4	1.2	< 7.2	< 1.4	< 1.4	< 1.4
MW10	8/12/09			38	< 1.7	27	5.8	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	0.6 J	0.51 J	< 1.7	1.4 J	< 17	< 1.7 U	1.7	< 8.4	< 1.7	< 1.7	< 1.7
MW10	11/11/09			50	< 2.5	33	9.6	< 5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	1.1 J	0.69 J	< 2.5	2.1 J	< 25	< 2.5	3.4 J	< 12	< 2.5	< 2.5	< 2.5
MW10	2/16/10			31	< 1	25	7.2	< 2	< 1	< 1	< 1	< 1	< 1	0.86 J	0.47 J	< 1	1.4	< 10	< 1 U	2.2	< 5	< 1 UJ	0.39 J	< 1
MW10	5/6/10			10	< 1	8.6	1.8	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0.42 J	< 10	< 1	0.6 J	< 5	< 1	< 1	< 1
MW10	11/17/10			10	< 1	8.3	1.6	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0.49 J	< 10	< 1	0.6 J	< 5	< 1	< 1	< 1
MW10	5/11/11			11	< 1	8.2	2.6	< 2	< 1	< 1	< 1	< 1	< 1	0.44 J	0.18 J	< 1	0.44 J	< 10	< 1	0.73 J	< 5	< 1	< 1	< 1
MW10	11/10/11			18	< 1	12	2.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.29 J	< 1	0.64 J	< 10	< 1	1.5	< 5	< 1	< 1	< 1
MW10	5/9/12			53	< 2.5	40	9.5	< 5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	1.7	0.81	< 2.5	2.3	< 25	< 2.5	4.4	1.1	< 2.5	0.76	< 2.5
MW10	11/9/12			31	< 1	29	6.8	< 2	< 1	< 1	< 1	< 1	< 1	0.78 J	0.53 J	< 1	1.5	< 10	< 1	2.2	< 5	< 1	0.39 J	< 1
MW10	11/6/13			5.6	< 1	6.1	1.1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0.41 J	< 10	< 1	0.82 J	< 5	< 1	< 1	< 1
MW10	11/6/13		D	6.3	< 1	6.5	1.2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.92 J	< 5	< 1	< 1	< 1
MW10	11/6/14			38	< 1	28	5.9	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.76 J	< 1	1.3	< 10	< 1	3.1	0.65 J	< 1	0.47 J	< 1

**Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane	1,1,1-Trichloroethane	1,1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromo-3-chloropropane	1,2-Dichloroethane	1,2-Dichloropropane	Benzene	Bromodichloromethane	Carbon tetrachloride	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	4-Methyl-2-pentanone (Methyl isobutyl ketone)	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	trans-1,3-Dichloropropene	Trichloroethene	Vinyl chloride
				200 40 ug/L	5 0.5 ug/L	850 85 ug/L	7 0.7 ug/L	0.2 0.02 ug/L	5 0.5 ug/L	5 0.5 ug/L	5 0.5 ug/L	0.6 0.06 ug/L	5 0.5 ug/L	400 80 ug/L	6 0.6 ug/L	30 3 ug/L	70 7 ug/L	500 50 ug/L	5 0.5 ug/L	5 0.5 ug/L	50 10 ug/L	0.4 0.04 ug/L	5 0.5 ug/L	0.2 0.02 ug/L
MW10	11/4/15			36	< 1	26	6.1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.61 J	< 1	2.6	< 10	< 1	5.9	< 5	< 1	0.66 J	< 1
MW10	5/10/16			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW10	11/9/16			3.5	< 1	2.6	0.67 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.3 J	< 5	< 1	< 1	< 1
MW10	5/18/17			1.8	< 1	1.3	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW10	11/1/17			2.9	< 1	2.5	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW10A	6/15/05			35	< 0.98	6.1	4.7	< 1.5	< 0.97	< 0.73	< 0.71	< 0.71	< 0.74	< 3.2	< 0.51	< 0.87	0.91	< 3.5	< 1.3	< 0.88	< 2.6	< 1.2	< 0.64	< 1
MW10A	8/8/05			26	< 0.98	7.5	3	< 1.5	< 0.97	< 0.73	< 0.71	< 0.71	< 0.74	< 3.2	< 0.51	< 0.87	< 0.9	< 3.5	< 1.3	< 0.88	< 2.6	< 1.2	< 0.64	< 1
MW10A	4/2/07			65	< 0.81	20	6.6	< 0.87	< 0.77	< 1.1	< 1.1	< 0.87	< 1.1	< 4.4	< 0.99	< 0.74	2.2	< 1.2	< 2	7.1	< 2.3	< 0.75	< 0.99	< 0.86
MW10A	7/19/07			61	< 3.3	25	9.8	< 6.7	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3 U	< 3.3	3.5	< 33	< 3.3	4.5	< 17	< 3.3	< 3.3	< 3.3
MW10A	5/8/08			73	< 2.5	26	8	< 5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	3.7	< 25	< 2.5 U	10	< 12	< 2.5	0.78 J	< 2.5
MW10A	8/5/08			61	< 2.5	28	15	< 5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	0.63 J	< 2.5	3.4	< 25	< 2.5	5.7	< 12	< 2.5	< 2.5	< 2.5
MW10A	11/12/08			68	< 2.5	31	14	< 5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	0.61 J	< 2.5	4.1	< 25	< 2.5 U	9.1	< 12	< 2.5	0.71 J	< 2.5
MW10A	2/18/09			69	< 2	32	18	< 4	< 2	< 2	< 2	< 2	< 2	< 2	< 2 U	< 2	4.1	< 20	< 2	10	< 10	< 2	0.79 J	< 2
MW10A	5/5/09			72	< 2.5	37	14	< 5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	0.69	< 2.5	4.4	< 25	< 2.5	8.6	< 12	< 2.5	0.82	< 2.5
MW10A	8/12/09			75	< 2	36	13	< 4	< 2	< 2	< 2	< 2	< 2	< 2	0.63 J	< 2	4.4	< 20	< 2	8.9	0.97 J	< 2	0.82 J	< 2
MW10A	11/11/09			67	< 2.5	31	14	< 5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5 UJ	0.64 J	< 2.5	4.4	< 25	< 2.5	11 J	< 12	< 2.5	0.89 J	< 2.5
MW10A	2/16/10			63 J	< 2 UJ	35 J	13	< 4 UJ	< 2	< 2 UJ	< 2	< 2 UJ	< 2	< 2	0.72 J	< 2	4.3 J	< 20 UJ	0.85 J	9.5 J	< 10	< 2 UJ	0.83 J	< 2 UJ
MW10A	5/6/10			59	< 2	36	13	< 4	< 2	< 2	< 2	< 2	< 2	< 2	0.64 J	< 2	4.4	< 20	< 2	7.1	1.4 J	< 2	0.75 J	< 2
MW10A	11/17/10			58	< 2.5	33	11	< 5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	0.69 J	< 2.5	4	< 25	< 2.5	7.7	< 12	< 2.5	< 2.5	< 2.5
MW10A	5/11/11			63	< 1.7	39	15	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	0.84 J	< 1.7	4.5	< 17	< 1.7	8.9	0.84 J	< 1.7	0.87 J	< 1.7
MW10A	11/10/11			55	< 1.7	30	9.2	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	0.7 J	< 1.7	3.6	< 17	< 1.7	8	< 8.4	< 1.7	0.78 J	< 1.7
MW10A	5/10/12			53	< 2	34	10	< 4	< 2	< 2	< 2	< 2	< 2	< 2	0.72	< 2	3.8	< 20	< 2	6.3	< 10	< 2	0.71	< 2
MW10A	11/9/12			43	< 1.7	31	12	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	0.62 J	< 1.7	3.4	< 17	< 1.7 U	6.3	< 8.4	< 1.7	0.72 J	< 1.7
MW10A	11/6/13			30	< 3.3	25	7	< 6.7	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	0.54 J	< 3.3	3 J	< 33	< 3.3	6.4	< 17	< 3.3	0.61 J	< 3.3
MW10A	11/6/14			38	< 1.4	29	6.7	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	0.72 J	< 1.4	2.9	< 14	< 1.4	5.9	< 7.2	< 1.4	0.62 J	< 1.4
MW10A	11/4/15			15	< 1	10	2.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1 J	0.31 J	< 1	0.4 J	< 10	< 1	1.4	< 5	< 1	< 1	< 1
MW10A	5/10/16			31	< 1	26	5.6	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.61 J	< 1	2.7	< 10	< 1	5.2	< 5	< 1	0.63 J	< 1
MW10A	11/9/16			26	< 1	23	5.4	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.58 J	< 1	2.2	< 10	< 1	4.5	< 5	< 1	0.49 J	< 1
MW10A	5/18/17			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW10A	11/1/17			19	< 1	19	4.1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	0.7 J	< 1	1.7	< 5	< 5	4.1	< 10	< 1	0.4 J	< 0.5
MW10B	5/20/05	190		98	< 0.2	36	6.3	< 0.3	< 0.19	0.21	< 0.14	< 0.14	< 0.15	< 0.63	0.84	0.22	5	< 0.69	< 0.25	9.9	1.2	< 0.24	0.92	< 0.2
MW10B	5/23/05	230		0.25	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.19	< 0.51	< 0.24	< 0.13	< 0.2
MW10B	6/15/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW10B	8/8/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW10B	4/2/07			< 0.18	< 0.16	< 0.21	< 0.24	< 0.17	< 0.15	< 0.23	< 0.21	< 0.17	< 0.22	< 0.88	< 0.2	< 0.15	< 0.21	< 0.24	< 0.4	< 0.21	< 0.47	< 0.15	< 0.2	< 0.17
MW10B	7/19/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW10B	5/8/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW10B	8/5/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11	6/15/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW11	8/11/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW11	4/2/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	0.22	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	0.2	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18

**Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,1,2-Trichloroethane 5 0.5 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3- chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L
MW11	7/17/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1 U	< 1	< 5	< 1	< 1	< 1
MW11	7/17/07		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11	5/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11	8/4/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11	5/10/16			6.1	< 1	4.6	1.3	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.62 J	< 5	< 1	< 1	< 1
MW11A	6/15/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW11A	8/11/05			0.22	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW11A	4/2/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	0.21	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW11A	7/17/07			0.28 J	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	5/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	8/4/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	11/11/08			0.22 J	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.36 J	< 1	< 10	< 1	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	2/17/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	5/4/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	8/10/09			0.23 J	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	11/11/09			0.24 J	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1 UJ	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	2/15/10			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 1	< 0.5	< 0.5 UJ	< 0.5	< 0.5
MW11A	5/4/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	5/4/10		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	11/16/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	5/10/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	11/7/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	5/8/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	5/8/12		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	11/7/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	11/6/13			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	11/6/14			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	11/3/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1 J	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	11/8/16			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	10/30/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW12	8/11/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW12	9/28/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW12	4/4/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	0.35	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW12	7/17/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW12	5/5/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW12	8/4/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW12	11/5/13			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW12A	8/11/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW12A	8/11/05		D	< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW12A	9/28/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW12A	4/4/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	0.39	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18

**Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,1,2-Trichloroethane 5 0.5 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3- chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L	
MW12A	7/17/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	5/5/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	8/4/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	11/11/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	2/17/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	2/17/09		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	5/4/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	8/10/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	11/10/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	UJ	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	2/15/10			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	UJ	< 0.5	< 0.5
MW12A	5/4/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	11/16/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	11/16/10		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	5/10/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	11/7/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	5/8/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	11/7/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW12A	10/30/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5	
MW13	6/15/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2	
MW13	8/11/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2	
MW13	4/2/07			< 0.18	< 0.16	< 0.21	< 0.24	< 0.17	< 0.15	< 0.23	< 0.21	< 0.17	< 0.22	< 0.88	< 0.2	< 0.15	< 0.21	< 0.24	< 0.4	< 0.21	< 0.47	< 0.15	< 0.2	< 0.17	
MW13	7/18/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	5/7/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	8/5/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	11/12/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	2/17/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	5/5/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	8/11/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	11/11/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	UJ	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	11/11/09		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	UJ	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	2/15/10			< 0.5	< 1	< 0.5	< 0.5	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.33 J	< 0.5	< 0.5	< 0.5	UJ	< 0.5	< 0.5
MW13	5/5/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	11/16/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	5/11/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	11/7/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	5/10/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	11/7/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	11/6/13			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	11/6/14			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	11/4/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	J	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW13	11/4/15		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	J	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	

Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,1,2-Trichloroethane 5 0.5 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3-chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L
MW13	11/7/16			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW13	11/7/16		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW13	10/31/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW13A	5/25/05	160		0.16	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW13A	6/15/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW13A	8/11/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW13A	4/2/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	0.19	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW13A	7/18/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW13A	5/7/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW13A	8/5/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	6/16/05			8	< 0.2	0.37	0.56	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	0.3	< 0.51	< 0.24	< 0.13	< 0.2
MW14	8/11/05			6.2	< 0.2	0.22	0.35	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	0.9	< 0.24	< 0.13	< 0.2
MW14	4/4/07			3.2	< 0.21	0.2	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	0.36	0.27	< 0.86	< 0.19	< 0.38	< 0.18
MW14	7/18/07			4.1	< 1	0.27 J	0.3 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	5/7/08			3.4	< 1	< 1	0.32 J	< 2	< 1	< 1	1.3	< 1	< 1	0.31 J	< 1	11	< 1	< 10	< 1 U	0.33 J	< 5	< 1	< 1	< 1
MW14	8/5/08			5.4	< 1	0.32 J	1.2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.43 J	< 5	< 1	< 1	< 1
MW14	11/11/08			4.6	< 1	0.29 J	0.56 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.4 J	< 5	< 1	< 1	< 1
MW14	2/17/09			4.1	< 1	0.31 J	0.67 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.37 J	< 5	< 1	< 1	< 1
MW14	5/5/09			4.2	< 1	0.31	0.5	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.34	< 5	< 1	< 1	< 1
MW14	8/11/09			3	< 1	0.23 J	0.3 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.29 J	< 5	< 1	< 1	< 1
MW14	11/11/09			2.3	< 1	< 1	0.29 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1 UJ	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	2/15/10			1.5	< 0.5	< 0.5	0.21 J	< 0.5	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 UJ	< 0.5	< 0.5
MW14	2/15/10		D	1.5	< 0.5	< 1	0.22 J	< 2	< 1	< 1	< 0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 0.5	< 0.5	< 0.5	< 0.5 UJ	< 0.5	< 1
MW14	5/5/10			3.1	< 1	< 1	0.33 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.29 J	< 5	< 1	< 1	< 1
MW14	11/18/10			2.1	< 1	< 1	0.23 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	5/11/11			1.8	< 1	< 1	0.28 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	11/9/11			0.95 J	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	5/9/12			0.38	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	5/9/12		D	0.28	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	11/7/12			0.26 J	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	11/5/13			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	11/5/14			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	11/5/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1 J	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	11/8/16			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	10/31/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW14	10/31/17		D	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW14A	6/16/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	0.2	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW14A	6/16/05		D	< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	0.22	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW14A	8/11/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW14A	4/4/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	0.71	0.42	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW14A	7/18/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1

**Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,1,2-Trichloroethane 5 0.5 ug/L	1,1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3-chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L
MW14A	5/7/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14A	5/7/08		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14A	8/5/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15	8/11/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW15	8/11/05		D	< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW15	9/28/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	0.2	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW15	4/4/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	0.43	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW15	7/17/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15	5/5/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15	8/4/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	8/11/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW15A	9/28/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	0.2	< 0.14	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	< 0.18	< 0.51	< 0.24	< 0.13	< 0.2
MW15A	4/4/07			< 0.18	< 0.21	< 0.13	< 0.21	< 0.56	< 0.19	< 0.24	< 0.11	< 0.25	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	0.39	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW15A	7/17/07			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	5/5/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	8/4/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	8/4/08		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/11/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/11/08		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	2/17/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	5/4/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	5/4/09		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	8/10/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/10/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/10/09		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	2/15/10			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1	0.41 J	< 0.5	< 0.5	< 0.5 UJ	< 0.5	< 0.5
MW15A	5/5/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/16/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	5/10/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/7/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/7/11		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	5/8/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/7/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/7/12		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/5/13			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/6/14			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/3/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	11/8/16			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW15A	10/30/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW15A	10/30/17		D	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW16	5/8/08			160	< 5.7	160	18	< 11	< 5.7	< 5.7	< 5.7	< 5.7	< 5.7	3.9 J	< 5.7	< 5.7	11	< 57	< 5.7 U	17	5.8 J	< 5.7	2.5 J	< 5.7

Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,1,2-Trichloroethane 5 0.5 ug/L	1,1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3-chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L
MW16	8/6/08			150	< 6.7	150	19	< 13	< 6.7	< 6.7	< 6.7	< 6.7	< 6.7	3.7 J	2.8 J	< 6.7	9.6	< 67	< 6.7	14	2.8 J	< 6.7	2.3 J	< 6.7
MW16	11/12/08			97	< 3.3	92	14	< 6.7	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	2.7 J	1.6 J	< 3.3	4.5	< 33	< 3.3 U	7.1	< 17	< 3.3	1.4 J	< 3.3
MW16	2/18/09			97	< 4	86	16	< 8	< 4	< 4	< 4	< 4	< 4	2 J	< 4 U	< 4	4.2	< 40	< 4	9	3 J	< 4	1.4 J	< 4
MW16	5/6/09			110	< 5	110	16	< 10	< 5	< 5	< 5	< 5	< 5	1.4	2.4	< 5	4.9	< 50	< 5	9.8	4.4	< 5	1.7	< 5
MW16	5/6/09		D	110	< 4	110	16	< 8	< 4	< 4	< 4	< 4	< 4	2.3	2.4	< 4	4.9	< 40	< 4	9.5	3.9	< 4	1.6	< 4
MW16	8/11/09			160	< 5.7	180	13	< 11	< 5.7	< 5.7	< 5.7	< 5.7	< 5.7	2.8 J	3.8 J	< 5.7	9.7	< 57	< 5.7	14	7.1 J	< 5.7	2.8 J	< 5.7
MW16	11/10/09			100	< 3.3	100	19	< 6.7	< 3.3	0.6 J	< 3.3	< 3.3	< 3.3	2.3 J	2.3 J	< 3.3	5.9	< 33 UJ	< 3.3	8.7	< 17	< 3.3	1.9 J	< 3.3
MW16	2/16/10			140 J	< 6.7	190	32 J	< 13	< 6.7	< 6.7	< 6.7	< 6.7	< 6.7	3.5 J	3.9 J	< 6.7	11	< 67	< 6.7 U	13	2.8 J	< 6.7 UJ	3 J	< 6.7
MW16	5/6/10			150	< 6.7	200	24	< 13	< 6.7	< 6.7	< 6.7	< 6.7	< 6.7	3 J	4 J	< 6.7	9.7	< 67	< 6.7	13	8.6 J	< 6.7	2.6 J	< 6.7
MW16	5/6/10		D	140	< 6.7	200	25	< 13	< 6.7	< 6.7	< 6.7	< 6.7	< 6.7	3.1 J	4 J	< 6.7	9.8	< 67	< 6.7	12	8.6 J	< 6.7	2.4 J	< 6.7
MW16	11/17/10			140	< 8	190	22	< 16	< 8	< 8	< 8	< 8	< 8	2.8 J	4.3 J	< 8	9.7	< 80	< 8	16	5.9 J	< 8	3 J	< 8
MW16	5/11/11			130	< 5.7	170	27	< 11	< 5.7	1 J	< 5.7	< 5.7	< 5.7	2.4 J	4.1 J	< 5.7	9.8	< 57	< 5.7	13	6.1 J	< 5.7	2.4 J	< 5.7
MW16	11/10/11			74	< 2.5	68	9.4	< 5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	2.6	< 2.5	4.2	< 25	< 2.5	11	2.6 J	< 2.5	1.2 J	< 2.5
MW16	5/11/12			77	< 2.5	94	10	< 5	< 2.5	0.67	< 2.5	< 2.5	< 2.5	1	2.8	< 2.5	6.1	< 25	< 2.5	8.6	3.5	< 2.5	1.3	< 2.5
MW16	11/8/12			84	< 3.3	110	15	< 6.7	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	3.5	< 3.3	7.3	< 33	< 3.7 U	11	< 17	< 3.3	1.7 J	< 3.3
MW16	11/8/12		D	87	< 3.3	120	17	< 6.7	< 3.3	0.84 J	< 3.3	< 3.3	< 3.3	< 3.3	3.6	< 3.3	7.6	< 33	< 3.5 U	12	< 17	< 3.3	1.9 J	< 3.3
MW16	11/6/13			40	< 3.3	46	7	< 6.7	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	1.8 J	< 3.3	3.1 J	< 33	< 3.3	7.6	1.9 J	< 3.3	0.82 J	< 3.3
MW16	11/6/14			42	< 1.7	41	6	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	1.8	< 1.7	2.6	< 17	< 1.7	5.3	1.6 J	< 1.7	0.64 J	< 1.7
MW16	11/4/15			35	< 1	32	6.3	< 2	< 1	< 1	< 1	< 1	< 1	< 1 J	1.6	< 1	1.5	< 10	< 1	3.4	< 5	< 1	0.55 J	< 1
MW16	5/10/16			27	< 1	30	5.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.4	< 1	1.7	< 10	< 1	3.2	1.5 J	< 1	0.51 J	< 1
MW16	11/9/16			19	< 1	20	3.9	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.2	< 1	1.1	< 10	< 1	2.3	1.5 J	< 1	0.37 J	< 1
MW16	5/18/17			17	< 1	20	3.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.2	< 1	1.1	< 10	< 1	2	1.1 J	< 1	< 1	< 1
MW16	11/1/17			14	< 1	15	2.5	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	1.1 J	< 1	< 1	< 5	< 5	1.5	< 10	< 1	< 0.5	< 0.5
MW16A	5/8/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	8/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	11/12/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	2/18/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	2/18/09		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	5/6/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	8/11/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	8/11/09		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	11/10/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10 UJ	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	2/16/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1 UJ	< 1	< 1
MW16A	5/6/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	11/17/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	5/11/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	5/11/11		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	11/10/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	5/11/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	11/8/12			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	11/6/13			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1

Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane 200 40 ug/L	1,1,1,2-Trichloroethane 5 0.5 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	1,2-Dibromo-3- chloropropane 0.2 0.02 ug/L	1,2-Dichloroethane 5 0.5 ug/L	1,2-Dichloropropane 5 0.5 ug/L	Benzene 5 0.5 ug/L	Bromodichloromethane 0.6 0.06 ug/L	Carbon tetrachloride 5 0.5 ug/L	Chloroethane 400 80 ug/L	Chloroform 6 0.6 ug/L	Chloromethane 30 3 ug/L	cis-1,2-Dichloroethene 70 7 ug/L	4-Methyl-2-pentanone (Methyl isobutyl ketone) 500 50 ug/L	Methylene chloride 5 0.5 ug/L	Tetrachloroethene 5 0.5 ug/L	Tetrahydrofuran 50 10 ug/L	trans-1,3-Dichloropropene 0.4 0.04 ug/L	Trichloroethene 5 0.5 ug/L	Vinyl chloride 0.2 0.02 ug/L	
MW16A	11/6/14			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW16A	11/6/14		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW16A	11/4/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW16A	5/10/16			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW16A	11/9/16			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW16A	5/18/17			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW16A	11/1/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5	
MW17	5/8/08			55	< 1	32	7.7	< 2	< 1	< 1	< 1	< 1	< 1	1.1	< 1	< 1	2.7	< 10	< 1	4.7	1	< 1	0.42	< 1	
MW17	8/5/08			48	< 1.7	32	11	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	0.98	J	0.37	J	< 1.7	2.3	< 1.7	3.7	1.1	J	< 1.7	
MW17	11/12/08			48	< 1.4	35	6	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	1.3	J	0.41	J	< 1.4	2.6	< 1.4	U	3.2	< 7.2	< 1.4	
MW17	2/18/09			44	< 1.7	32	8.7	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	0.98	J	< 1.7	U	< 1.7	2.5	< 1.7		3.8	< 8.4	< 1.7	
MW17	5/5/09			44	< 2	37	7	< 4	< 2	< 2	< 2	< 2	< 2	0.98		0.49	< 2	2.6	< 20	< 2		3.1	1.4	< 2	
MW17	8/11/09			47	< 1.7	34	3.7	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	1.3	J	0.46	J	< 1.7	2.6	< 1.7		3.5	1.2	J	
MW17	11/10/09			43	< 1.7	29	6.4	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	1.3	J	0.41	J	< 1.7	2.3	< 1.7		4.2	J	< 8.4	
MW17	2/16/10			36	< 1.4	32	6.5	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	1.4		0.4	J	< 1.4	2.3	< 1.4	U	3.5	< 7.2	< 1.4	
MW17	5/6/10			41	< 2	37	6.1	< 4	< 2	< 2	< 2	< 2	< 2	1.8	J	0.45	J	< 2	2.4	< 20	< 2	3.2	1.9	J	
MW17	11/17/10			34	< 1.4	30	6.8	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	1.4		0.38	J	< 1.4	2.1	< 1.4		3.4	0.69	J	
MW17	5/11/11			39	< 1.7	37	7.8	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	1.7		0.48	J	< 1.7	2.3	< 1.7		3.5	1.1	J	
MW17	11/10/11			40	< 2	35	7.7	< 4	< 2	< 2	< 2	< 2	< 2	1.7	J	0.48	J	< 2	2.1	< 20	< 2	U	3.7	1.4	J
MW17	5/11/12			37	< 1.4	35	4.9	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	1.2		0.43	< 1.4	2.2	< 1.4	< 1.4		3.2	1.1	< 1.4	
MW17	11/9/12			36	< 1	33	7.3	< 2	< 1	< 1	< 1	< 1	< 1	2.2		0.42	J	< 1	2	< 10	< 1	3.5	< 5	< 1	
MW17	11/6/13			28	< 1	29	6.2	< 2	< 1	< 1	< 1	< 1	< 1	1.4		0.38	J	< 1	1.8	< 10	< 1	3.6	1.1	J	
MW17	11/6/14			32	< 1	30	5.6	< 2	< 1	< 1	< 1	< 1	< 1	1.2		0.43	J	< 1	1.7	< 10	< 1	3.2	1.2	J	
MW17	11/4/15			24	< 1	23	3.7	< 2	< 1	< 1	< 1	< 1	< 1	0.54	J	0.35	J	< 1	1.4	< 10	< 1	3	< 5	< 1	
MW17	5/10/16			17	< 1	23	3.7	< 2	< 1	< 1	< 1	< 1	< 1	2		0.32	J	< 1	1.2	< 10	< 1	2.4	< 5	< 1	
MW17	11/8/16			17	< 1	19	3.1	< 2	< 1	< 1	< 1	< 1	< 1	1.2		< 1	< 1	1	< 10	< 1		2.3	0.9	J	
MW17	5/18/17			17	< 1	22	3.6	< 2	< 1	< 1	< 1	< 1	< 1	0.86	J	< 1	< 1	1.2	< 10	< 1		2.2	1	J	
MW17	11/1/17			14	< 1	18	3.3	< 5	< 1	< 1	< 0.5	< 1	< 1	1.3	< 2	< 1	< 1	< 1	< 5	< 23		2.2	< 10	< 1	
MW17A	5/7/08			38	< 1	21	5.2	< 2	< 1	< 1	< 1	< 1	< 1	0.55	J	< 1	< 1	1.5	< 10	< 1		3.1	0.62	J	
MW17A	8/5/08			38	< 1.4	26	8.6	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	0.8	J	0.31	J	< 1.4	1.6	< 1.4	< 1.4	2.3	< 7.2	U	
MW17A	8/5/08		D	38	< 1.4	27	8.1	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	0.86	J	0.29	J	< 1.4	1.6	< 1.4	< 1.4	2.5	< 7.2	U	
MW17A	11/12/08			30	< 1.4	22	4.1	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	0.7	J	0.29	J	< 1.4	1.4	< 1.4	U	1.9	< 7.2	< 1.4	
MW17A	2/18/09			36	< 1	23	6.1	< 2	< 1	< 1	< 1	< 1	< 1	0.73	J	< 1	U	< 1	1.5	< 10	< 1	2.9	0.52	J	
MW17A	5/5/09			37	< 1	29	5.9	< 2	< 1	< 1	< 1	< 1	< 1	0.74		0.33	< 1	1.5	< 10	< 1		2.5	0.8	< 1	
MW17A	8/11/09			40	< 1	27	4.6	< 2	< 1	< 1	< 1	< 1	< 1	1.1		0.37	J	< 1	1.5	< 10	< 1	3	0.84	J	
MW17A	11/11/09			34	< 1	23	5.6	< 2	< 1	< 1	< 1	< 1	< 1	0.53	J	0.31	J	< 1	1.6	< 10	< 1	3.2	< 5	< 1	
MW17A	2/16/10			31	< 1	26	5.3	< 2	< 1	< 1	< 1	< 1	< 1	1.2		0.32	J	< 1	1.5	< 10	< 1	U	3	< 5	
MW17A	5/6/10			39	< 1	27	4.6	< 2	< 1	< 1	< 1	< 1	< 1	1.2		0.36	J	< 1	1.5	< 10	0.33	J	2.9	< 5	
MW17A	11/17/10			29	< 1	24	6.7	< 2	< 1	< 1	< 1	< 1	< 1	0.93	J	0.32	J	< 1	1.2	< 10	< 1	2.6	< 5	U	
MW17A	5/11/11			30	< 1	27	7.4	< 2	< 1	< 1	< 1	< 1	< 1	1.4		0.37	J	< 1	1.4	< 10	< 1	2.5	0.83	J	
MW17A	11/10/11			28	< 1	25	5.7	< 2	< 1	< 1	< 1	< 1	< 1	1.4		0.35	J	< 1	1.2	< 10	< 1	2.6	0.82	J	

**Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane	1,1,1,2-Trichloroethane	1,1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromo-3-chloropropane	1,2-Dichloroethane	1,2-Dichloropropane	Benzene	Bromodichloromethane	Carbon tetrachloride	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	4-Methyl-2-pentanone (Methyl isobutyl ketone)	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	trans-1,3-Dichloropropene	Trichloroethene	Vinyl chloride
				200 40 ug/L	5 0.5 ug/L	850 85 ug/L	7 0.7 ug/L	0.2 0.02 ug/L	5 0.5 ug/L	5 0.5 ug/L	5 0.06 ug/L	5 0.5 ug/L	400 80 ug/L	6 0.6 ug/L	30 3 ug/L	70 7 ug/L	500 50 ug/L	5 0.5 ug/L	5 0.5 ug/L	50 10 ug/L	0.4 0.04 ug/L	5 0.5 ug/L	0.2 0.02 ug/L	
MW17A	5/11/12			26	< 1	24	2.1	< 2	< 1	< 1	< 1	< 1	< 1	1.3	0.29	< 1	1	< 10	< 1	1.9	0.87	< 1	0.31	< 1
MW17A	11/9/12			23	< 1	22	4.8	< 2	< 1	< 1	< 1	< 1	< 1	1.7	0.28 J	< 1	1.1	< 10	< 1	2	< 5	< 1	0.28 J	< 1
MW17A	11/6/13			16	< 1	17	3.8	< 2	< 1	< 1	< 1	< 1	< 1	1.1	0.24 J	< 1	0.85 J	< 10	< 1	2	0.86 J	< 1	0.24 J	< 1
MW17A	11/6/14			19	< 1	19	3.1	< 2	< 1	< 1	< 1	< 1	< 1	0.79 J	0.28 J	< 1	0.72 J	< 10	< 1	1.8	0.72 J	< 1	0.23 J	< 1
MW17A	11/4/15			20	< 1	17	2.4	< 2	< 1	< 1	< 1	< 1	< 1	0.36 J	< 1	< 1	0.4 J	< 10	< 1	1.7	< 5	< 1	< 1	< 1
MW17A	5/10/16			14	< 1	17	2.5	< 2	< 1	< 1	< 1	< 1	< 1	1.1	< 1	< 1	0.48 J	< 10	< 1	1.6	< 5	< 1	< 1	< 1
MW17A	11/8/16			10	< 1	12	2.5	< 2	< 1	< 1	< 1	< 1	< 1	1.1	< 1	< 1	0.53 J	< 10	< 1	1.5	0.89 J	< 1	< 1	< 1
MW17A	5/19/17			10	< 1	14	2	< 2	< 1	< 1	< 1	< 1	< 1	0.65 J	< 1	< 1	0.61 J	< 10	< 1	1.2	0.86 J	< 1	< 1	< 1
MW17A	11/1/17			13	< 1	13	2	< 5	< 1	< 1	< 0.5	< 1	< 1	0.85 J	< 2	< 1	< 1	< 5	< 23	1.8	< 10	< 1	< 0.5	< 0.5
MW-18	10/2/07			2.5	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1
MW-18	5/14/08			3.2	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1
MW-18	8/12/09			7.5	< 1	< 1	0.66 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	4.2	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1
MW-18	10/21/09			6.6	< 1	< 1	0.7 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1 UJ	< 1	< 1
MW-18	4/1/10			13	< 1	0.36 J	1.5	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW-18	11/16/10			2.7	< 1	0.59 J	0.34 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW-18	5/10/11			6.1	< 1	0.61 J	0.94 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW-18	5/10/11		D	8	< 1	0.57 J	1.2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW-18	11/9/11			< 1	< 1	0.55 J	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW-18	11/9/11		D	< 1	< 1	0.56 J	< 1	< 2	< 1	< 1	0.22 J	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW-18	5/10/12			22	< 1	0.52	2.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW-18	11/9/12			20	< 1	0.56 J	3.9	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1

Historical Groundwater Monitoring Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Location	Date	Depth	ES PAL Dup	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromo-3-chloropropane	1,2-Dichloroethane	1,2-Dichloropropane	Benzene	Bromodichloromethane	Carbon tetrachloride	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	4-Methyl-2-pentanone (Methyl isobutyl ketone)	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	trans-1,3-Dichloropropene	Trichloroethene	Vinyl chloride
				200 40 ug/L	5 0.5 ug/L	850 85 ug/L	7 0.7 ug/L	0.2 0.02 ug/L	5 0.5 ug/L	5 0.5 ug/L	5 0.06 ug/L	5 0.5 ug/L	400 80 ug/L	6 0.6 ug/L	30 3 ug/L	70 7 ug/L	500 50 ug/L	5 0.5 ug/L	5 0.5 ug/L	50 10 ug/L	0.4 0.04 ug/L	5 0.5 ug/L	0.2 0.02 ug/L	
MW-18	6/6/13			24	< 1	0.78 J	3.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW-18	6/6/13		D	26	< 1	0.76 J	3.9	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	0.42 J	< 1	< 1	< 1
MW-18	11/5/13			25	< 1	0.96 J	3.6	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	5/13/14			33	< 1	1.3	5.9	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	11/5/14			29	< 1	1.2	5.1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	5/13/15			34	< 1	1.7	6.3	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	11/4/15			32	< 1	1.6	5.6	< 2	< 1	< 1	< 1	< 1	< 1	< 1 J	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	5/10/16			25	< 1	2	6.2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	11/9/16			25	< 1	2.7	6.1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	5/19/17			31	< 1	3.8	6.8	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	10/31/17			15	< 1	2.6	4.2	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 23	< 1	< 10	< 1	< 0.5	< 0.5
MW19	5/13/14			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19	11/5/14			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19	5/13/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19	11/3/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1 J	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19	11/8/16			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19	10/31/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 23	< 1	< 10	< 1	< 0.5	< 0.5
MW19A	5/13/14			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19A	5/13/14		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19A	11/5/14			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19A	5/13/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19A	5/13/15		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19A	11/3/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1 J	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19A	11/8/16			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19A	11/8/16		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19A	11/1/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 1	< 1	< 2	< 1	< 1	< 5	< 22	< 1	< 10	< 1	< 0.5	< 0.5

Notes:

All results are in ug/L

D - Duplicate

J - Estimated concentration

Bold Lettering - Exceeds PAL

Light Gray Background - Exceeds ES

Thommes (OLD) residential well was renamed MW-18 in 2014

Appendix D

Historical Residential Well Analytical Results

**Historical Residential Well Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Name	Phase	Date	ES PAL Dup	Iron ug/L	1,1,1-Trichloroethane 200 40 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1,1-Dichloroethene 7 0.7 ug/L	5 Tetrachloroethene 0.5 ug/L
985 198th St			7/2/13			< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/14/08			< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		8/12/09			< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/6/10			< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/9/11			< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/8/12			< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/14/13			< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/13/14			< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/13/15			< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/10/16			< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/18/17			< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/18/17	D		< 1	< 1	< 1	< 1
1085 Cty Rd C	Brotzler		5/14/08			< 1	< 1	< 1	< 1
1087 Cty Rd C	Franko S		5/14/08			< 1	< 1	< 1	< 1
1098 Cty Rd C	Penman		5/14/08			< 1	< 1	< 1	< 1
1098 Cty Rd C	Penman		5/14/08	D		< 1	< 1	< 1	< 1
1103 Cty Rd C	Deavy		10/2/07			< 1	< 1	< 1	< 1
1965 104th St	Wittstock		8/28/09			< 1	< 1	< 1	< 1
1965 110th St	Tamoshaitis		10/1/07			1.7	< 1	< 1	< 1
1968 115th St D	Karastes D	Eff	5/29/07			< 1	< 1	< 1	< 1
1968 115th St D	Karastes D	Inf	5/29/07			46	42	7.4	3.8
1968 115th St D	Karastes D	Inter	5/29/07			< 1	6.8	< 1	< 1
1968 115th St D	Karastes D	Inter	6/27/07			< 1	< 1	< 1	< 1
1968 115th St J	Karastes J	Inf	5/29/07			0.2 J	< 1	< 1	< 1
1968 115th St J	Karastes J	Inter	5/29/07			< 1	< 1	< 1	< 1
1968 115th St J	Karastes J	Inter	6/27/07			< 1	< 1	< 1	< 1
1974 110th St	Backes		10/1/07			< 1	< 1	< 1	< 1
1982 115th St	FormerClement		10/2/07			< 1	< 1	< 1	< 1
1985 110th St	Potting	Inf	5/29/07			67	36	11	3.6
1985 110th St	Potting	Inter	5/29/07			< 1	< 1	< 1	< 1
1985 110th St	Potting	Inter	6/27/07			< 1	< 1	< 1	< 1
1985 115th St	Olson T	Inf	6/5/07			19	2.5	2.9	1.1
1985 115th St	Olson T	Inter	6/5/07			< 1	< 1	< 1	< 1
1985 115th St	Olson T	Inter	6/27/07			< 1	< 1	< 1	< 1
1987 115th St	Claassen	Eff	5/29/07			< 1	< 1	< 1	< 1
1987 115th St	Claassen	Inf	5/29/07			140	29	23	15

**Historical Residential Well Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Name	Phase	Date	ES PAL Dup	Iron ug/L	1,1,1-Trichloroethane 200 40 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	5 Tetrachloroethene 0.5 ug/L
1987 115th St	Claassen	Inter	5/29/07			2.3	6.6	< 1	< 1
1987 115th St	Claassen	Inter	6/27/07			< 1	< 1	< 1	< 1
1988 115th St	Kunz		10/2/07			1.4	1.6	< 1	< 1
1988 115th St	Kunz		10/2/07	D		1	1.7	0.2 J	< 1
1989 110th St	Seim	Eff	5/29/07			< 1	< 1	< 1	< 1
1989 110th St	Seim	Inf	5/29/07			170	52	29	11
1989 110th St	Seim	Inter	5/29/07			< 1	< 1	< 1	< 1
1989 110th St	Seim	Inter	6/27/07			< 1	< 1	< 1	< 1
1989 110th St	Seim	Inter	6/27/07	D		< 1	< 1	< 1	< 1
1991 115th St	Mountain	Eff	5/29/07			< 1	< 1	< 1	< 1
1991 115th St	Mountain	Inf	5/29/07			73	28	14	6.4
1991 115th St	Mountain	Inter	5/29/07			< 1	< 1	< 1	< 1
1991 115th St	Mountain	Inter	6/27/07			< 1	< 1	< 1	< 1
1997 110th St	Lehner	Eff	5/29/07			< 1	< 1	< 1	< 1
1997 110th St	Lehner	Inf	5/29/07			34	17	4.8	1.9
1997 110th St	Lehner	Inter	5/29/07			< 1	< 1	< 1	< 1
1997 110th St	Lehner	Inter	6/27/07			< 1	< 1	< 1	< 1
2001 110th St	Barberine		7/17/07			9.3	3	1.4	0.5
2001 110th St	Barberine		10/1/07			8.2	2.6	0.8 J	0.6 J
2001 110th St	Barberine		1/18/08			6.2	2.6	1.5	0.6 J
2003 110th St	Wicklem	Eff	5/29/07			< 1	< 1	< 1	< 1
2003 110th St	Wicklem	Inf	5/29/07			56	42	9.1	3.6
2003 110th St	Wicklem	Inter	5/29/07			< 1	< 1	< 1	< 1
2003 110th St	Wicklem	Inter	6/27/07			< 1	< 1	< 1	< 1
2013 110th St	Heinecke	Eff	5/29/07			< 1	< 1	< 1	< 1
2013 110th St	Heinecke	Eff	5/29/07	D		< 1	< 1	< 1	< 1
2013 110th St	Heinecke	Eff	6/25/07			< 1	< 1	< 1	< 1
2013 110th St	Heinecke	Inf	5/29/07			87	26	14	7.6
2013 110th St	Heinecke	Inf	6/25/07			70	22	19	7.6
2013 110th St	Heinecke	Inter	5/29/07			< 1	< 1	< 1	< 1
2013 110th St	Heinecke	Inter	6/27/07			< 1	< 1	< 1	< 1
2025 110th St	Mondor	Eff	5/29/07			< 1	< 1	< 1	< 1
2025 110th St	Mondor	Inf	5/29/07			52	29	8.3	3.6
2025 110th St	Mondor	Inter	5/29/07			1.7	38	< 1	< 1
2025 110th St	Mondor	Inter	6/27/07			< 1	< 1	< 1	< 1
2025 110th St	Mondor	Inter	6/27/07	D		< 1	< 1	< 1	< 1

**Historical Residential Well Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Name	Phase	Date	ES PAL Dup	Iron ug/L	1,1,1,1-Trichloroethane 200 40 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1,1-Dichloroethene 7 0.7 ug/L	5 Tetrachloroethene 0.5 ug/L
2040 110th St	Levy(new)		10/1/07			< 1	1.3	< 1	< 1
2040 110th St	Levy(new)		10/1/07	D		< 1	1.5	< 1	< 1
2054 County Road C			5/13/14			< 1	< 1	< 1	< 1
2055 Cty Rd C	Thommes (NEW)	Eff	4/1/10		< 100	< 1	< 1	< 1	< 1
2055 Cty Rd C	Thommes (NEW)	Inf	4/1/10		288	< 1	< 1	< 1	< 1
2055 Cty Rd C	Thommes (NEW)		5/9/11			< 1	< 1	< 1	< 1
2055 Cty Rd C	Thommes (NEW)		5/8/12			< 1	< 1	0.28	< 1
2055 Cty Rd C	Thommes (NEW)		5/14/13			< 1	0.5 J	0.26 J	< 1
2055 Cty Rd C	Thommes (NEW)		5/13/14			< 1	0.9 J	0.53 J	< 1
2055 Cty Rd C	Thommes (NEW)		5/13/15			< 1	1.3	0.76 J	< 1
2055 Cty Rd C	Thommes (NEW)		11/4/15			< 1	1.5	0.98 J	< 1
2055 Cty Rd C	Thommes (NEW)		5/10/16			1	1.9	1.3	< 1
2055 Cty Rd C	Thommes (NEW)		5/10/16			1 J	1.9	1.3	< 1
2055 Cty Rd C	Thommes (NEW)		11/9/16			1.7	2.1	1.4	< 1
2055 Cty Rd C	Thommes (NEW)		5/19/17			2.2	2.5	1.4	< 1
2055 Cty Rd C	Thommes (NEW)		10/31/17			2.1	2.4	1.2	< 1
2056 Cty Rd C	TNT Metals		5/14/08			< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		4/1/10			< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/9/11			< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/8/12			< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/14/13			< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/13/14			< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/13/15			< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/10/16			< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/10/16	D		< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/18/17			< 1	< 1	< 1	< 1
2061 Cty Rd C	Olson R (OLD)		10/2/07			< 1	< 1	< 1	< 1
2061 Cty Rd C	Olson R (OLD)		5/14/08			< 1	< 1	< 1	< 1
2061 Cty Rd C	Olson R (OLD)		8/12/09			< 1	< 1	< 1	< 1
2061 Cty Rd C	Olson R (OLD)		10/21/09			< 1	< 1	< 1	< 1
2061 Cty Rd C	Olson R (NEW)		4/1/10			< 1	< 1	< 1	< 1
2062 Cty Rd C	Star Prairie		7/2/13			< 1	< 1	< 1	< 1
2072 110th St	Aldous		10/2/07			< 1	< 1	< 1	< 1
2072 Cty Rd C	Larson R		5/14/08			< 1	< 1	< 1	< 1
2073 Cty Rd C	Johnson D		5/14/08			< 1	< 1	< 1	< 1
2076 110th St	Hanson		10/1/07			< 1	< 1	< 1	< 1

**Historical Residential Well Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Name	Phase	Date	Dup	ES PAL Iron ug/L	200 40 1,1,1-Trichloroethane ug/L	850 85 1,1-Dichloroethane ug/L	7 0.7 1,1,1-Dichloroethene ug/L	5 0.5 Tetrachloroethene ug/L
2077 110th St	Olson C		10/1/07			< 1	< 1	< 1	< 1
2078 114th St	Rivard		10/1/07			< 1	< 1	< 1	< 1
2080 Asplund Rd	Deal		10/2/07			< 1	< 1	< 1	< 1
2082 110th St	Bryant		10/1/07			< 1	< 1	< 1	< 1
2082 Asplund Rd	Brown		10/2/07			1.2	0.7 J	< 1	< 1
2118 Cook Dr	Star Prairie Town Hall		5/14/08			< 1	< 1	< 1	< 1

Notes:

All results are in ug/L

D - Duplicate

J - Estimated concentration

Bold Lettering - Exceeds PAL

- Exceeds ES

Appendix E

Historical SVE/LFG System Monitoring Data

Appendix E.1

**Historical SVE/LFG System Blower (Stack) Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		
Stack	09/23/08	28.9	0.3	0.5	93	1,250	-
Stack	09/25/08	13.9	1.8	1.4	98	1,250	-
Stack	10/01/08	1.6	6.3	0.6	100	1,275	-
Stack	10/07/08	0.6	10.3	0.7	96	1,300	-
Stack	10/15/08	0.4	12.2	0.9	100	1,280	-
Stack	10/30/08	0.4	13.9	1.0	92	1,100	-
Stack	11/13/08	0.1	14.5	0.2	88	1,100	-
Stack	11/26/08	0.0	15.6	0.3	84	1,100	-
Stack	01/22/09 ¹	0.5	14.0	0.8	80	1,250	24,900
Stack	02/05/09	0.0	16.0	0.8	82	1,230	2,840
Stack	02/16/09	0.0	17.0	0.7	80	1,260	3,200
Stack	03/16/09	0.0	16.5	0.8	80	1,310	3,350
Stack	04/24/09	0.0	16.7	1.4	84	1,360	2,420
Stack	05/20/09	0.0	17.1	1.5	92	1,340	1,500
Stack	06/23/09	0.0	16.3	1.8	106	1,282	1,950
Stack	07/23/09	0.0	16.5	1.1	106	1,357	6,420
Stack	08/20/09	0.0	16.0	2.0	108	1,407	8,240
Stack	09/23/09	0.0	16.9	2.2	108	1,458	7,850
Stack	10/20/09	0.0	16.7	1.4	96	1,445	7,200
Stack	11/24/09	0.0	16.9	1.4	92	1,450	6,550
Stack	12/29/09	0.0	19.2	1.4	86	1,916 ²	7,230
Stack	01/29/10	0.1	18.3	1.7	86	1,051	NA ³
Stack	02/22/10	0.2	20.8	1.6	80	1,732	10,700
Stack	03/26/10	0.0	16.9	1.2	84	1,552	3,040
Stack	04/22/10	0.0	18.0	1.6	88	1,574	2,130
Stack	05/18/10	0.0	17.7	2.2	90	1,568	6,530
Stack	06/29/10	0.0	16.9	2.2	104	1,354	4,760
Stack	07/23/10	0.0	16.8	2.2	110	1,357	4,650
Stack	08/27/10	4.4	9.4	2.2	108	1,369	NA ³
Stack	10/01/10	3.5	9.1	1.8	98	1,353	NA ³
Stack	10/22/10	1.9	13.7	1.4	96	1,444	NA ³
Stack	11/29/10	0.1	17.0	1.2	90	1,504	13,400
Stack	12/22/10	0.7	17.4	2.0	84	1,127	16,400
Stack	01/24/11	0.0	18.8	0.8	89	1,207	7,610
Stack	02/28/11	0.0	16.6	0.0	88	906 ⁴	5,970
Stack	04/13/11	0.2	17	0.6	90	970 ⁴	9,430

Appendix E.1

**Historical SVE/LFG System Blower (Stack) Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				VOC Concentration	
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	by FID (ppm)
Stack	04/29/11	0.1	17.8	1.0	88	1,203	9,850
Stack	05/27/11	0.0	18.2	1.1	94	1,313	6,850
Stack	06/24/11	0.1	17.5	1.2	101	1,230	5,820
Stack	07/22/11	0.0	18.3	1.4	108	1,290	4,800
Stack	08/25/11	2.1	14.6	1.3	106	1,347	23,200
Stack	09/30/11	0.1	17.8	2.2	102	1,421	2,670
Stack	10/26/11	0.1	17.0	1.6	96	1,534	3,270
Stack	11/22/11	0.0	17.5	1.5	94	1,454	5,170
Stack	12/29/11	0.1	18.4	1.4	88	1,493	5,000
Stack	01/26/12	0.3	16.3	1.4	80	1,410	33,350
Stack	02/21/12	0.0	18.0	1.0	85	1,456	5,270
Stack	03/30/12	0.0	17.8	0.9	93	1,235	3,301
Stack	04/27/12	0.0	16.8	1.2	92	1,400	3,920
Stack	05/25/12	0.2	19.5	1.2	96	1,509	7,350
Stack	06/26/12	0.3	15.7	1.7	104	1,415	24,820
Stack	07/25/12	0.7	16.5	1.0	112	1,010	28,890
Stack	08/22/12	0.0	17.7	1.9	108	1,549	6,950
Stack	09/25/12	0.3	17.6	2.3	106	2,005	4,010
Stack	10/30/12	0.0	18.1	2.0	56	1,974	650 ⁵
Stack	11/21/12 ⁶	0.0	18.3	1.7	90	1,708	3,140
Stack	12/21/12 ⁶	3.5	13.7	1.8	70	1,000 ⁴	NA ³
Stack	1/3/13 ⁶	0.1	17.9	0.8	80	1,501	8,190
Stack	1/28/13	0.0	17.7	2.8	82	1,680	7,600
Stack	2/27/13	0.0	18.1	1.2	80	1,608	6,160
Stack	3/25/13	0.0	17.9	1.0	84	1,447	8,680
Stack	04/26/13	0.8	16.3	0.6	40	1,257	44,710
Stack	05/30/13	0.0	18.3	1.2	90	1,341	2,740
Stack	06/27/13	0.4	17.3	1.2	62	2,114	7,200
Stack	07/25/13	0.0	17.9	1.4	108	2,301	1,980
Stack	08/30/13	0.1	19.6	1.3	84	1,269	2,213
Stack	09/25/13	0.1	18.8	2.0	100	2,115	2,680
Stack	10/23/13	0.0	18.6	3.7	57	2,335	1,150
Stack	11/20/13	0.0	18.4	3.1	52	2,134	2,370
Stack	12/18/13	0.0	18.6	1.3	82	1,437	1,690
Stack	05/13/14 ⁷	3.7	10.1	0.1	86	616 ⁴	8,490
Stack	05/28/14 ⁷	0.0	17.6	0.9	88	2,174	10,200

Appendix E.1

**Historical SVE/LFG System Blower (Stack) Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
Stack	06/26/14	0.0	17.9	1.3	98	1,324	4,010 ⁵
Stack	07/31/14	3.3	14.6	1.9	98	1,653	10,190
Stack	08/28/14	7.0	12.0	2.0	92	3,163	21,840
Stack	09/26/14	0.0	17.7	2.0	100	1,367	1,530
Stack	10/24/14	0.0	18.3	1.2	92	1,516	2,430
Stack	11/19/14	0.1	16.4	1.6	82	1,712	4,530
Stack	12/17/14	0.0	18.7	1.8	82	1,745	700
Stack	01/21/15	0.0	18.7	1.6	78	1,588	510
Stack	02/26/15	0.0	17.1	1.4	85	1,602	7,820
Stack	03/17/15	0.0	19.4	2.2	90	1,908	1,130
Stack	04/17/15	0.0	16.7	1.9	82	1,704	2,910
Stack	05/12/15	0.0	18.8	3.2	85	2,033	990
Stack	06/25/15	0.0	17.7	2.6	96	1,955	340
Stack	07/31/15	0.0	18.7	2.4	108	1,809	450
Stack	08/19/15	0.0	18.5	2.7	98	3,114	530
Stack	09/24/15	0.2	17.9	1.7	100	2,090	2,370
Stack	10/22/15	0.0	18.9	1.8	90	2,612	770
Stack	11/12/15	0.6	15.4	0.1	110	550	12,250
Stack	12/17/15	0.7	14.9	0.1	110	464	NA ³
Stack	1/21/16	0.5	16.1	0.1	35	401	18,650
Stack	2/24/16	0.6	13.3	0.2	98	458	NA ³
Stack	3/22/16	0.0	15.4	0.1	85	448	NA ³
Stack	4/22/16	0.1	17.4	1.1	112	459	2,120
Stack	5/19/16	0.0	17	0.2	115	403	3,600
Stack	6/14/16	0.0	16.4	0.2	120	415	3,700
Stack	7/27/16	0.1	15.3	0.3	124	494	3,870
Stack	8/10/16	0.3	16.1	0.1	130	444	3,760
Stack	9/15/16	0.3	14.9	0.2	110	458	4,120
Stack	10/26/16	1.1	12.9	0.2	51	537	NA ³
Stack	11/23/16	1.4	12.3	0	50	547	NA ³
Stack	12/13/16	0.0	18.7	0.2	45	593	5,096
Stack	1/10/17	0.4	14.7	0.1	40	488	NA ³
Stack	2/14/17	0.0	17.4	0.2	44	499	2,167
Stack	3/7/17	0.3	17.2	0	40	437	3,491
Stack	4/5/17	0.5	14.5	0.2	50	378	NA ³
Stack	5/25/17	0.2	13.0	0.7	53	430	NA ³
Stack	6/28/17	0.0	16.5	0.0	63	910	3,117
Stack	7/24/17	0.0	17.8	0.0	68	962	3,710

Appendix E.1

**Historical SVE/LFG System Blower (Stack) Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)			
Stack	8/14/17	0.0	17.1	0.0	66	964	4,989
Stack	9/13/17	0.3	15.9	0.0	67	0 ⁸	NA ³
Stack	10/30/17	0.4	14.3	0.0	54	448	NA ³
Stack	11/17/17	0.0	16.4	0.0	55	447	NA ³
Stack	12/7/17	0.0	18.4	0.0	52	464	3,841

Notes:

¹ System was restarted on 1/19/09 after being down for a month for SVE well cleaning and condensate collection system installation.

² During the 12/29/09 inspection, the pitot tube flow measurement device was noted to be slightly misaligned. The pitot tube was realigned resulting in a higher flow rate versus previous months.

³ No reading could be obtained; FID flamed out because of low oxygen level.

⁴ Tubing connecting Pitot tube from discharge stack to manometer was blocked or cracked.

⁵ FID taken with Thermo Scientific TVA 1000 Vapor Analyzer.

⁶ System was shutdown on 11/21/12 following monthly monitoring for 1 month shutdown period.

Post 1 month shutdown monitoring was conducted at startup (12/21/12) and two weeks after startup (1/3/13).

⁷ System was shutdown on 1/10/14 for a 4 month shutdown period.

Post 4 month shutdown monitoring was conducted at startup (5/13/14) and two weeks after startup (5/28/14).

⁸ Could not obtain flow reading

With approval from the WDNR on 10/21/15, the System was put into part time (16 hrs/day) operational mode on 10/29/15. Select SVE wells were turned off, and LFG wells were adjusted to focus extraction around the GP-2 nest.

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-1	08/27/08 ¹	1.1	19.2	0.0	-	-	-	-
SVE-1	09/23/08 ²	-	-	-	-	-	90 - 100	-
SVE-1	09/25/08 ²	-	-	-	-	-	90 - 100	-
SVE-1	10/1/08 ²	-	-	-	-	-	90 - 100	-
SVE-1	10/07/08	0.1	10.5	-47.4	-	29	90 - 100	-
SVE-1	10/15/08	0.0	14.4	-47.8	-	0	90 - 100	-
SVE-1	10/30/08	0.0	15.9	-47.9	-	0	90 - 100	635
SVE-1	11/13/08	0.0	16.7	-47.3	-	0	90 - 100	222
SVE-1	11/26/08	0.0	17.3	-49.4	-	0	90 - 100	-
SVE-1	01/22/09 ³	0.0	16.9	-50.0	-	42	90 - 100	1,300
SVE-1	02/05/09	0.0	17.8	-50.7	-	43	90 - 100	49
SVE-1	02/16/09	0.0	19.0	-51.0	-	43	90 - 100	120
SVE-1	03/16/09	0.0	18.8	-49.6	-	0	90 - 100	108
SVE-1	04/24/09	0.0	19.2	-47.6	-	42	90 - 100	147
SVE-1	05/20/09	0.0	19.2	-46.8	-	49	90 - 100	25
SVE-1	06/23/09	0.0	18.4	-45.2	-	30	90 - 100	63
SVE-1	07/23/09	0.0	18.1	-44.3	-	32	90 - 100	50
SVE-1	08/20/09	0.0	18.0	-43.0	-	32	50	178
SVE-1	09/23/09	0.0	18.6	-43.8	-	29	50	152
SVE-1	10/20/09	0.0	19.1	-46.2	-	36	50	64
SVE-1	11/24/09	0.0	19.0	-45.8	-	36	50	127
SVE-1	12/29/09	0.0	18.7	-47.0	-	37	50	105
SVE-1	01/29/10	0.0	20.9	-46.9	-	34	50	11
SVE-1	02/22/10	0.1	19.9	-47.1	-	40	50	5
SVE-1	03/26/10	0.0	18.5	-46.1	-	37	50	64
SVE-1	04/22/10	0.0	19.6	-44.4	-	31	50	8
SVE-1	05/18/10	0.0	19.1	-44.4	-	13	50	460
SVE-1	06/29/10	0.0	18.6	-44.7	-	30	50	87
SVE-1	07/23/10	0.0	18.2	-41.9	-	33	50	170
SVE-1	08/27/10	0.0	15.8	-43.7	-	38	50	192
SVE-1	10/01/10	0.0	16.1	-46.5	-	32	50	3,270
SVE-1	10/22/10	0.0	17.6	-46.0	-	32	50	185
SVE-1	11/29/10	0.0	19.2	-44.0	-	50	50	20
SVE-1	12/22/10	0.0	20.4	-46.5	-	50	50	171
SVE-1	01/24/11	0.0	21.5	-45.2	-	50	50	320
SVE-1	02/28/11	0.0	18.7	-46.0	-	50	50	195
SVE-1	04/13/11	0.0	19.5	-49.1	-	40	50	241
SVE-1	04/29/11	0.0	20.1	-47.8	-	41	50	354
SVE-1	05/27/11	0.0	19.7	-42.0	-	50	50	682
SVE-1	06/24/11	0.0	19.1	-45.5	-	0 ⁴	50	190
SVE-1	07/22/11	0.0	18.3	-43.4	-	0 ⁴	50	257
SVE-1	08/25/11	0.0	17.5	-44.6	-	0 ⁴	50	325
SVE-1	09/30/11	0.0	19.8	-43.3	-	0 ⁴	50	250

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-1	10/26/11	0.0	18.4	-44.3	-	0 ⁴	50	12
SVE-1	11/22/11	0.0	19.3	-44.7	-	40	50	250
SVE-1	12/29/11	0.1	20.2	-45.2	-	49	50	160
SVE-1	01/26/12	0.0	19.6	-45.1	-	54	50	84
SVE-1	02/21/12	0.0	19.9	-46.0	-	50	50	231
SVE-1	03/30/12	0.0	19.7	-45.6	-	0 ⁴	50	327
SVE-1	04/27/12	0.0	18.3	-47.2	-	46	50	210
SVE-1	05/25/12	0.0	21.2	-42.5	-	0 ⁴	50	130
SVE-1	06/26/12	0.0	18.5	-44.3	-	42	50	120
SVE-1	07/25/12	0.0	17.7	-45.1	-	0 ⁴	50	140
SVE-1	08/22/12	0.0	18.6	-40.3	-	33	50	300
SVE-1	09/25/12	0.0	19.2	-35.4	-	36	50	17
SVE-1	10/30/12	0.0	19.4	-38.4	-	0 ⁴	50	NA ¹¹
SVE-1	11/21/12	0.0	19.8	-42.8	-	0 ⁴	50	20
SVE-1	12/21/12 ¹²	0.0	17.8	-43.6	-	57	50	315
SVE-1	01/03/13 ¹²	0.0	20.1	-45.4	-	41	50	230
SVE-1	01/28/13	0.0	20.4	-48.8	-	33	50	730
SVE-1	02/27/13	0.0	20.1	-47.2	-	0 ⁴	50	231
SVE-1	03/25/13	0.0	19.7	-46.1	-	0 ⁴	50	650
SVE-1	04/26/13	0.0	19.0	-49.5	-	50	50	214
SVE-1	05/30/13	0.0	20.0	-47.3	-	49	50	130
SVE-1	06/27/13	0.0	18.9	-34.5	-	0 ⁴	50	74
SVE-1	07/25/13	0.0	18.6	-40.8	-	36	50	5
SVE-1	08/30/13	0.0	20.0	-41.1	-	0 ⁴	50	96
SVE-1	09/25/13	0.0	20.2	-41.5	-	32	50	110
SVE-1	10/23/13	0.0	20.2	-43.2	-	40	50	1
SVE-1	11/20/13	0.0	19.9	-45.3	-	0 ⁴	50	120
SVE-1	12/18/13	0.0	21.4	-47.0	-	56	50	55
SVE-1	05/13/14 ¹³	0.0	11.9	0.0	-	48	50	290
SVE-1	05/28/14 ¹³	0.0	20.8	-44.8	-	0 ⁴	50	200
SVE-1	06/26/14	0.0	18.9	-45.8	-	0 ⁴	50	20 ¹¹
SVE-1	07/31/14	0.0	20.5	-44.5	-	0 ⁴	50	43
SVE-1	08/28/14	0.0	14.9	-45.0	-	59	50	257
SVE-1	09/26/14	0.0	18.8	-46.3	-	39	50	48
SVE-1	10/24/14	0.0	19.4	-46.8	-	59	50	190
SVE-1	11/19/14	0.0	19.9	-46.0	-	0 ⁴	50	67
SVE-1	12/17/14	0.0	20.2	-45.5	-	37	50	110
SVE-1	01/21/15	0.0	19.9	-47.0	-	0 ⁴	50	7
SVE-1	02/26/15	0.0	20.1	-47.8	-	57	50	330
SVE-1	03/17/15	0.0	20.1	-20.5	-	47	50	16
SVE-1	04/17/15	0.0	19.6	-16.0	-	0 ⁴	50	12
SVE-1	05/12/15	0.0	19.7	-17.9	-	50	50	5
SVE-1	06/25/15	0.0	18.2	-15.6	-	0 ⁴	50	51

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-1	07/31/15	0.0	20.7	0.0	-	0 ⁴	50	6
SVE-1	08/19/15	0.0	20.7	-0.1	-	0 ⁴	50	250
SVE-1	09/24/15	0.0	20.9	-0.1	-	0 ⁴	50	250
SVE-1	10/22/15	0.0	20.1	-19.1	-	0 ⁴	50	77
SVE-1	04/22/16	0.0	19.0	-5.0	50	0	-	120
SVE-1	10/26/16	0.0	14.7	-6.9	51	0	-	NA ⁶
SVE-1	04/05/17	0.0	14.3	-7.7	50	0	-	NA ⁶
SVE-1	10/30/17	0.0	16.7	-10.2	54	0	-	674
SVE-2	08/27/08 ¹	8.3	3.1	0.2	-	-	-	-
SVE-2	09/23/08 ²	-	-	-	-	-	90 - 100	-
SVE-2	09/25/08 ²	-	-	-	-	-	90 - 100	-
SVE-2	10/01/08 ²	-	-	-	-	-	90 - 100	-
SVE-2	10/07/08	0.9	8.7	-47.1	-	30	90 - 100	-
SVE-2	10/15/08	0.3	12.0	-47.4	-	40	90 - 100	-
SVE-2	10/30/08	0.0	13.9	-47.6	-	0	90 - 100	3,300
SVE-2	11/13/08	0.0	15.3	-46.9	-	0	90 - 100	1,350
SVE-2	11/26/08	0.0	15.7	-49.1	-	13	90 - 100	-
SVE-2	01/22/09 ^{3,5}	-	-	-	-	-	90 - 100	-
SVE-2	02/05/09 ⁵	-	-	-	-	-	90 - 100	-
SVE-2	02/16/09 ⁵	-	-	-	-	-	90 - 100	-
SVE-2	03/16/09 ⁵	-	-	-	-	-	90 - 100	-
SVE-2	04/24/09	0.0	16.7	-44.1	-	93	90 - 100	787
SVE-2	05/20/09	0.0	16.6	-43.1	-	104	90 - 100	670
SVE-2	06/23/09	0.0	15.4	-41.8	-	100	90 - 100	805
SVE-2	07/23/09	0.0	15.2	-40.8	-	100	90 - 100	2,310
SVE-2	08/20/09	0.0	16.0	-42.7	-	87	150	730
SVE-2	09/23/09	0.0	16.4	-43.5	-	98	150	588
SVE-2	10/20/09	0.0	17.2	-45.8	-	108	150	444
SVE-2	11/24/09	0.0	17.2	-45.5	-	106	150	425
SVE-2	12/29/09	0.0	16.9	-46.6	-	109	150	216
SVE-2	01/29/10	0.0	19.2	-46.6	-	125	150	75
SVE-2	02/22/10	0.0	18.1	-45.8	-	105	150	91
SVE-2	03/26/10	0.0	16.7	-45.8	-	104	150	194
SVE-2	04/22/10	0.0	17.7	-44.0	-	106	150	65
SVE-2	05/18/10	0.0	17.0	-44.0	-	100	150	745
SVE-2	06/29/10	0.0	16.8	-44.2	-	101	150	225
SVE-2	07/23/10	0.0	16.2	-41.5	-	95	150	412
SVE-2	08/27/10	0.0	12.9	-43.3	-	106	150	520
SVE-2	10/01/10	0.0	13.5	-46.2	-	121	150	3,130
SVE-2	10/22/10	0.0	13.7	-45.8	-	106	150	2,420
SVE-2	11/29/10	0.0	16.5	-45.8	-	109	150	1,780
SVE-2	12/22/10	0.0	17.7	-48.5	-	128	150	310

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-2	01/24/11	0.0	19.1	-48.2	-	132	150	460
SVE-2	02/28/11	0.0	16.9	-49.3	-	118	150	289
SVE-2	04/13/11	0.0	16.7	-48.8	-	116	150	331
SVE-2	04/29/11	0.0	17.6	-47.5	-	98	150	520
SVE-2	05/27/11	0.0	17.8	-46.7	-	122	150	730
SVE-2	06/24/11	0.0	17.0	-45.2	-	109	150	400
SVE-2	07/22/11	0.0	15.5	-43.2	-	98	150	825
SVE-2	08/25/11	0.0	15.6	-44.1	-	116	150	3,660
SVE-2	09/30/11	0.0	17.6	-42.8	-	150	150	1,530
SVE-2	10/26/11	0.0	16.4	-44.1	-	60	150	350
SVE-2	11/22/11	0.0	17.2	-44.2	-	86	150	590
SVE-2	12/29/11	0.0	18.0	-44.6	-	113	150	1,480
SVE-2	01/26/12	0.0	16.2	-44.4	-	35	150	2,591
SVE-2	02/21/12	0.0	17.2	-45.8	-	84	150	1,180
SVE-2	03/30/12	0.0	17.0	-46.4	-	109	150	612
SVE-2	04/27/12	0.0	16.2	-46.7	-	110	150	1,430
SVE-2	05/25/12	0.0	18.8	-45.0	-	84	150	400
SVE-2	06/26/12	0.0	16.2	-43.9	-	85	150	690
SVE-2	07/25/12	0.0	14.9	-44.6	-	80	150	780
SVE-2	08/22/12	0.0	16.3	-39.7	-	87	150	580
SVE-2	09/25/12	0.0	16.3	-39.9	-	131	150	1,710
SVE-2	10/30/12	0.0	17.4	-40.1	-	126	150	28 ¹¹
SVE-2	11/21/12	0.0	17.7	-42.4	-	120	150	240
SVE-2	12/21/12 ¹²	1.0	12.8	-44.4	-	141	150	NA ⁶
SVE-2	01/03/13 ¹²	0.0	17.7	-45.4	-	143	150	980
SVE-2	01/28/13	0.0	17.9	-48.1	-	0 ⁴	150	2,270
SVE-2	02/27/13	0.0	17.5	-47.0	-	0 ⁴	150	3,230
SVE-2	03/25/13	0.0	17.5	-45.6	-	0 ⁴	150	3,110
SVE-2	04/26/13	0.5	13.8	-46.4	-	0 ⁴	150	30,380
SVE-2	05/30/13	0.0	18.4	-47.7	-	0 ⁴	150	96
SVE-2	06/27/13	0.0	16.1	-38.8	-	0 ⁴	150	840
SVE-2	07/25/13	0.0	17.5	-40.4	-	50	150	27
SVE-2	08/30/13	0.0	18.3	-40.6	-	60	150	120
SVE-2	09/25/13	0.0	17.8	-20.2	-	48	150	140
SVE-2	10/23/13	0.0	18.6	-42.7	-	109	150	16
SVE-2	11/20/13	0.0	20.8	-44.4	-	0 ⁴	150	140
SVE-2	12/18/13	0.0	19.9	-46.9	-	146	150	79
SVE-2	05/13/14 ¹³	0.7	9.1	38.0	-	124	150	NA ⁶
SVE-2	5/28/14 ¹³	0.0	17.0	-7.2	-	0 ⁴	150	5,890
SVE-2	06/26/14	0.0	17.3	-45.2	-	124	150	400 ¹¹
SVE-2	07/31/14	1.8	15.1	-44.0	-	147	150	2,810
SVE-2	08/28/14	5.0	8.0	-44.6	-	108	150	NA ⁶
SVE-2	09/26/14	0.0	17.4	-45.8	-	138	150	55

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-2	10/24/14	0.0	18.4	-46.3	-	143	150	200
SVE-2	11/19/14	0.0	17.2	-45.8	-	151	150	71
SVE-2	12/17/14	0.0	19.4	-44.6	-	144	150	180
SVE-2	01/21/15	0.0	19.2	-46.3	-	111	150	8
SVE-2	02/26/15	0.0	18.6	-47.2	-	158	150	66
SVE-2	03/17/15	0.0	18.4	-45.3	-	142	150	9
SVE-2	04/17/15	0.0	19.1	-43.2	-	0 ⁴	150	14
SVE-2	05/12/15	0.0	19.0	-41.6	-	147	150	6
SVE-2	06/25/15	0.0	18.4	-38.9	-	152	150	47
SVE-2	07/31/15	0.0	18.7	-38.5	-	152	150	9
SVE-2	08/19/15	0.0	18.7	-39.6	-	105	150	90
SVE-2	09/24/15	0.0	18.1	-44.9	-	105	150	210
SVE-2	10/22/15	0.0	19.3	-43.2	-	0 ⁴	150	57
SVE-2	04/22/16	0.0	16.1	-1.2	50	0	-	270
SVE-2	10/26/16	0.0	13.4	-0.2	51	0	-	NA ⁶
SVE-2	04/05/17	0.0	16.3	-0.1	50	0	-	741
SVE-2	10/30/17	0.0	20.0	0.0	54	0	-	1,008
SVE-3	08/27/08 ¹	6.1	3.5	0.6	-	-	-	-
SVE-3	09/23/08	8.5	0.0	-12.2	-	89	90 - 100	-
SVE-3	09/25/08	3.0	2.8	-13.7	-	91	90 - 100	-
SVE-3	10/01/08	0.2	6.9	-14.5	-	93	90 - 100	-
SVE-3	10/07/08	0.1	11.0	-17.4	-	116	90 - 100	-
SVE-3	10/15/08	0.0	13.1	-14.5	-	104	90 - 100	-
SVE-3	10/30/08	0.0	14.5	-13.6	-	89	90 - 100	730
SVE-3	11/13/08	0.0	15.4	-11.7	-	99	90 - 100	455
SVE-3	11/26/08	0.0	16.8	-13.8	-	100	90 - 100	-
SVE-3	01/22/09 ³	0.0	15.0	-13.6	-	100	90 - 100	1,510
SVE-3	02/05/09	0.0	17.3	-11.7	-	104	90 - 100	371
SVE-3	02/16/09	0.0	18.0	-12.2	-	92	90 - 100	327
SVE-3	03/16/09	0.0	17.7	-12.6	-	97	90 - 100	267
SVE-3	04/24/09	0.0	18.4	-11.6	-	95	90 - 100	236
SVE-3	05/20/09	0.0	18.6	-10.4	-	104	90 - 100	68
SVE-3	06/23/09	0.0	18.1	-14.6	-	104	90 - 100	138
SVE-3	07/23/09	0.0	18.1	-14.0	-	104	90 - 100	169
SVE-3	08/20/09	0.0	18.5	-6.7	-	53	50	170
SVE-3	09/23/09	0.0	18.8	-7.7	-	50	50	210
SVE-3	10/20/09	0.0	19.4	-7.6	-	58	50	18
SVE-3	11/24/09	0.0	19.1	-6.4	-	48	50	94
SVE-3	12/29/09	0.0	18.4	-6.7	-	49	50	24
SVE-3	01/29/10	0.0	19.0	-6.1	-	43	50	8
SVE-3	02/22/10	0.0	19.7	-5.0	-	52	50	84
SVE-3	03/26/10	0.0	18.3	-6.5	-	49	50	122

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-3	04/22/10	0.0	19.2	-7.2	-	45	50	15
SVE-3	05/18/10	0.0	18.9	-7.6	-	44	50	542
SVE-3	06/29/10	0.0	18.7	-8.9	-	54	50	130
SVE-3	07/23/10	0.0	18.8	-7.4	-	53	50	152
SVE-3	08/27/10	6.1	7.5	-5.8	-	53	50	NA ⁶
SVE-3	10/01/10	5.9	7.3	-5.3	-	47	50	NA ⁶
SVE-3	10/22/10	0.0	18.4	-6.3	-	34	50	9,830
SVE-3	11/29/10	0.0	19.4	-2.6	-	49	50	151
SVE-3	12/22/10	0.0	20.7	-6.1	-	46	50	152
SVE-3	01/24/11	0.0	20.6	-4.6	-	46	50	310
SVE-3	02/28/11	0.0	18.7	-5.2	-	54	50	178
SVE-3	04/13/11	0.0	19.1	-8.6	-	49	50	295
SVE-3	04/29/11	0.0	19.8	-7.2	-	53	50	269
SVE-3	05/27/11	0.0	19.6	-8.0	-	45	50	377
SVE-3	06/24/11	0.0	19.5	-12.9	-	57	50	240
SVE-3	07/22/11	0.0	17.8	-12.8	-	50	50	23
SVE-3	08/25/11	0.1	18.4	-11.4	-	55	50	16,510
SVE-3	09/30/11	0.0	17.8	-8.8	-	51	50	2,350
SVE-3	10/26/11	0.0	18.3	-10.1	-	47	50	16
SVE-3	11/22/11	0.0	19.2	-6.4	-	54	50	270
SVE-3	12/29/11	0.0	21.0	-5.7	-	49	50	300
SVE-3	01/26/12	0.0	19.2	-3.8	-	50	50	96
SVE-3	02/21/12	0.0	19.8	-6.6	-	46	50	210
SVE-3	03/30/12	0.0	19.8	-5.0	-	0 ⁴	50	220
SVE-3	04/27/12	0.0	18.2	-5.4	-	56	50	190
SVE-3	05/25/12	0.0	18.0	-7.7	-	51	50	430
SVE-3	06/26/12	0.0	19.1	-5.5	-	48	50	120
SVE-3	07/25/12	0.0	18.2	-5.7	-	45	50	130
SVE-3	08/22/12	0.0	18.4	-6.0	-	47	50	300
SVE-3	09/25/12	0.0	19.0	-5.9	-	0 ⁴	50	35
SVE-3	10/30/12	0.0	19.0	-5.4	-	52	50	NA ¹¹
SVE-3	11/21/12	0.0	19.4	-5.5	-	45	50	56
SVE-3	12/21/12 ¹²	0.6	16.4	-6.6	-	46	50	4,680
SVE-3	01/03/13 ¹²	0.0	19.6	-6.8	-	46	50	115
SVE-3	01/28/13	0.0	20.9	-6.7	-	73	50	601
SVE-3	02/27/13	0.0	20.1	-5.6	-	54	50	239
SVE-3	03/25/13	0.0	19.8	-6.9	-	53	50	430
SVE-3	04/26/13	0.0	18.9	-5.4	-	50	50	260
SVE-3	05/30/13	0.0	19.6	-8.4	-	51	50	280
SVE-3	06/27/13	0.0	18.8	-11.8	-	63	50	22
SVE-3	07/25/13	0.0	18.6	-11.5	-	50	50	47
SVE-3	08/30/13	0.0	19.4	-11.2	-	57	50	82
SVE-3	09/25/13	0.0	18.9	-20.5	-	54	50	120

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-3	10/23/13	0.0	19.3	-11.2	-	51	50	6
SVE-3	11/20/13	0.0	19.7	-5.8	-	56	50	87
SVE-3	12/18/13	0.0	19.7	0.0	-	46	50	23
SVE-3	05/13/14 ¹³	0.0	15.3	0.0	-	47	50	200
SVE-3	05/28/14 ¹³	0.0	17.0	-7.2	-	59	50	730
SVE-3	06/26/14	0.0	18.8	-8.7	-	41	50	6 ¹¹
SVE-3	07/31/14	0.0	17.8	-13.4	-	44	50	81
SVE-3	08/28/14	0.1	14.1	-15.2	-	52	50	454
SVE-3	09/26/14	0.0	18.2	-14.1	-	64	50	44
SVE-3	10/24/14	0.0	18.9	-14.6	-	50	50	160
SVE-3	11/19/14	0.0	19.8	-12.4	-	42	50	66
SVE-3	12/17/14	0.0	19.8	-11.7	-	52	50	110
SVE-3	01/21/15	0.0	19.5	-11.8	-	56	50	33
SVE-3	02/26/15	0.0	19.7	-11.2	-	46	50	600
SVE-3	03/17/15	0.0	19.6	-10.5	-	51	50	14
SVE-3	04/17/15	0.0	19.2	-9.8	-	58	50	13
SVE-3	05/12/15	0.0	19.2	-13.5	-	48	50	11
SVE-3	06/25/15	0.0	17.9	-10.6	-	47	50	47
SVE-3	07/31/15	0.0	18.7	-11.4	-	52	50	3
SVE-3	08/19/15	0.0	19.1	-11.9	-	44	50	50
SVE-3	09/24/15	0.0	18.6	-14.1	-	0 ⁴	50	100
SVE-3	10/22/15	0.0	19.4	-13.3	-	0 ⁴	50	70
SVE-3	04/22/16	0.0	17.8	-1.7	50	0	-	48
SVE-3	10/26/16	0.0	12.5	0.0	51	0	-	NA ⁶
SVE-3	04/05/17	0.0	20.5	0.0	50	0	-	1,108
SVE-3	10/30/17	0.0	14.4	-0.6	54	0	-	NA ⁶
SVE-4	08/27/08 ¹	3.3	17.9	0.3	-	-	-	-
SVE-4	09/23/08	46.8	0.0	-47.4	-	0	90 - 100	-
SVE-4	09/25/08	0.0	19.6	-19.8	-	0	90 - 100	-
SVE-4	10/01/08	1.4	6.9	-49.5	-	43	90 - 100	-
SVE-4	10/07/08	0.7	10.7	-47.6	-	36	90 - 100	-
SVE-4	10/15/08	0.3	13.2	-48.2	-	31	90 - 100	-
SVE-4	10/30/08	0.1	15.1	-48.0	-	30	90 - 100	2,700
SVE-4	11/13/08	0.0	16.0	-47.4	-	44	90 - 100	-
SVE-4	11/26/08	0.0	17.1	-49.5	-	47	90 - 100	-
SVE-4	01/22/09 ²	0.2	16.1	-21.0	-	105	90 - 100	10,400
SVE-4	02/05/09	0.0	17.4	-17.4	-	95	90 - 100	616
SVE-4	02/16/09	0.0	18.9	-19.4	-	94	90 - 100	159
SVE-4	03/16/09	0.0	18.3	-21.3	-	105	90 - 100	452
SVE-4	04/24/09	0.0	18.0	-20.1	-	98	90 - 100	3,720
SVE-4	05/20/09	0.0	18.7	-19.0	-	92	90 - 100	1,210
SVE-4	06/23/09	0.0	17.8	-18.6	-	90	90 - 100	1,550

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-4	07/23/09	0.0	18.0	-20.1	-	103	90 - 100	5,880
SVE-4	08/20/09	0.0	17.5	-27.8	-	146	150	7,540
SVE-4	09/23/09	0.0	17.5	-28.1	-	146	150	5,340
SVE-4	10/20/09	0.0	18.5	-30.0	-	154	150	5,080
SVE-4	11/24/09	0.0	18.0	-29.4	-	156	150	4,160
SVE-4	12/29/09	0.0	17.2	-30.5	-	153	150	1,516
SVE-4	01/29/10	0.0	18.0	-30.4	-	149	150	1,247
SVE-4	02/22/10	0.0	18.4	-25.5	-	147	150	1,350
SVE-4	03/26/10	0.0	17.9	-28.9	-	147	150	2,160
SVE-4	04/22/10	0.0	18.2	-29.4	-	147	150	412
SVE-4	05/18/10	0.0	18.0	-29.4	-	147	150	2,830
SVE-4	06/29/10	0.0	18.6	-29.8	-	145	150	1,780
SVE-4	07/23/10	0.0	17.6	-28.6	-	150	150	3,120
SVE-4	08/27/10	0.0	14.9	-28.0	-	153	150	4,680
SVE-4	10/01/10	0.1	14.0	-28.3	-	154	150	26,600
SVE-4	10/22/10	0.1	15.9	-27.8	-	153	150	NA ⁶
SVE-4	11/29/10	0.0	18.1	-25.2	-	151	150	5,930
SVE-4	12/22/10	0.1	18.4	-25.5	-	146	150	1,150
SVE-4	01/24/11	0.1	17.9	-27.7	-	154	150	2,890
SVE-4	02/28/11	0.2	16.8	-28.2	-	150	150	4,781
SVE-4	04/13/11	0.4	18.6	-29.9	-	152	150	6,320
SVE-4	04/29/11	0.0	18.4	-30.3	-	149	150	2,870
SVE-4	05/27/11	0.0	19.5	-30.4	-	145	150	605
SVE-4	06/24/11	0.0	18.8	-32.5	-	157	150	590
SVE-4	07/22/11	0.0	17.7	-33.3	-	146	150	28
SVE-4	08/25/11	0.0	17.3	-32.6	-	156	150	620
SVE-4	09/30/11	0.0	20.8	-40.7	-	148	150	320
SVE-4	10/26/11	0.0	19.3	-43.9	-	133	150	8,850
SVE-4	11/22/11	0.0	19.8	-38.3	-	155	150	6,680
SVE-4	12/29/11	0.0	20.0	-36.8	-	155	150	2,980
SVE-4	01/26/12	0.0	17.6	-35.1	-	153	150	4,740
SVE-4	02/21/12	0.0	18.3	-18.8	-	147	150	2,820
SVE-4	03/30/12	0.0	19.5	-25.5	-	149	150	195
SVE-4	04/27/12	0.0	18.3	-28.4	-	152	150	1,150
SVE-4	05/25/12	0.0	19.4	-22.5	-	150	150	150
SVE-4	06/26/12	0.0	18.7	-28.8	-	155	150	20
SVE-4	07/25/12	0.0	19.4	-33.2	-	148	150	30
SVE-4	08/22/12	0.0	19.4	-39.7	-	149	150	4,960
SVE-4	09/25/12	0.1	19.7	-40.2	-	144	150	7,510
SVE-4	10/30/12	0.0	20.1	-40.4	-	60	150	370 ¹¹
SVE-4	11/21/12	0.0	18.6	-36.3	-	149	150	1,920
SVE-4	12/21/12 ¹²	0.0	18.2	-34.8	-	152	150	28,360
SVE-4	01/03/13 ¹²	0.3	18.2	-19.8	-	150	150	11,020

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-4	01/28/13	0.0	20.2	-16.9	-	115	150	1,160
SVE-4	02/27/13	0.0	19.3	-9.0	-	156	150	256
SVE-4	03/25/13	0.0	20.0	-24.6	-	147	150	650
SVE-4	04/26/13	0.2	18.2	-35.2	-	149	150	16,640
SVE-4	05/30/13	0.0	18.6	-37.0	-	149	150	3,710
SVE-4	06/27/13	0.1	18.0	-43.4	-	86	150	2,056
SVE-4	07/25/13	0.0	18.1	-40.8	-	90	150	64
SVE-4	08/30/13	0.0	18.4	-37.2	-	0 ⁴	150	760
SVE-4	09/25/13	0.0	19.8	-48.8	-	88	150	7,590
SVE-4	10/23/13	0.0	18.1	-44.3	-	143	150	1,070
SVE-4	11/20/13	0.0	18.0	-45.6	-	150	150	3,090
SVE-4	12/18/13	0.0	17.8	-47.2	-	155	150	1,790
SVE-4	05/13/14 ¹³	0.1	9.7	17.0	-	148	150	NA ⁶
SVE-4	05/28/14 ¹³	0.0	17.9	-43.8	-	0 ⁴	150	3,970
SVE-4	06/26/14	0.0	18.4	-45.1	-	149	150	1,930 ¹¹
SVE-4	07/31/14	0.0	13.4	-44.0	-	141	150	2,380
SVE-4	08/28/14	0.6	11.7	-45.0	-	147	150	NA ⁶
SVE-4	09/26/14	0.0	17.4	-45.6	-	138	150	310
SVE-4	10/24/14	0.0	17.8	-46.4	-	164	150	450
SVE-4	11/19/14	0.0	18.1	-46.2	-	161	150	300
SVE-4	12/17/14	0.0	18.7	-34.2	-	170	150	170
SVE-4	01/21/15	0.0	18.4	-33.6	-	168	150	80
SVE-4	02/26/15	0.0	18.6	-31.9	-	152	150	170
SVE-4	03/17/15	0.0	18.7	-31.2	-	143	150	46
SVE-4	04/17/15	0.0	19.7	-24.8	-	144	150	9
SVE-4	05/12/15	0.0	18.5	-27.6	-	155	150	30
SVE-4	06/25/15	0.0	18.5	-37.4	-	117	150	37
SVE-4	07/31/15	0.0	18.7	-37.7	-	155	150	56
SVE-4	08/19/15	0.0	19.0	-34.2	-	153	150	88
SVE-4	09/24/15	0.0	18.6	-30.3	-	147	150	140
SVE-4	10/22/15	0.0	19.8	-27.2	-	150	150	70
SVE-4	11/12/15	0.0	19.7	-6.4	-	69	40 - 50	140
SVE-4	12/17/15	0.0	19.9	-17.2	-	47	40 - 50	340
SVE-4	01/21/16	0.0	17.1	-15.6	35	52	40-50	450
SVE-4	02/24/16	0.0	16.2	-14.9	38	0 ^{4,17}	40-50	300
SVE-4	03/22/16	0.0	15.7	-16.1	42	0 ^{4,17}	40-50	NA ⁶
SVE-4	04/22/16	0.0	17.0	-8.3	50	0 ⁴	40-50	33
SVE-4	05/19/16	0.0	16.9	-11.3	55	43	40-50	1,010
SVE-4	06/14/16	0.0	16.4	-10.6	62	0 ^{4,17}	40-50	1,670
SVE-4	07/27/16	0.2	15.1	-9.2	70	0 ^{4,17}	40-50	520
SVE-4	08/10/16	0.1	15.9	-10.2	70	0 ⁴	40-50	600
SVE-4	09/15/16	0.6	14.8	-9.6	68	0 ⁴	40-50	NA ⁶
SVE-4	10/26/16	0.1	14.7	-11.5	51	40	40-50	900

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-4	11/23/16	0.0	14.0	-11.3	50	44	40-50	NA ⁶
SVE-4	12/13/16	0.3	15.9	-13.3	45	63	40-50	NA ⁶
SVE-4	01/10/17	0.0	13.5	-10.8	40	58	40-50	NA ⁶
SVE-4	02/14/17	0.0	15.5	-14.3	44	58	40-50	NA ⁶
SVE-4	03/07/17	0.0	14.3	-14.8	40	57	40-50	NA ⁶
SVE-4	04/05/17	0.0	14.0	-12.3	50	54	40-50	NA ⁶
SVE-4	05/25/17	0.0	12.9	-16.4	53	0 ⁴	40-50	NA ⁶
SVE-4	06/28/17	0.0	16.3	-14.0	63	0 ⁴	40-50	492
SVE-4	07/24/17	0.0	15.7	-14.0	68	0 ⁴	40-50	611
SVE-4	08/14/17	0.0	15.0	-14.0	66	0 ⁴	40-50	NA ⁶
SVE-4	09/13/17	0.3	15.5	-12.4	67	42	40-50	NA ⁶
SVE-4	10/30/17	0.5	14.4	-16.1	54	56	40-50	NA ⁶
SVE-4	11/17/17	0.5	16.0	-12.4	55	64	40-50	NA ⁶
SVE-4	12/07/17	0.4	16.0	-12.4	52	0 ⁴	40-50	NA ⁶
SVE-5	08/27/08 ¹	5.5	14.8	0.3	-	-	-	-
SVE-5	09/23/08 ²	-	-	-	-	-	90 - 100	-
SVE-5	09/25/08 ²	-	-	-	-	-	90 - 100	-
SVE-5	10/01/08 ²	-	-	-	-	-	90 - 100	-
SVE-5	10/07/08	3.1	6.1	-47.7	-	0	90 - 100	-
SVE-5	10/15/08	1.2	10.6	-48.1	-	0	90 - 100	-
SVE-5	10/30/08	0.4	12.4	-47.9	-	0	90 - 100	10,100
SVE-5	11/13/08	0.3	12.6	-33.1	-	164	90 - 100	-
SVE-5	11/26/08	0.0	13.1	-49.4	-	31	90 - 100	-
SVE-5	01/22/09 ³	0.0	13.8	-50.7	-	34	90 - 100	6,910
SVE-5	02/05/09	0.0	14.2	-50.3	-	34	90 - 100	NA ⁶
SVE-5	02/16/09	0.0	15.1	-51.2	-	27	90 - 100	2,560
SVE-5	03/16/09	0.0	15.8	-49.7	-	-	90 - 100	4,320
SVE-5	04/24/09	0.0	16.2	-44.6	-	0	90 - 100	7,890
SVE-5	05/20/09	0.0	16.5	-47.2	-	0	90 - 100	4,910
SVE-5	06/23/09	0.0	16.0	-44.9	-	0	90 - 100	5,880
SVE-5	07/23/09	0.0	16.2	-44.7	-	0	90 - 100	20,900
SVE-5	08/20/09	0.0	16.9	-42.8	-	0	100	8,710
SVE-5	09/23/09	0.0	16.9	-43.8	-	0	100	5,610
SVE-5	10/20/09	0.0	17.8	-46.4	-	0	100	5,900
SVE-5	11/24/09	0.0	17.2	-45.8	-	0	100	8,460
SVE-5	12/29/09	0.0	16.5	-46.8	-	0	100	3,480
SVE-5	01/29/10	0.0	17.9	-46.9	-	31	100	2,802
SVE-5	02/22/10	0.0	17.3	-46.2	-	32	100	4,710
SVE-5	03/26/10	0.0	16.3	-46.1	-	0	100	5,850
SVE-5	04/22/10	0.0	17.4	-44.0	-	0	100	2,520
SVE-5	05/18/10	0.0	16.9	-44.4	-	0	100	13,900
SVE-5	06/29/10	0.0	17.1	-44.4	-	0	100	5,430

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-5	07/23/10	0.0	17.4	-41.8	-	0	100	5,210
SVE-5	08/27/10	0.8	13.5	-43.7	-	0	100	4,060
SVE-5	10/01/10	0.4	14.0	-46.5	-	0	100	42,900
SVE-5	10/22/10	0.1	14.5	-45.9	-	0	100	26,800
SVE-5	11/29/10	0.1	17.4	-46.5	-	0	100	13,600
SVE-5	12/22/10	0.2	18.0	-48.9	-	31	100	4,130
SVE-5	01/24/11	0.1	18.0	-48.6	-	0	100	3,940
SVE-5	02/28/11	0.0	16.8	-49.4	-	0	100	1,554
SVE-5	04/13/11	0.0	16.7	-48.8	-	0	100	1,010
SVE-5	04/29/11	0.0	18.0	-47.6	-	0	100	2,160
SVE-5	05/27/11	0.0	18.3	-46.5	-	46	100	2,990
SVE-5	06/24/11	0.0	17.7	-45.0	-	0	100	2,120
SVE-5	07/22/11	0.0	17.0	-43.3	-	0	100	470
SVE-5	08/25/11	0.0	17.1	-44.8	-	0	100	4,300
SVE-5	09/30/11	0.0	18.8	-42.1	-	0	100	470
SVE-5	10/26/11	0.0	17.3	-44.0	-	0	100	3,010
SVE-5	11/22/11	0.0	18.0	-45.0	-	0	100	1,830
SVE-5	12/29/11	0.0	19.8	-44.9	-	0	100	1,820
SVE-5	01/26/12	0.0	17.3	-45.8	-	46	100	6,564
SVE-5	02/21/12	0.0	18.2	-46.6	-	89	100	1,932
SVE-5	03/30/12	0.0	18.0	-46.8	-	49	100	1,888
SVE-5	04/27/12	0.0	16.8	-46.9	-	0 ⁴	100	2,360
SVE-5	05/25/12	0.1	18.3	-34.3	-	0 ⁴	100	2,220
SVE-5	06/26/12	0.0	16.9	-44.4	-	0 ⁴	100	3,050
SVE-5	07/25/12	0.0	16.4	-45.1	-	0 ⁴	100	3,500
SVE-5	08/22/12	0.0	16.8	-40.5	-	0 ⁴	100	2,390
SVE-5	09/25/12	0.0	16.7	-38.0	-	0 ⁴	100	2,270
SVE-5	10/30/12	0.0	17.5	-40.6	-	0 ⁴	100	87 ¹¹
SVE-5	11/21/12	0.0	17.8	-43.4	-	0 ⁴	100	170
SVE-5	12/21/12 ¹²	0.0	14.1	-45.3	-	0 ⁴	100	2,490
SVE-5	01/03/13 ¹²	0.0	17.1	-45.8	-	74	100	1,030
SVE-5	01/28/13	0.0	18.5	-49.1	-	50	100	1,850
SVE-5	02/27/13	0.0	17.9	-49.1	-	91	100	2,780
SVE-5	03/25/13	0.0	17.6	-49.4	-	0 ⁴	100	6,620
SVE-5	04/26/13	0.1	13.8	-49.3	-	0 ⁴	100	7,090
SVE-5	05/30/13	0.0	17.7	-47.6	-	0 ⁴	100	180
SVE-5	06/27/13	0.0	16.8	-43.9	-	96	100	280
SVE-5	07/25/13	0.0	17.8	-41.0	-	0 ⁴	100	78
SVE-5	08/30/13	0.0	18.8	-40.0	-	0 ⁴	100	52
SVE-5	09/25/13	0.0	18.5	-41.6	-	0 ⁴	100	150
SVE-5	10/23/13	0.0	19.1	-44.3	-	55	100	24
SVE-5	11/20/13	0.0	18.9	-45.7	-	107	100	150
SVE-5	12/18/13	0.0	19.3	-47.6	-	112	100	58

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-5	05/13/14 ¹³	1.9	7.9	61.0	-	96	100	NA ⁶
SVE-5	05/28/14 ¹³	0.0	15.9	-43.8	-	0 ⁴	100	7,200
SVE-5	06/26/14	0.0	19.0	-45.4	-	0 ⁴	100	550 ¹¹
SVE-5	07/31/14	0.6	18.3	-44.0	-	95	100	12,870
SVE-5	08/28/14	1.4	17.1	-45.1	-	98	100	24,500
SVE-5	09/26/14	0.0	19.5	-45.8	-	108	100	96
SVE-5	10/24/14	0.0	19.9	-46.7	-	91	100	200
SVE-5	11/19/14	0.0	20.4	-46.0	-	96	100	210
SVE-5	12/17/14	0.0	20.4	-46.2	-	108	100	120
SVE-5	01/21/15	0.0	19.7	-47.7	-	99	100	110
SVE-5	02/26/15	0.0	19.8	-47.2	-	108	100	200
SVE-5	03/17/15	0.0	19.9	-47.1	-	96	100	10
SVE-5	04/17/15	0.0	19.1	-46.0	-	98	100	40
SVE-5	05/12/15	0.0	19.9	-42.5	-	106	100	14
SVE-5	06/25/15	0.0	19.4	-39.7	-	102	100	52
SVE-5	07/31/15	0.0	20.2	-38.6	-	106	100	87
SVE-5	08/19/15	0.0	20.5	-40.1	-	103	100	150
SVE-5	09/24/15	0.0	20.3	-45.5	-	93	100	52
SVE-5	10/22/15	0.0	20.8	-43.7	-	91	100	78
SVE-5	04/22/16	0.0	20.0	-0.2	50	0	-	24
SVE-5	10/26/16	0.0	19.2	0.0	51	0	-	NA ⁶
SVE-5	4/5/2017 ¹⁴	-	-	-	-	-	-	-
SVE-5	10/30/17	0.0	20.3	-0.8	54	0	-	427
SVE-6	08/27/08 ¹	3.0	2.2	0.4	-	-	-	-
SVE-6	09/23/08	27.7	0.3	-15.0	-	96	90 - 100	-
SVE-6	09/25/08	10.7	3.1	-16.9	-	90	90 - 100	-
SVE-6	10/01/08	1.7	6.2	-17.7	-	92	90 - 100	-
SVE-6	10/07/08	0.6	10.0	-17.4	-	91	90 - 100	-
SVE-6	10/15/08	0.1	12.5	-19.4	-	96	90 - 100	-
SVE-6	10/30/08	7.3	14.4	-19.7	-	89	90 - 100	1,150
SVE-6	11/13/08	0.0	15.4	-18.8	-	108	90 - 100	-
SVE-6	11/26/08	0.0	16.5	-20.1	-	103	90 - 100	-
SVE-6	01/22/09 ³	0.0	15.3	-14.0	-	102	90 - 100	6,100
SVE-6	02/05/09	0.0	16.8	-9.7	-	102	90 - 100	608
SVE-6	02/16/09	0.0	17.4	-13.3	-	92	90 - 100	609
SVE-6	03/16/09	0.0	16.6	-15.5	-	96	90 - 100	2,260
SVE-6	04/24/09	0.0	16.8	-14.6	-	96	90 - 100	1,570
SVE-6	05/20/09	0.0	16.9	-14.6	-	97	90 - 100	985
SVE-6	06/23/09	0.0	16.1	-17.7	-	103	90 - 100	1,830
SVE-6	07/23/09	0.0	16.0	-18.4	-	106	90 - 100	5,640
SVE-6	08/20/09	0.0	16.6	-26.4	-	151	150	5,910
SVE-6	09/23/09	0.0	16.7	-26.6	-	153	150	3,210

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-6	10/20/09	0.0	18.0	-24.4	-	144	150	3,280
SVE-6	11/24/09	0.0	18.0	-22.8	-	156	150	1,740
SVE-6	12/29/09	0.0	17.4	-22.4	-	153	150	551
SVE-6	01/29/10	0.0	18.3	-22.7	-	157	150	12
SVE-6	02/22/10	0.0	17.2	-20.4	-	156	150	2,320
SVE-6	03/26/10	0.0	16.8	-22.6	-	155	150	330
SVE-6	04/22/10	0.0	17.7	-25.7	-	147	150	158
SVE-6	05/18/10	0.0	17.3	-24.2	-	150	150	1,880
SVE-6	06/29/10	0.0	17.3	-25.0	-	154	150	698
SVE-6	07/23/10	0.0	17.4	-23.5	-	152	150	935
SVE-6	08/27/10	1.8	8.9	-25.0	-	152	150	NA ⁶
SVE-6	10/01/10	0.8	10.8	-25.2	-	156	150	NA ⁶
SVE-6	10/22/10	1.1	12.6	-24.8	-	153	150	NA ⁶
SVE-6	11/29/10	0.0	18.1	-22.0	-	151	150	920
SVE-6	12/22/10	0.3	17.1	-23.0	-	154	150	4,650
SVE-6	01/24/11	0.0	19.7	-18.8	-	152	150	400
SVE-6	02/28/11	0.0	18.0	-18.8	-	147	150	208
SVE-6	04/13/11	0.0	18.1	-22.8	-	148	150	310
SVE-6	04/29/11	0.0	18.9	-22.9	-	158	150	565
SVE-6	05/27/11	0.0	19.0	-28.1	-	148	150	530
SVE-6	06/24/11	0.0	18.4	-28.4	-	145	150	340
SVE-6	07/22/11	0.0	17.1	-28.1	-	125	150	325
SVE-6	08/25/11	1.5	13.8	-31.5	-	145	150	>50,000
SVE-6	09/30/11	0.0	19.4	-40.1	-	147	150	3,120
SVE-6	10/26/11	0.0	17.6	-40.0	-	153	150	1,240
SVE-6	11/22/11	0.0	18.7	-36.6	-	154	150	650
SVE-6	12/29/11	0.0	21.0	-43.4	-	145	150	115
SVE-6	01/26/12	0.0	17.8	-43.5	-	147	150	20,566
SVE-6	02/21/12	0.0	19.6	-38.1	-	150	150	237
SVE-6	03/30/12	0.0	19.6	-46.2	-	147	150	202
SVE-6	04/27/12	0.0	18.3	-46.5	-	128	150	200
SVE-6	05/25/12	0.0	19.9	-42.0	-	90	150	120
SVE-6	06/26/12	0.0	18.8	-43.4	-	133	150	870
SVE-6	07/25/12	0.0	18.0	-44.9	-	66	150	1,020
SVE-6	08/22/12	0.0	19.0	-39.6	-	0 ⁴	150	310
SVE-6	09/25/12	0.0	19.5	-39.8	-	103	150	80
SVE-6	10/30/12	0.0	19.4	-40.1	-	65	150	NA ¹¹
SVE-6	11/21/12	0.0	19.8	-42.6	-	98	150	93
SVE-6	12/21/12 ¹²	1.5	17.1	-44.4	-	134	150	36,810
SVE-6	01/03/13 ¹²	0.0	20.0	-44.5	-	0 ⁴	150	210
SVE-6	01/28/13	0.0	21.2	-48.4	-	0 ⁴	150	665
SVE-6	02/27/13	0.0	20.3	-48.2	-	156	150	211
SVE-6	03/25/13	0.0	20.1	-49.9	-	147	150	498

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-6	04/26/13	0.0	15.9	-33.6	-	149	150	299
SVE-6	05/30/13	0.0	19.4	-29.2	-	153	150	60
SVE-6	06/27/13	0.0	18.4	-43.7	-	152	150	280
SVE-6	07/25/13	0.0	18.9	-40.6	-	155	150	90
SVE-6	08/30/13	0.0	20.5	-42.0	-	155	150	67
SVE-6	09/25/13	0.0	20.1	-10.2	-	153	150	30
SVE-6	10/23/13	0.0	20.8	-23.4	-	147	150	4
SVE-6	11/20/13	0.0	20.2	-29.5	-	156	150	82
SVE-6	12/18/13	0.0	20.1	-47.4	-	58	150	27
SVE-6	05/13/14 ¹³	1.0	11.6	105.0	-	151	150	48,250
SVE-6	05/28/14 ¹³	0.0	18.5	-45.2	-	60	150	230
SVE-6	06/26/14	0.0	18.9	-45.1	-	147	150	6 ¹¹
SVE-6	07/31/14	0.8	17.6	-44.2	-	141	150	7,350
SVE-6	08/28/14	3.7	10.1	-44.9	-	148	150	NA ⁶
SVE-6	09/26/14	0.0	18.5	-45.8	-	156	150	50
SVE-6	10/24/14	0.0	19.0	-46.6	-	146	150	180
SVE-6	11/19/14	0.0	17.0	-46.3	-	144	150	2,940
SVE-6	12/17/14	0.0	19.8	-45.8	-	153	150	110
SVE-6	01/21/15	0.0	19.5	-47.5	-	146	150	13
SVE-6	02/26/15	0.0	18.9	-48.1	-	149	150	200
SVE-6	03/17/15	0.0	19.6	-47.6	-	0 ⁴	150	58
SVE-6	04/17/15	0.0	18.8	-46.0	-	159	150	11
SVE-6	05/12/15	0.0	19.6	-42.2	-	149	150	29
SVE-6	06/25/15	0.0	18.5	-39.7	-	151	150	44
SVE-6	07/31/15	0.0	19.0	-38.6	-	147	150	6
SVE-6	08/19/15	0.0	19.3	-40.1	-	120	150	50
SVE-6	09/24/15	0.0	19.3	-45.5	-	159	150	59
SVE-6	10/22/15	0.0	19.4	-43.9	-	147	150	83
SVE-6	11/12/15	0.0	21.0	-5.8	-	0 ⁴	40 - 50	34
SVE-6	12/17/15 ¹⁴	-	-	-	-	-	40 - 50	-
SVE-6	1/21/2016 ¹⁸	-	-	-	-	-	40-50	-
SVE-6	02/24/16	0.0	18.2	0.0	38	0 ^{16,17}	40-50	770
SVE-6	03/22/16	0.0	16.6	-16.1	42	44	40-50	NA ⁶
SVE-6	04/22/16	0.0	18.1	-8.1	50	0 ⁴	40-50	34
SVE-6	05/19/16	0.0	18.1	-10.3	55	0 ^{4,17}	40-50	480
SVE-6	06/14/16	0.0	17.3	-10.8	62	0 ^{4,17}	40-50	450
SVE-6	07/27/16	0.0	15.9	-9.4	70	0 ^{4,17}	40-50	670
SVE-6	08/10/16	0.0	16.1	-10.3	70	0 ^{4,17}	40-50	970
SVE-6	09/15/16	0.0	14.7	-10.1	68	0 ^{4,17}	40-50	NA ⁶
SVE-6	10/26/16	0.0	12.4	-11.7	51	47	40-50	NA ⁶
SVE-6	11/23/16	0.0	13.1	-11.6	50	54	40-50	NA ⁶
SVE-6	12/13/16	0.0	16.4	-0.1	45	49	40-50	830
SVE-6	01/10/17	0.0	18.8	-11.6	40	61	40-50	1,101

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-6	02/14/17	0.0	18.3	-14.4	44	48	40-50	949
SVE-6	03/07/17	0.0	18.1	-13.6	40	47	40-50	1,110
SVE-6	04/05/17	0.0	15.0	-13.4	50	41	40-50	NA ⁶
SVE-6	05/25/17	0.0	15.4	-16.4	53	0 ⁴	40-50	NA ⁶
SVE-6	06/28/17	0.0	17.5	-14.0	63	0 ⁴	40-50	NA ⁶
SVE-6	07/24/17	0.0	16.8	-12.8	68	0 ⁴	40-50	991
SVE-6	08/14/17	0.0	17.1	-13.1	66	0 ⁴	40-50	1,106
SVE-6	09/13/17	0.0	16.5	-11.9	67	42	40-50	NA ⁶
SVE-6	10/30/17	0.0	15.2	-16.0	54	46	40-50	NA ⁶
SVE-6	11/17/17	0.0	17.5	-11.9	55	0 ⁴	40-50	511
SVE-6	12/07/17	0.0	18.4	-11.9	52	48	40-50	720
SVE-7	08/27/08 ¹	0.3	19.3	0.3	-	-	-	-
SVE-7	09/23/08	44.5	0.0	-19.6	-	117	90 - 100	-
SVE-7	09/25/08	16.1	2.5	-23.9	-	102	90 - 100	-
SVE-7	10/01/08	3.0	6.7	-23.8	-	103	90 - 100	-
SVE-7	10/07/08	1.0	10.5	-24.4	-	103	90 - 100	-
SVE-7	10/15/08	0.6	12.7	-25.4	-	108	90 - 100	-
SVE-7	10/30/08	0.3	14.3	-25.4	-	92	90 - 100	7,320
SVE-7	11/13/08	0.1	15.3	-25.4	-	100	90 - 100	-
SVE-7	11/26/08	0.0	16.7	-26.3	-	106	90 - 100	-
SVE-7	01/22/09 ³	1.0	14.9	-45.9	-	103	90 - 100	40,400
SVE-7	02/05/09	0.0	15.7	-38.8	-	99	90 - 100	4,200
SVE-7	02/16/09	0.0	16.5	-35.9	-	101	90 - 100	4,560
SVE-7	03/16/09	0.0	16.8	-35.7	-	91	90 - 100	5,770
SVE-7	04/24/09	0.0	17.9	-34.1	-	92	90 - 100	608
SVE-7	05/20/09	0.0	18.1	-33.3	-	90	90 - 100	135
SVE-7	06/23/09	0.0	17.4	-35.6	-	93	90 - 100	262
SVE-7	07/23/09	0.0	17.2	-41.8	-	101	90 - 100	1,360
SVE-7	08/20/09	0.0	17.6	-43.7	-	114	150	1,530
SVE-7	09/23/09	0.0	17.7	-44.6	-	109	150	1,500
SVE-7	10/20/09	0.0	18.1	-47.3	-	117	150	3,380
SVE-7	11/24/09	0.0	17.6	-46.7	-	122	150	5,590
SVE-7	12/29/09	0.0	16.5	-47.7	-	123	150	1,380
SVE-7	01/29/10	0.0	18.8	-47.8	-	151	150	2
SVE-7	02/22/10	0.0	18.2	-46.9	-	147	150	192
SVE-7	03/26/10	0.0	16.7	-46.7	-	159	150	3,070
SVE-7	04/22/10	0.0	17.7	-44.6	-	145	150	600
SVE-7	05/18/10	0.0	17.5	-43.6	-	149	150	4,280
SVE-7	06/29/10	0.0	16.8	-37.0	-	145	150	10,100
SVE-7	07/23/10	0.0	18.2	-33.9	-	151	150	1,710
SVE-7	08/27/10	0.0	16.1	-19.8	-	154	150	1,880
SVE-7	10/01/10	0.0	16.3	-22.1	-	150	150	3,450

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-7	10/22/10	0.0	18.5	-17.4	-	153	150	1,120
SVE-7	11/29/10	0.0	20.1	-13.8	-	152	150	42
SVE-7	12/22/10	0.1	19.6	-17.0	-	151	150	150
SVE-7	01/24/11	0.4	18.2	-26.8	-	145	150	9,630
SVE-7	02/28/11	0.5	17.6	-21.7	-	154	150	11,182
SVE-7	04/13/11	0.0	19.3	-17.4	-	153	150	3,140
SVE-7	04/29/11	0.0	20.2	-17.0	-	150	150	560
SVE-7	05/27/11	0.0	20.4	-10.8	-	152	150	280
SVE-7	06/24/11	0.0	19.9	-12.0	-	123	150	240
SVE-7	07/22/11	0.0	18.7	-10.5	-	122	150	200
SVE-7	08/25/11	0.0	19.6	-20.5	-	150	150	1,310
SVE-7	09/30/11	0.0	20.7	-21.7	-	145	150	230
SVE-7	10/26/11	0.0	18.7	-22.9	-	152	150	130
SVE-7	11/22/11	0.0	19.4	-18.0	-	151	150	300
SVE-7	12/29/11	0.0	21.3	-16.3	-	154	150	100
SVE-7	01/26/12	0.0	19.2	-15.2	-	147	150	89
SVE-7	02/21/12	0.0	19.9	-12.9	-	151	150	167
SVE-7	03/30/12	0.0	20.2	-8.2	-	146	150	173
SVE-7	04/27/12	0.0	19.1	-7.6	-	45	150	180
SVE-7	05/25/12	0.0	19.7	-11.7	-	0 ⁴	150	110
SVE-7	06/26/12	0.0	19.2	-9.6	-	70	150	30
SVE-7	07/25/12	2.5	15.3	-19.5	-	94	150	16,800
SVE-7	08/22/12	0.0	19.3	-10.7	-	92	150	300
SVE-7	09/25/12	0.0	20.2	-10.6	-	90	150	6
SVE-7	10/30/12	0.0	20.0	-9.3	-	98	150	NA ¹¹
SVE-7	11/21/12	0.0	20.2	-23.4	-	155	150	15
SVE-7	12/21/12 ¹²	0.0	16.4	-19.8	-	147	150	3,550
SVE-7	01/03/13 ¹²	0.0	19.5	-15.8	-	150	150	301
SVE-7	01/28/13	0.0	19.5	-18.1	-	136	150	888
SVE-7	02/27/13	0.0	19.3	-16.5	-	127	150	886
SVE-7	03/25/13	0.0	18.6	-17.0	-	143	150	4,360
SVE-7	04/26/13	0.0	16.3	-12.4	-	39	150	2,090
SVE-7	05/30/13	0.0	19.4	-13.1	-	0 ⁴	150	120
SVE-7	06/27/13	1.7	15.9	-43.4	-	145	150	42,800
SVE-7	07/25/13	0.0	17.5	-39.4	-	153	150	2,590
SVE-7	08/30/13	0.2	18.3	-40.6	-	146	150	5,130
SVE-7	09/25/13	0.4	17.8	-40.0	-	147	150	5,960
SVE-7	10/23/13	0.0	18.5	-42.9	-	152	150	5,020
SVE-7	11/20/13	0.1	18.3	-43.6	-	106	150	4,050
SVE-7	12/18/13	0.0	18.1	-45.8	-	157	150	1,920
SVE-7	05/13/14 ¹³	1.6	6.5	253.0	-	197	150	NA ⁶
SVE-7	05/28/14 ¹³	0.1	16.1	-44.0	-	125	150	19,400
SVE-7	06/26/14	0.2	16.2	-44.4	-	0 ⁹	150	2 ¹¹

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-7	07/31/14	1.7	13.4	-43.2	-	0 ⁹	150	67
SVE-7	08/28/14	7.6	11.3	-45.1	-	0 ⁹	150	NA ⁶
SVE-7	09/26/14	0.0	16.7	-46.1	-	0 ⁹	150	3,650
SVE-7	10/24/14	0.0	17.3	-47.0	-	0 ⁹	150	4,930
SVE-7	11/19/14	0.0	17.5	-48.4	-	0 ⁹	150	1,110
SVE-7	12/17/14	0.0	17.9	-49.5	-	0 ⁹	150	180
SVE-7	01/21/15	0.0	17.3	-49.8	-	0 ⁹	150	110
SVE-7	02/26/15	0.0	17.3	-48.8	-	0 ⁹	150	130
SVE-7	03/17/15	0.0	16.6	-47.6	-	0 ⁹	150	77
SVE-7	04/17/15	0.0	16.4	-44.1	-	0 ⁹	150	58
SVE-7	05/12/15	0.0	17.5	-42.5	-	0 ⁹	150	43
SVE-7	06/25/15	0.0	16.1	-39.2	-	0 ⁹	150	90
SVE-7	07/31/15	0.0	17.2	-38.7	-	0 ⁹	150	680
SVE-7	08/19/15	0.0	17.7	-40.7	-	0 ⁹	150	660
SVE-7	09/24/15	0.9	17.5	-45.9	-	0 ⁹	150	810
SVE-7	10/22/15	0.1	18.4	-43.2	-	0 ⁹	150	1,980
SVE-7	11/12/15	0.6	15.7	-29.2	-	170	40 - 50	610
SVE-7	12/17/15	0.9	15.4	-21.6	-	141	40 - 50	1,140
SVE-7	01/21/16	0.3	16.2	-16.0	35	147 ⁵	40-50	8,730
SVE-7	02/24/16	0.4	14.0	0.2	38	50	40-50	NA ⁶
SVE-7	03/22/16	0.2	15.2	-16.1	42	45	40-50	NA ⁶
SVE-7	04/22/16	0.4	17.1	-8.1	50	0 ⁴	40-50	2,360
SVE-7	05/19/16	0.2	16.8	-11.1	55	0 ^{4,17}	40-50	5,090
SVE-7	06/14/16	0.2	16.7	-10.6	62	0 ⁴	40-50	7,020
SVE-7	07/27/16	0.7	16.0	-9.1	70	0 ⁴	40-50	7,390
SVE-7	08/10/16	0.6	16.7	-10.0	70	0 ⁴	40-50	7,520
SVE-7	09/15/16	1.4	15.4	-10.0	68	0 ⁴	40-50	NA ⁶
SVE-7	10/26/16	0.9	15.8	-10.4	51	52	40-50	NA ⁶
SVE-7	11/23/16	0.3	15.2	-12.2	50	45	40-50	NA ⁶
SVE-7	12/13/16	0.7	16.5	0.0	45	46	40-50	290
SVE-7	01/10/17	0.3	14.0	-10.8	40	54	40-50	NA ⁶
SVE-7	02/14/17	0.0	16.1	-14.4	44	55	40-50	740
SVE-7	03/07/17	0.0	14.7	-14.1	40	41	40-50	NA ⁶
SVE-7	04/05/17	0.1	13.5	-12.8	50	41	40-50	NA ⁶
SVE-7	05/25/17	0.6	11.4	-16.3	53	0 ⁴	40-50	NA ⁶
SVE-7	06/28/17	0.3	15.5	-14.1	63	0 ⁴	40-50	NA ⁶
SVE-7	07/24/17	0.5	15.8	-12.6	68	0 ⁴	40-50	408
SVE-7	08/14/17	0.2	16.4	-13.1	66	0 ⁴	40-50	593
SVE-7	09/13/17	0.7	16.5	-12.0	67	41	40-50	NA ⁶
SVE-7	10/30/17	0.8	15.5	-16.2	54	44	40-50	NA ⁶
SVE-7	11/17/17	0.3	16.9	-12.0	55	0 ⁴	40-50	840
SVE-7	12/07/17	0.2	16.8	-12.0	52	0 ⁴	40-50	825

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-8	08/27/08 ¹	7.6	15.7	0.3	-	-	-	-
SVE-8	09/23/08 ²	-	-	-	-	-	90 - 100	-
SVE-8	09/25/08 ²	-	-	-	-	-	90 - 100	-
SVE-8	10/01/08 ²	-	-	-	-	-	90 - 100	-
SVE-8	10/07/08 ²	-	-	-	-	-	90 - 100	-
SVE-8	10/15/08	1.1	4.3	-48.3	-	0	90 - 100	-
SVE-8	10/30/08	0.6	8.1	-48.1	-	0	90 - 100	NA ⁶
SVE-8	11/13/08	0.5	10.0	-47.5	-	34	90 - 100	-
SVE-8	11/26/08	0.3	10.9	-49.6	-	0	90 - 100	-
SVE-8	01/22/09 ³	3.7	6.8	-50.8	-	31	90 - 100	NA ⁶
SVE-8	02/05/09	0.0	7.7	-50.7	-	13	90 - 100	NA ⁶
SVE-8	02/16/09	0.1	8.7	-51.2	-	58	90 - 100	NA ⁶
SVE-8	03/16/09	0.3	9.7	-50.0	-	-	90 - 100	NA ⁶
SVE-8	04/24/09	0.0	10.2	-48.1	-	0	90 - 100	NA ⁶
SVE-8	05/20/09	0.0	11.0	-47.6	-	0	90 - 100	NA ⁶
SVE-8	06/23/09	0.0	10.1	-45.4	-	0	90 - 100	6,370
SVE-8	07/23/09	0.3	9.9	-45.0	-	0	90 - 100	35,400
SVE-8	08/20/09	0.2	10.8	-43.8	-	0	100	43,300
SVE-8	09/23/09	0.5	10.6	-44.7	-	0	100	47,600
SVE-8	10/20/09	0.5	12.0	-47.3	-	0	100	39,200
SVE-8	11/24/09	0.0	12.7	-46.8	-	0	100	12,900
SVE-8	12/29/09	0.0	12.7	-47.8	-	0	100	8,440
SVE-8	01/29/10	0.1	14.7	-47.9	-	13	100	480
SVE-8	02/22/10	0.0	12.9	-47.0	-	25	100	6,410
SVE-8	03/26/10	0.0	12.1	-46.6	-	0	100	6,150
SVE-8	04/22/10	0.0	13.9	-44.6	-	0	100	2,910
SVE-8	05/18/10	0.0	12.5	-44.9	-	0	100	25,100
SVE-8	06/29/10	0.0	13.7	-45.4	-	0	100	6,580
SVE-8	07/23/10	0.0	13.1	-42.4	-	0	100	20,400
SVE-8	08/27/10	3.3	8.3	-45.1	-	0	100	NA ⁶
SVE-8	10/01/10	3.9	6.7	-47.6	-	0	100	NA ⁶
SVE-8	10/22/10	5.0	9.4	-46.7	-	0	100	NA ⁶
SVE-8	11/29/10	0.4	16.7	-47.0	-	0	100	24,400
SVE-8	12/22/10	0.5	16.6	-49.5	-	44	100	8,700
SVE-8	01/24/11	0.1	15.3	-49.2	-	0	100	3,420
SVE-8	02/28/11	0.1	15.6	-50.1	-	0	100	1,418
SVE-8	04/13/11	0.2	13.7	-49.5	-	0	100	3,560
SVE-8	04/29/11	0.0	15.4	-48.4	-	0	100	8,725
SVE-8	05/27/11	0.0	15.9	-47.3	-	13	100	10,620
SVE-8	06/24/11	0.1	15.7	-45.6	-	30	100	7,210
SVE-8	07/22/11	0.0	15.0	-44.0	-	0	100	2,035
SVE-8	08/25/11	1.0	13.4	-45.1	-	0	100	>50,000
SVE-8	09/30/11	0.3	17.5	-43.7	-	0 ⁴	100	1,890

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-8	10/26/11	0.0	16.9	-44.4	-	31	100	4,220
SVE-8	11/22/11	0.0	18.7	-46.1	-	63	100	860
SVE-8	12/29/11	0.0	19.6	-45.5	-	70	100	1,550
SVE-8	01/26/12	0.0	18.4	-46.3	-	71	100	7,170
SVE-8	02/21/12	0.0	19.3	-38.0	-	98	100	1,230
SVE-8	03/30/12	0.0	19.4	-41.7	-	96	100	650
SVE-8	04/27/12	0.0	18.6	-46.6	-	92	100	480
SVE-8	05/25/12	0.0	16.6	-46.4	-	0 ⁴	100	1,310
SVE-8	06/26/12	0.0	15.6	-44.5	-	0 ⁴	100	5,840
SVE-8	07/25/12	0.0	15.6	-45.6	-	0 ⁴	100	5,100
SVE-8	08/22/12	0.0	16.6	-40.5	-	0 ⁴	100	5,830
SVE-8	09/25/12	0.1	18.8	-40.0	-	56	100	1,870
SVE-8	10/30/12	0.0	19.1	-40.8	-	68	100	270 ¹¹
SVE-8	11/21/12	0.0	19.5	-43.3	-	83	100	270
SVE-8	12/21/12 ¹²	0.9	17.9	-45.0	-	94	100	3,890
SVE-8	01/03/13 ¹²	0.0	19.2	0.0	-	0 ⁴	100	926
SVE-8	01/28/13	0.0	20.4	-23.1	-	110	100	750
SVE-8	02/27/13	0.0	17.4	1.2	-	0 ⁴	100	1,030
SVE-8	03/25/13	0.0	19.1	4.1	-	0 ⁴	100	740
SVE-8	04/26/13	0.0	17.6	0.3	-	0 ⁴	100	13,200
SVE-8	05/30/13	0.0	19.6	-14.5	-	0 ⁴	100	100
SVE-8	06/27/13	0.0	16.2	-43.0	-	0 ⁴	100	780
SVE-8	07/25/13	0.0	18.1	-40.4	-	0 ⁴	100	120
SVE-8	08/30/13	0.0	19.8	-42.7	-	66	100	62
SVE-8	09/25/13	0.0	19.5	-47.4	-	47	100	130
SVE-8	10/23/13	0.0	20.0	-44.1	-	97	100	19
SVE-8	11/20/13	0.0	19.8	-45.6	-	107	100	100
SVE-8	12/18/13	0.0	19.7	-47.3	-	87	100	50
SVE-8	05/13/14 ¹³	5.0	7.8	-42.9	-	90	100	NA ⁶
SVE-8	05/28/14 ¹³	0.0	10.7	-44.0	-	200	100	NA ⁶
SVE-8	06/26/14	0.0	16.3	-44.2	-	114	100	120 ¹¹
SVE-8	07/31/14	2.8	15.7	-42.8	-	80	100	1,010
SVE-8	08/28/14	4.8	12.9	-44.8	-	89	100	20
SVE-8	09/26/14	0.0	19.0	-45.6	-	162	100	64
SVE-8	10/24/14	0.0	19.9	-46.8	-	107	100	240
SVE-8	11/19/14	0.0	20.4	-46.0	-	116	100	110
SVE-8	12/17/14	0.0	20.3	-46.5	-	98	100	490
SVE-8	01/21/15	0.0	19.6	-47.8	-	107	100	240
SVE-8	02/26/15	0.0	19.4	-49.0	-	97	100	280
SVE-8	03/17/15	0.0	19.4	-47.5	-	108	100	89
SVE-8	04/17/15	0.0	18.2	-44.2	-	104	100	61
SVE-8	05/12/15	0.0	19.5	-42.5	-	100	100	73
SVE-8	06/25/15	0.0	18.9	-10.4	-	92	100	48

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-8	07/31/15	0.0	19.3	-22.9	-	106	100	17
SVE-8	08/19/15	0.0	20.1	-40.6	-	70	100	110
SVE-8	09/24/15	0.0	18.9	-46.0	-	99	100	160
SVE-8	10/22/15	0.0	20.0	-43.2	-	102	100	180
SVE-8	04/22/16	0.0	18.8	-0.8	50	0	-	39
SVE-8	10/26/2016 ¹⁴	-	-	-	-	-	-	-
SVE-8	04/05/17 ¹⁴	-	-	-	-	-	-	-
SVE-8	10/30/17	0	19.6	-0.3	54	0	-	729
SVE-9	08/27/08 ¹	40.8	2.1	0.2	-	-	-	-
SVE-9	09/23/08 ²	-	-	-	-	-	90 - 100	-
SVE-9	09/25/08 ²	-	-	-	-	-	90 - 100	-
SVE-9	10/01/08 ²	-	-	-	-	-	90 - 100	-
SVE-9	10/07/08	0.2	15.5	-47.8	-	0	90 - 100	-
SVE-9	10/15/08	0.0	17.1	-48.2	-	0	90 - 100	-
SVE-9	10/30/08	0.0	17.8	-47.8	-	0	90 - 100	NA ⁶
SVE-9	11/13/08	0.0	17.9	-47.4	-	0	90 - 100	-
SVE-9	11/26/08	0.0	18.6	-49.5	-	0	90 - 100	-
SVE-9	01/22/09 ^{3,7}	0.0	15.1	-50.7	-	-	90 - 100	5,480
SVE-9	02/05/09	0.0	16.7	-50.6	-	40	90 - 100	1,030
SVE-9	02/16/09	0.0	17.2	-51.4	-	28	90 - 100	1,160
SVE-9	03/16/09	0.0	16.3	-49.9	-	-	90 - 100	1,310
SVE-9	04/24/09	0.0	17.0	-47.9	-	0	90 - 100	995
SVE-9	05/20/09	0.0	17.0	-47.4	-	0	90 - 100	411
SVE-9	06/23/09	0.0	15.9	-45.2	-	0	90 - 100	604
SVE-9	07/23/09	0.0	15.7	-44.8	-	0	90 - 100	1,430
SVE-9	08/20/09	0.0	15.7	-43.8	-	0	100	1,320
SVE-9	09/23/09	0.0	16.0	-44.6	-	0	100	740
SVE-9	10/20/09	0.0	17.1	-47.2	-	0	100	411
SVE-9	11/24/09	0.0	17.0	-46.6	-	0	100	355
SVE-9	12/29/09	0.0	17.5	-47.6	-	0	100	60
SVE-9	01/29/10	0.0	20.6	-47.5	-	70	100	16
SVE-9	02/22/10	0.0	19.3	-46.5	-	50	100	174
SVE-9	03/26/10	0.0	18.6	-46.0	-	105	100	83
SVE-9	04/22/10	0.0	19.7	-43.9	-	104	100	13
SVE-9	05/18/10	0.0	19.4	-44.1	-	94	100	561
SVE-9	06/29/10	0.0	18.9	-44.6	-	75	100	95
SVE-9	07/23/10	0.0	19.3	-41.8	-	61	100	130
SVE-9	08/27/10	1.8	14.1	-44.6	-	0	100	490
SVE-9	10/01/10	1.1	12.9	-47.8	-	0	100	>50,000
SVE-9	10/22/10	0.0	18.7	-45.8	-	90	100	10,600
SVE-9	11/29/10	0.0	19.9	-46.3	-	90	100	39
SVE-9	12/22/10	0.1	19.5	-48.8	-	98	100	620

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-9	01/24/11	0.1	18.8	-48.9	-	78	100	240
SVE-9	02/28/11	0.0	18.8	-49.7	-	94	100	257
SVE-9	04/13/11	0.0	20.1	-16.3	-	0 ⁴	100	251
SVE-9	04/29/11	0.0	20.0	-47.0	-	0 ⁴	100	1,475
SVE-9	05/27/11	0.0	20.6	-46.4	-	96	100	320
SVE-9	06/24/11	0.0	20.0	-44.5	-	100	100	205
SVE-9	07/22/11	0.0	18.4	-43.2	-	30	100	180
SVE-9	08/25/11	0.2	18.2	-44.4	-	100	100	19,410
SVE-9	09/30/11	0.0	20.5	-30.1	-	149 ⁸	100	290
SVE-9	10/26/11	0.0	18.9	-10.3	-	100	100	33
SVE-9	11/22/11	0.0	20.0	-9.3	-	103	100	280
SVE-9	12/29/11	0.0	21.1	-7.2	-	97	100	358
SVE-9	01/26/12	0.0	19.5	-7.2	-	100	100	649
SVE-9	02/21/12	0.0	20.3	-8.7	-	102	100	194
SVE-9	03/30/12	0.0	20.5	-2.1	-	101	100	179
SVE-9	04/27/12	0.0	19.3	-25.2	-	97	100	180
SVE-9	05/25/12	0.0	19.5	-21.2	-	103	100	120
SVE-9	06/26/12	0.0	20.0	-15.7	-	97	100	50
SVE-9	07/25/12	0.0	19.2	-44.4	-	96	100	60
SVE-9	08/22/12	0.0	18.8	-21.2	-	102	100	200
SVE-9	09/25/12	0.0	19.7	-25.6	-	106	100	14
SVE-9	10/30/12	0.0	19.6	-9.4	-	102	100	NA ¹¹
SVE-9	11/21/12	0.0	20.2	-8.7	-	96	100	25
SVE-9	12/21/12 ¹²	0.8	18.8	-11.5	-	96	100	46,340
SVE-9	01/03/13 ¹²	0.0	20.2	-8.8	-	104	100	230
SVE-9	01/28/13	0.0	21.2	-4.6	-	99	100	571
SVE-9	02/27/13	0.0	20.5	-17.8	-	98	100	120
SVE-9	03/25/13	0.0	19.8	-28.6	-	105	100	489
SVE-9	04/26/13	0.1	18.5	-28.1	-	102	100	391
SVE-9	05/30/13	0.0	20.4	-5.4	-	0 ⁴	100	100
SVE-9	06/27/13	0.0	19.5	-38.6	-	92	100	750
SVE-9	07/25/13	0.0	19.7	-17.9	-	105	100	64
SVE-9	08/30/13	0.0	20.4	-19.8	-	100	100	65
SVE-9	09/25/13	0.0	20.1	-26.7	-	100	100	56
SVE-9	10/23/13	0.0	20.4	-31.7	-	103	100	5
SVE-9	11/20/13	0.0	20.3	-34.4	-	99	100	140
SVE-9	12/18/13	0.0	20.6	-2.2	-	0 ⁴	100	22
SVE-9	05/13/14 ¹³	0.4	14.7	21.0	-	68	100	28,900
SVE-9	05/28/14 ¹³	0.0	19.2	-43.1	-	102	100	230
SVE-9	06/26/14	0.0	19.7	-42.9	-	0 ⁴	100	9 ¹¹
SVE-9	07/31/14	0.6	19.8	-40.6	-	116	100	7,860
SVE-9	08/28/14	1.4	18.9	-42.7	-	101	100	17,950
SVE-9	09/26/14	0.0	20.0	-9.6	-	98	100	17

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-9	10/24/14	0.0	20.1	-10.9	-	108	100	190
SVE-9	11/19/14	0.0	21.0	-8.8	-	98	100	58
SVE-9	12/17/14	0.0	20.7	-13.0	-	0 ⁴	100	100
SVE-9	01/21/15	0.0	19.9	-22.2	-	104	100	52
SVE-9	02/26/15	0.0	20.1	-16.3	-	93	100	97
SVE-9	03/17/15	0.0	20.3	-24.8	-	102	100	34
SVE-9	04/17/15	0.0	19.7	-27.9	-	99	100	19
SVE-9	05/12/15	0.0	20.1	-26.2	-	97	100	11
SVE-9	06/25/15	0.0	19.1	-30.5	-	98	100	55
SVE-9	07/31/15	0.0	20.2	-26.7	-	101	100	18
SVE-9	08/19/15	0.0	20.8	-38.4	-	101	100	50
SVE-9	09/24/15	0.0	20.6	-44.3	-	105	100	55
SVE-9	10/22/15	0.0	21.2	-40.8	-	104	100	78
SVE-9	04/22/16	0.0	19.8	0.1	50	0 ¹⁶	-	73
SVE-9	10/26/16	0.0	14.1	0.0	51	0	-	NA ⁶
SVE-9	04/05/17	0.0	15.0	-0.1	50	0	-	NA ⁶
SVE-9	10/30/17	0.2	13.8	0.0	54	0	-	NA ⁶
SVE-10	08/27/08 ¹	0.0	19.9	0.4	-	-	-	-
SVE-10	09/23/08	40.4	0.0	-18.8	-	105	90 - 100	-
SVE-10	09/25/08	15.3	0.7	-21.0	-	101	90 - 100	-
SVE-10	10/01/08	1.5	8.5	-21.8	-	107	90 - 100	-
SVE-10	10/07/08	0.6	11.7	-22.4	-	104	90 - 100	-
SVE-10	10/15/08	0.3	13.5	-22.9	-	109	90 - 100	-
SVE-10	10/30/08	0.2	14.7	-22.8	-	103	90 - 100	6,120
SVE-10	11/13/08	0.2	15.9	-22.9	-	110	90 - 100	-
SVE-10	11/26/08	0.0	16.7	-21.4	-	95	90 - 100	-
SVE-10	01/22/09 ^{3,7}	0.0	21.0	-18.9	-	-	90 - 100	30,800
SVE-10	02/05/09	0.0	20.5	-15.4	-	101	90 - 100	5,600
SVE-10	02/16/09	0.0	20.9	-29.9	-	100	90 - 100	209
SVE-10	03/16/09 ⁵	0.0	20.0	-10.1	-	-	90 - 100	4,880
SVE-10	04/24/09	0.0	17.7	-19.6	-	104	90 - 100	3,310
SVE-10	05/20/09	0.0	17.6	-19.0	-	103	90 - 100	1,880
SVE-10	06/23/09	0.0	16.8	-19.4	-	102	90 - 100	2,810
SVE-10	07/23/09	0.0	16.8	-18.9	-	106	90 - 100	11,300
SVE-10	08/20/09	0.0	16.9	-29.0	-	155	150	12,900
SVE-10	09/23/09	0.0	16.8	-32.4	-	144	150	9,850
SVE-10	10/20/09	0.0	16.8	-31.1	-	151	150	16,700
SVE-10	11/24/09	0.1	16.7	-25.0	-	153	150	22,200
SVE-10	12/29/09	0.1	15.8	-23.2	-	156	150	8,690
SVE-10	01/29/10	0.2	19.0	-23.3	-	157	150	4,800
SVE-10	02/22/10	0.0	19.0	-18.6	-	155	150	2,650
SVE-10	03/26/10	0.0	19.4	-12.1	-	280 ⁸	150	36

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-10	04/22/10	0.0	20.0	-14.4	-	156	150	9
SVE-10	05/18/10	0.0	20.1	-11.7	-	147	150	1,410
SVE-10	06/29/10	0.0	18.9	-17.1	-	139	150	6,460
SVE-10	07/23/10	0.0	18.8	-17.5	-	145	150	2,290
SVE-10	08/27/10	0.0	19.8	-12.3	-	142	150	150
SVE-10	10/01/10	0.0	19.1	-20.8	-	153	150	7,730
SVE-10	10/22/10	0.3	14.3	-21.0	-	143	150	>50,000
SVE-10	11/29/10	0.1	17.9	-18.7	-	154	150	9,570
SVE-10	12/22/10	0.3	17.5	-17.5	-	150	150	3,250
SVE-10	01/24/11	0.1	17.5	-13.5	-	147	150	1,320
SVE-10	02/28/11	0.1	19.1	-18.6	-	147	150	143
SVE-10	04/13/11	0.0	19.9	-16.4	-	147	150	970
SVE-10	04/29/11	0.0	17.6	-29.3	-	153	150	10,330
SVE-10	04/27/11	0.1	17.0	-31.8	-	142	150	16,430
SVE-10	06/24/11	0.3	15.7	-31.0	-	145	150	15,520
SVE-10	07/22/11	0.1	14.9	-30.4	-	131	150	2,715
SVE-10	08/25/11	0.5	13.9	-26.8	-	129	150	44,430
SVE-10	09/30/11	0.2	17.7	-28.9	-	- ⁹	150	2,570
SVE-10	10/26/11	0.0	16.1	-38.0	-	- ⁹	150	10,270
SVE-10	11/22/11	0.2	16.8	-23.0	-	153	150	10,630
SVE-10	12/29/11	0.0	18.2	-23.0	-	153	150	5,280
SVE-10	01/26/12	0.0	16.0	-23.0	-	153	150	6,691
SVE-10	02/21/12	0.2	17.0	-16.6	-	149	150	6,700
SVE-10	03/30/12	0.0	18.2	-14.9	-	145	150	490
SVE-10	04/27/12	0.0	17.7	-15.7	-	44 ¹⁰	150	580
SVE-10	05/25/12	0.0	17.9	-15.3	-	30 ¹⁰	150	690
SVE-10	06/26/12	0.0	16.6	-13.5	-	54 ¹⁰	150	770
SVE-10	07/25/12	0.0	18.0	-3.8	-	0 ⁴	150	620
SVE-10	08/22/12	0.0	17.5	-33.6	-	153	150	930
SVE-10	09/25/12	0.6	17.2	-33.2	-	155	150	7,020
SVE-10	10/30/12	0.0	17.5	-25.8	-	150	150	340 ¹¹
SVE-10	11/21/12	0.0	18.0	-25.8	-	154	150	2,040
SVE-10	12/21/12 ¹²	1.0	12.6	-29.6	-	135	150	NA ⁶
SVE-10	01/03/13 ¹²	0.0	18.4	-14.6	-	157	150	846
SVE-10	01/28/13	0.0	20.5	-13.0	-	101	150	1,040
SVE-10	02/27/13	0.0	20.3	-11.4	-	149	150	240
SVE-10	03/25/13	0.0	19.7	-12.4	-	90	150	655
SVE-10	04/26/13	0.1	16.8	-6.4	-	147	150	6,510
SVE-10	05/30/13	0.0	19.9	-7.6	-	0 ⁴	150	110
SVE-10	06/27/13	0.0	20.1	0.0	-	0 ⁴	150	35
SVE-10	07/25/13	0.0	19.6	-1.5	-	0 ⁴	150	110
SVE-10	08/30/13	0.0	20.5	-0.7	-	0 ⁴	150	92
SVE-10	09/25/13	0.0	20.4	-1.0	-	0 ⁴	150	62

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-10	10/23/13	0.0	20.8	-1.4	-	142	150	0
SVE-10	11/20/13	0.0	20.6	-0.6	-	0 ⁴	150	10
SVE-10	12/18/13	0.0	20.8	-0.9	-	156	150	47
SVE-10	05/13/14 ¹³	0.0	20.6	-4.1	-	0 ⁴	150	270
SVE-10	05/28/14 ¹³	0.0	19.6	-2.4	-	38	150	170
SVE-10	06/26/14	0.0	20.1	-2.4	-	0 ⁴	150	3 ¹¹
SVE-10	07/31/14	0.0	20.7	0.2	-	0 ⁴	150	80
SVE-10	08/28/14	0.0	20.7	-1.2	-	32	150	95
SVE-10	09/26/14	0.0	20.2	-0.8	-	0 ⁴	150	47
SVE-10	10/24/14	0.0	20.4	-1.5	-	15	150	210
SVE-10	11/19/14	0.0	21.5	-0.6	-	0 ⁴	150	23
SVE-10	12/17/14	0.0	20.9	-2.5	-	0 ⁴	150	64
SVE-10	01/21/15	0.0	20.2	-16.1	-	0 ¹⁵	150	9
SVE-10	02/26/15	0.0	20.6	-1.4	-	0 ¹⁵	150	56
SVE-10	03/17/15	0.0	21.0	-3.1	-	0 ¹⁵	150	40
SVE-10	04/17/15	0.0	20.2	-1.5	-	0 ¹⁵	150	19
SVE-10	05/12/15	0.0	20.3	-4.0	-	0 ¹⁵	150	6
SVE-10	06/25/15	0.0	19.2	-1.7	-	0 ¹⁵	150	48
SVE-10	07/31/15	0.0	20.3	-3.0	-	0 ¹⁵	150	35
SVE-10	08/19/15	0.0	20.9	-4.0	-	0 ¹⁵	150	44
SVE-10	09/24/15	0.0	21.2	-5.1	-	0 ¹⁵	150	210
SVE-10	10/22/15	0.0	21.0	-3.8	-	0 ¹⁵	150	180
SVE-10	04/22/16	0.0	20.3	-15.7	50	0 ^{4,5}	-	45
SVE-10	10/26/16	0.0	20.5	-0.3	51	0	-	380
SVE-10	04/05/17	0.0	20.1	0.0	50	0	-	599
SVE-10	10/30/17	0.0	15.0	0.0	54	0	-	NA ⁶
SVE-11	08/27/08 ¹	0.9	19.0	0.4	-	-	-	-
SVE-11	09/23/08	47.1	0.0	-16.8	-	94	90 - 100	-
SVE-11	09/25/08	47.0	0.0	-18.4	-	88	90 - 100	-
SVE-11	10/01/08	9.7	0.0	-19.2	-	92	90 - 100	-
SVE-11	10/07/08	3.3	2.4	-19.3	-	88	90 - 100	-
SVE-11	10/15/08	1.9	5.3	-19.6	-	90	90 - 100	-
SVE-11	10/30/08	1.1	6.7	-19.2	-	68	90 - 100	NA ⁶
SVE-11	11/13/08	0.9	9.1	-20.6	-	86	90 - 100	-
SVE-11	11/26/08	0.5	10.8	-20.6	-	103	90 - 100	-
SVE-11	01/22/09 ³	6.7	5.9	-15.6	-	101	90 - 100	NA ⁶
SVE-11	02/05/09	0.3	9.9	-12.9	-	94	90 - 100	26,800
SVE-11	02/16/09	0.0	14.9	-9.1	-	99	90 - 100	13,400
SVE-11	03/16/09	0.1	15.9	-13.0	-	98	90 - 100	38,500
SVE-11	04/24/09	0.1	10.1	-15.0	-	98	90 - 100	NA ⁶
SVE-11	05/20/09	0.0	10.6	-14.3	-	92	90 - 100	NA ⁶
SVE-11	06/23/09	0.1	9.7	-14.2	-	94	90 - 100	10,600

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-11	07/23/09	0.4	10.5	-13.2	-	91	90 - 100	41,900
SVE-11	08/20/09	0.3	10.5	-18.6	-	148	150	41,200
SVE-11	09/23/09	0.5	12.7	-17.6	-	146	150	39,000
SVE-11	10/20/09	0.2	16.4	-20.8	-	153	150	30,200
SVE-11	11/24/09	0.0	19.2	-11.9	-	156	150	410
SVE-11	12/29/09	0.0	18.5	-11.3	-	156	150	1,400
SVE-11	01/29/10	0.1	20.2	-12.7	-	145	150	1,825
SVE-11	02/22/10	0.0	17.4	-20.9	-	147	150	5,810
SVE-11	03/26/10	0.0	17.2	-12.9	-	410 ⁸	150	6,490
SVE-11	04/22/10	0.0	18.7	-12.1	-	148	150	2,620
SVE-11	05/18/10	0.0	18.2	-10.9	-	150	150	20,200
SVE-11	06/29/10	0.0	19.7	-5.8	-	0 ¹⁰	150	96
SVE-11	07/23/10	0.3	13.0	-26.4	-	116 ¹⁰	150	34,400
SVE-11	08/27/10	2.4	9.3	-27.2	-	128 ¹⁰	150	NA ⁶
SVE-11	10/01/10	2.6	8.1	-35.1	-	60 ¹⁰	150	NA ⁶
SVE-11	10/22/10	0.4	14.0	-37.9	-	50 ¹⁰	150	NA ⁶
SVE-11	11/29/10	0.9	13.6	-41.8	-	0 ¹⁰	150	>50,000
SVE-11	12/22/10	0.6	15.0	-43.1	-	109 ¹⁰	150	15,200
SVE-11	01/24/11	0.5	16.9	-39.0	-	164	150	14
SVE-11	02/28/11	0.1	19.0	-45.1	-	110	150	211
SVE-11	04/13/11	0.0	20.1	-40.2	-	0 ⁴	150	620
SVE-11	04/29/11	0.0	20.5	-31.0	-	0 ⁴	150	33,125
SVE-11	05/27/11	0.0	20.6	-35.5	-	0 ⁴	150	16,020
SVE-11	06/24/11	0.0	20.2	-40.6	-	0 ⁴	150	30,860
SVE-11	07/22/11	0.0	18.8	-41.2	-	0 ⁴	150	6,500
SVE-11	08/25/11	0.0	19.7	-43.3	-	105	150	> 50,000
SVE-11	09/30/11	0.5	16.9	-41.8	-	147	150	10,120
SVE-11	10/26/11	0.2	15.6	-16.0	-	154	150	18,660
SVE-11	11/22/11	0.4	17.9	-12.9	-	146	150	260
SVE-11	12/29/11	0.0	19.2	-13.0	-	147	150	390
SVE-11	01/26/12	0.2	17.2	-12.6	-	146	150	260
SVE-11	02/21/12	0.0	20.4	-10.7	-	150	150	1,610
SVE-11	03/30/12	0.5	15.6	-15.4	-	149	150	149
SVE-11	04/27/12	0.0	17.1	-39.5	-	156	150	3,710
SVE-11	05/25/12	0.5	14.1	-45.7	-	108	150	2,880
SVE-11	06/26/12	0.2	14.4	-26.7	-	150	150	5,290
SVE-11	07/25/12	0.0	18.4	-44.1	-	49	150	4,310
SVE-11	08/22/12	0.3	15.3	-39.6	-	75	150	220
SVE-11	09/25/12	0.9	16.7	-36.9	-	0 ⁴	150	12,760
SVE-11	10/30/12	0.1	18.1	-40.1	-	92	150	NA ¹¹
SVE-11	11/21/12	0.0	18.6	-41.4	-	93	150	130
SVE-11	12/21/12 ¹²	4.1	8.8	-44.2	-	78	150	NA ⁶
SVE-11	01/03/13 ¹²	0.8	14.6	-17.3	-	146	150	1,820

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-11	01/28/13	0.2	16.3	-47.3	-	102	150	4,620
SVE-11	02/27/13	0.2	16.8	-47.1	-	100	150	216
SVE-11	03/25/13	0.3	16.2	-47.1	-	150	150	651
SVE-11	04/26/13	0.6	14.6	-9.4	-	156	150	2,470
SVE-11	05/30/13	0.0	17.3	-41.6	-	0 ⁴	150	230
SVE-11	06/27/13	0.0	20.0	-42.2	-	0 ⁴	150	55
SVE-11	07/25/13	0.0	19.7	-42.4	-	0 ⁴	150	21
SVE-11	08/30/13	0.0	20.4	-41.4	-	0 ⁴	150	34
SVE-11	09/25/13	0.0	20.5	-20.8	-	0 ⁴	150	120
SVE-11	10/23/13	0.0	20.6	-45.7	-	110	150	4
SVE-11	11/20/13	0.0	20.7	-48.5	-	143	150	79
SVE-11	12/18/13	0.0	20.7	-47.0	-	60	150	48
SVE-11	05/13/14 ¹³	0.9	16.6	89.0	-	156	150	1,350
SVE-11	05/28/14 ¹³	0.0	19.3	-45.8	-	50	150	155
SVE-11	06/26/14	0.0	20.0	-47.4	-	156	150	5 ¹¹
SVE-11	07/31/14	0.2	20.2	-43.2	-	182	150	66
SVE-11	08/28/14	0.6	20.2	-44.8	-	100	150	1,370
SVE-11	09/26/14	0.0	20.1	-44.8	-	191	150	NA ⁶
SVE-11	10/24/14	0.0	20.4	-47.7	-	157	150	300
SVE-11	11/19/14	0.0	21.2	-47.1	-	142	150	110
SVE-11	12/17/14	0.0	20.8	-47.9	-	153	150	160
SVE-11	01/21/15	0.0	20.2	-47.8	-	156	150	13
SVE-11	02/26/15	0.0	20.5	-50.1	-	0 ⁴	150	170
SVE-11	03/17/15	0.0	20.9	-48.1	-	143	150	52
SVE-11	04/17/15	0.0	19.9	-44.4	-	162	150	38
SVE-11	05/12/15	0.0	20.0	-43.2	-	152	150	59
SVE-11	06/25/15	0.0	19.2	-36.3	-	151	150	51
SVE-11	07/31/15	0.0	20.0	-38.3	-	145	150	43
SVE-11	08/19/15	0.0	20.3	-39.0	-	88	150	210
SVE-11	09/24/15	0.0	20.6	-45.0	-	162	150	290
SVE-11	10/22/15	0.2	19.9	-42.3	-	165	150	2,350
SVE-11	04/22/16	0.0	20.3	0.0	50	0	-	460
SVE-11	10/26/16	0.0	19.9	-10.0	51	0	-	610
SVE-11	04/05/17	0.0	18.7	-0.4	50	0	-	781
SVE-11	10/30/17	0.0	15.2	0.0	54	0	-	NA ⁶
SVE-12	08/27/08 ¹	0.0	19.3	0.7	-	-	-	-
SVE-12	09/23/08	13.7	0.0	-35.2	-	96	90 - 100	-
SVE-12	09/25/08	9.1	0.0	-36.9	-	98	90 - 100	-
SVE-12	10/01/08	0.9	3.2	-36.6	-	104	90 - 100	-
SVE-12	10/07/08	0.3	6.5	-35.4	-	101	90 - 100	-
SVE-12	10/15/08	0.0	9.8	-36.2	-	102	90 - 100	-
SVE-12	10/30/08	0.0	11.9	-36.6	-	85	90 - 100	1,050

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-12	11/13/08	0.0	14.1	-17.3	-	87	90 - 100	-
SVE-12	11/26/08	0.0	13.7	-6.2	-	34	90 - 100	-
SVE-12	01/22/09 ³	0.5	12.3	-43.4	-	102	90 - 100	24,100
SVE-12	02/05/09	0.0	14.3	-42.4	-	102	90 - 100	3,150
SVE-12	02/16/09	0.0	15.1	-35.6	-	96	90 - 100	3,750
SVE-12	03/16/09	0.0	15.7	-38.7	-	97	90 - 100	3,480
SVE-12	04/24/09	0.0	16.1	-37.4	-	92	90 - 100	3,030
SVE-12	05/20/09	0.0	16.2	-41.0	-	104	90 - 100	1,630
SVE-12	06/23/09	0.0	15.5	-39.5	-	95	90 - 100	2,290
SVE-12	07/23/09	0.0	15.6	-39.1	-	93	90 - 100	8,520
SVE-12	08/20/09	0.0	16.1	-42.1	-	102	150	9,410
SVE-12	09/23/09	0.0	16.3	-42.8	-	96	150	7,220
SVE-12	10/20/09	0.0	17.0	-45.1	-	109	150	7,610
SVE-12	11/24/09	0.0	16.5	-44.4	-	109	150	6,440
SVE-12	12/29/09	0.0	15.4	-45.7	-	94	150	3,240
SVE-12	01/29/10	0.0	18.2	-45.8	-	120	150	2,300
SVE-12	02/22/10	0.0	16.4	-44.3	-	108	150	5,130
SVE-12	03/26/10	0.0	15.4	-44.7	-	111	150	4,810
SVE-12	04/22/10	0.0	16.2	-42.4	-	96	150	2,960
SVE-12	05/18/10	0.0	15.9	-42.6	-	98	150	14,400
SVE-12	06/29/10	0.0	15.9	-44.4	-	91	150	8,090
SVE-12	07/23/10	0.0	16.9	-41.0	-	82	150	4,930
SVE-12	08/27/10	2.6	10.7	-43.8	-	94	150	NA ⁶
SVE-12	10/01/10	0.9	11.0	-46.6	-	103	150	NA ⁶
SVE-12	10/22/10	0.4	13.7	-45.2	-	100	150	21,300
SVE-12	11/29/10	0.1	17.2	-45.8	-	93	150	10,400
SVE-12	12/22/10	0.4	16.4	-48.2	-	112	150	5,770
SVE-12	01/24/11	0.3	16.7	-47.8	-	102	150	5,870
SVE-12	02/28/11	0.2	16.4	-49.1	-	87	150	4,195
SVE-12	04/13/11	0.3	16.0	-48.8	-	93	150	6,170
SVE-12	04/29/11	0.0	17.3	-47.2	-	84	150	10,750
SVE-12	05/27/11	0.0	18.3	-46.1	-	91	150	1,460
SVE-12	06/24/11	0.0	18.0	-45.0	-	97	150	420
SVE-12	07/22/11	0.0	16.4	-43.4	-	45	150	97
SVE-12	08/25/11	0.0	16.0	-44.3	-	76	150	8,250
SVE-12	09/30/11	0.0	18.3	-41.8	-	40	150	310
SVE-12	10/26/11	0.0	16.6	-44.4	-	46	150	890
SVE-12	11/22/11	0.0	17.6	-45.3	-	61	150	2,530
SVE-12	12/29/11	0.0	18.6	-44.8	-	70	150	7,840
SVE-12	01/26/12	0.0	17.3	-44.9	-	102	150	27,614
SVE-12	02/21/12	0.0	17.6	-46.2	-	108	150	4,800
SVE-12	03/30/12	0.0	18.0	-47.1	-	123	150	1,771
SVE-12	04/27/12	0.0	18.1	-46.1	-	149	150	2,730

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-12	05/25/12	0.0	18.1	-44.8	-	106	150	802
SVE-12	06/26/12	0.0	16.8	-41.8	-	113	150	5,430
SVE-12	07/25/12	0.2	15.7	-44.2	-	110	150	6,360
SVE-12	08/22/12	0.0	17.3	-38.7	-	98	150	6,320
SVE-12	09/25/12	0.2	17.8	-5.7	-	152	150	2,520
SVE-12	10/30/12	0.0	18.8	-21.8	-	0 ⁴	150	440 ¹¹
SVE-12	11/21/12	0.0	19.0	-36.1	-	147	150	1,360
SVE-12	12/21/12 ¹²	2.4	15.0	-30.2	-	151	150	>50,000
SVE-12	01/03/13 ¹²	0.2	18.7	-23.8	-	153	150	5,420
SVE-12	01/28/13	0.0	19.7	-23.2	-	144	150	3,940
SVE-12	02/27/13	0.1	19.3	-20.8	-	154	150	5,710
SVE-12	03/25/13	0.1	19.0	-21.8	-	147	150	7,960
SVE-12	04/26/13	1.6	12.8	-12.6	-	151	150	NA ⁶
SVE-12	05/30/13	0.0	17.0	-42.1	-	122	150	2,340
SVE-12	06/27/13	0.0	20.1	-39.0	-	99	150	230
SVE-12	07/25/13	0.0	18.4	-38.6	-	156	150	1,740
SVE-12	08/30/13	0.0	19.1	-38.5	-	157	150	1,610
SVE-12	09/25/13	0.1	19.0	-46.4	-	155	150	2,300
SVE-12	10/23/13	0.0	19.4	-19.6	-	149	150	1,900
SVE-12	11/20/13	0.1	19.5	-19.3	-	146	150	3,120
SVE-12	12/18/13	0.0	19.8	-13.8	-	147	150	20
SVE-12	05/13/14 ¹³	5.4	6.7	464.0	-	149	150	NA ⁶
SVE-12	05/28/14 ¹³	0.0	17.0	-22.1	-	147	150	27,700
SVE-12	06/26/14	0.0	18.0	-25.7	-	148	150	6,390 ¹¹
SVE-12	07/31/14	0.6	18.5	-17.6	-	153	150	10,160
SVE-12	08/28/14	2.0	17.4	-21.9	-	155	150	18,770
SVE-12	09/26/14	0.0	19.0	-36.9	-	141	150	920
SVE-12	10/24/14	0.0	19.3	-21.0	-	150	150	2,080
SVE-12	11/19/14	0.0	20.0	-17.2	-	160	150	1,330
SVE-12	12/17/14	0.0	20.1	-22.4	-	159	150	1,390
SVE-12	01/21/15	0.0	19.4	-23.1	-	145	150	780
SVE-12	02/26/15	0.0	19.9	-16.5	-	0 ⁴	150	1,190
SVE-12	03/17/15	0.0	20.2	-22.2	-	151	150	410
SVE-12	04/17/15	0.0	19.1	-18.2	-	0 ⁴	150	400
SVE-12	05/12/15	0.0	19.6	-19.2	-	155	150	110
SVE-12	06/25/15	0.0	18.4	-16.5	-	153	150	530
SVE-12	07/31/15	0.0	19.6	-17.7	-	153	150	250
SVE-12	08/19/15	0.0	20.1	-19.3	-	88	150	500
SVE-12	09/24/15	0.1	19.8	-41.6	-	144	150	780
SVE-12	10/22/15	0.0	20.5	-37.8	-	150	150	520
SVE-12	11/12/15	0.4	17.0	-10.8	-	0 ¹⁵	40 - 50	690
SVE-12	12/17/15	0.1	18.1	-16.2	-	0 ¹⁵	40 - 50	1,020
SVE-12	01/21/16	0.0	18.9	-7.2	35	43	40-50	4,140

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-12	02/24/16	0.1	18.7	0.1	38	51	40-50	2,340
SVE-12	03/22/16	0.0	16.2	-7.5	42	46	40-50	NA ⁶
SVE-12	04/22/16	0.2	18.5	-4.1	50	0 ⁴	40-50	100
SVE-12	05/19/16	0.0	18.5	-6.2	55	49	40-50	2,810
SVE-12	06/14/16	0.0	18.2	-5.6	62	0 ⁴	40-50	4,260
SVE-12	07/27/16	0.3	17.6	-4.5	70	0 ⁴	40-50	4,050
SVE-12	08/10/16	0.2	18.5	-4.8	70	0 ⁴	40-50	1,430
SVE-12	09/15/16	0.2	18.0	-6.6	68	0 ⁴	40-50	1,610
SVE-12	10/26/16	0.6	18.4	-6.4	51	0 ⁴	40-50	1,240
SVE-12	11/23/16	0.6	17.8	-7.2	50	52	40-50	1,000
SVE-12	12/13/16	0.3	18.4	-7.9	45	56	40-50	1,330
SVE-12	01/10/17	0.8	17.0	-6.4	40	70	40-50	1,244
SVE-12	02/14/17	0.0	18.1	-8.8	44	49	40-50	1,314
SVE-12	03/07/17	0.2	18.0	-10.3	40	55	40-50	841
SVE-12	04/05/17	0.1	18.3	-11.9	50	47	40-50	1,011
SVE-12	05/25/17	0.8	12.9	-12.0	53	0 ⁴	40-50	NA ⁶
SVE-12	06/28/17	0.1	17.9	-8.6	63	0 ⁴	40-50	911
SVE-12	07/24/17	0.1	18.1	-8.7	68	0 ⁴	40-50	1,022
SVE-12	08/14/17	0.1	19.0	-9.0	66	0 ⁴	40-50	989
SVE-12	09/13/17	0.2	18.6	-7.7	67	42	40-50	904
SVE-12	10/30/17	0.1	19.1	0.0	54	52	40-50	1,410
SVE-12	11/17/17	0.0	19.1	-7.7	55	0 ⁴	40-50	1,591
SVE-12	12/07/17	0.0	19.6	-7.7	52	0 ⁴	40-50	1,308
SVE-13	08/27/08 ¹	0.5	16.2	0.3	-	-	-	-
SVE-13	09/23/08	34.2	0.0	-46.7	-	0	90 - 100	-
SVE-13	09/25/08 ²	-	-	-	-	-	90 - 100	-
SVE-13	10/01/08	0.0	11.0	-48.6	-	46	90 - 100	-
SVE-13	10/07/08	0.0	14.9	-47.2	-	0	90 - 100	-
SVE-13	10/15/08	0.0	16.3	-47.7	-	0	90 - 100	-
SVE-13	10/30/08	0.0	17.0	-47.3	-	33	90 - 100	365
SVE-13	11/13/08	0.0	17.9	-47.4	-	0	90 - 100	-
SVE-13	11/26/08	0.0	18.1	-48.7	-	0	90 - 100	-
SVE-13	01/22/09 ³	0.0	18.4	-11.9	-	99	90 - 100	2,040
SVE-13	02/05/09	0.0	18.8	-11.5	-	103	90 - 100	303
SVE-13	02/16/09	0.0	19.4	-12.8	-	90	90 - 100	364
SVE-13	03/16/09	0.0	18.6	-11.4	-	97	90 - 100	1,030
SVE-13	04/24/09	0.0	18.8	-12.0	-	94	90 - 100	750
SVE-13	05/20/09	0.0	18.4	-11.8	-	104	90 - 100	510
SVE-13	06/23/09	0.0	16.9	-11.9	-	100	90 - 100	594
SVE-13	07/23/09	0.0	16.7	-11.5	-	99	90 - 100	1,740
SVE-13	08/20/09	0.0	15.9	-12.8	-	99	100	2,430
SVE-13	09/23/09	0.0	16.1	-12.8	-	98	100	1,580

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-13	10/20/09	0.0	16.8	-14.0	-	96	100	1,560
SVE-13	11/24/09	0.0	17.5	-13.2	-	103	100	1,550
SVE-13	12/29/09	0.0	16.8	-12.8	-	94	100	545
SVE-13	01/29/10	0.0	19.5	-12.8	-	104	100	404
SVE-13	02/22/10	0.0	18.7	-11.4	-	101	100	620
SVE-13	03/26/10	0.0	17.8	-13.4	-	96	100	1,720
SVE-13	04/22/10	0.0	18.4	-11.8	-	105	100	664
SVE-13	05/18/10	0.0	17.8	-11.7	-	94	100	3,730
SVE-13	06/29/10	0.0	16.3	-12.7	-	106	100	1,830
SVE-13	07/23/10	0.0	16.1	-12.7	-	101	100	1,630
SVE-13	08/27/10	0.0	13.0	-10.3	-	102	100	1,790
SVE-13	10/01/10	0.0	14.0	-10.4	-	99	100	4,930
SVE-13	10/22/10	0.0	13.9	-9.8	-	100	100	6,680
SVE-13	11/29/10	0.0	17.3	-9.8	-	94	100	1,640
SVE-13	12/22/10	0.1	18.0	-10.3	-	106	100	350
SVE-13	01/24/11	0.2	17.6	-10.2	-	102	100	1,770
SVE-13	02/28/11	0.1	17.3	-11.0	-	95	100	1,243
SVE-13	04/13/11	0.0	18.3	-10.1	-	97	100	1,120
SVE-13	04/29/11	0.0	18.3	-12.2	-	100	100	4,184
SVE-13	05/27/11	0.0	18.7	-11.9	-	98	100	2,150
SVE-13	06/24/11	0.0	17.1	-13.2	-	102	100	1,170
SVE-13	07/22/11	0.0	16.1	-12.8	-	109	100	248
SVE-13	08/25/11	0.0	15.6	-12.3	-	100	100	3,180
SVE-13	09/30/11	0.0	17.9	-13.3	-	98	100	440
SVE-13	10/26/11	0.0	16.9	-14.2	-	99	100	860
SVE-13	11/22/11	0.0	18.5	-12.4	-	105	100	650
SVE-13	12/29/11	0.0	19.9	-13.3	-	102	100	850
SVE-13	01/26/12	0.0	18.0	-11.4	-	105	100	10,905
SVE-13	02/21/12	0.0	18.7	-8.3	-	102	100	2,260
SVE-13	03/30/12	0.0	19.1	-11.4	-	106	100	483
SVE-13	04/27/12	0.0	18.3	-14.8	-	102	100	1,210
SVE-13	05/25/12	0.0	18.3	-13.6	-	103	100	280
SVE-13	06/26/12	0.0	16.3	-14.8	-	103	100	1,680
SVE-13	07/25/12	0.0	14.2	-17.0	-	101	100	2,100
SVE-13	08/22/12	0.0	16.8	-16.8	-	101	100	1,690
SVE-13	09/25/12	0.0	17.5	-16.8	-	108	100	540
SVE-13	10/30/12	0.0	18.3	-16.2	-	110	100	280 ¹¹
SVE-13	11/21/12	0.0	18.2	-16.0	-	103	100	260
SVE-13	12/21/12 ¹²	0.0	14.5	-14.6	-	97	100	4,470
SVE-13	01/03/13 ¹²	0.0	19.2	-14.1	-	101	100	750
SVE-13	01/28/13	0.0	19.6	-14.9	-	101	100	1,700
SVE-13	02/27/13	0.0	19.8	-8.0	-	101	100	275
SVE-13	03/25/13	0.0	19.6	-9.0	-	97	100	515

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-13	04/26/13	0.0	17.5	-32.1	-	92	100	207
SVE-13	05/30/13	0.1	18.0	-37.3	-	99	100	4,460
SVE-13	06/27/13	0.1	15.5	-35.7	-	0 ⁴	100	2,420
SVE-13	07/25/13	0.0	17.2	-23.9	-	97	100	700
SVE-13	08/30/13	0.0	18.0	-20.7	-	103	100	480
SVE-13	09/25/13	0.0	17.7	-21.6	-	101	100	120
SVE-13	10/23/13	0.0	18.6	-11.9	-	101	100	260
SVE-13	11/20/13	0.0	18.9	-10.8	-	106	100	290
SVE-13	12/18/13	0.0	19.2	-13.2	-	94	100	220
SVE-13	05/13/14 ¹³	1.2	5.3	56.0	-	96	100	NA ⁶
SVE-13	05/28/14 ¹³	0.0	17.5	-20.2	-	92	100	620
SVE-13	06/26/14	0.0	16.7	-21.4	-	71	100	140 ¹¹
SVE-13	07/31/14	0.2	17.7	-16.0	-	0 ⁴	100	2,290
SVE-13	08/28/14	0.4	10.4	-18.0	-	94	100	NA ⁶
SVE-13	09/26/14	0.0	17.4	-8.0	-	111	100	46
SVE-13	10/24/14	0.0	18.4	-8.5	-	106	100	110
SVE-13	11/19/14	0.0	18.6	-8.8	-	107	100	1,050
SVE-13	12/17/14	0.0	20.0	-9.1	-	98	100	93
SVE-13	01/21/15	0.0	19.6	-8.9	-	0	100	90
SVE-13	02/26/15	0.0	19.7	-43.4	-	102	100	80
SVE-13	03/17/15	0.0	18.2	-45.2	-	110	100	27
SVE-13	04/17/15	0.0	18.5	-28.1	-	108	100	33
SVE-13	05/12/15	0.0	18.8	-29.2	-	105	100	19
SVE-13	06/25/15	0.0	17.5	-27.5	-	94	100	64
SVE-13	07/31/15	0.0	18.2	-28.3	-	110	100	42
SVE-13	08/19/15	0.0	18.8	-21.9	-	101	100	150
SVE-13	09/24/15	0.0	17.4	-23.6	-	125	100	55
SVE-13	10/22/15	0.0	18.9	-18.6	-	0	100	59
SVE-13	11/12/15	0.0	18.7	-2.9	-	0	40 - 50	110
SVE-13	12/17/15	0.0	17.7	-5.8	-	46	40 - 50	250
SVE-13	01/21/16	0.0	17.2	-1.2	35	55	40-50	150
SVE-13	02/24/16	0.0	15.8	0.1	38	44	40-50	22
SVE-13	03/22/16	0.0	13.5	-14.2	42	42	40-50	NA ⁶
SVE-13	04/22/16	0.0	16.6	-9.0	50	48	40-50	15
SVE-13	05/19/16	0.0	16.3	-11.0	55	44	40-50	540
SVE-13	06/14/16	0.0	15.3	-10.6	62	0 ⁴	40-50	NA ⁶
SVE-13	07/27/16	0.0	12.5	-8.9	70	0 ⁴	40-50	NA ⁶
SVE-13	08/10/16	0.0	13.1	-8.4	70	0 ⁴	40-50	NA ⁶
SVE-13	09/15/16	0.0	10.9	-10.1	68	0 ⁴	40-50	NA ⁶
SVE-13	10/26/16	0.0	11.5	-12.0	51	0 ⁴	40-50	NA ⁶
SVE-13	11/23/16	0.0	12.5	-12.7	50	58	40-50	NA ⁶
SVE-13	12/13/16	0.0	15.0	-0.2	45	111	40-50	NA ⁶
SVE-13	01/10/17	0.0	13.4	-10.9	40	50	40-50	NA ⁶

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-13	02/14/17	0.0	15.7	-15.0	44	48	40-50	NA ⁶
SVE-13	03/07/17	0.0	14.0	-14.9	40	51	40-50	NA ⁶
SVE-13	04/05/17	0.0	14.8	-13.6	50	44	40-50	NA ⁶
SVE-13	05/25/17	0.0	12.2	-16.2	53	0 ⁴	40-50	NA ⁶
SVE-13	06/28/17	0.0	14.9	-14.2	63	0 ⁴	40-50	NA ⁶
SVE-13	07/24/17	0.0	14.3	-14.0	68	0 ⁴	40-50	NA ⁶
SVE-13	08/14/17	0.0	13.9	-14.1	66	48	40-50	NA ⁶
SVE-13	09/13/17	0.0	13.6	-12.1	67	44	40-50	NA ⁶
SVE-13	10/30/17	0.0	13.9	0.0	54	49	40-50	NA ⁶
SVE-13	11/17/17	0.0	14.2	-12.1	55	0 ⁴	40-50	NA ⁶
SVE-13	12/07/17	0.0	14.6	-12.1	52	40	40-50	NA ⁶
SVE-14	08/27/08 ¹	0.0	3.4	0.6	-	-	-	-
SVE-14	09/23/08	7.4	1.4	-10.8	-	104	90 - 100	-
SVE-14	09/25/08	6.2	5.6	-12.6	-	102	90 - 100	-
SVE-14	10/01/08	0.5	9.9	-13.0	-	103	90 - 100	-
SVE-14	10/07/08	0.4	11.9	-13.3	-	86	90 - 100	-
SVE-14	10/15/08	0.0	15.9	-9.8	-	81	90 - 100	-
SVE-14	10/30/08	0.0	17.0	-8.8	-	83	90 - 100	263
SVE-14	11/13/08	0.0	18.1	-7.7	-	97	90 - 100	-
SVE-14	11/26/08	0.0	16.1	-11.4	-	105	90 - 100	-
SVE-14	01/22/09 ³	0.8	13.4	-14.9	-	101	90 - 100	39,800
SVE-14	02/05/09	0.0	14.4	-13.4	-	102	90 - 100	4,100
SVE-14	02/16/09	0.0	15.8	-12.6	-	102	90 - 100	5,450
SVE-14	03/16/09	0.0	15.0	-13.4	-	102	90 - 100	4,360
SVE-14	04/24/09	0.0	15.4	-14.5	-	97	90 - 100	3,890
SVE-14	05/20/09	0.0	15.6	-13.9	-	94	90 - 100	1,710
SVE-14	06/23/09	0.0	14.6	-14.6	-	92	90 - 100	3,050
SVE-14	07/23/09	0.0	14.4	-14.0	-	90	90 - 100	13,500
SVE-14	08/20/09	0.0	15.0	-14.5	-	96	100	22,200
SVE-14	09/23/09	0.1	14.9	-14.6	-	97	100	17,050
SVE-14	10/20/09	0.1	15.7	-15.5	-	98	100	19,100
SVE-14	11/24/09	0.0	15.4	-14.5	-	104	100	17,300
SVE-14	12/29/09	0.0	14.8	-14.6	-	101	100	5,510
SVE-14	01/29/10	0.1	17.2	-14.4	-	107	100	3,340
SVE-14	02/22/10	0.0	15.6	-13.2	-	103	100	7,610
SVE-14	03/26/10	0.0	14.6	-14.0	-	108	100	2,200
SVE-14	04/22/10	0.0	15.3	-13.8	-	98	100	3,660
SVE-14	05/18/10	0.0	14.9	-13.4	-	98	100	25,100
SVE-14	06/29/10	0.0	14.6	-14.9	-	96	100	17,800
SVE-14	07/23/10	0.0	15.1	-15.0	-	103	100	16,300
SVE-14	08/27/10	1.0	8.5	-13.1	-	106	100	NA ⁶
SVE-14	10/01/10	0.8	8.7	-12.1	-	96	100	NA ⁶

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-14	10/22/10	1.2	12.7	-12.8	-	106	100	NA ⁶
SVE-14	11/29/10	0.4	15.1	-13.3	-	104	100	2,100
SVE-14	12/22/10	0.6	14.5	-14.3	-	104	100	3,200
SVE-14	01/24/11	0.5	14.8	-13.3	-	105	100	16,140
SVE-14	02/28/11	0.8	13.8	-14.4	-	93	100	23,210
SVE-14	04/13/11	1.0	14.1	-13.6	-	99	100	NA ⁶
SVE-14	04/29/11	0.3	15.8	-14.9	-	105	100	35,701
SVE-14	05/27/11	0.1	16.0	-14.5	-	106	100	21,400
SVE-14	06/24/11	0.2	15.6	-16.8	-	104	100	9,240
SVE-14	07/22/11	0.1	14.4	-17.2	-	109	100	2,505
SVE-14	08/25/11	0.4	13.6	-17.5	-	102	100	36,400
SVE-14	09/30/11	0.4	15.9	-18.0	-	101	100	3,640
SVE-14	10/26/11	0.1	15.0	-17.6	-	105	100	16,510
SVE-14	11/22/11	0.1	15.4	-27.4	-	154	150	9,250
SVE-14	12/29/11	0.0	16.4	-29.3	-	155	150	8,710
SVE-14	01/26/12	0.1	15.3	-29.8	-	130	150	28,259
SVE-14	02/21/12	0.3	15.5	-15.9	-	140	150	16,370
SVE-14	03/30/12	0.2	16.3	-14.9	-	106	150	8,810
SVE-14	04/27/12	0.0	18.0	-35.5	-	146	150	12,820
SVE-14	05/25/12	0.1	15.7	-36.2	-	136	150	3,560
SVE-14	06/26/12	0.1	14.9	-28.6	-	152	150	16,330
SVE-14	07/25/12	1.0	14.0	-36.2	-	145	150	19,200
SVE-14	08/22/12	0.0	14.7	-37.8	-	109	150	10,630
SVE-14	09/25/12	0.5	14.4	-39.7	-	139	150	6,760
SVE-14	10/30/12	0.0	15.9	-40.9	-	138	150	NA ¹¹
SVE-14	11/21/12	0.0	15.8	-42.4	-	143	150	2,130
SVE-14	12/21/12 ¹²	2.4	12.3	-44.8	-	140	150	NA ⁶
SVE-14	01/03/13 ¹²	0.2	15.4	-47.6	-	144	150	140
SVE-14	01/28/13	0.0	16.4	-48.6	-	168	150	2,070
SVE-14	02/27/13	0.0	16.9	-47.2	-	141	150	11,260
SVE-14	03/25/13	0.1	16.1	-48.4	-	149	150	11,020
SVE-14	04/26/13	2.7	13.4	-48.3	-	153	150	NA ⁶
SVE-14	05/30/13	0.0	16.3	-45.6	-	33	150	3,980
SVE-14	06/27/13	0.5	15.0	-42.6	-	0 ⁴	150	13,140
SVE-14	07/25/13	0.0	16.1	-43.2	-	67	150	3,430
SVE-14	08/30/13	0.2	16.4	0.3	-	71	150	4,940
SVE-14	09/25/13	0.3	16.1	-38.1	-	85	150	7,590
SVE-14	10/23/13	0.0	16.5	-45.9	-	152	150	9,840
SVE-14	11/20/13	0.3	15.9	-47.3	-	74	150	5,880
SVE-14	12/18/13	0.0	17.2	-46.7	-	38	150	2,920
SVE-14	05/13/14 ¹³	4.5	8.0	-46.6	-	156	150	NA ⁶
SVE-14	05/28/14 ¹³	0.2	13.4	-46.4	-	78	150	24,600
SVE-14	06/26/14	0.0	15.3	-47.5	-	141	150	2,890 ¹¹

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-14	07/31/14	0.4	14.2	-43.2	-	146	150	8,450
SVE-14	08/28/14	2.2	12.0	-45.6	-	124	150	NA ⁶
SVE-14	09/26/14	0.0	14.5	-46.1	-	122	150	2,020
SVE-14	10/24/14	0.0	15.6	-48.2	-	58	150	3,420
SVE-14	11/19/14	0.0	14.8	-47.7	-	136	150	2,360
SVE-14	12/17/14	0.0	16.3	-48.0	-	122	150	1,580
SVE-14	01/21/15	0.0	15.8	-48.5	-	142	125 - 150	960
SVE-14	02/26/15	0.0	15.9	-49.0	-	144	125 - 150	840
SVE-14	03/17/15	0.0	15.3	-48.2	-	131	125 - 150	NA ⁶
SVE-14	04/17/15	0.0	14.6	-44.5	-	0 ⁴	125 - 150	NA ⁶
SVE-14	05/12/15	0.0	15.7	-42.7	-	129	125 - 150	NA ⁶
SVE-14	06/25/15	0.0	15.3	-37.4	-	135	125 - 150	720
SVE-14	07/31/15	0.0	15.7	-37.9	-	154	125 - 150	2,140
SVE-14	08/19/15	0.0	16.7	-39.7	-	88	125 - 150	1,120
SVE-14	09/24/15	0.2	16.5	-46.1	-	125	125 - 150	200
SVE-14	10/22/15	0.1	16.9	-43.8	-	126	125 - 150	1,470
SVE-14	11/12/15	0.2	15.2	-29.0	-	167	40 - 50	1,330
SVE-14	12/17/15	0.4	14.2	-9.7	-	45	40 - 50	NA ⁶
SVE-14	01/21/16	0.3	13.3	-6.1	35	67	40-50	NA ⁶
SVE-14	2/24/2016 ¹⁴	-	-	-	-	-	40-50	-
SVE-14	03/22/16	0.0	14.5	-11.9	42	0 ⁴	40-50	NA ⁶
SVE-14	04/22/16	0.7	13.2	-9.4	50	0 ⁴	40-50	4,660
SVE-14	05/19/16	0.2	13.9	-9.4	55	41	40-50	NA ⁶
SVE-14	06/14/16	0.1	13.9	-9.9	62	0 ⁴	40-50	NA ⁶
SVE-14	07/27/16	0.7	13.3	-8.3	70	0 ⁴	40-50	NA ⁶
SVE-14	08/10/16	0.6	13.9	-8.8	70	0 ⁴	40-50	NA ⁶
SVE-14	09/15/16	1.2	12.8	-9.5	68	0 ⁴	40-50	NA ⁶
SVE-14	10/26/16	1.4	13.3	-11.2	51	0 ⁴	40-50	NA ⁶
SVE-14	11/23/16	1.0	12.8	-12.0	50	48	40-50	NA ⁶
SVE-14	12/13/16	1.4	12.5	0.0	45	54	40-50	NA ⁶
SVE-14	01/10/17	0.4	13.8	-9.2	40	44	40-50	NA ⁶
SVE-14	02/14/17	0.0	13.2	-13.9	44	59	40-50	NA ⁶
SVE-14	03/07/17	0.2	12.7	-14.0	40	53	40-50	NA ⁶
SVE-14	04/05/17	0.2	13.4	-13.6	50	50	40-50	NA ⁶
SVE-14	05/25/17	0.7	11.0	-15.0	53	0 ⁴	40-50	NA ⁶
SVE-14	06/28/17	0.2	13.6	-13.2	63	0 ⁴	40-50	NA ⁶
SVE-14	07/24/17	0.3	13.3	-13.1	68	0 ⁴	40-50	NA ⁶
SVE-14	08/14/17	0.2	13.4	-13.4	66	0 ⁴	40-50	NA ⁶
SVE-14	09/13/17	0.5	14.3	-11.8	67	54	40-50	NA ⁶
SVE-14	10/30/17	0.4	14.2	0.0	54	44	40-50	NA ⁶
SVE-14	11/17/17	0.4	14.6	-11.8	55	0 ⁴	40-50	NA ⁶
SVE-14	12/07/17	0.3	15.1	-11.8	52	0 ⁴	40-50	NA ⁶

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-15	08/27/08 ¹	1.3	17.8	0.4	-	-	-	-
SVE-15	09/23/08 ²	-	-	-	-	-	90 - 100	-
SVE-15	09/25/08 ²	-	-	-	-	-	90 - 100	-
SVE-15	10/01/08	1.1	4.6	-48.3	-	90	90 - 100	-
SVE-15	10/07/08	0.4	10.0	-47.0	-	80	90 - 100	-
SVE-15	10/15/08	0.2	13.0	-47.0	-	80	90 - 100	-
SVE-15	10/30/08	0.1	14.9	-46.5	-	72	90 - 100	4,220
SVE-15	11/13/08	0.1	15.9	-46.6	-	96	90 - 100	-
SVE-15	11/26/08	0.0	16.4	-47.2	-	96	90 - 100	-
SVE-15	01/22/09 ³	0.0	14.7	-49.6	-	36	90 - 100	5,280
SVE-15	02/05/09	0.0	16.3	-49.3	-	78	90 - 100	3,830
SVE-15	02/16/09	0.0	17.2	-47.8	-	91	90 - 100	3,920
SVE-15	03/16/09	0.0	16.8	-48.6	-	90	90 - 100	4,050
SVE-15	04/24/09	0.0	17.6	-46.7	-	58	90 - 100	4,040
SVE-15	05/20/09	0.0	17.5	-46.2	-	70	90 - 100	2,040
SVE-15	06/23/09	0.0	16.8	-44.3	-	55	90 - 100	2,030
SVE-15	07/23/09	0.0	16.5	-43.9	-	57	90 - 100	6,080
SVE-15	08/20/09	0.0	16.8	-42.7	-	39	100	7,930
SVE-15	09/23/09	0.0	17.5	-43.5	-	69	100	3,870
SVE-15	10/20/09	0.0	17.7	-46.6	-	50	100	4,130
SVE-15	11/24/09	0.0	17.3	-46.3	-	56	100	4,570
SVE-15	12/29/09	0.0	16.6	-47.0	-	34	100	1,600
SVE-15	01/29/10	0.0	19.3	-46.8	-	92	100	1,465
SVE-15	02/22/10	0.1	18.8	-45.8	-	34	100	10,200
SVE-15	03/26/10	0.0	16.5	-46.3	-	34	100	1,680
SVE-15	04/22/10	0.0	17.6	-43.6	-	57	100	1,090
SVE-15	05/18/10	0.0	17.0	-44.8	-	76	100	4,920
SVE-15	06/29/10	0.0	16.8	-45.5	-	52	100	1,990
SVE-15	07/23/10	0.0	17.3	-42.1	-	49	100	1,930
SVE-15	08/27/10	0.9	12.2	-43.8	-	51	100	2,510
SVE-15	10/01/10	0.8	11.3	-47.3	-	72	100	NA ⁶
SVE-15	10/22/10	0.4	13.9	-45.9	-	98	100	42,200
SVE-15	11/29/10	0.0	18.1	-37.7	-	103	100	3,400
SVE-15	12/22/10	0.7	17.0	-40.3	-	103	100	10,800
SVE-15	01/24/11	0.2	16.9	-33.0	-	117	100	3,610
SVE-15	02/28/11	0.1	16.4	-27.1	-	97	100	250
SVE-15	04/13/11	0.0	16.0	-14.1	-	105	100	2,110
SVE-15	04/29/11	0.0	16.9	-12.8	-	101	100	1,020
SVE-15	05/27/11	0.0	18.3	-9.9	-	104	100	2,060
SVE-15	06/24/11	0.0	17.5	-4.3	-	100	100	260
SVE-15	07/22/11	0.0	17.2	-8.0	-	99	100	197
SVE-15	08/25/11	0.0	15.5	-9.8	-	103	100	6,900
SVE-15	09/30/11	0.0	18.3	-6.8	-	99	100	210

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-15	10/26/11	0.0	18.4	-9.3	-	104	100	55
SVE-15	11/22/11	0.0	19.0	-14.3	-	102	100	250
SVE-15	12/29/11	0.0	19.8	-16.3	-	103	100	560
SVE-15	01/26/12	0.0	17.9	-12.3	-	95	100	2,907
SVE-15	02/21/12	0.0	18.8	-13.4	-	0 ⁴	100	197
SVE-15	03/30/12	0.0	18.6	-27.2	-	100	100	200
SVE-15	04/27/12	0.0	18.6	-19.8	-	96	100	240
SVE-15	05/25/12	0.0	19.6	-36.7	-	0 ⁴	100	438
SVE-15	06/26/12	0.0	19.0	-14.8	-	102	100	430
SVE-15	07/25/12	0.0	17.6	-41.8	-	105	100	480
SVE-15	08/22/12	0.0	18.4	-4.0	-	100	100	150
SVE-15	09/25/12	0.0	19.4	-5.4	-	98	100	26
SVE-15	10/30/12	0.0	19.1	-5.4	-	104	100	27 ¹¹
SVE-15	11/21/12	0.0	19.7	-5.8	-	104	100	71
SVE-15	12/21/12 ¹²	0.1	16.4	-7.6	-	98	100	3,170
SVE-15	01/03/13 ¹²	0.0	18.5	-3.2	-	105	100	223
SVE-15	01/28/13	0.0	20.2	-2.6	-	0 ⁴	100	547
SVE-15	02/27/13	0.0	20.3	-1.8	-	101	100	272
SVE-15	03/25/13	0.0	20.2	-2.9	-	100	100	361
SVE-15	04/26/13	0.0	20.0	-2.8	-	86	100	1,060
SVE-15	05/30/13	0.0	19.4	-15.8	-	0 ⁴	100	140
SVE-15	06/27/13	0.0	20.1	-2.2	-	0 ⁴	100	120
SVE-15	07/25/13	0.0	19.1	-0.8	-	100	100	180
SVE-15	08/30/13	0.0	20.0	-36.0	-	106	100	120
SVE-15	09/25/13	0.0	20.1	-37.7	-	98	100	222
SVE-15	10/23/13	0.0	19.4	-41.0	-	98	100	100
SVE-15	11/20/13	0.0	19.3	-42.8	-	96	100	110
SVE-15	12/18/13	0.0	19.0	-42.5	-	99	100	30
SVE-15	05/13/14 ¹³	3.4	8.6	-40.7	-	99	100	NA ⁶
SVE-15	05/28/14 ¹³	0.0	17.0	-5.4	-	122	100	350
SVE-15	06/26/14	0.0	18.4	-2.3	-	111	100	33 ¹¹
SVE-15	07/31/14	0.0	19.4	-0.4	-	100	100	420
SVE-15	08/28/14	0.3	18.5	-2.5	-	119	100	4,180
SVE-15	09/26/14	0.0	19.9	-0.3	-	98	100	160
SVE-15	10/24/14	0.0	19.8	-1.6	-	96	100	53
SVE-15	11/19/14	0.0	20.0	-2.0	-	103	100	33
SVE-15	12/17/14	0.0	19.3	-2.6	-	97	100	52
SVE-15	01/21/15	0.0	19.7	-3.1	-	98	100	110
SVE-15	02/26/15	0.0	20.1	-1.4	-	106	100	41
SVE-15	03/17/15	0.0	20.4	-2.5	-	111	100	15
SVE-15	04/17/15	0.0	19.6	-34.3	-	104	100	17
SVE-15	05/12/15	0.0	19.9	-31.8	-	92	100	17
SVE-15	06/25/15	0.0	18.5	-23.2	-	108	100	68

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-15	07/31/15	0.0	19.8	-23.0	-	93	100	39
SVE-15	08/19/15	0.0	20.1	-23.3	-	167 ¹⁰	100	130
SVE-15	09/24/15	0.0	19.9	-36.7	-	161 ¹⁰	100	180
SVE-15	10/22/15	0.0	20.6	-34.0	-	103	100	16
SVE-15	04/22/16	0.0	19.8	-1.2	50	0	-	690
SVE-15	10/26/16	0.0	19.7	-1.4	51	0	-	740
SVE-15	04/05/17	0.0	19.6	-0.1	50	0	-	940
SVE-15	10/30/17	0.1	17.4	0.0	54	0	-	1,230
SVE-16	08/27/08 ¹	3.9	14.3	0.3	-	-	-	-
SVE-16	09/23/08	32.5	0.0	-31.8	-	93	90 - 100	-
SVE-16	09/25/08	13.7	0.3	-33.5	-	93	90 - 100	-
SVE-16	10/01/08	1.2	8.4	-34.2	-	91	90 - 100	-
SVE-16	10/07/08	0.4	13.0	-35.0	-	94	90 - 100	-
SVE-16	10/15/08	0.2	14.5	-35.1	-	95	90 - 100	-
SVE-16	10/30/08	0.1	15.8	-34.6	-	101	90 - 100	3,250
SVE-16	11/13/08	0.0	16.5	-34.9	-	110	90 - 100	-
SVE-16	11/26/08	0.0	17.3	-35.7	-	100	90 - 100	-
SVE-16	01/22/09 ³	0.5	12.9	-33.8	-	100	90 - 100	26,900
SVE-16	02/05/09	0.0	16.0	-35.2	-	98	90 - 100	2,330
SVE-16	02/16/09	0.0	16.7	-33.9	-	104	90 - 100	2,310
SVE-16	03/16/09	0.0	16.4	-35.2	-	95	90 - 100	2,750
SVE-16	04/24/09	0.0	16.9	-34.5	-	95	90 - 100	2,350
SVE-16	05/20/09	0.0	16.8	-38.6	-	100	90 - 100	1,210
SVE-16	06/23/09	0.0	15.8	-37.6	-	91	90 - 100	1,680
SVE-16	07/23/09	0.0	16.5	-26.6	-	96	90 - 100	3,390
SVE-16	08/20/09	0.0	17.5	-21.5	-	100	100	3,110
SVE-16	09/23/09	0.0	18.0	-14.7	-	95	100	1,700
SVE-16	10/20/09	0.0	18.3	-16.8	-	95	100	1,060
SVE-16	11/24/09	0.0	17.5	-19.9	-	97	100	3,240
SVE-16	12/29/09	0.0	16.4	-21.7	-	92	100	1,960
SVE-16	01/29/10	0.0	19.2	-26.2	-	108	100	1,540
SVE-16	02/22/10	0.0	17.1	-24.4	-	92	100	2,920
SVE-16	03/26/10	0.0	15.9	-46.3	-	96	100	5,080
SVE-16	04/22/10	0.0	17.3	-44.2	-	0 ⁴	100	1,140
SVE-16	05/18/10	0.0	16.9	-13.9	-	100	100	4,660
SVE-16	06/29/10	0.0	16.1	-17.7	-	103	100	3,050
SVE-16	07/23/10	0.0	16.4	-14.9	-	100	100	1,830
SVE-16	08/27/10	0.4	11.8	-8.8	-	52	100	2,470
SVE-16	10/01/10	0.0	12.4	-13.7	-	95	100	15,300
SVE-16	10/22/10	0.2	13.1	-11.9	-	98	100	36,300
SVE-16	11/29/10	0.0	16.8	-10.8	-	104	100	1,920
SVE-16	12/22/10	0.1	16.1	-13.2	-	103	100	662

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-16	01/24/11	0.2	16.2	-10.7	-	97	100	4,670
SVE-16	02/28/11	0.2	15.3	-14.9	-	97	100	3,460
SVE-16	04/13/11	0.3	15.5	-12.8	-	96	100	3,620
SVE-16	04/29/11	0.0	16.3	-13.1	-	92	100	8,910
SVE-16	05/27/11	0.0	16.9	-14.1	-	97	100	6,960
SVE-16	06/24/11	0.0	16.0	-15.0	-	98	100	4,230
SVE-16	07/22/11	0.0	15.4	-13.9	-	94	100	405
SVE-16	08/25/11	0.1	14.5	-15.3	-	100	100	20,410
SVE-16	09/30/11	0.0	20.7	-11.9	-	- ⁹	100	0
SVE-16	10/26/11	0.0	16.4	-19.6	-	- ⁹	100	2,080
SVE-16	11/22/11	0.0	20.2	-28.6	-	105	100	2,000
SVE-16	12/29/11	0.0	20.1	-39.1	-	104	100	1,600
SVE-16	01/26/12	0.0	18.8	-28.5	-	106	100	6,720
SVE-16	02/21/12	0.0	19.6	-13.3	-	92	100	1,500
SVE-16	03/30/12	0.0	19.1	-15.2	-	96	100	2,365
SVE-16	04/27/12	0.0	19.0	-36.3	-	99	100	2,250
SVE-16	05/25/12	0.1	19.8	-45.5	-	58	100	1,422
SVE-16	06/26/12	0.0	18.4	-13.1	-	107	100	420
SVE-16	07/25/12	0.0	18.6	-38.6	-	95	100	350
SVE-16	08/22/12	0.0	19.6	-23.9	-	105	100	340
SVE-16	09/25/12	0.0	20.1	-9.3	-	100	100	6
SVE-16	10/30/12	0.0	20.1	-6.2	-	97	100	NA ¹¹
SVE-16	11/21/12	0.0	20.4	-6.0	-	102	100	83
SVE-16	12/21/12 ¹²	0.0	20.5	-9.1	-	86	100	731
SVE-16	01/03/13 ¹²	0.0	20.4	-12.5	-	106	100	20
SVE-16	01/28/13	0.0	20.8	-34.0	-	0 ⁴	100	190
SVE-16	02/27/13	0.0	21.1	-44.8	-	0 ⁴	100	84
SVE-16	03/25/13	0.0	18.4	-48.3	-	105	100	2,400
SVE-16	04/26/13	0.0	20.0	-46.8	-	0 ⁴	100	501
SVE-16	05/30/13	0.0	20.3	-42.8	-	97	100	21
SVE-16	06/27/13	0.0	20.2	-40.8	-	0 ⁴	100	28
SVE-16	07/25/13	0.0	19.7	-42.3	-	0 ⁴	100	120
SVE-16	08/30/13	0.0	20.0	-40.1	-	0 ⁴	100	10
SVE-16	09/25/13	0.0	20.3	-40.8	-	0 ⁴	100	56
SVE-16	10/23/13	0.0	20.5	-43.8	-	102	100	8
SVE-16	11/20/13	0.0	20.2	-44.6	-	109	100	1
SVE-16	12/18/13	0.0	20.1	-44.4	-	103	100	14
SVE-16	05/13/14 ¹³	0.0	20.4	-43.5	-	0 ⁴	100	25,620
SVE-16	05/28/14 ¹³	0.0	19.8	-17.7	-	83	100	3,630
SVE-16	06/26/14	0.0	20.0	-6.8	-	0 ⁴	100	27 ¹¹
SVE-16	07/31/14	0.0	17.8	-9.6	-	0 ⁴	100	1,120
SVE-16	08/28/14	0.0	20.7	-12.9	-	0 ⁴	100	5,250
SVE-16	09/26/14	0.0	20.2	-1.4	-	0 ⁴	100	22

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-16	10/24/14	0.0	20.4	-2.2	-	0 ⁴	100	88
SVE-16	11/19/14	0.0	20.5	-2.8	-	0 ⁴	100	4
SVE-16	12/17/14	0.0	20.9	-4.3	-	97	100	95
SVE-16	01/21/15	0.0	20.3	-4.3	-	0 ¹⁵	100	70
SVE-16	02/26/15	0.0	20.8	-3.8	-	94	100	93
SVE-16	03/17/15	0.0	21.0	-4.7	-	0 ¹⁵	100	20
SVE-16	04/17/15	0.0	20.2	-3.6	-	0 ¹⁵	100	18
SVE-16	05/12/15	0.0	20.3	-5.8	-	0 ¹⁵	100	31
SVE-16	06/25/15	0.0	19.1	-2.2	-	0 ¹⁵	100	8
SVE-16	07/31/15	0.0	20.4	-2.0	-	0 ¹⁵	100	38
SVE-16	08/19/15	0.0	21.1	-4.2	-	0 ¹⁵	100	25
SVE-16	09/24/15	0.0	20.9	-2.4	-	0 ¹⁵	100	56
SVE-16	10/22/15	0.0	21.3	-2.4	-	0 ¹⁵	100	9
SVE-16	04/22/16	0.0	18.9	-2.7	50	0	-	77
SVE-16	10/26/16	0.0	19.2	-0.9	51	0	-	88
SVE-16	04/05/17	0.0	19.4	0.3	50	0	-	407
SVE-16	10/30/17	0.0	19.1	0.0	54	0	-	611
SVE-17	08/27/08 ¹	1.1	0.7	0.4	-	-	-	-
SVE-17	09/23/08 ²	-	-	-	-	-	90 - 100	-
SVE-17	09/25/08 ²	-	-	-	-	-	90 - 100	-
SVE-17	10/01/08 ²	-	-	-	-	-	90 - 100	-
SVE-17	10/07/08	0.0	9.6	-47.2	-	0	90 - 100	-
SVE-17	10/15/08	0.0	12.6	-47.3	-	0	90 - 100	-
SVE-17	10/30/08	0.0	14.4	-47.0	-	0	90 - 100	290
SVE-17	11/13/08	0.0	16.0	-47.0	-	0	90 - 100	-
SVE-17	11/26/08	0.0	16.9	-47.9	-	0	90 - 100	-
SVE-17	01/22/09 ^{3,7}	0.0	15.9	-49.5	-	-	90 - 100	430
SVE-17	02/05/09	0.0	16.9	-49.9	-	28	90 - 100	70
SVE-17	02/16/09	0.0	17.9	-48.2	-	39	90 - 100	134
SVE-17	03/16/09	0.0	17.5	-49.1	-	-	90 - 100	99
SVE-17	04/24/09	0.0	18.1	-47.0	-	0	90 - 100	303
SVE-17	05/20/09	0.0	18.1	-46.5	-	0	90 - 100	77
SVE-17	06/23/09	0.0	17.5	-44.4	-	0	90 - 100	176
SVE-17	07/23/09	0.0	17.5	-43.9	-	0	90 - 100	354
SVE-17	08/20/09	0.0	17.9	-42.7	-	0	50	242
SVE-17	09/23/09	0.0	18.1	-43.6	-	0	50	278
SVE-17	10/20/09	0.0	18.3	-47.0	-	0	50	21
SVE-17	11/24/09	0.0	18.0	-46.6	-	0	50	92
SVE-17	12/29/09	0.0	16.9	-47.2	-	0	50	152
SVE-17	01/29/10	0.0	19.5	-47.4	-	0	50	14
SVE-17	02/22/10	0.0	18.8	-46.2	-	0	50	176
SVE-17	03/26/10	0.0	17.2	-46.4	-	0	50	214

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-17	04/22/10	0.0	18.1	-43.7	-	0	50	20
SVE-17	05/18/10	0.0	17.8	-45.2	-	0	50	750
SVE-17	06/29/10	0.0	17.8	-45.6	-	0	50	155
SVE-17	07/23/10	0.0	18.5	-42.4	-	0	50	134
SVE-17	08/27/10	1.1	11.6	-44.2	-	0	50	3,270
SVE-17	10/01/10	1.3	13.6	-47.5	-	0	50	NA ⁶
SVE-17	10/22/10	0.2	16.2	-46.3	-	0	50	29,500
SVE-17	11/29/10	0.0	18.3	-47.3	-	0	50	290
SVE-17	12/22/10	0.2	18.1	-49.4	-	31	50	2,170
SVE-17	01/24/11	0.1	17.7	-49.2	-	0	50	250
SVE-17	02/28/11	0.1	17.2	-49.9	-	0	50	139
SVE-17	04/13/11	0.0	18.5	-48.7	-	0	50	220
SVE-17	04/29/11	0.0	19.8	-3.9	-	46	50	615
SVE-17	05/27/11	0.0	20.3	-1.5	-	49	50	660
SVE-17	06/24/11	0.0	20.1	-1.9	-	52	50	200
SVE-17	07/22/11	0.0	18.7	-3.7	-	48	50	140
SVE-17	08/25/11	0.9	17.6	-27.4	-	48	50	> 50,000
SVE-17	09/30/11	0.0	20.7	-3.2	-	51	50	0
SVE-17	10/26/11	0.0	19.1	-2.4	-	55	50	9
SVE-17	11/22/11	0.0	20.2	-1.9	-	46	50	210
SVE-17	12/29/11	0.0	20.3	-3.5	-	47	50	350
SVE-17	01/26/12	0.0	19.9	-1.6	-	55	50	88
SVE-17	02/21/12	0.0	20.3	-1.1	-	47	50	107
SVE-17	03/30/12	0.0	20.6	-0.2	-	54	50	91
SVE-17	04/27/12	0.0	18.8	-44.8	-	61	50	150
SVE-17	05/25/12	0.0	19.9	-4.1	-	34	50	87
SVE-17	06/26/12	0.0	19.2	-5.4	-	55	50	550
SVE-17	07/25/12	0.0	17.9	-26.2	-	0 ⁴	50	540
SVE-17	08/22/12	0.0	19.1	-8.7	-	54	50	110
SVE-17	09/25/12	0.0	19.7	-8.9	-	54	50	6
SVE-17	10/30/12	0.0	19.7	-6.1	-	52	50	NA ¹¹
SVE-17	11/21/12	0.0	20.2	-1.3	-	49	50	79
SVE-17	12/21/12 ¹²	0.2	20.1	-5.5	-	46	50	2,260
SVE-17	01/03/13 ¹²	0.0	20.0	-4.3	-	50	50	145
SVE-17	01/28/13	0.0	20.7	-4.6	-	0 ⁴	50	271
SVE-17	02/27/13	0.0	20.5	-4.8	-	42	50	107
SVE-17	03/25/13	0.0	20.2	-0.2	-	47	50	318
SVE-17	04/26/13	0.0	18.1	-30.6	-	66	50	2,800
SVE-17	05/30/13	0.0	19.5	-17.3	-	66	50	300
SVE-17	06/27/13	0.0	20.2	-40.9	-	50	50	1,190
SVE-17	07/25/13	0.0	18.9	-36.6	-	54	50	38
SVE-17	08/30/13	0.0	19.9	0.4	-	58	50	33
SVE-17	09/25/13	0.0	20.2	-28.0	-	52	50	48

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-17	10/23/13	0.0	20.1	-14.2	-	57	50	8
SVE-17	11/20/13	0.0	20.1	-14.4	-	55	50	52
SVE-17	12/18/13	0.0	20.0	-6.4	-	57	50	43
SVE-17	05/13/14 ^{13,14}	-	-	-	-	-	50	-
SVE-17	05/28/14 ¹³	0.0	19.4	-21.4	-	0 ⁴	50	100
SVE-17	06/26/14	0.0	20.0	0.0	-	0 ⁴	50	4 ¹¹
SVE-17	07/31/14	0.0	20.7	1.3	-	0 ⁴	50	64
SVE-17	08/28/14	0.0	20.6	-0.3	-	50	50	60
SVE-17	09/26/14	0.0	20.2	0.6	-	45	50	6
SVE-17	10/24/14	0.0	20.1	0.0	-	42	50	16
SVE-17	11/19/14	0.0	20.5	-0.3	-	65	50	20
SVE-17	12/17/14	0.0	20.9	-0.5	-	54	50	38
SVE-17	01/21/15	0.0	20.3	-0.6	-	51	50	22
SVE-17	02/26/15	0.0	20.6	-1.1	-	57	50	60
SVE-17	03/17/15	0.0	21.0	-46.7	-	47	50	17
SVE-17	04/17/15	0.0	18.7	-43.5	-	57	50	22
SVE-17	05/12/15	0.0	19.7	-42.0	-	47	50	12
SVE-17	06/25/15	0.0	18.2	-36.9	-	54	50	21
SVE-17	07/31/15	0.0	20.2	-36.6	-	0 ⁴	50	31
SVE-17	08/19/15	0.0	20.3	-39.5	-	48	50	32
SVE-17	09/24/15	0.0	20.2	-46.0	-	50	50	51
SVE-17	10/22/15	0.0	20.5	-43.3	-	65	50	18
SVE-17	04/22/16	0.0	18.9	-0.2	50	0	-	25
SVE-17	10/26/16	0.0	15.8	-0.8	51	0	-	NA ⁶
SVE-17	04/05/17	0.0	15.0	-0.1	50	0	-	NA ⁶
SVE-17	10/30/17	0.0	15.2	0.0	54	0	-	NA ⁶
SVE-18	08/27/08 ¹	0.2	5.2	0.6	-	-	-	-
SVE-18	09/23/08	2.8	1.6	-25.8	-	86	90 - 100	-
SVE-18	09/25/08	0.7	4.9	-27.4	-	80	90 - 100	-
SVE-18	10/01/08	0.0	12.1	-28.0	-	90	90 - 100	-
SVE-18	10/07/08	0.0	14.7	-27.7	-	93	90 - 100	-
SVE-18	10/15/08	0.0	16.1	-27.9	-	96	90 - 100	-
SVE-18	10/30/08	0.0	17.3	-26.8	-	88	90 - 100	0
SVE-18	11/13/08	0.0	17.9	-25.9	-	102	90 - 100	-
SVE-18	11/26/08	0.0	18.9	-26.9	-	99	90 - 100	-
SVE-18	01/22/09 ³	0.0	18.0	-11.6	-	101	90 - 100	52
SVE-18	02/05/09	0.0	18.1	-11.0	-	96	90 - 100	0
SVE-18	02/16/09	0.0	18.7	-11.2	-	104	90 - 100	135
SVE-18	03/16/09	0.0	18.7	-10.0	-	100	90 - 100	32
SVE-18	04/24/09	0.0	19.0	-11.0	-	99	90 - 100	212
SVE-18	05/20/09	0.0	18.8	-9.6	-	100	90 - 100	61
SVE-18	06/23/09	0.0	17.8	-9.5	-	97	90 - 100	136

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-18	07/23/09	0.0	17.5	-8.8	-	101	90 - 100	232
SVE-18	08/20/09	0.0	18.1	-5.0	-	46	50	140
SVE-18	09/23/09	0.0	17.9	-4.4	-	46	50	216
SVE-18	10/20/09	0.0	18.3	-4.6	-	45	50	0
SVE-18	11/24/09	0.0	18.1	-4.3	-	48	50	45
SVE-18	12/29/09	0.0	17.1	-4.7	-	36	50	138
SVE-18	01/29/10	0.0	19.5	-4.8	-	30	50	1
SVE-18	02/22/10	0.0	18.6	-4.4	-	38	50	162
SVE-18	03/26/10	0.0	17.3	-3.8	-	46	50	135
SVE-18	04/22/10	0.0	18.1	-5.4	-	45	50	4
SVE-18	05/18/10	0.0	17.5	-5.4	-	55	50	671
SVE-18	06/29/10	0.0	17.4	-6.1	-	54	50	105
SVE-18	07/23/10	0.0	17.3	-5.4	-	46	50	133
SVE-18	08/27/10	0.0	11.9	-4.1	-	53	50	280
SVE-18	10/01/10	0.0	15.0	-5.5	-	51	50	113
SVE-18	10/22/10	0.0	16.5	-4.6	-	51	50	287
SVE-18	11/29/10	0.0	17.4	-5.2	-	48	50	133
SVE-18	12/22/10	0.1	18.0	-5.8	-	56	50	80
SVE-18	01/24/11	0.1	3.1	5.0	-	47	50	290
SVE-18	02/28/11	0.0	16.6	-5.0	-	46	50	86
SVE-18	04/13/11	0.0	17.6	-5.1	-	0 ⁴	50	83
SVE-18	04/29/11	0.0	18.3	-7.0	-	49	50	725
SVE-18	05/27/11	0.0	18.1	-5.0	-	49	50	560
SVE-18	06/24/11	0.0	17.8	-7.6	-	47	50	40
SVE-18	07/22/11	0.0	16.3	-6.4	-	57	50	45
SVE-18	08/25/11	0.0	17.1	-6.8	-	56	50	610
SVE-18	09/30/11	0.0	20.6	-2.9	-	51	50	0
SVE-18	10/26/11	0.0	16.9	-4.7	-	48	50	3
SVE-18	11/22/11	0.0	18.1	-4.4	-	45	50	29
SVE-18	12/29/11	0.0	18.4	-6.1	-	47	50	310
SVE-18	01/26/12	0.0	18.6	-4.1	-	46	50	70
SVE-18	02/21/12	0.0	18.4	-7.5	-	53	50	33
SVE-18	03/30/12	0.0	18.4	-3.7	-	50	50	76
SVE-18	04/27/12	0.0	17.5	-9.7	-	55	50	160
SVE-18	05/25/12	0.0	17.8	-10.7	-	58	50	180
SVE-18	06/26/12	0.0	17.2	-5.2	-	45	50	140
SVE-18	07/25/12	0.0	17.8	-9.3	-	47	50	170
SVE-18	08/22/12	0.0	17.1	-4.2	-	51	50	150
SVE-18	09/25/12	0.0	17.3	-8.9	-	47	50	9
SVE-18	10/30/12	0.0	18.0	-4.4	-	52	50	NA ¹¹
SVE-18	11/21/12	0.0	18.2	-4.6	-	54	50	0
SVE-18	12/21/12 ¹²	0.1	16.5	-5.1	-	57	50	386
SVE-18	01/03/13 ¹²	0.0	18.2	-5.4	-	0 ⁴	50	80

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-18	01/28/13	0.0	18.4	-5.8	-	0 ⁴	50	457
SVE-18	02/27/13	0.0	18.7	-2.0	-	0 ⁴	50	41
SVE-18	03/25/13	0.0	18.5	-2.3	-	50	50	524
SVE-18	04/26/13	0.0	17.5	-0.4	-	51	50	75
SVE-18	05/30/13	0.0	18.4	-11.0	-	54	50	17
SVE-18	06/27/13	0.0	20.4	2.9	-	93	50	38
SVE-18	07/25/13	0.0	17.6	-4.9	-	46	50	73
SVE-18	08/30/13	0.0	18.1	0.4	-	0 ⁴	50	7
SVE-18	09/25/13	0.0	18.3	-3.7	-	52	50	37
SVE-18	10/23/13	0.0	18.4	-3.9	-	51	50	11
SVE-18	11/20/13	0.0	17.9	-3.4	-	56	50	41
SVE-18	12/18/13	0.0	18.9	-3.3	-	57	50	4
SVE-18	05/13/14 ¹³	0.0	14.1	-6.7	-	45	50	910
SVE-18	05/28/14 ^{13, 14}	-	-	-	-	-	50	-
SVE-18	06/26/14	0.0	17.2	-11.0	-	0 ⁴	50	3 ¹¹
SVE-18	07/31/14	0.0	19.1	-12.3	-	54	50	82
SVE-18	08/28/14	0.0	15.2	-14.4	-	63	50	330
SVE-18	09/26/14	0.0	16.7	-2.2	-	62	50	29
SVE-18	10/24/14	0.0	17.6	-2.7	-	55	50	150
SVE-18	11/19/14	0.0	17.9	-2.8	-	55	50	8
SVE-18	12/17/14	0.0	19.3	-3.0	-	57	50	33
SVE-18	01/21/15	0.0	18.3	-3.2	-	60	50	61
SVE-18	02/26/15	0.0	18.6	-3.2	-	46	50	110
SVE-18	03/17/15	0.0	19.3	-3.3	-	0 ⁴	50	71
SVE-18	04/17/15	0.0	18.6	-17.0	-	47	50	37
SVE-18	05/12/15	0.0	18.9	-20.2	-	43	50	94
SVE-18	06/25/15	0.0	17.5	-17.1	-	43	50	28
SVE-18	07/31/15	0.0	18.5	-17.4	-	48	50	42
SVE-18	08/19/15	0.0	18.9	-5.8	-	53	50	26
SVE-18	09/24/15	0.0	18.1	-4.6	-	54	50	47
SVE-18	10/22/15	0.0	18.8	-4.2	-	0 ⁴	50	12
SVE-18	04/22/16	0.0	16.8	-2.4	50	0	-	12
SVE-18	10/26/16	0.0	19.4	-1.0	51	0	-	100
SVE-18	04/05/17	0.0	19.2	-0.3	50	0	-	394
SVE-18	10/30/17	0.0	20.1	0.0	54	0	-	890
SVE-19	08/27/08 ¹	8.8	2.1	0.2	-	-	-	-
SVE-19	09/23/08 ²	-	-	-	-	-	90 - 100	-
SVE-19	09/25/08 ²	-	-	-	-	-	90 - 100	-
SVE-19	10/01/08	0.0	9.0	-49.3	-	40	90 - 100	-
SVE-19	10/07/08	0.0	13.3	-46.8	-	33	90 - 100	-
SVE-19	10/15/08	0.0	15.3	-46.9	-	54	90 - 100	-
SVE-19	10/30/08	0.0	16.1	-46.2	-	52	90 - 100	80
SVE-19	11/13/08	0.0	16.5	-46.2	-	55	90 - 100	-

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
SVE-19	11/26/08	0.0	17.2	-47.2	-	53	90 - 100	-
SVE-19	01/22/09 ³	0.0	17.1	-49.2	-	31	90 - 100	569
SVE-19	02/05/09	0.0	18.0	-49.4	-	24	90 - 100	35
SVE-19	02/16/09	0.0	18.5	-47.7	-	42	90 - 100	135
SVE-19	03/16/09	0.0	17.7	-48.7	-	40	90 - 100	418
SVE-19	04/24/09	0.0	17.4	-46.4	-	50	90 - 100	312
SVE-19	05/20/09	0.0	17.8	-45.8	-	37	90 - 100	83
SVE-19	06/23/09	0.0	17.3	-44.0	-	30	90 - 100	169
SVE-19	07/23/09	0.0	17.2	-43.6	-	55	90 - 100	345
SVE-19	08/20/09	0.0	18.2	-27.7	-	51	50	215
SVE-19	09/23/09	0.0	18.5	-10.4	-	46	50	295
SVE-19	10/20/09	0.0	18.2	-14.2	-	47	50	10
SVE-19	11/24/09	0.0	18.0	-9.9	-	58	50	0
SVE-19	01/29/10	0.0	19.5	-10.5	-	55	50	13
SVE-19	02/22/10	0.0	18.9	-8.7	-	52	50	184
SVE-19	03/26/10	0.0	17.4	-16.5	-	48	50	162
SVE-19	04/22/10	0.0	18.1	-11.9	-	55	50	12
SVE-19	05/18/10	0.0	17.6	-15.0	-	50	50	697
SVE-19	06/29/10	0.0	17.2	-18.3	-	53	50	164
SVE-19	07/23/10	0.0	18.1	-16.0	-	56	50	148
SVE-19	08/27/10	0.0	14.9	-15.6	-	52	50	312
SVE-19	10/01/10	0.0	14.4	-11.2	-	54	50	2,100
SVE-19	10/22/10	0.0	16.5	-8.8	-	40	50	4,280
SVE-19	11/29/10	0.0	17.8	-8.3	-	52	50	157
SVE-19	12/22/10	0.1	17.1	-8.4	-	47	50	145
SVE-19	01/24/11	0.1	17.3	-7.1	-	15	50	128
SVE-19	02/28/11	0.0	16.4	-18.2	-	48	50	113
SVE-19	04/13/11	0.0	16.7	-12.9	-	0 ⁴	50	120
SVE-19	04/29/11	0.0	16.4	-3.8	-	50	50	915
SVE-19	05/29/11	0.0	18.3	-46.9	-	56	50	630
SVE-19	06/24/11	0.0	17.3	-8.1	-	51	50	166
SVE-19	07/22/11	0.0	18.0	-35.4	-	56	50	150
SVE-19	08/25/11	0.0	15.4	-9.7	-	54	50	4,210
SVE-19	09/30/11	0.0	17.7	-7.6	-	54	50	300
SVE-19	10/26/11	0.0	16.4	-3.7	-	45	50	8
SVE-19	11/22/11	0.0	17.7	-6.0	-	52	50	170
SVE-19	12/29/11	0.0	17.9	-3.2	-	52	50	370
SVE-19	01/26/12	0.0	18.6	-1.4	-	46	50	114
SVE-19	02/21/12	0.0	18.8	-2.6	-	50	50	135
SVE-19	03/30/12	0.0	19.5	-15.0	-	55	50	59
SVE-19	04/27/12	0.0	17.8	-6.9	-	0 ⁴	50	50
SVE-19	05/25/12	0.0	19.1	-1.8	-	0 ⁴	50	46
SVE-19	06/26/12	0.0	18.6	-45.2	-	0 ⁴	50	100
SVE-19	07/25/12	0.0	18.3	-45.1	-	0 ⁴	50	110
SVE-19	08/22/12	0.0	16.9	-33.0	-	50	50	100
SVE-19	09/25/12	0.0	20.0	-6.6	-	51	50	8

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-19	10/30/12	0.0	18.2	-9.2	-	0 ⁴	50	NA ¹¹
SVE-19	11/21/12	0.0	18.4	-20.8	-	49	50	120
SVE-19	12/21/12 ¹²	0.0	15.9	-12.2	-	56	50	169
SVE-19	01/03/13 ¹²	0.0	18.0	-11.6	-	0 ⁴	50	68
SVE-19	01/28/13	0.0	19.2	-42.8	-	60	50	112
SVE-19	02/27/13	0.0	19.1	-27.4	-	70	50	58
SVE-19	03/25/13	0.0	19.2	-27.6	-	69	50	320
SVE-19	04/26/13	0.0	16.0	-0.6	-	0 ⁴	50	177
SVE-19	05/30/13	0.0	19.6	-33.2	-	55	50	23
SVE-19	06/27/13	0.0	18.0	-32.0	-	51	50	42
SVE-19	07/25/13	0.0	18.3	-40.8	-	47	50	120
SVE-19	08/30/13	0.0	18.6	-37.5	-	0 ⁴	50	20
SVE-19	09/25/13	0.0	20.4	-38.7	-	45	50	87
SVE-19	10/23/13	0.0	18.3	-43.5	-	0 ⁴	50	11
SVE-19	11/20/13	0.0	18.3	0.0	-	42	50	53
SVE-19	12/18/13	0.0	19.0	-43.2	-	0 ⁴	50	15
SVE-19	05/13/14 ¹³	0.4	15.6	72.0	-	50	50	440
SVE-19	05/28/14 ¹³	0.0	15.6	-21.4	-	33	50	130
SVE-19	06/26/14	0.0	17.0	-7.2	-	0 ⁴	50	6 ¹¹
SVE-19	07/31/14	0.0	19.1	-14.2	-	58	50	890
SVE-19	08/28/14	0.7	15.5	-22.3	-	65	50	9,190
SVE-19	09/26/14	0.0	17.7	-5.0	-	68	50	14
SVE-19	10/24/14	0.0	18.2	-6.2	-	55	50	130
SVE-19	11/19/14	0.0	18.2	0.0	-	60	50	NA ⁶
SVE-19	12/17/14	0.0	19.1	0.0	-	50	50	57
SVE-19	01/21/15	0.0	19.6	-10.3	-	56	50	14
SVE-19	02/26/15	0.0	19.1	-10.8	-	49	50	1,210
SVE-19	03/17/15	0.0	17.5	-9.4	-	0 ⁴	50	740
SVE-19	04/17/15	0.0	19.2	-41.4	-	0 ⁴	50	300
SVE-19	05/12/15	0.0	19.8	-39.8	-	55	50	280
SVE-19	06/25/15	0.0	19.0	-35.9	-	0 ¹⁵	50	20
SVE-19	07/31/15	0.0	19.6	-35.1	-	0 ¹⁵	50	4
SVE-19	08/19/15	0.0	19.5	-41.0	-	0 ¹⁵	50	21
SVE-19	09/24/15	0.0	18.4	-44.3	-	0 ¹⁵	50	44
SVE-19	10/22/15	0.0	19.9	-42.1	-	0 ¹⁵	50	30

Appendix E.2

**Historical SVE Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)					
SVE-19	04/22/16	0.0	19.2	-13.2	50	0	-	19
SVE-19	10/26/16	0.0	19.9	-10.0	51	0	-	260
SVE-19	04/05/17	0.0	18.7	-0.9	50	0	-	681
SVE-19	10/30/17	0.0	20.4	0.0	54	0	-	1,046

Notes:

¹ Pre-startup readings

² No Air Flow due to obstructed well screen; therefore, field data was not collected

³ System was restarted on 1/19/09 after being down for a month for SVE well cleaning and condensate collection system installation.

⁴ Air flow is heard through the pipe, but no flow measurement could be determined.

⁵ Valve was frozen shut

⁶ No reading could be obtained; FID flamed out because of low oxygen level.

⁷ Air flow could not be determined because ice formed in pitot tube lines during well cleaning.

⁸ Air flow was higher due to vacuum in annular space around well.

⁹ Air flow is heard through the pipe, but no flow measurement could be determined because valve on Pitot Tube was closed.

¹⁰ Valve is stuck in place due to a bent valve stem and debris in valve.

¹¹ FID taken with Thermo Scientific TVA 1000 Vapor Analyzer.

¹² System was shutdown on 11/21/12 following monthly monitoring for 1 month shutdown period.

Post 1 month shutdown monitoring was conducted at startup (12/21/12) and two weeks after startup (1/3/13).

¹³ System was shutdown on 1/10/14 for a 4 month shutdown period.

Post 4 month shutdown monitoring was conducted at startup (5/13/14) and two weeks after startup (5/28/14).

¹⁴ No reading could be obtained due to blockage/water in the pipe.

¹⁵ Well turned off due to vacuum in annular space around the well.

¹⁶ Well is not under vacuum; unable to obtain flow reading.

¹⁷ Valve is fully open.

With approval from the WDNR on 10/21/15, System modifications occurred on 10/29/15. Modifications included operating the system on a part time schedule (16 hrs/day) and operating only SVE wells SVE-4, SVE-6, SVE-7, SVE-12, SVE-13, and SVE-14. These wells are monitored on a monthly basis. All other SVE wells will be monitored on a semi-annual basis (April and October) and will be "turned on" on an as needed basis.

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-1	08/27/08 ¹	52.1	0.0	0.1	70	-	-
LFG-1	09/23/08	53.4	0.0	-2.6	62	10	-
LFG-1	09/25/08	15.1	0.0	-3.2	58	10	-
LFG-1	10/01/08	2.9	0.0	-2.7	59	10	-
LFG-1	10/07/08	1.9	1.8	-2.9	62	11	-
LFG-1	10/15/08	1.2	3.5	-3.6	60	10	-
LFG-1	10/30/08	1.0	6.1	-2.8	64	9	-
LFG-1	11/13/08	1.1	5.3	-4.2	52	10	-
LFG-1	11/26/08	0.8	6.5	-3.7	54	10	-
LFG-1	01/22/09 ²	2.3	7.0	-4.8	45	10	NA ³
LFG-1	02/05/09	0.0	15.5	-3.3	44	10	19,500
LFG-1	02/16/09	0.0	9.9	-6.8	40	10	25,200
LFG-1	03/16/09	0.0	12.6	-5.0	50	10	13,800
LFG-1	04/24/09	0.0	15.7	-4.3	54	10	12,100
LFG-1	05/20/09	0.0	14.0	-4.3	60	10	5,840
LFG-1	06/23/09	0.0	11.2	-4.1	70	10	6,150
LFG-1	07/23/09	0.1	10.4	-3.0	74	10	16,000
LFG-1	08/20/09	0.0	10.8	-5.4	73	20	21,500
LFG-1	09/23/09	0.3	12.0	-4.2	80	20	31,800
LFG-1	10/20/09	0.5	11.6	-6.0	72	20	38,400
LFG-1	11/24/09	0.3	13.8	-5.6	66	20	4,230
LFG-1	12/29/09	0.3	14.2	-5.1	54	20	16,600
LFG-1	01/29/10	0.5	16.6	-5.1	47	20	13,380
LFG-1	02/22/10	0.8	13.2	-5.1	46	20	42,500
LFG-1	03/26/10	0.1	15.0	-4.7	49	20	19,360
LFG-1	04/22/10	0.0	14.8	-4.5	60	20	9,540
LFG-1	05/18/10	0.1	14.0	-4.2	62	20	36,800
LFG-1	06/29/10	0.3	10.2	-6.0	68	20	-
LFG-1	07/23/10	0.2	10.3	-4.7	74	20	NA ³
LFG-1	08/27/10	15.0	0.0	-5.1	80	20	NA ³
LFG-1	10/01/10	9.8	0.4	-6.8	72	20	NA ³
LFG-1	10/22/10	6.7	3.0	-4.8	74	20	NA ³
LFG-1	11/29/10	1.1	9.4	-6.8	62	20	NA ³
LFG-1	12/22/10	3.0	7.3	-5.5	67	20	NA ³
LFG-1	01/24/11	0.8	15.1	-5.2	63	20	26,030
LFG-1	02/28/11	0.6	15.6	-5.9	52	20	18,170
LFG-1	04/13/11	0.4	15.5	-7.0	55	20	16,300
LFG-1	04/29/11	0.6	13.4	-10.0	58	20	467
LFG-1	05/27/11	0.3	15.3	-6.6	52	20	39,400
LFG-1	06/24/11	0.6	12.2	-5.8	76	20	2,540

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-1	07/22/11	0.5	10.2	-4.8	66	20	NA ³
LFG-1	08/25/11	7.8	1.1	-5.5	88	20	NA ³
LFG-1	09/30/11	0.8	13.6	-6.2	88	20	32,100
LFG-1	10/26/11	0.6	13.9	-4.0	88	20	49,030
LFG-1	11/22/11	0.7	13.9	-3.9	82	25	45,100
LFG-1	12/29/11	0.6	14.1	-4.1	74	25	42,300
LFG-1	01/26/12	1.3	9.2	-4.0	72	25	NA ³
LFG-1	02/21/12	0.4	16.8	-3.9	68	25	22,690
LFG-1	03/30/12	0.2	15.1	-5.0	70	25	10,054
LFG-1	04/27/12	0.1	14.3	-5.6	72	25	14,630
LFG-1	05/25/12	0.4	11.2	-8.8	80	25	NA ³
LFG-1	06/26/12	1.0	7.6	-6.5	84	25	NA ³
LFG-1	07/25/12	1.2	8.0	-8.3	92	25	NA ³
LFG-1	08/22/12	0.4	11.9	-5.0	84	25	34,850
LFG-1	09/25/12	1.2	10.2	-4.3	80	25	NA ³
LFG-1	10/30/12	0.6	14.2	-4.6	75	25	NA ⁶
LFG-1	11/21/12	0.3	15.0	-4.2	68	25	40,670
LFG-1	12/21/12 ⁷	13.0	3.5	-4.0	52	25	NA ³
LFG-1	01/03/13 ⁷	0.9	15.7	-4.3	75	25	39,470
LFG-1	01/28/13	0.4	16.7	-4.8	72	24	19,280
LFG-1	02/27/13	0.1	17.7	-4.6	51	25	9,290
LFG-1	03/25/13	0.5	16.2	-3.7	44	24	34,890
LFG-1	04/26/13	1.6	13.8	-8.5	80	25	12,620
LFG-1	05/30/13	0.1	17.7	-46.8	68	25	2,530
LFG-1	06/27/13	0.2	18.0	-13.6	75	26	15,490
LFG-1	07/25/13	0.1	15.3	-7.8	82	25	9,070
LFG-1	08/30/13	0.5	13.7	-5.0	85	25	9,040
LFG-1	09/25/13	0.6	14.6	-2.2	88	25	17,160
LFG-1	10/23/13	0.2	15.6	-4.4	82	25	10,390
LFG-1	11/20/13	0.6	16.0	-4.3	75	25	9,720
LFG-1	12/18/13	0.3	18.2	-4.5	67	25	NA ⁹
LFG-1	05/13/14 ¹⁰	10.4	7.9	-25.3	56	25	NA ³
LFG-1	05/28/14 ¹⁰	0.3	13.1	-13.0	61	25	27,900
LFG-1	06/26/14	0.0	16.2	-13.2	68	25	1,910 ⁶
LFG-1	07/31/14	13.8	11.4	-6.8	74	25	7,750
LFG-1	08/28/14	24.8	2.1	-6.2	73	25	NA ³
LFG-1	09/26/14	0.3	13.8	-4.4	82	25	2,330
LFG-1	10/24/14	0.3	15.8	-4.4	75	25	2,170
LFG-1	11/19/14	0.6	11.0	-5.4	71	25	6,240
LFG-1	12/17/14	0.0	19.3	-3.5	60	25	1,170

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				VOC Concentration	
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	by FID (ppm)
LFG-1	01/21/15	0.0	17.6	-4.0	62	25	940
LFG-1	02/26/15	0.3	11.8	-4.4	58	25	NA ³
LFG-1	03/17/15	0.2	14.0	-4.1	48	25	NA ³
LFG-1	04/17/15	0.1	11.3	-3.2	67	10	NA ³
LFG-1	05/12/15	0.0	17.3	-3.9	60	25	490
LFG-1	06/25/15	0.0	15.5	-5.1	72	25	1,010
LFG-1	07/31/15	0.0	15.4	-5.4	77	25	22
LFG-1	08/19/15	0.1	15.4	-2.7	77	24	2,510
LFG-1	09/24/15	0.7	13.0	-4.5	80	25	2,790
LFG-1	10/22/15	0.2	16.8	-3.8	77	26	810
LFG-1	11/12/15	9.3	0.4	-0.9	73	6	NA ³
LFG-1	12/17/15	37.3	0.7	-8.3	51	7	NA ³
LFG-1	01/21/16	2.7	5.5	-2.6	63	7	NA ³
LFG-1	02/24/16	2.4	3.7	0.8	51	8	NA ³
LFG-1	03/22/16	1.1	4.5	-0.4	58	7	NA ³
LFG-1	04/22/16	1.1	9.3	-2.0	56	9	NA ³
LFG-1	05/19/16	0.1	14.2	-2.7	59	9	NA ³
LFG-1	06/14/16	0.3	12.3	-2.1	66	10	NA ³
LFG-1	07/27/16	0.9	9.5	-1.1	70	0 ⁸	NA ³
LFG-1	08/10/16	0.7	10.9	-0.8	75	9	NA ³
LFG-1	09/15/16	1.5	8.8	-2.0	74	5	NA ³
LFG-1	10/26/16	5.7	2.4	-1.9	44	10	NA ³
LFG-1	11/23/16	7.2	0.7	-1.5	52	5	NA ³
LFG-1	12/13/16	1.0	12.9	-1.3	33	7	870
LFG-1	01/10/17	5.7	3.3	-0.9	35	9	NA ³
LFG-1	02/14/17	0.2	11.2	-1.7	46	6	NA ³
LFG-1	03/07/17	4.4	2.1	-0.9	46	6	NA ³
LFG-1	04/05/17	4.3	3.4	-14.0	51	10	NA ³
LFG-1	05/25/17	5.8	2.1	-2.4	66	0 ⁸	NA ³
LFG-1	06/28/17	1.0	10.0	-1.0	68	0 ⁸	NA ³
LFG-1	07/24/17	1.5	9.6	-0.7	68	0 ⁸	NA ³
LFG-1	08/14/17	1.6	10.1	-1.1	68	0 ⁸	NA ³
LFG-1	09/13/17	1.9	8.6	-1.0	77	10	NA ³
LFG-1	10/30/17	6.0	0.8	0.1	44	0 ⁸	NA ³
LFG-1	11/17/17	1.6	10.0	-1.0	41	0 ⁸	NA ³
LFG-1	12/07/17	1.4	12.4	-1.0	37	10	NA ³
LFG-2	08/27/08 ¹	47.8	0.0	0.3	70	-	-
LFG-2	09/23/08	50.2	0.0	-6.7	59	10	-
LFG-2	09/25/08	11.1	0.6	-7.3	56	8	-

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-2	10/01/08	0.7	5.8	-7.2	58	10	-
LFG-2	10/07/08	1.1	6.0	-8.4	60	10	-
LFG-2	10/15/08	1.0	5.3	-10.5	60	10	-
LFG-2	10/30/08	0.4	8.4	-15.6	64	10	-
LFG-2	11/13/08	0.4	6.5	-15.3	60	10	-
LFG-2	11/26/08	0.0	8.8	-15.2	60	10	-
LFG-2	01/22/09 ²	1.2	7.9	-13.6	52	10	NA ³
LFG-2	02/05/09	0.0	12.6	-13.3	50	10	3,200
LFG-2	02/16/09	0.0	10.1	-13.6	47	10	5,090
LFG-2	03/16/09	0.0	13.0	-13.8	54	10	1,750
LFG-2	04/24/09	0.0	15.8	-13.3	62	10	975
LFG-2	05/20/09	0.0	15.3	-13.2	62	10	466
LFG-2	06/23/09	0.0	13.1	-13.3	70	10	1,240
LFG-2	07/23/09	0.0	12.0	-12.6	74	10	5,620
LFG-2	08/20/09	0.0	11.2	-11.8	78	10	14,000
LFG-2	09/23/09	0.0	12.1	-10.7	84	10	8,730
LFG-2	10/20/09	0.0	11.1	-11.6	82	10	10,100
LFG-2	11/24/09	0.0	13.1	-12.2	76	10	1,740
LFG-2	12/29/09	0.0	14.0	-11.3	65	10	2,580
LFG-2	01/29/10	0.0	16.8	-11.3	50	10	1,133
LFG-2	02/22/10	0.3	12.8	-11.3	53	10	19,700
LFG-2	03/26/10	0.0	15.0	-11.0	55	10	2,340
LFG-2	04/22/10	0.0	15.9	-9.9	62	10	1,130
LFG-2	05/18/10	0.0	15.0	-9.2	68	10	5,710
LFG-2	06/29/10	0.0	12.7	-10.7	68	10	-
LFG-2	07/23/10	0.0	13.0	-9.1	80	10	6,930
LFG-2	08/27/10	12.7	0.0	-9.5	80	10	NA ³
LFG-2	10/01/10	7.0	0.9	-11.4	77	10	NA ³
LFG-2	10/22/10	3.5	4.8	-9.4	78	10	NA ³
LFG-2	11/29/10	0.1	9.8	-9.8	62	10	NA ³
LFG-2	12/22/10	1.9	9.9	-9.4	60	10	NA ³
LFG-2	01/24/11	0.3	16.1	-10.9	55	10	4,260
LFG-2	02/28/11	0.1	16.3	-12.9	54	10	2,240
LFG-2	04/13/11	0.0	16.9	-15.9	56	10	2,140
LFG-2	04/29/11	0.0	16.5	-15.0	55	10	4,914
LFG-2	05/27/11	0.0	16.9	-13.9	52	10	5,510
LFG-2	06/24/11	0.0	16.2	-13.8	71	10	36,680
LFG-2	07/22/11	0.0	14.2	-12.2	66	10	1,590
LFG-2	08/25/11	3.3	9.6	-12.8	86	10	NA ³
LFG-2	09/30/11	0.1	17.3	-12.8	94	10	3,400

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-2	10/26/11	0.0	16.0	-9.0	82	10	6,540
LFG-2	11/22/11	0.0	16.5	-8.4	82	10	5,170
LFG-2	12/29/11	0.0	16.6	-8.6	76	10	4,310
LFG-2	01/26/12	1.1	10.2	-8.1	72	10	NA ³
LFG-2	02/21/12	0.0	17.6	-6.4	66	10	2,780
LFG-2	03/30/12	0.0	17.0	-6.2	65	10	1,565
LFG-2	04/27/12	0.0	16.4	-7.4	67	10	2,620
LFG-2	05/25/12	0.1	15.6	-10.7	80	10	2,350
LFG-2	06/26/12	0.4	9.1	-7.8	77	10	NA ³
LFG-2	07/25/12	0.3	12.7	-11.1	86	10	6,240
LFG-2	08/22/12	0.0	15.8	-8.8	84	10	5,100
LFG-2	09/25/12	0.1	15.7	-6.9	70	10	2,580
LFG-2	10/30/12	0.0	16.7	-1.2	70	0 ⁵	250 ⁶
LFG-2	11/21/12	0.0	17.7	-6.3	64	10	200
LFG-2	12/21/12 ⁷	6.7	7.4	-4.8	51	10	NA ³
LFG-2	01/03/13 ⁷	0.1	18.2	-4.9	68	10	4,940
LFG-2	01/28/13	0.0	19.0	-5.4	65	15	823
LFG-2	02/27/13	0.0	15.2	-1.7	63	11	17,530
LFG-2	03/25/13	0.1	17.2	-4.5	55	10	9,280
LFG-2	04/26/13	0.3	17.2	-11.6	80	10	12,140
LFG-2	05/30/13	0.0	18.9	-44.8	66	10	190
LFG-2	06/27/13	0.0	18.8	-12.4	75	11	1,590
LFG-2	07/25/13	0.0	17.2	-5.8	80	10	650
LFG-2	08/30/13	0.0	16.9	-4.9	81	10	120
LFG-2	09/25/13	0.1	17.3	-2.6	81	10	2,550
LFG-2	10/23/13	0.0	17.3	-3.2	76	10	1,680
LFG-2	11/20/13	0.2	17.6	-1.9	65	11	2,520
LFG-2	12/18/13 ⁴	-	-	-	-	-	-
LFG-2	05/13/14 ¹⁰	10.2	10.1	-12.3	56	10	NA ³
LFG-2	05/28/14 ¹⁰	0.0	16.4	-9.3	63	10	2,600
LFG-2	06/26/14	0.0	18.0	-11.7	68	11	320 ⁶
LFG-2	07/31/14	3.9	12.0	-1.3	74	10	4,410
LFG-2	08/28/14	15.7	1.6	-2.0	76	10	NA ³
LFG-2	09/26/14	0.0	17.4	-1.6	77	13	920
LFG-2	10/24/14	0.0	17.9	-2.4	68	10	1,300
LFG-2	11/19/14	0.0	15.1	-9.5	63	0 ⁸	3,300
LFG-2	12/17/14	0.0	19.8	-3.5	58	10	270
LFG-2	01/21/15	0.0	18.9	-5.0	53	10	200
LFG-2	02/26/15	0.0	15.9	-8.0	52	10	700
LFG-2	03/17/15	0.0	15.9	-6.8	55	10	NA ³

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-2	04/17/15	0.0	14.8	-4.4	67	10	NA ³
LFG-2	05/12/15	0.0	18.7	-5.4	56	10	100
LFG-2	06/25/15	0.0	17.0	-1.6	67	10	230
LFG-2	07/31/15	0.0	17.7	-4.6	77	10	67
LFG-2	08/19/15	0.0	18.2	-3.2	72	10	180
LFG-2	09/24/15	0.0	17.6	-3.6	74	10	310
LFG-2	10/22/15	0.0	19.8	-2.8	73	10	330
LFG-2	11/12/15	2.0	1.6	-0.4	64	0 ¹¹	780
LFG-2	12/17/15	15.1	6.0	-0.1	51	0 ¹¹	NA ³
LFG-2	01/21/16	1.1	0.7	-18.1	36	0 ⁸	NA ³
LFG-2	02/24/16	1.4	7.0	-14.9	47	10	NA ³
LFG-2	03/22/16	0.6	7.0	-12.2	56	5	NA ³
LFG-2	04/22/16	0.0	17.0	-10.5	61	0 ⁸	270
LFG-2	05/19/16	0.0	16.2	-7.0	60	9	1,180
LFG-2	06/14/16	0.0	15.5	-4.8	66	7	NA ³
LFG-2	07/27/16	0.0	13.1	-4.0	70	0 ⁸	NA ³
LFG-2	08/10/16	0.0	14.5	-2.2	76	10	NA ³
LFG-2	09/15/16	0.1	9.7	-1.2	71	8	NA ³
LFG-2	10/26/16	3.1	1.3	-0.7	43	7	NA ³
LFG-2	11/23/16	3.2	0.2	-1.2	47	8	NA ³
LFG-2	12/13/16	0.0	16.9	-0.1	35	7	1,000
LFG-2	01/10/17	2.7	2.4	-0.7	37	10	NA ³
LFG-2	02/14/17	0.0	12.1	-1.2	41	10	NA ³
LFG-2	03/07/17	0.8	1.8	-0.8	44	8	NA ³
LFG-2	04/05/17	0.5	1.9	-14.1	50	8	NA ³
LFG-2	05/25/17	1.1	2.2	-2.0	71	0 ⁸	NA ³
LFG-2	06/28/17	0.0	14.5	-0.8	70	0 ⁸	NA ³
LFG-2	07/24/17	0.0	14.7	-0.8	69	0 ⁸	NA ³
LFG-2	08/14/17	0.0	13.9	-0.6	68	8	NA ³
LFG-2	09/13/17	0.1	13.6	-1.1	71	10	NA ³
LFG-2	10/30/17	0.5	2.8	-0.6	41	0 ⁸	NA ³
LFG-2	11/17/17	0.0	20.7	-1.1	38	0 ⁸	629
LFG-2	12/07/17	0.0	20.1	-1.1	36	0 ⁸	590
LFG-3	08/27/08 ¹	52.0	0.0	0.0	70	-	-
LFG-3	09/23/08	33.7	4.3	-14.3	64	10	-
LFG-3	09/25/08	5.2	7.9	-14.0	56	16	-
LFG-3	09/25/08	5.2	7.9	-12.2	56	10	-
LFG-3	10/01/08	0.8	9.8	-9.5	60	10	-
LFG-3	10/07/08	0.7	11.9	-9.4	60	11	-

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-3	10/15/08	0.5	13.0	-11.9	59	10	-
LFG-3	10/30/08	0.1	16.2	-9.2	60	10	-
LFG-3	11/13/08	0.0	18.0	-6.8	50	10	-
LFG-3	11/26/08	0.0	19.3	-3.7	40	10	-
LFG-3	01/22/09 ²	1.2	13.5	-12.1	42	10	50,000
LFG-3	02/05/09	0.0	16.0	-8.6	40	10	3,640
LFG-3	02/16/09	0.4	11.5	-17.7	36	10	38,100
LFG-3	03/16/09	0.1	14.7	-15.8	44	10	8,520
LFG-3	04/24/09	0.0	17.4	-13.6	52	10	2,040
LFG-3	05/20/09	0.0	16.6	-13.8	60	10	624
LFG-3	06/23/09	0.0	16.7	-8.5	70	10	513
LFG-3	07/23/09	0.0	18.3	-3.2	70	10	550
LFG-3	08/20/09	0.0	13.9	-16.6	70	10	8,230
LFG-3	09/23/09	0.0	16.3	-9.1	73	10	2,600
LFG-3	10/20/09	0.0	18.1	-6.3	56	10	1,880
LFG-3	11/24/09	0.0	18.7	-5.0	52	10	202
LFG-3	12/29/09 ⁴	-	-	-	-	-	-
LFG-3	01/29/10 ⁴	-	-	-	-	-	-
LFG-3	02/22/10	0.0	18.0	-12.1	42	10	2,520
LFG-3	03/26/10	0.0	16.6	-12.1	46	10	924
LFG-3	04/22/10	0.0	17.4	-9.8	52	10	407
LFG-3	05/18/10	0.0	18.3	-3.9	64	10	1,140
LFG-3	06/29/10	0.0	15.4	-12.3	64	10	-
LFG-3	07/23/10	0.0	17.5	-4.8	68	10	750
LFG-3	08/27/10	10.7	7.8	-17.6	74	10	NA ³
LFG-3	10/01/10	1.8	14.8	-9.0	60	10	NA ³
LFG-3	10/22/10	0.2	18.6	-2.4	60	10	21,700
LFG-3	11/29/10	0.0	21.3	-2.3	54	10	12,100
LFG-3	12/22/10 ⁴	-	-	-	-	-	-
LFG-3	01/24/11 ⁴	-	-	-	-	-	-
LFG-3	02/28/11	0.0	18.9	-0.1	52	0 ⁵	67
LFG-3	04/13/11	0.0	19.1	-7.1	40	10	1,100
LFG-3	04/29/11	0.1	18.7	-11.7	42	10	14,048
LFG-3	05/27/11	0.1	18.9	-2.7	52	10	9,230
LFG-3	06/24/11	0.5	16.1	-11.0	73	10	17,650
LFG-3	07/22/11	0.3	14.0	-15.0	66	10	3,849
LFG-3	08/25/11	5.0	11.7	-15.6	77	10	NA ³
LFG-3	09/30/11	0.1	20.1	-1.1	59	10	4,210
LFG-3	10/26/11	0.0	18.9	-0.6	55	10	740
LFG-3	11/22/11	0.0	19.8	-0.6	48	10	130

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				VOC Concentration	
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	by FID (ppm)
LFG-3	12/29/11	0.0	19.6	-0.8	50	10	344
LFG-3	01/26/12	0.0	19.2	-0.9	65	10	503
LFG-3	02/21/12	0.0	19.8	-1.0	40	10	70
LFG-3	03/30/12	0.0	19.6	-2.5	40	10	261
LFG-3	04/27/12	0.0	18.9	-2.9	50	10	100
LFG-3	05/25/12	0.1	14.6	-24.0	64	10	2,030
LFG-3	06/26/12	0.8	9.9	-22.2	66	10	NA ³
LFG-3	07/25/12	1.4	11.3	-33.7	82	10	5,290
LFG-3	08/22/12	0.5	14.5	-16.9	70	10	20,840
LFG-3	09/25/12	1.0	15.8	-8.3	60	10	18,710
LFG-3	10/30/12	0.0	19.1	-1.4	45	10	46 ⁶
LFG-3	11/21/12	0.0	19.9	-1.1	46	10	120
LFG-3	12/21/12 ⁷	1.0	18.3	-1.2	50	10	12,370
LFG-3	01/03/13 ⁷	0.0	19.5	0.0	65	5 ⁵	302
LFG-3	01/28/13	0.0	21.3	-0.1	42	13	689
LFG-3	02/27/13	0.0	15.2	-1.9	51	10	1,210
LFG-3	03/25/13	0.0	20.0	-2.6	44	10	510
LFG-3	04/26/13	0.3	17.3	-31.7	60	10	7,500
LFG-3	05/30/13	0.0	18.1	-47.0	60	10	430
LFG-3	06/27/13	0.1	15.6	-28.6	72	0 ⁸	3,430
LFG-3	07/25/13	0.0	16.8	-9.3	76	10	5,650
LFG-3	08/30/13	0.1	19.2	-1.0	77	0 ⁸	1,560
LFG-3	09/25/13	0.1	19.8	-0.6	70	10	900
LFG-3	10/23/13	0.0	19.3	-1.0	50	10	248
LFG-3	11/20/13	0.0	20.0	-1.1	47	10	79
LFG-3	12/18/13	0.0	20.0	-0.3	55	10	NA ⁹
LFG-3	05/13/14 ¹⁰	19.0	11.1	-47.3	52	6 ⁵	NA ³
LFG-3	05/28/14 ¹⁰	0.7	13.2	-46.6	68	6 ⁵	31,100
LFG-3	06/26/14	0.0	16.6	-45.8	68	10	1,050 ⁶
LFG-3	07/31/14	11.2	16.5	-22.1	72	10	11,070
LFG-3	08/28/14	20.4	10.1	-22.0	70	9	NA ³
LFG-3	09/26/14	0.0	15.8	-14.2	72	10	630
LFG-3	10/24/14	0.0	17.3	-14.7	63	10	NA ³
LFG-3	11/19/14	0.3	14.2	-22.5	59	9	4,070
LFG-3	12/17/14	0.0	20.0	-5.9	41	10	81
LFG-3	01/21/15	0.0	19.4	-7.9	44	10	130
LFG-3	02/26/15	0.0	19.9	0.0	47	0 ⁴	1,080
LFG-3	03/17/15	0.0	17.5	-5.6	48	10	330
LFG-3	04/17/15	0.0	16.0	-6.2	61	10	110
LFG-3	05/12/15	0.0	19.1	-15.6	54	11	88

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		
LFG-3	06/25/15	0.0	16.7	-8.6	69	10	45
LFG-3	07/31/15	0.0	16.4	-26.4	75	10	424
LFG-3	08/19/15	0.0	17.1	0.0	76	10	1,533
LFG-3	09/24/15	0.4	15.8	-20.0	73	9	1,411
LFG-3	10/22/15	0.2	18.1	-14.6	67	10	4,144
LFG-3	11/12/15	0.0	20.4	-0.1	66	0 ¹¹	798
LFG-3	12/17/15	59.8	1.4	0.0	51	0 ¹¹	NA ³
LFG-3	01/21/16	1.0	8.6	-17.7	56	8	NA ³
LFG-3	02/24/16	2.8	9.3	-16.7	51	6	NA ³
LFG-3	03/22/16	0.8	11.5	-13.2	50	10	NA ³
LFG-3	04/22/16	0.5	15.9	-12.4	57	0 ⁸	NA ³
LFG-3	05/19/16	0.0	16.3	-10.2	61	14	6,150
LFG-3	06/14/16	0.2	15.3	-10.3	72	8	NA ³
LFG-3	07/27/16	0.9	12.9	-10.0	72	0 ⁸	NA ³
LFG-3	08/10/16	0.7	13.9	-3.0	78	10	NA ³
LFG-3	09/15/16	1.8	11.7	-10.6	77	10	NA ³
LFG-3	10/26/16	6.3	9.5	-11.3	53	10	NA ³
LFG-3	11/23/16	4.0	6.6	-11.3	51	10	NA ³
LFG-3	12/13/16	0.5	15.1	-1.5	37	8	NA ³
LFG-3	01/10/17	3.0	9.5	-11.7	40	6	NA ³
LFG-3	02/14/17	0.7	12.4	-14.8	49	8	NA ³
LFG-3	03/07/17	2.9	10.1	-14.8	45	6	NA ³
LFG-3	04/05/17	3.4	10.3	-13.9	53	9	NA ³
LFG-3	05/25/17	1.2	7.0	-16.8	66	0 ⁸	NA ³
LFG-3	06/28/17	0.7	15.0	-13.6	65	0 ⁸	NA ³
LFG-3	07/24/17	0.9	15.0	-13.4	70	0 ⁸	NA ³
LFG-3	08/14/17	1.1	15.0	-13.0	70	0 ⁸	NA ³
LFG-3	09/13/17	1.0	14.7	-7.8	78	8	NA ³
LFG-3	10/30/17	1.9	12.1	-7.3	42	0 ⁸	NA ³
LFG-3	11/17/17	0.4	16.7	-7.8	40	0 ⁸	1,177
LFG-3	12/07/17	0.3	16.9	-7.8	39	8	1,081
LFG-4	08/27/08 ¹	52.1	0.0	0.1	70	-	-
LFG-4	09/23/08	51.4	0.0	-12.0	58	10	-
LFG-4	09/25/08	7.2	0.7	-11.2	56	9	-
LFG-4	10/01/08	1.2	3.9	-10.8	60	11	-
LFG-4	10/01/08	1.2	3.9	-10.7	60	10	-
LFG-4	10/07/08	1.0	6.4	-11.3	60	10	-
LFG-4	10/15/08	1.1	6.0	-13.7	59	10	-
LFG-4	10/30/08	0.7	9.8	-13.6	64	10	-

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-4	11/13/08	1.1	6.7	-16.2	58	10	-
LFG-4	11/26/08	0.6	9.1	-14.9	57	10	-
LFG-4	01/22/09 ²	1.2	9.4	-16.8	50	10	NA ³
LFG-4	02/05/09	0.0	12.9	-15.7	46	10	12,400
LFG-4	02/16/09	0.0	12.2	-16.4	44	10	11,200
LFG-4	03/16/09	0.0	13.5	-18.2	50	10	11,600
LFG-4	04/24/09	0.0	14.6	-18.1	60	10	3,000
LFG-4	05/20/09	0.0	14.0	-18.6	60	10	1,550
LFG-4	06/23/09	0.0	12.1	-17.9	70	10	2,610
LFG-4	07/23/09	0.0	11.2	-16.0	78	10	6,300
LFG-4	08/20/09	0.0	11.1	-13.6	80	10	9,310
LFG-4	09/23/09	0.0	11.9	-11.7	86	10	11,500
LFG-4	10/20/09	0.0	12.2	-14.1	80	10	22,300
LFG-4	11/24/09	0.0	13.6	-16.0	74	10	3,620
LFG-4	12/29/09	0.0	13.7	-14.3	62	10	7,490
LFG-4	01/29/10	0.1	17.7	-14.3	51	10	14
LFG-4	02/22/10	0.7	12.5	-14.3	52	10	27,300
LFG-4	03/26/10	0.0	15.1	-18.5	54	10	11,200
LFG-4	04/22/10	0.0	16.2	-13.9	62	10	3,370
LFG-4	05/18/10	0.0	15.2	-10.7	64	10	15,200
LFG-4	06/29/10	0.0	12.6	-11.8	74	10	-
LFG-4	07/23/10	0.0	13.0	-10.8	80	10	14,400
LFG-4	08/27/10	21.6	1.7	-12.7	82	10	NA ³
LFG-4	10/01/10	14.3	2.4	-16.8	72	10	NA ³
LFG-4	10/22/10	7.9	6.3	-11.0	76	10	NA ³
LFG-4	11/29/10	0.6	11.1	-11.1	61	10	NA ³
LFG-4	12/22/10	2.6	9.5	-10.0	65	10	NA ³
LFG-4	01/24/11	0.6	16.2	-10.0	52	10	13,820
LFG-4	02/28/11	0.5	16.7	-13.2	52	10	12,340
LFG-4	04/13/11	0.3	17.2	-15.5	51	10	10,370
LFG-4	04/29/11	0.5	16.4	-15.9	58	10	42,973
LFG-4	05/27/11	0.2	16.9	-12.0	52	10	24,450
LFG-4	06/24/11	0.2	15.3	-8.5	73	10	15,430
LFG-4	07/22/11	0.1	12.9	-7.1	66	10	270
LFG-4	08/25/11	9.6	3.9	-10.5	85	10	NA ³
LFG-4	09/30/11	0.3	16.3	-7.8	85	10	6,780
LFG-4	10/26/11	0.2	15.0	-6.7	83	10	16,450
LFG-4	11/22/11	0.2	15.8	-6.8	79	15	10,490
LFG-4	12/29/11	0.1	16.0	-7.5	70	15	9,820
LFG-4	01/26/12	1.7	9.4	-6.7	70	15	NA ³

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-4	02/21/12	0.1	17.2	-5.6	64	15	6,340
LFG-4	03/30/12	0.0	16.0	-10.2	62	15	4,373
LFG-4	04/27/12	0.0	16.8	-11.8	72	15	5,560
LFG-4	05/25/12	0.2	14.5	-13.6	73	15	6,250
LFG-4	06/26/12	1.2	6.8	-14.8	75	15	NA ³
LFG-4	07/25/12	0.8	11.6	-16.1	88	15	7,780
LFG-4	08/22/12	0.2	14.7	-10.8	80	15	19,970
LFG-4	09/25/12	0.4	15.9	-7.8	75	15	7,860
LFG-4	10/30/12	0.2	16.0	-7.4	62	15	NA ⁶
LFG-4	11/21/12	0.0	16.7	-7.0	60	15	2,560
LFG-4	12/21/12 ⁷	17.3	6.9	-8.5	53	15	NA ³
LFG-4	01/03/13 ⁷	0.2	18.0	-6.4	65	15	8,350
LFG-4	01/28/13	0.1	18.4	-5.9	60	16	4,430
LFG-4	02/27/13	0.0	17.9	-1.2	61	16	10,540
LFG-4	03/25/13	0.3	17.5	-2.8	58	15	21,610
LFG-4	04/26/13	0.7	16.1	-19.8	60	15	12,330
LFG-4	05/30/13	0.0	18.6	-46.8	64	15	940
LFG-4	06/27/13	0.0	19.9	-22.8	74	15	5,030
LFG-4	07/25/13	0.0	16.4	-9.3	80	15	4,070
LFG-4	08/30/13	0.2	16.0	-7.4	83	15	1,020
LFG-4	09/25/13	0.4	16.5	-3.6	82	15	6,860
LFG-4	10/23/13	0.0	17.6	-6.8	75	15	4,750
LFG-4	11/20/13	0.2	17.4	-5.0	71	15	3,580
LFG-4	12/18/13	0.0	18.3	-2.0	55	15	NA ⁹
LFG-4	05/13/14 ¹⁰	14.5	8.6	-18.1	55	15	NA ³
LFG-4	05/28/14 ¹⁰	0.0	14.8	-12.6	62	15	NA ³
LFG-4	06/26/14	0.0	17.0	-13.4	72	15	2,690 ⁶
LFG-4	07/31/14	16.5	6.5	-9.9	72	15	NA ³
LFG-4	08/28/14	25.2	4.9	-10.1	75	14	NA ³
LFG-4	09/26/14	0.0	16.4	-6.3	76	15	1,750
LFG-4	10/24/14	0.0	17.6	-6.1	70	15	2,770
LFG-4	11/19/14	0.3	12.4	-8.0	63	15	10,750
LFG-4	12/17/14	0.0	19.8	-5.1	53	15	380
LFG-4	01/21/15	0.0	18.5	-7.8	52	15	350
LFG-4	02/26/15	0.0	13.4	-5.5	48	15	470
LFG-4	03/17/15	0.0	15.4	-8.2	52	15	NA ³
LFG-4	04/17/15	0.0	13.0	-6.2	61	15	NA ³
LFG-4	05/12/15	0.0	18.2	-13.0	65	15	180
LFG-4	06/25/15	0.0	16.7	-3.0	67	14	280
LFG-4	07/31/15	0.0	16.2	-10.4	75	15	510

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-4	08/19/15	0.0	17.8	-10.8	75	17	1,350
LFG-4	09/24/15	0.2	17.7	-7.4	75	16	1,390
LFG-4	10/22/15	0.1	19.0	-5.7	71	15	1,600
LFG-4	11/12/15	0.0	6.6	-12.3	69	12	1,240
LFG-4	12/17/15	24.0	9.6	-22.0	51	20	NA ³
LFG-4	01/21/16	2.8	11.8	-17.4	56	20	NA ³
LFG-4	02/24/16	3.4	6.3	-16.5	59	16	NA ³
LFG-4	03/22/16	2.2	6.8	-12.5	55	20	NA ³
LFG-4	04/22/16	0.2	17.3	-11.7	70	20	500
LFG-4	05/19/16	0.0	16.6	-9.3	66	15	20,220
LFG-4	06/14/16	0.0	15.9	-9.8	70	0 ^{5,8}	3,710
LFG-4	07/27/16	0.2	14.0	-9.3	72	0 ⁸	NA ³
LFG-4	08/10/16	0.1	15.4	-7.9	78	20	6,890
LFG-4	09/15/16	0.4	12.7	-8.7	68	15	NA ³
LFG-4	10/26/16	6.9	5.5	-9.5	45	15	NA ³
LFG-4	11/23/16	6.5	3.8	-10.7	56	10	NA ³
LFG-4	12/13/16	0.2	16.1	-11.8	34	23	3,400
LFG-4	01/10/17	9.0	4.7	-12.1	34	11	NA ³
LFG-4	02/14/17	0.1	12.0	-14.5	44	20	NA ³
LFG-4	03/07/17	6.6	5.4	-13.5	52	15	NA ³
LFG-4	04/05/17	6.0	5.4	-13.9	54	20	NA ³
LFG-4	05/25/17	4.3	3.8	-16.6	68	0 ⁸	NA ³
LFG-4	06/28/17	0.1	15.9	-13.3	66	0 ⁸	NA ³
LFG-4	07/24/17	0.2	16.1	-13.0	72	0 ⁸	NA ³
LFG-4	08/14/17	0.2	14.4	-12.9	49	0 ⁸	NA ³
LFG-4	09/13/17	0.1	15.9	-12.9	73	17	NA ³
LFG-4	10/30/17	1.4	8.5	-6.4	47	13	NA ³
LFG-4	11/17/17	0.0	16.7	-12.9	42	0 ⁸	989
LFG-4	12/07/17	0.0	17.2	-12.9	37	14	907
LFG-5	08/27/08 ¹	53.1	0.0	0.3	70	-	-
LFG-5	09/23/08	40.0	0.7	-9.4	64	10	-
LFG-5	09/25/08	7.1	4.5	-9.1	56	7	-
LFG-5	10/01/08	1.2	6.9	-8.6	59	10	-
LFG-5	10/07/08	1.0	9.0	-8.5	58	9	-
LFG-5	10/15/08	0.9	9.5	-8.7	60	10	-
LFG-5	10/30/08	0.5	10.7	-8.0	64	10	-
LFG-5	11/13/08	1.1	9.2	-9.5	60	10	-
LFG-5	11/26/08	0.7	10.1	-9.1	60	10	-
LFG-5	01/22/09 ²	1.8	6.7	-8.8	52	10	NA ³

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-5	02/05/09	0.0	11.0	-6.9	54	10	19,300
LFG-5	02/16/09	0.0	7.9	-10.9	54	10	NA ³
LFG-5	03/16/09	0.1	9.9	-8.5	60	10	NA ³
LFG-5	04/24/09	0.0	11.7	-7.9	68	10	6,730
LFG-5	05/20/09	0.0	11.0	-8.1	70	10	NA ³
LFG-5	06/23/09	0.0	9.1	-7.6	80	10	NA ³
LFG-5	07/23/09	0.1	8.5	-7.4	80	10	NA ³
LFG-5	08/20/09	0.3	8.9	-11.5	80	20	NA ³
LFG-5	09/23/09	0.6	9.8	-11.1	86	20	47,500
LFG-5	10/20/09	0.9	9.8	-14.1	80	20	NA ³
LFG-5	11/24/09	0.0	16.0	-23.2	70	20	17,300
LFG-5	12/29/09	0.2	14.0	-21.2	60	20	10,200
LFG-5	01/29/10	0.7	13.3	-21.2	51	20	14,430
LFG-5	02/22/10	2.7	10.1	-21.2	52	20	NA ³
LFG-5	03/26/10	0.5	12.7	-18.4	54	20	38,200
LFG-5	04/22/10	0.1	14.4	-16.4	62	20	14,700
LFG-5	05/18/10	0.2	14.2	-15.2	64	20	891
LFG-5	06/29/10	0.3	13.0	-19.4	70	20	-
LFG-5	07/23/10	0.0	15.2	-19.6	73	20	12,100
LFG-5	08/27/10	20.0	4.6	-19.1	78	20	NA ³
LFG-5	10/01/10	7.4	8.1	-31.7	70	20	NA ³
LFG-5	10/22/10	2.4	12.4	-27.6	73	20	NA ³
LFG-5	11/29/10	5.2	5.1	-11.9	61	20	NA ³
LFG-5	12/22/10	3.1	12.7	-20.8	56	20	NA ³
LFG-5	01/24/11	0.6	17.4	-28.2	54	20	17,860
LFG-5	02/28/11	0.5	17.3	-33.3	40	20	12,720
LFG-5	04/13/11	0.5	18.2	-45.6	45	18	12,640
LFG-5	04/29/11	0.9	16.9	-47.6	56	10 ⁵	>50,000
LFG-5	05/27/11	0.2	18.7	-43.1	52	20	20,100
LFG-5	06/24/11	0.4	17.5	-44.5	66	20	15,360
LFG-5	07/22/11	0.0	16.4	-35.6	66	21	1,480
LFG-5	08/25/11	3.3	11.8	-37.4	80	20	NA ³
LFG-5	09/30/11	0.2	17.9	-26.1	75	29	2,310
LFG-5	10/26/11	0.0	16.7	-23.6	73	20	7,740
LFG-5	11/22/11	0.3	15.9	-18.2	70	20	10,570
LFG-5	12/29/11	0.9	15.7	-18.1	68	20	39,010
LFG-5	01/26/12	7.8	6.8	-17.8	72	20	NA ³
LFG-5	02/21/12	0.7	12.0	-5.8	76	20	NA ³
LFG-5	03/30/12	1.1	7.7	-8.6	78	20	NA ³
LFG-5	04/27/12	0.0	17.7	-24.6	69	20	80

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-5	05/25/12	0.7	13.2	-37.8	70	20	41,170
LFG-5	06/26/12	0.8	12.8	-36.8	68	20	>50,000
LFG-5	07/25/12	0.9	12.0	-40.3	84	20	>50,000
LFG-5	08/22/12	0.1	16.9	-30.5	74	20	12,910
LFG-5	09/25/12	0.4	16.5	-24.4	67	20	6,810
LFG-5	10/30/12	0.5	15.1	-15.0	64	20	NA ⁶
LFG-5	11/21/12	0.5	13.5	-10.3	60	20	11,380
LFG-5	12/21/12 ⁷	30.1	3.2	-8.5	57	20	NA ³
LFG-5	01/03/13 ⁷	0.8	11.7	-6.9	74	20	36,220
LFG-5	01/28/13	0.4	11.7	-6.4	74	20	12,310
LFG-5	02/27/13	0.3	10.2	-4.5	63	20	28,360
LFG-5	03/25/13	0.1	14.1	-7.9	66	20	17,500
LFG-5	04/26/13	3.0	15.8	-48.1	66	20	>50,000
LFG-5	05/30/13	0.2	18.8	-45.5	65	20	5,930
LFG-5	06/27/13	0.2	17.5	-43.6	75	18	5,020
LFG-5	07/25/13	0.0	17.6	-26.8	80	20	1,860
LFG-5	08/30/13	0.0	17.8	-14.3	81	20	2,130
LFG-5	09/25/13	0.1	18.7	-0.4	74	20	1,490
LFG-5	10/23/13	0.2	18.0	-5.3	65	20	10,500
LFG-5	11/20/13	0.7	16.9	-4.7	62	20	11,970
LFG-5	12/18/13	0.2	17.8	-4.3	52	20	NA ⁹
LFG-5	05/13/14 ¹⁰	15.5	8.4	-47.4	54	19	NA ³
LFG-5	05/28/14 ¹⁰	0.4	13.8	-46.8	62	20	>50,000
LFG-5	06/26/14	0.0	17.4	-46.4	67	20	8,530 ⁶
LFG-5	07/31/14	4.9	11.9	-31.5	73	20	4,960
LFG-5	08/28/14	13.8	6.5	-21.0	75	20	NA ³
LFG-5	09/26/14	0.0	16.9	-18.0	76	20	1,680
LFG-5	10/24/14	0.0	18.2	-18.6	69	20	2,490
LFG-5	11/19/14	0.0	15.0	-8.3	58	20	9,100
LFG-5	12/17/14	0.0	17.4	-7.4	54	20	1,240
LFG-5	01/21/15	0.0	15.2	-12.0	58	20	880
LFG-5	02/26/15	3.6	9.8	-9.6	55	20	NA ³
LFG-5	03/17/15	2.4	10.4	-9.0	59	20	NA ³
LFG-5	04/17/15	2.8	6.8	-9.7	67	20	NA ³
LFG-5	05/12/15	0.0	15.2	-9.6	66	20	NA ³
LFG-5	06/25/15	0.0	16.5	-16.2	73	20	300
LFG-5	07/31/15	0.0	17.9	-22.6	78	20	540
LFG-5	08/19/15	0.0	18.2	-19.5	77	20	830
LFG-5	09/24/15	0.1	17.3	-16.8	77	20	800
LFG-5	10/22/15	0.0	19.2	-9.7	73	20	830

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		
LFG-5	11/12/15	2.0	15.4	-16.2	69	10	1,090
LFG-5	12/17/15	3.6	18.2	-15.8	50	6	4,840
LFG-5	01/21/16	0.5	5.4	-3.5	26	0 ^{4,8}	NA ³
LFG-5	02/24/16	0.7	9.2	-12.2	34	11	NA ³
LFG-5	03/22/16	0.9	6.3	-8.1	52	0 ⁸	NA ³
LFG-5	04/22/16	0.1	17.9	-8.0	58	8	310
LFG-5	05/19/16	0.0	17.6	-7.1	64	9	3,600
LFG-5	06/14/16	0.0	16.7	-8.5	68	8	1,940
LFG-5	07/27/16	0.1	14.9	-7.4	74	0 ⁸	2,640
LFG-5	08/10/16	0.0	16.4	-6.0	80	10	2,590
LFG-5	09/15/16	0.1	13.5	-8.3	73	5	NA ³
LFG-5	10/26/16	1.5	5.1	-9.1	47	12	NA ³
LFG-5	11/23/16	2.5	2.4	-9.1	50	7	NA ³
LFG-5	12/13/16	0.0	17.6	-9.0	36	7	1,720
LFG-5	01/10/17	0.2	15.5	0.0	39	6	NA ³
LFG-5	02/14/17	0.0	14.2	-10.8	45	7	NA ³
LFG-5	03/07/17	1.2	5.3	-11.8	49	5	NA ³
LFG-5	04/05/17	1.0	5.1	-14.0	51	8	NA ³
LFG-5	05/25/17	0.5	5.3	-15.9	60	0 ⁸	NA ³
LFG-5	06/28/17	0.0	17.5	-11.8	66	0 ⁸	NA ³
LFG-5	07/24/17	0.0	17.5	-10.9	72	0 ⁸	NA ³
LFG-5	08/14/17	0.0	17.9	-14.2	70	0 ⁸	2,004
LFG-5	09/13/17	0.0	18.0	-7.8	76	5	2,111
LFG-5	10/30/17	0.7	8.9	-2.9	44	9	NA ³
LFG-5	11/17/17	0.0	17.7	-7.8	40	8	2,004
LFG-5	12/07/17	0.0	18.2	-7.8	33	9	1,633
LFG-6	08/27/08 ¹	47.7	0.0	0.2	70	-	-
LFG-6	09/23/08	42.0	1.9	-6.3	60	10	-
LFG-6	09/25/08	10.2	3.2	-6.7	56	18	-
LFG-6	09/25/08	10.2	3.2	-6.2	56	10	-
LFG-6	10/01/08	1.0	6.6	-6.4	58	10	-
LFG-6	10/07/08	0.9	9.0	-6.7	60	10	-
LFG-6	10/15/08	0.7	9.9	-7.4	60	10	-
LFG-6	10/30/08	0.6	10.0	-7.8	64	10	-
LFG-6	11/13/08	0.6	9.4	-9.0	60	10	-
LFG-6	11/26/08	0.6	9.2	-8.8	57	10	-
LFG-6	01/22/09 ²	1.0	7.8	-9.2	48	10	NA ³
LFG-6	02/05/09	0.0	8.0	-7.3	54	11	16,700
LFG-6	02/16/09	0.0	9.1	-9.6	48	10	NA ³

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-6	03/16/09	0.2	9.1	-10.2	55	10	NA ³
LFG-6	04/24/09	0.0	10.5	-9.5	60	10	NA ³
LFG-6	05/20/09	0.0	10.3	-10.1	64	10	NA ³
LFG-6	06/23/09	0.0	9.8	-8.3	78	10	NA ³
LFG-6	07/23/09	0.3	9.4	-8.3	80	10	NA ³
LFG-6	08/20/09	0.3	9.6	-8.6	80	10	NA ³
LFG-6	09/23/09	0.5	10.4	-8.1	84	10	40,400
LFG-6	10/20/09	0.5	9.8	-9.6	80	10	NA ³
LFG-6	11/24/09	0.4	11.0	-9.3	75	10	26,800
LFG-6	12/29/09	0.3	10.5	-9.5	66	10	14,600
LFG-6	01/29/10	0.6	12.3	-9.5	54	10	1,565
LFG-6	02/22/10	1.4	10.9	-9.5	64	10	NA ³
LFG-6	03/26/10	0.3	11.2	-12.9	58	10	18,000
LFG-6	04/22/10	0.1	13.2	-10.1	72	10	15,600
LFG-6	05/18/10	0.3	12.6	-8.8	77	10	>50,000
LFG-6	06/29/10	0.4	11.3	-9.7	80	10	-
LFG-6	07/23/10	0.3	12.1	-8.3	80	10	38,950
LFG-6	08/27/10	17.2	6.2	-7.8	87	10	NA ³
LFG-6	10/01/10	12.4	5.8	-11.4	79	10	NA ³
LFG-6	10/22/10	9.2	8.9	-9.3	81	10	NA ³
LFG-6	11/29/10	1.2	8.3	-10.8	69	10	NA ³
LFG-6	12/22/10	5.9	6.1	-11.8	76	10	NA ³
LFG-6	01/24/11	1.1	13.7	-14.1	67	10	19,590
LFG-6	02/28/11	0.9	13.8	-21.4	60	10	NA ³
LFG-6	04/13/11	0.8	14.1	-22.4	60	11	NA ³
LFG-6	04/29/11	1.7	11.6	-27.7	62	10	NA ³
LFG-6	05/27/11	0.8	15.3	-16.4	52	10	>50,000
LFG-6	06/24/11	1.1	12.6	-16.1	66	10	38,540
LFG-6	07/22/11	1.0	12.4	-12.7	66	10	28,550
LFG-6	08/25/11	15.3	6.2	-12.6	96	10	NA ³
LFG-6	09/30/11	1.1	15.1	-9.2	91	10	>50,000
LFG-6	10/26/11	0.8	14.0	-8.2	87	10	>50,000
LFG-6	11/22/11	0.6	15.5	-9.7	83	20	8,080
LFG-6	12/29/11	0.7	15.4	-8.6	77	20	16,100
LFG-6	01/26/12	3.7	12.6	-8.2	84	20	NA ³
LFG-6	02/21/12	0.4	16.0	-7.3	72	20	16,730
LFG-6	03/30/12	0.4	14.0	-10.7	70	20	213
LFG-6	04/27/12	0.1	15.6	-13.3	83	20	10,840
LFG-6	05/25/12	1.2	10.5	-27.8	70	20	2,790
LFG-6	06/26/12	4.0	9.9	-24.6	81	20	NA ³

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-6	07/25/12	2.8	11.1	-30.1	96	20	>50,000
LFG-6	08/22/12	0.6	14.9	-20.7	80	20	3,850
LFG-6	09/25/12	0.7	16.1	-12.0	76	20	10,610
LFG-6	10/30/12	0.4	16.7	-9.7	62	20	NA ⁶
LFG-6	11/21/12	0.1	17.3	-9.2	60	20	7,120
LFG-6	12/21/12 ⁷	17.3	9.5	-11.0	55	20	NA ³
LFG-6	01/03/13 ⁷	0.3	16.6	-11.2	70	20	13,640
LFG-6	01/28/13	0.3	16.8	-11.1	70	20	5,360
LFG-6	02/27/13	0.0	13.7	-3.5	70	20	11,170
LFG-6	03/25/13	0.3	15.1	-5.4	69	20	8,460
LFG-6	04/26/13	2.6	11.0	-26.8	73	20	38,550
LFG-6	05/30/13	0.4	17.4	-43.4	73	20	13,200
LFG-6	06/27/13	1.1	15.3	-39.2	75	18	30,300
LFG-6	07/25/13	0.2	16.7	-14.3	84	20	9,180
LFG-6	08/30/13	0.6	17.2	-8.8	85	20	6,460
LFG-6	09/25/13	0.6	17.7	-3.7	81	20	11,530
LFG-6	10/23/13	0.2	17.6	-8.4	75	20	8,670
LFG-6	11/20/13	0.7	17.0	-7.9	71	20	5,040
LFG-6	12/18/13	0.4	17.7	-5.7	60	20	NA ⁹
LFG-6	05/13/14 ¹⁰	20.5	10.0	-44.6	56	20	NA ³
LFG-6	05/28/14 ¹⁰	0.6	12.2	-32.2	66	18	NA ³
LFG-6	06/26/14	0.4	16.5	-29.0	70	21	12,670 ⁶
LFG-6	07/31/14	11.4	14.1	-14.9	76	20	10,980
LFG-6	08/28/14	17.5	11.3	-14.0	75	20	NA ³
LFG-6	09/26/14	0.1	16.3	-13.2	76	20	NM ⁹
LFG-6	10/24/14	0.2	17.4	-10.4	68	20	11,530
LFG-6	11/19/14	1.2	15.8	-7.1	58	20	28,540
LFG-6	12/17/14	0.0	18.3	-2.1	56	21	2,890
LFG-6	01/21/15	0.0	17.4	-11.6	58	20	2,190
LFG-6	02/26/15	0.9	14.2	-8.8	63	20	8,310
LFG-6	03/17/15	0.9	13.1	-13.2	65	21	NA ³
LFG-6	04/17/15	0.6	11.1	-12.5	70	20	NA ³
LFG-6	05/12/15	0.0	17.2	-12.3	65	20	69
LFG-6	06/25/15	0.0	15.4	-11.0	77	20	1,350
LFG-6	07/31/15	0.0	16.9	-13.8	81	20	21,670
LFG-6	08/19/15	0.2	17.2	-28.7	76	20	3,170
LFG-6	09/24/15	0.7	16.3	-8.2	78	19	3,340
LFG-6	10/22/15	0.2	19.0	-6.1	75	20	2,900
LFG-6	11/12/15	0.7	5.6	-26.3	72	19	2,310
LFG-6	12/17/15	14.6	9.3	-20.9	53	14	NA ³

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-6	01/21/16	2.5	11.4	-16.5	65	20	NA ³
LFG-6	02/24/16	5.2	4.9	-16.3	34	19	NA ³
LFG-6	03/22/16	3.2	6.5	-12.2	52	0 ⁸	NA ³
LFG-6	04/22/16	0.5	16.8	-12.0	58	19	1,140
LFG-6	05/19/16	0.1	16.3	-9.8	64	18	8,190
LFG-6	06/14/16	0.1	16.1	-9.6	68	5 ⁵	6,860
LFG-6	07/27/16	0.5	14.6	-8.8	70	0 ⁸	NA ³
LFG-6	08/10/16	0.3	15.7	-4.2	75	18	7,010
LFG-6	09/15/16	1.3	11.3	-6.9	68	15	NA ³
LFG-6	10/26/16	5.5	9.3	-9.0	51	15	NA ³
LFG-6	11/23/16	4.3	6.8	-9.2	49	18	NA ³
LFG-6	12/13/16	0.6	16.1	-10.8	33	16	5,910
LFG-6	01/10/17	4.7	9.7	-9.4	38	15	NA ³
LFG-6	02/14/17	0.4	12.2	-12.7	48	19	NA ³
LFG-6	03/07/17	3.3	8.8	-12.7	52	19	NA ³
LFG-6	04/05/17	3.2	8.0	-14.0	55	15	NA ³
LFG-6	05/25/17	2.8	9.9	-15.9	67	0 ⁸	NA ³
LFG-6	06/28/17	0.1	17.1	-12.2	66	0 ⁸	NA ³
LFG-6	07/24/17	0.3	17.0	-11.9	72	0 ⁸	4,991
LFG-6	08/14/17	0.2	16.8	-11.4	70	0 ⁸	5,714
LFG-6	09/13/17	0.3	17.0	-9.5	72	15	4,923
LFG-6	10/30/17	1.5	9.9	-3.4	44	19	NA ³
LFG-6	11/17/17	0.4	15.6	-9.5	44	17	NA ³
LFG-6	12/07/17	0.3	15.1	-9.5	34	0 ⁸	NA ³
LFG-7	08/27/08 ¹	54.4	0.0	0.1	70	-	-
LFG-7	09/23/08	39.7	0.4	-4.9	60	9	-
LFG-7	09/25/08	10.6	2.9	-5.4	56	9	-
LFG-7	10/01/08	1.3	5.7	-5.8	64	10	-
LFG-7	10/07/08	1.0	8.6	-6.4	60	9	-
LFG-7	10/15/08	0.7	10.2	-6.7	64	11	-
LFG-7	10/30/08	0.5	10.9	-6.0	64	10	-
LFG-7	11/13/08	0.2	12.5	-6.2	60	9	-
LFG-7	11/26/08	0.0	12.5	-5.8	56	10	-
LFG-7	01/22/09 ²	0.1	13.8	-6.6	48	10	13,200
LFG-7	02/05/09	0.0	14.8	-5.4	48	10	1,280
LFG-7	02/16/09	0.0	16.0	-6.3	44	10	1,080
LFG-7	03/16/09	0.0	15.8	-6.3	50	10	1,410
LFG-7	04/24/09	0.0	15.2	-6.4	54	10	2,430
LFG-7	05/20/09	0.0	14.7	-5.7	60	10	1,220

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-7	06/23/09	0.0	13.2	-5.3	68	10	1,820
LFG-7	07/23/09	0.0	11.3	-5.2	72	10	9,940
LFG-7	08/20/09	0.0	10.2	-5.4	72	10	12,900
LFG-7	09/23/09	0.0	11.4	-4.8	77	10	9,780
LFG-7	10/20/09	0.3	9.4	-6.6	70	10	NA ³
LFG-7	11/24/09	0.0	11.4	-7.4	64	10	25,400
LFG-7	12/29/09	0.1	11.5	-8.8	56	10	11,300
LFG-7	01/29/10	0.0	21.0	-8.8	48	10	21
LFG-7	02/22/10	0.5	9.6	-8.8	46	10	NA ³
LFG-7	03/26/10	0.0	13.5	-10.7	50	10	NA ³
LFG-7	04/22/10	0.0	14.3	-9.7	57	10	3,260
LFG-7	05/18/10	0.0	13.5	-7.6	70	10	19,700
LFG-7	06/29/10	0.1	9.7	-9.6	67	10	-
LFG-7	07/23/10	0.0	10.6	-9.7	70	10	NA ³
LFG-7	08/27/10	15.3	2.5	-9.2	77	10	NA ³
LFG-7	10/01/10	9.7	1.5	-10.0	72	10	NA ³
LFG-7	10/22/10	7.4	3.6	-8.9	75	10	NA ³
LFG-7	11/29/10	0.4	7.8	-10.0	64	10	NA ³
LFG-7	12/22/10	2.0	4.0	-11.9	52	10	NA ³
LFG-7	01/24/11	0.5	13.1	-12.1	50	10	13,730
LFG-7	02/28/11	0.1	14.9	-17.4	40	10	3,178
LFG-7	04/13/11	0.0	15.2	-21.7	48	10	2,860
LFG-7	04/29/11	0.2	12.3	-22.4	51	10	33,140
LFG-7	05/27/11	0.0	15.7	-22.8	52	10	4,270
LFG-7	06/24/11	0.3	15.0	-16.3	73	10	18,020
LFG-7	07/22/11	0.0	11.7	-12.3	66	9	1,620
LFG-7	08/25/11	4.5	3.4	-17.6	80	10	NA ³
LFG-7	09/30/11	0.1	14.1	-9.4	86	10	4,600
LFG-7	10/26/11	0.0	13.0	-11.5	72	10	7,250
LFG-7	11/22/11	0.1	16.4	-12.1	70	10	980
LFG-7	12/29/11	0.0	15.1	-10.8	64	10	1,720
LFG-7	01/26/12	1.1	9.9	-9.1	68	10	NA ³
LFG-7	02/21/12	0.3	16.1	-3.4	62	10	7,900
LFG-7	03/30/12	0.2	14.7	-9.2	60	10	216
LFG-7	04/27/12	0.0	15.9	-15.2	68	10	3,040
LFG-7	05/25/12	0.3	12.2	-25.7	70	10	NA ³
LFG-7	06/26/12	0.7	5.9	-20.4	71	10	NA ³
LFG-7	07/25/12	1.4	9.6	-28.1	84	10	NA ³
LFG-7	08/22/12	0.0	13.2	-19.0	74	10	930
LFG-7	09/25/12	0.1	14.4	-16.7	75	10	1,860

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-7	10/30/12	0.0	15.3	-10.4	60	11	492 ⁶
LFG-7	11/21/12	0.0	15.2	-10.3	60	10	3,170
LFG-7	12/21/12 ⁷	13.8	6.4	-12.9	53	10	NA ³
LFG-7	01/03/13 ⁷	0.3	16.2	-10.0	62	10	9,130
LFG-7	01/28/13	0.2	17.4	-14.3	60	10	5,110
LFG-7	02/27/13	0.0	14.4	-5.6	63	11	4,000
LFG-7	03/25/13	0.2	17.8	-7.2	56	10	7,940
LFG-7	04/26/13	2.8	8.5	-50.1	60	0 ⁸	7,440
LFG-7	05/30/13	0.0	16.9	-45.1	64	9	280
LFG-7	06/27/13	0.6	12.3	-43.9	75	10	NA ³
LFG-7	07/25/13	0.0	16.6	-22.8	76	10	100
LFG-7	08/30/13	0.0	16.4	-25.0	78	0 ⁸	210
LFG-7	09/25/13	0.1	17.3	-14.2	74	10	1,050
LFG-7	10/23/13	0.0	17.0	-15.7	68	10	381
LFG-7	11/20/13	0.1	16.4	-12.1	64	10	1,800
LFG-7	12/18/13	0.0	17.2	-12.6	58	10	NM ⁹
LFG-7	05/13/14 ¹⁰	19.9	8.4	-43.4	54	0 ⁸	NA ³
LFG-7	05/28/14 ¹⁰	0.0	12.5	-47.6	68	0 ⁸	NA ³
LFG-7	06/26/14	0.0	12.1	-46.6	70	0 ⁸	3,210 ⁶
LFG-7	07/31/14	4.6	18.4	-44.3	70	10	2,090
LFG-7	08/28/14	13.5	8.8	-46.3	71	17	NA ³
LFG-7	09/26/14	0.0	11.9	-6.5	75	12	2,430
LFG-7	10/24/14	0.0	14.2	-20.4	66	10	390
LFG-7	11/19/14	0.2	12.3	-14.8	60	10	4,990
LFG-7	12/17/14	0.0	16.9	-17.8	51	10	200
LFG-7	01/21/15	0.0	16.7	-6.9	53	11	290
LFG-7	02/26/15	0.0	20.3	-0.3	44	0 ⁴	1,970
LFG-7	03/17/15	0.2	12.2	-17.2	55	10	NA ³
LFG-7	04/17/15	0.2	10.7	-22.6	60	10	NA ³
LFG-7	05/12/15	0.0	17.7	-21.9	56	10	260
LFG-7	06/25/15	0.0	14.7	-23.4	68	10	630
LFG-7	07/31/15	0.0	15.1	-33.9	72	10	47
LFG-7	08/19/15	0.0	14.2	-30.4	70	10	1,160
LFG-7	09/24/15	0.1	11.8	-17.9	72	10	1,020
LFG-7	10/22/15	0.0	15.3	-10.9	70	10	740
LFG-7	11/12/15	1.9	2.7	-28.6	70	12	880
LFG-7	12/17/15	0.9	11.2	-23.4	50	0 ¹¹	NA ³
LFG-7	01/21/16	0.3	11.7	-18.6	21	0 ^{4,8}	NA ³
LFG-7	02/24/16	2.5	4.8	-17.4	34	6	NA ³
LFG-7	03/22/16	2.3	5.2	-12.9	54	5	NA ³

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		
LFG-7	04/22/16	0.1	13.7	-12.0	58	8	NA ³
LFG-7	05/19/16	0.0	13.5	-10.0	55	5	NA ³
LFG-7	06/14/16	0.0	14.0	-10.6	59	8	NA ³
LFG-7	07/27/16	0.0	12.4	-9.7	69	0 ⁸	NA ³
LFG-7	08/10/16	0.0	13.4	-8.7	73	7	NA ³
LFG-7	09/15/16	0.7	9.1	-11.9	70	6	NA ³
LFG-7	10/26/16	2.5	5.3	-12.1	43	10	NA ³
LFG-7	11/23/16	1.6	4.9	-11.9	50	0 ⁸	NA ³
LFG-7	12/13/16	0.0	14.0	-6.5	30	0 ⁸	NA ³
LFG-7	01/10/17	1.4	3.1	-12.9	31	0 ⁸	NA ³
LFG-7	02/14/17	0.1	5.9	-15.3	46	5	NA ³
LFG-7	03/07/17	1.5	9.0	-14.8	45	7	NA ³
LFG-7	04/05/17	2.1	8.7	-14.0	51	6	NA ³
LFG-7	05/25/17	0.5	1.4	-17.0	65	0 ⁸	NA ³
LFG-7	06/28/17	0.0	13.6	-14.2	66	0 ⁸	NA ³
LFG-7	07/24/17	0.0	13.7	-14.2	69	0 ⁸	NA ³
LFG-7	08/14/17	0.0	13.6	-14.2	68	0 ⁸	NA ³
LFG-7	09/13/17	0.0	14.1	-11.6	71	5	NA ³
LFG-7	10/30/17	1.0	10.1	-15.3	49	9	NA ³
LFG-7	11/17/17	0.3	12.8	-11.6	41	5	NA ³
LFG-7	12/07/17	0.6	13.3	-11.6	36	8	NA ³
LFG-8	08/27/08 ¹	50.7	0.0	0.0	70	-	-
LFG-8	09/23/08	46.3	0.1	-8.5	56	10	-
LFG-8	09/25/08	19.1	2.5	-9.5	56	9	-
LFG-8	10/01/08	3.2	3.6	-10.5	58	10	-
LFG-8	10/07/08	2.0	6.6	-10.6	60	9	-
LFG-8	10/15/08	1.4	8.4	-9.5	60	12	-
LFG-8	10/15/08	1.4	8.4	-9.4	60	10	-
LFG-8	10/30/08	1.7	9.1	-10.7	64	10	-
LFG-8	11/13/08	1.4	9.1	-12.3	54	10	-
LFG-8	11/26/08	1.5	9.7	-9.7	54	10	-
LFG-8	01/22/09 ²	2.4	9.8	-9.0	53	10	NA ³
LFG-8	02/05/09	1.9	10.4	-12.6	53	10	41,000
LFG-8	02/16/09	0.7	12.9	-8.9	48	10	50,000
LFG-8	03/16/09	0.7	12.9	-11.0	54	10	50,000
LFG-8	04/24/09	0.9	11.0	-10.4	60	10	NA ³
LFG-8	05/20/09	0.9	10.6	-10.3	60	10	NA ³
LFG-8	06/23/09	1.3	9.5	-10.9	70	10	NA ³
LFG-8	07/23/09	2.1	8.7	-12.3	70	10	NA ³

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-8	08/20/09	1.6	8.2	-20.9	70	20	NA ³
LFG-8	09/23/09	1.9	9.2	-20.5	78	20	NA ³
LFG-8	10/20/09	2.1	8.3	-26.3	70	20	NA ³
LFG-8	11/24/09	2.5	9.9	-32.2	62	20	NA ³
LFG-8	12/29/09	1.3	9.9	-31.1	56	20	>50,000
LFG-8	01/29/10	2.0	13.0	-31.1	49	20	>50,000
LFG-8	02/22/10	5.1	8.8	-31.1	50	20	NA ³
LFG-8	03/26/10	1.2	10.2	-33.1	52	20	NA ³
LFG-8	04/22/10	1.0	11.7	-34.6	62	20	NA ³
LFG-8	05/18/10	1.0	12.0	-37.6	64	20	>50,000
LFG-8	06/29/10	1.6	9.2	-41.6	74	20	-
LFG-8	07/23/10	1.9	10.1	-42.0	78	20	NA ³
LFG-8	08/27/10	26.3	1.4	-39.0	82	20	NA ³
LFG-8	10/01/10	22.4	0.7	-39.0	70	20	NA ³
LFG-8	10/22/10	16.3	4.3	-39.5	77	20	NA ³
LFG-8	11/29/10	2.6	11.2	-44.6	62	20	NA ³
LFG-8	12/22/10	10.0	4.6	-47.4	66	20	NA ³
LFG-8	01/24/11	2.5	12.9	-48.5	63	20	NA ³
LFG-8	02/28/11	1.6	13.1	-49.6	52	20	NA ³
LFG-8	04/13/11	1.1	13.0	-48.8	52	10 ⁵	NA ³
LFG-8	04/29/11	2.0	11.1	-48.0	56	7 ⁵	NA ³
LFG-8	05/27/11	1.0	13.7	-47.4	52	10 ⁵	>50,000
LFG-8	06/24/11	1.2	12.2	-45.8	73	10 ⁵	NA ³
LFG-8	07/22/11	1.0	11.0	-43.6	66	13 ⁵	NA ³
LFG-8	08/25/11	15.0	7.6	-45.0	86	14 ⁵	NA ³
LFG-8	09/30/11	1.4	14.2	-43.4	86	10 ⁵	>50,000
LFG-8	10/26/11	1.1	13.2	-44.9	80	20	>50,000
LFG-8	11/22/11	1.1	14.2	-44.9	80	23	>50,000
LFG-8	12/29/11	1.0	14.4	-44.6	70	22	49,900
LFG-8	01/26/12	4.7	9.8	-46.8	80	25	NA ³
LFG-8	02/21/12	1.0	15.5	-35.7	70	25	>50,000
LFG-8	03/30/12	0.6	14.2	-28.6	62	25	27,840
LFG-8	04/27/12	0.0	19.3	-44.4	72	18 ⁵	80
LFG-8	05/25/12	1.7	10.9	-44.3	81	0 ⁵	NA ³
LFG-8	06/26/12	5.6	3.4	-44.7	83	12 ⁵	NA ³
LFG-8	07/25/12	3.5	6.6	-46.1	90	19 ⁵	NA ³
LFG-8	08/22/12	1.2	12.4	-39.0	80	7 ⁵	NA ³
LFG-8	09/25/12	2.0	12.1	-40.0	78	18 ⁵	NA ³
LFG-8	10/30/12	1.1	14.3	-41.6	70	21 ⁵	NA ⁶
LFG-8	11/21/12	0.8	14.9	-42.6	64	25	33,810

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				VOC Concentration	
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)	Flow Rate (CFM)	by FID (ppm)
LFG-8	12/21/12 ⁷	22.2	3.2	-44.5	57	25	NA ³
LFG-8	01/03/13 ⁷	1.2	15.1	-47.6	64	25	41,890
LFG-8	01/28/13	0.7	15.9	-48.2	70	26	45,520
LFG-8	02/27/13	0.5	16.2	-35.0	70	25	41,430
LFG-8	03/25/13	0.9	15.5	-44.0	68	24	>50,000
LFG-8	04/26/13	7.0	6.1	-49.2	70	0 ⁸	NA ³
LFG-8	05/30/13	0.6	14.0	-44.8	70	0 ⁸	NA ³
LFG-8	06/27/13	2.6	10.0	-44.4	80	24	NA ³
LFG-8	07/25/13	0.4	14.1	-43.7	85	9	27,340
LFG-8	08/30/13	0.7	14.7	-40.3	83	16	21,770
LFG-8	09/25/13	0.8	15.4	-34.1	84	17	24,470
LFG-8	10/23/13	0.4	16.1	-45.5	78	20	21,580
LFG-8	11/20/13	0.8	15.7	-46.7	65	25	16,890
LFG-8	12/18/13	0.5	16.2	-46.7	68	25	4,290
LFG-8	05/13/14 ¹⁰	37.6	1.3	-43.2	54	4 ⁵	NA ³
LFG-8	05/28/14 ¹⁰	1.3	9.1	-46.1	70	0 ⁸	NA ³
LFG-8	06/26/14	1.0	10.2	-46.4	72	2 ⁵	NA ⁶
LFG-8	07/31/14	13.9	3.7	-44.6	75	1 ⁵	NA ³
LFG-8	08/28/14	25.5	2.9	-46.7	72	0 ⁸	NA ³
LFG-8	09/26/14	0.3	13.5	-46.6	76	24	380
LFG-8	10/24/14	0.4	15.3	-47.6	66	20	170
LFG-8	11/19/14	1.5	10.7	-42.3	70	25	NA ³
LFG-8	12/17/14	0.4	17.0	-41.7	60	25	6,190
LFG-8	01/21/15	1.7	13.1	-37.0	63	25	6,010
LFG-8	02/26/15	1.6	10.9	-39.2	62	25	NA ³
LFG-8	03/17/15	1.6	11.4	-43.0	65	20	NA ³
LFG-8	04/17/15	1.2	8.5	-39.9	69	21	NA ³
LFG-8	05/12/15	0.3	16.1	-42.5	53	25	NA ³
LFG-8	06/25/15	0.1	13.9	-37.9	72	20	7,440
LFG-8	07/31/15	0.3	14.3	-37.7	76	16	10,130
LFG-8	08/19/15	0.6	14.3	-41.8	76	22	10,230
LFG-8	09/24/15	0.8	12.3	-42.2	78	22	12,310
LFG-8	10/22/15	0.6	16.3	-42.9	75	25	8,930
LFG-8	11/12/15	3.7	4.0	-29.6	71	19	8,790
LFG-8	12/17/15	0.0	4.4	-23.6	60	0 ¹¹	NA ³
LFG-8	01/21/16	0.0	20.6	-18.6	25	0 ⁸	290
LFG-8	02/24/16	8.7	5.9	-17.3	33	0 ^{5,8}	NA ³
LFG-8	03/22/16	11.0	1.4	-12.9	54	0 ^{5,8}	NA ³
LFG-8	04/22/16	3.1	10.7	-12.7	58	13	NA ³
LFG-8	05/19/16	1.7	11.4	-10.5	55	20	NA ³

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		
LFG-8	06/14/16	1.9	11.1	-10.6	62	0 ^{5,8}	NA ³
LFG-8	07/27/16	3.1	8.8	-9.8	71	0 ⁸	NA ³
LFG-8	08/10/16	2.3	9.7	-9.2	77	19	NA ³
LFG-8	09/15/16	5.6	5.1	-11.6	74	15	NA ³
LFG-8	10/26/16	12.4	1.4	-12.5	45	12	NA ³
LFG-8	11/23/16	14.0	0.8	-12.6	51	0 ⁸	NA ³
LFG-8	12/13/16	0.0	11.9	-15.8	34	0 ⁸	NA ³
LFG-8	01/10/17	27.3	0.3	-12.8	38	20	NA ³
LFG-8	02/14/17	5.5	5.3	-15.4	44	20	NA ³
LFG-8	03/07/17	19.0	1.1	-14.7	47	15	NA ³
LFG-8	04/05/17	19.6	2.0	-14.1	53	15	NA ³
LFG-8	05/25/17	13.2	0.0	-17.1	65	0 ⁸	NA ³
LFG-8	06/28/17	2.9	6.7	-14.3	67	0 ⁸	NA ³
LFG-8	07/24/17	3.6	6.9	-14.3	68	0 ⁸	NA ³
LFG-8	08/14/17	3.9	6.9	-14.1	66	0 ⁸	NA ³
LFG-8	09/13/17	3.1	9.8	-13.0	74	16	NA ³
LFG-8	10/30/17	7.9	3.6	-16.0	49	0 ⁸	NA ³
LFG-8	11/17/17	3.6	8.8	-13.0	41	19	NA ³
LFG-8	12/07/17	4.4	9.0	-13.0	37	0 ⁸	NA ³
LFG-9	08/27/08 ¹	20.9	0.0	0.0	70	-	-
LFG-9	09/23/08	28.1	0.0	-1.0	62	10	-
LFG-9	09/25/08	4.0	3.0	-1.2	56	11	-
LFG-9	10/01/08	0.0	9.5	-1.4	60	10	-
LFG-9	10/07/08	0.0	11.8	-1.2	60	10	-
LFG-9	10/15/08	0.0	12.8	-1.4	60	10	-
LFG-9	10/30/08	0.0	13.5	-1.0	64	10	-
LFG-9	11/13/08	0.0	13.6	-1.5	58	11	-
LFG-9	11/26/08	0.0	13.5	-1.3	58	11	-
LFG-9	01/22/09 ²	0.0	13.3	-1.6	50	10	1,160
LFG-9	02/05/09	0.0	11.5	-1.6	48	10	345
LFG-9	02/16/09	0.0	16.3	-1.8	46	10	247
LFG-9	03/16/09	0.0	15.7	-2.0	52	10	269
LFG-9	04/24/09	0.0	16.3	-1.4	60	10	520
LFG-9	05/20/09	0.0	16.0	-1.2	60	10	219
LFG-9	06/23/09	0.0	14.2	-0.9	70	10	243
LFG-9	07/23/09	0.0	13.3	-0.8	72	10	500
LFG-9	08/20/09	0.0	13.6	-0.9	74	10	563
LFG-9	09/23/09	0.0	13.8	-0.5	80	10	537
LFG-9	10/20/09	0.0	14.6	-1.0	74	10	681

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-9	11/24/09	0.0	15.6	-0.6	70	10	801
LFG-9	12/29/09	0.0	15.4	-0.8	60	10	434
LFG-9	01/29/10	0.0	18.5	-0.8	50	10	383
LFG-9	02/22/10	0.0	13.8	-0.8	45	10	1,870
LFG-9	03/26/10	0.0	16.3	-0.6	48	10	955
LFG-9	04/22/10	0.0	17.0	-0.7	60	10	305
LFG-9	05/18/10	0.0	16.4	-0.6	60	10	1,990
LFG-9	06/29/10	0.0	15.4	-1.0	64	10	-
LFG-9	07/23/10	0.0	14.8	-0.7	70	10	730
LFG-9	08/27/10	1.2	0.0	-0.6	76	10	NA ³
LFG-9	10/01/10	0.0	2.5	-0.8	70	10	NA ³
LFG-9	10/22/10	0.0	4.3	-0.4	72	10	NA ³
LFG-9	11/29/10	0.0	15.6	-0.6	60	10	1,490
LFG-9	12/22/10	0.1	11.9	-0.8	58	10	1,265
LFG-9	01/24/11	0.1	16.2	-0.6	56	10	1,040
LFG-9	02/28/11	0.1	16.6	-0.8	50	10	707
LFG-9	04/13/11	0.0	17.2	-0.8	50	10	860
LFG-9	04/29/11	0.0	16.3	-0.9	52	10	2,810
LFG-9	05/27/11	0.0	17.6	-0.6	52	10	1,880
LFG-9	06/24/11	0.0	17.3	-1.1	68	10	1,560
LFG-9	07/22/11	0.0	14.5	-0.7	66	10	237
LFG-9	08/25/11	0.0	10.6	-0.7	77	10	NA ³
LFG-9	09/30/11	0.0	16.8	-0.4	76	10	320
LFG-9	10/26/11	0.0	15.7	-0.4	73	10	530
LFG-9	11/22/11	0.0	16.7	-0.3	71	10	660
LFG-9	12/29/11	1.0	14.4	-0.5	70	10	49,900
LFG-9	01/26/12	0.0	13.3	-0.4	62	10	4,650
LFG-9	02/21/12	0.0	16.5	-0.3	46	10	1,010
LFG-9	03/30/12	0.0	17.6	-0.4	62	10	335
LFG-9	04/27/12	0.0	16.6	-0.6	60	10	500
LFG-9	05/25/12	0.0	16.1	-1.2	58	10	400
LFG-9	06/26/12	0.0	10.2	-0.6	69	10	NA ³
LFG-9	07/25/12	0.0	11.8	-0.5	78	10	3,810
LFG-9	08/22/12	0.0	15.9	-0.4	70	10	560
LFG-9	09/25/12	0.0	15.4	-0.4	68	10	170
LFG-9	10/30/12	0.0	16.9	-0.3	60	10	88 ⁶
LFG-9	11/21/12	0.0	17.3	-0.3	60	10	210
LFG-9	12/21/12 ⁷	0.0	4.4	-0.3	50	10	NA ³
LFG-9	01/03/13 ⁷	0.0	17.8	-0.2	63	10	701
LFG-9	01/28/13	0.0	17.7	-0.2	55	10	746

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible				Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		by FID (ppm)
LFG-9	02/27/13	0.0	18.7	-0.3	57	10	598
LFG-9	03/25/13	0.0	18.2	-0.4	58	10	1,470
LFG-9	04/26/13	0.1	10.9	-0.6	63	10	2,130
LFG-9	05/30/13	0.0	17.7	-44.3	62	10	180
LFG-9	06/27/13	0.0	15.6	-1.0	69	10	260
LFG-9	07/25/13	0.0	17.4	-0.4	74	10	240
LFG-9	08/30/13	0.0	17.0	-0.2	75	10	180
LFG-9	09/25/13	0.0	17.1	-0.3	78	10	130
LFG-9	10/23/13	0.0	17.8	-0.3	71	10	70
LFG-9	11/20/13	0.0	17.5	-0.3	65	10	100
LFG-9	12/18/13	0.0	18.6	-0.3	60	10	102
LFG-9	05/13/14 ¹⁰	0.4	9.8	-2.2	50	10	NA ³
LFG-9	05/28/14 ¹⁰	0.0	15.6	-0.6	60	10	3,580
LFG-9	06/26/14	0.0	15.2	-0.5	60	10	380 ⁶
LFG-9	07/31/14	0.0	3.5	-0.3	64	10	NA ³
LFG-9	08/28/14	0.2	3.1	-0.4	71	11	NA ³
LFG-9	09/26/14	0.0	14.9	-0.3	72	10	39
LFG-9	10/24/14	0.0	17.1	-0.3	68	10	170
LFG-9	11/19/14	0.0	14.1	-0.3	61	10	100
LFG-9	12/17/14	0.0	18.4	-0.6	55	10	41
LFG-9	01/21/15	0.0	18.8	-0.4	54	10	88
LFG-9	02/26/15	0.0	19.6	-0.1	37	0 ⁴	810
LFG-9	03/17/15	0.0	16.7	-0.6	50	10	300
LFG-9	04/17/15	0.0	16.0	-1.8	56	10	49
LFG-9	05/12/15	0.0	19.4	-1.0	53	10	220
LFG-9	06/25/15	0.0	17.8	-0.9	63	10	18
LFG-9	07/31/15	0.0	18.4	-0.7	70	10	50
LFG-9	08/19/15	0.0	18.5	-0.8	68	10	380
LFG-9	09/24/15	0.0	16.4	-0.8	70	10	430
LFG-9	10/22/15	0.0	17.8	-0.4	67	9	360
LFG-9	11/12/15	0.0	12.3	-0.5	65	15	200
LFG-9	12/17/15	0.0	12.4	-0.4	58	5	NA ³
LFG-9	01/21/16	0.0	11.3	-3.5	30	0 ^{4,8}	NA ³
LFG-9	02/24/16	0.0	14.0	-0.8	36	7	NA ³
LFG-9	03/22/16	0.0	13.7	-0.3	50	9	NA ³
LFG-9	04/22/16	0.0	16.2	-0.6	63	10	NA ³
LFG-9	05/19/16	0.0	16.9	-0.7	58	10	810
LFG-9	06/14/16	0.0	16.9	-0.7	60	10	590
LFG-9	07/27/16	0.0	16.1	1.0	70	0 ⁸	930
LFG-9	08/10/16	0.0	14.9	-0.8	74	0 ⁸	NA ³

Appendix E.3

**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)			
LFG-9	09/15/16	0.0	16.7	-0.7	72	10	1,200
LFG-9	10/26/16	0.0	11.2	-0.2	47	5	NA ³
LFG-9	11/23/16	0.0	10.5	-0.2	48	10	NA ³
LFG-9	12/13/16	0.0	11.9	0.2	31	0 ⁸	NA ³
LFG-9	01/10/17	0.0	13.5	0.2	34	7	NA ³
LFG-9	02/14/17	0.0	15.5	-0.1	50	11	NA ³
LFG-9	03/07/17	0.0	10.3	-0.2	44	10	NA ³
LFG-9	04/05/17	0.0	11.1	-13.5	51	10	NA ³
LFG-9	05/25/17	0.0	13.4	-0.1	65	5	NA ³
LFG-9	06/28/17	0.0	14.3	0.0	66	0 ⁸	NA ³
LFG-9	07/24/17	0.0	13.6	-14.0	70	0 ⁸	NA ³
LFG-9	08/14/17	0.0	13.4	-14.2	68	7	NA ³
LFG-9	09/13/17	0.0	12.4	-0.2	72	10	NA ³
LFG-9	10/30/17	0.0	11.4	0.0	46	0 ⁸	NA ³
LFG-9	11/17/17	0.0	13.5	-0.2	45	8	NA ³
LFG-9	12/07/17	0.0	14.2	-0.2	38	0 ⁸	NA ³

Notes:

¹ Pre-startup readings

² System was restarted on 1-19-2009 after being down for a month for SVE well cleaning and condensate collection system installation.

³ No reading could be obtained; FID flamed out because of low oxygen level.

⁴ Values could not be determined because well was frozen.

⁵ Valve is fully open

⁶ FID taken with Thermo Scientific TVA 1000 Vapor Analyzer.

⁷ System was shutdown on 11/21/12 following monthly monitoring for 1 month shutdown period.

Post 1 month shutdown monitoring was conducted at startup (12/21/12) and two weeks after startup (1/3/13).

⁸ Air flow is heard through the pipe, but no flow measurement could be determined.

⁹ Value could not be determined because of an equipment malfunction.

¹⁰ System was shutdown on 1/10/14 for a 4 month shutdown period.

Post 4 month shutdown monitoring was conducted at startup (5/13/14) and two weeks after startup (5/28/14).

¹¹ Well is not under vacuum; unable to obtain flow reading.

With approval from the WDNR on 10/21/15, System modifications occurred on 10/29/15. Modifications included operating the system on a part time schedule (16 hrs/day) and adjusting the LFG wells to focus extraction in the vicinity of the GP-2 nest.

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-01	08/27/08 ¹	34.0	0.0	0.0
GP-01	09/23/08	30.9	0.0	0.0
GP-01	09/25/08	1.5	11.1	-0.4
GP-01	10/02/08	0.0	17.8	-0.6
GP-01	10/07/08	0.0	18.3	-0.6
GP-01	10/15/08	0.0	19.0	-0.6
GP-01	10/30/08	0.0	19.4	-0.5
GP-01	11/13/08	0.0	20.0	-0.7
GP-01	11/26/08	0.0	20.5	-0.6
GP-01	01/22/09 ²	0.0	19.6	-0.9
GP-01	02/05/09	0.0	20.2	-0.8
GP-01	02/17/09	0.0	20.6	-1.2
GP-01	03/16/09	0.0	19.7	-1.2
GP-01	04/24/09	0.0	19.9	-1.3
GP-01	05/20/09	0.0	20.4	-1.2
GP-01	06/23/09	0.0	18.8	-1.2
GP-01	07/23/09	0.0	19.5	-1.0
GP-01	10/20/09	0.0	20.5	-1.6
GP-01	02/01/10	0.0	19.4	-1.2
GP-01	04/22/10	0.0	20.1	-1.4
GP-01	07/23/10	0.0	19.8	-1.2
GP-01	10/22/10	0.0	20.8	-0.9
GP-01	01/24/11	0.1	19.1	-1.4
GP-01	04/29/11	0.0	20.5	-2.3
GP-01	07/22/11	0.0	18.0	-1.1
GP-01	10/26/11	0.0	19.7	-1.0
GP-01	01/26/12	0.0	20.9	-1.2
GP-01	04/27/12	0.0	19.5	-1.3
GP-01	07/25/12	0.0	19.7	-1.3
GP-01	11/21/12	0.0	20.6	-0.8
GP-01	12/21/12 ³	0.0	20.5	-1.0
GP-01	01/03/13 ³	0.0	20.5	0.0
GP-01	04/26/13	0.0	20.1	-2.3
GP-01	07/25/13	0.0	19.7	-0.8
GP-01	10/23/13	0.0	20.9	-0.8
GP-01	01/10/14	0.0	21.0	-0.3

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-01	02/07/14	0.0	20.2	0.0
GP-01	03/12/14	0.0	19.5	0.0
GP-01	04/14/14	0.0	19.4	0.0
GP-01	05/13/14 ⁴	0.0	20.6	-0.9
GP-01	08/28/14	0.1	15.0	-0.9
GP-01	10/24/14	0.0	20.4	-0.8
GP-01	01/21/15	0.0	20.7	-0.8
GP-01	04/17/15	0.0	20.2	-0.7
GP-01	07/31/15	0.0	19.5	-0.9
GP-01	10/22/15	0.0	20.9	-0.8
GP-01	11/12/15	0.0	20.0	-0.1
GP-01	12/17/15	0.0	20.3	-0.6
GP-01	01/21/16	0.0	20.3	-0.3
GP-01	04/22/16	0.0	19.7	-0.1
GP-01	07/27/16	0.0	17.2	0.0
GP-01	10/26/16	0.0	19.9	-0.1
GP-01	01/10/17	0.0	20.1	0.0
GP-01	04/05/17	0.0	20.0	0.0
GP-01	07/24/17	0.0	20.1	0.0
GP-01	10/30/17	0.0	19.8	0.9
GP-1A	08/27/08 ¹	23.8	3.2	0.0
GP-1A	09/23/08	18.2	4.9	0.0
GP-1A	09/25/08	0.0	19.5	-0.4
GP-1A	10/02/08	0.0	21.0	-0.6
GP-1A	10/07/08	0.0	20.1	-0.6
GP-1A	10/15/08	0.0	20.5	-0.6
GP-1A	10/30/08	0.0	20.4	-0.6
GP-1A	11/13/08	0.0	20.6	-0.6
GP-1A	11/26/08	0.0	21.2	-0.7
GP-1A	01/22/09 ²	0.0	21.1	-0.9
GP-1A	02/05/09	0.0	20.5	-0.8
GP-1A	02/17/09	0.0	21.0	-1.2
GP-1A	03/16/09	0.0	20.0	-1.1
GP-1A	04/24/09	0.0	20.4	-1.4
GP-1A	05/20/09	0.0	20.5	-1.4

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-1A	06/23/09	0.0	19.9	-1.2
GP-1A	07/23/09	0.0	19.8	-1.2
GP-1A	10/20/09	0.0	20.6	-1.8
GP-1A	02/01/10	0.0	19.3	-1.4
GP-1A	04/22/10	0.0	20.2	-1.5
GP-1A	07/23/10	0.0	19.9	-1.4
GP-1A	10/22/10	0.0	20.8	-1.1
GP-1A	01/24/11	0.1	19.3	-1.6
GP-1A	04/29/11	0.0	20.5	-2.4
GP-1A	07/22/11	0.0	18.8	-1.3
GP-1A	10/26/11	0.0	19.7	-1.3
GP-1A	01/26/12	0.0	20.8	-1.4
GP-1A	04/27/12	0.0	19.6	-1.4
GP-1A	07/25/12	0.0	20.5	-1.8
GP-1A	11/21/12	0.0	20.7	-1.0
GP-1A	12/21/12 ³	0.0	20.6	-1.2
GP-1A	01/03/13 ³	0.0	20.6	0.0
GP-1A	04/26/13	0.0	20.5	-2.2
GP-1A	07/25/13	0.0	19.7	-1.2
GP-1A	10/23/13	0.0	20.8	0.0
GP-1A	01/10/14	0.0	21.2	-0.5
GP-1A	02/07/14	0.0	21.0	-0.1
GP-1A	03/12/14	0.0	20.3	0.0
GP-1A	04/14/14	0.0	19.8	0.0
GP-1A	05/13/14 ⁴	0.0	19.7	-1.2
GP-1A	08/28/14	0.0	20.8	-1.0
GP-1A	10/24/14	0.0	20.4	-0.9
GP-1A	01/21/15	0.0	20.7	-1.0
GP-1A	04/17/15	0.0	20.2	-0.9
GP-1A	07/31/15	0.0	20.7	-1.0
GP-1A	10/22/15	0.0	21.2	-1.1
GP-1A	11/12/15	0.0	21.0	-0.2
GP-1A	12/17/15	0.0	12.8	-0.6
GP-1A	01/21/16	0.0	20.6	-0.4
GP-1A	04/22/16	0.0	20.5	-0.3
GP-1A	07/27/16	0.0	19.2	0.0

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-1A	10/26/16	0.0	19.2	-0.2
GP-1A	01/10/17	0.0	20.3	0.0
GP-1A	04/05/17	0.0	20.3	0.0
GP-1A	07/24/17	0.0	20.7	0.0
GP-1A	10/30/17	0.0	20.0	0.9
GP-02	08/27/08 ¹	41.4	0.0	-0.2
GP-02	09/23/08	41.8	0.0	-1.2
GP-02	09/25/08	13.3	5.2	-1.5
GP-02	10/02/08	0.1	2.8	-1.5
GP-02	10/07/08	0.0	9.2	-0.6
GP-02	10/15/08	0.0	13.1	-1.6
GP-02	10/30/08	0.0	20.4	-1.8
GP-02	11/13/08	0.0	20.6	-2.0
GP-02	11/26/08	0.0	20.6	-2.0
GP-02	01/22/09 ²	0.0	15.8	-1.9
GP-02	02/05/09	0.0	15.8	-1.9
GP-02	02/17/09	0.0	21.0	-2.2
GP-02	03/16/09	0.0	20.7	-2.5
GP-02	04/24/09	0.0	18.8	-2.0
GP-02	05/20/09	0.0	18.3	-1.8
GP-02	06/23/09	0.0	19.8	-4.1
GP-02	07/23/09	0.0	19.4	-1.0
GP-02	10/20/09	0.0	20.1	-1.6
GP-02	02/01/10	0.0	19.2	-1.3
GP-02	04/22/10	0.0	18.4	-1.2
GP-02	07/23/10	0.0	20.1	-1.4
GP-02	10/22/10	0.0	20.9	-0.9
GP-02	01/24/11	0.0	18.9	-1.0
GP-02	04/29/11	0.0	21.0	-1.4
GP-02	07/22/11	0.0	14.4	0.0
GP-02	10/26/11	0.0	18.4	-0.6
GP-02	01/26/12	0.0	20.4	-1.0
GP-02	04/27/12	0.0	19.7	-0.8
GP-02	07/25/12	0.0	15.7	-0.8
GP-02	11/21/12 ³	0.0	20.5	-0.4

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-02	12/21/12 ³	0.0	20.4	-0.3
GP-02	01/03/13 ³	0.0	20.6	-1.6
GP-02	04/26/13	0.0	17.8	-1.0
GP-02	07/25/13	0.0	20.4	-0.6
GP-02	10/23/13	0.0	20.2	-0.4
GP-02	01/10/14	0.0	19.5	-0.3
GP-02	02/07/14	0.0	9.3	0.0
GP-02	03/12/14	12.2	0.6	0.0
GP-02	04/14/14	13.6	0.0	0.0
GP-02	05/13/14 ⁴	6.2	17.2	-1.6
GP-02	05/28/14 ⁴	0.0	14.7	-0.3
GP-02	08/28/14	11.1	3.7	-0.5
GP-02	10/24/14	0.0	19.2	-0.1
GP-02	01/21/15	0.0	20.1	-0.4
GP-02	04/17/15	0.0	19.3	-0.4
GP-02	07/31/15	0.0	20.8	-0.6
GP-02	10/22/15	0.0	18.6	-0.6
GP-02	11/12/15	0.0	18.0	-0.5
GP-02	12/17/15	0.0	17.5	-0.5
GP-02	01/21/16	0.0	19.4	-0.8
GP-02	04/22/16	0.0	19.1	-0.4
GP-02	07/27/16	0.0	16.2	0.0
GP-02	10/26/16	0.0	14.2	-0.2
GP-02	01/10/17	0.0	16.4	0.2
GP-02	04/05/17	0.0	17.1	-0.1
GP-02	07/24/17	0.0	16.9	-0.2
GP-02	10/30/17	0.0	16.9	1.0
GP-2A	08/27/08 ¹	37.4	0.0	-0.4
GP-2A	09/23/08	14.0	12.9	-2.7
GP-2A	09/25/08	16.6	9.6	-2.7
GP-2A	10/02/08	0.0	20.9	-3.5
GP-2A	10/07/08	0.0	16.0	-0.7
GP-2A	10/15/08	0.0	15.9	-3.7
GP-2A	10/30/08	0.0	20.4	-3.7
GP-2A	11/13/08	0.0	20.5	-3.7

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-2A	11/26/08	0.0	20.5	-3.7
GP-2A	01/22/09 ²	0.0	17.7	-3.7
GP-2A	02/05/09	0.0	17.7	-3.7
GP-2A	02/17/09	0.0	20.9	-2.9
GP-2A	03/16/09	0.0	20.7	-4.3
GP-2A	04/24/09	0.0	19.9	-4.2
GP-2A	05/20/09	0.0	20.5	-3.3
GP-2A	06/23/09	0.0	20.0	-1.6
GP-2A	07/23/09	0.0	19.9	-3.4
GP-2A	10/20/09	0.0	20.7	-3.7
GP-2A	02/01/10	0.0	19.4	-3.0
GP-2A	04/22/10	0.0	20.2	-3.2
GP-2A	07/23/10	0.0	20.1	-3.6
GP-2A	10/22/10	0.0	20.8	-2.1
GP-2A	01/24/11	0.0	19.6	-2.5
GP-2A	04/29/11	0.0	20.9	-10.5
GP-2A	07/22/11	0.0	17.1	-1.5
GP-2A	10/26/11	0.0	19.6	-1.8
GP-2A	01/26/12	0.0	20.1	-1.7
GP-2A	04/27/12	0.0	19.7	-2.2
GP-2A	07/25/12	0.0	17.4	-0.5
GP-2A	11/21/12 ³	0.0	19.8	-0.7
GP-2A	12/21/12 ³	0.0	20.5	-0.6
GP-2A	01/03/13 ³	0.0	19.9	-0.5
GP-2A	04/26/13	0.0	19.8	-1.0
GP-2A	07/25/13	0.0	19.3	-1.4
GP-2A	10/23/13	0.0	20.3	-1.0
GP-2A	01/10/14	0.0	19.0	-0.6
GP-2A	02/07/14	0.0	11.7	0.2
GP-2A	03/12/14	5.9	5.6	0.0
GP-2A	04/14/14	10.3	2.7	0.0
GP-2A	05/13/14 ⁴	10.5	8.0	-3.6
GP-2A	05/28/14 ⁴	3.3	12.6	-0.2
GP-2A	08/28/14	6.8	3.8	-0.7
GP-2A	10/24/14	0.0	19.6	-0.2
GP-2A	01/21/15	0.0	20.3	-2.1

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-2A	04/17/15	0.0	19.7	-1.5
GP-2A	07/31/15	0.0	20.5	-2.0
GP-2A	10/22/15	0.0	19.6	-2.2
GP-2A	11/12/15	0.0	20.3	-1.8
GP-2A	12/17/15	0.0	19.8	-1.6
GP-2A	01/21/16	0.0	19.8	-0.8
GP-2A	04/22/16	0.0	18.9	-1.8
GP-2A	07/27/16	0.0	17.0	0.0
GP-2A	10/26/16	0.0	17.5	-0.3
GP-2A	01/10/17	0.0	17.9	-0.3
GP-2A	04/05/17	0.0	18.5	-0.1
GP-2A	07/24/17	0.0	18.8	-0.1
GP-2A	10/30/17	0.0	18.7	1.0
GP-2B	08/27/08 ¹	17.8	10.4	0.0
GP-2B	09/23/08	13.2	13.2	-1.2
GP-2B	09/25/08	0.0	19.5	-1.5
GP-2B	10/02/08	0.0	21.0	-1.5
GP-2B	10/07/08	0.0	20.6	-1.1
GP-2B	10/15/08	0.0	20.7	-2.6
GP-2B	10/30/08	0.0	20.4	-2.2
GP-2B	11/13/08	0.0	20.6	-1.4
GP-2B	11/26/08	0.0	20.6	-1.4
GP-2B	01/22/09 ²	0.0	21.2	-1.8
GP-2B	02/05/09	0.0	21.2	-1.8
GP-2B	02/17/09	0.0	21.0	-0.2
GP-2B	03/16/09	0.0	20.7	-2.2
GP-2B	04/24/09	0.0	20.3	-2.4
GP-2B	05/20/09	0.0	20.7	-1.2
GP-2B	06/23/09	0.0	20.1	-2.8
GP-2B	07/23/09	0.0	20.0	-1.9
GP-2B	10/20/09	0.0	20.6	-2.4
GP-2B	02/01/10	0.0	19.4	-1.4
GP-2B	04/22/10	0.0	20.2	-1.7
GP-2B	07/23/10	0.0	19.9	-2.7
GP-2B	10/22/10	0.0	20.8	-1.0

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-2B	01/24/11	0.0	19.7	-1.9
GP-2B	04/29/11	0.0	21.0	-1.5
GP-2B	07/22/11	0.0	19.0	-0.8
GP-2B	10/26/11	0.0	19.7	-2.0
GP-2B	01/26/12	0.0	21.0	-1.1
GP-2B	04/27/12	0.0	19.7	-2.2
GP-2B	07/25/12	0.0	20.4	-0.2
GP-2B	11/21/12 ³	0.0	20.7	-0.4
GP-2B	12/21/12 ³	0.0	20.5	-0.7
GP-2B	01/03/13 ³	0.0	20.5	-1.8
GP-2B	04/26/13	0.0	20.3	-0.8
GP-2B	07/25/13	0.0	20.3	-1.2
GP-2B	10/23/13	0.0	20.9	-1.2
GP-2B	01/10/14	0.0	19.8	-1.6
GP-2B	02/07/14	0.0	18.5	0.4
GP-2B	03/12/14	1.0	16.1	-0.6
GP-2B	04/14/14	3.1	12.1	-0.6
GP-2B	05/13/14 ⁴	0.0	20.5	-2.8
GP-2B	05/28/14 ⁴	0.0	20.1	-0.9
GP-2B	08/28/14	0.2	15.3	-0.2
GP-2B	10/24/14	0.0	20.6	0.2
GP-2B	01/21/15	0.0	20.8	-2.0
GP-2B	04/17/15	0.0	20.2	-0.6
GP-2B	07/31/15	0.0	20.8	-1.3
GP-2B	10/22/15	0.0	20.6	-1.7
GP-2B	11/12/15	0.0	20.8	-2.7
GP-2B	12/17/15	0.0	19.4	-1.8
GP-2B	01/21/16	0.0	20.8	-0.7
GP-2B	04/22/16	0.0	20.6	-1.8
GP-2B	07/27/16	0.0	18.9	0.2
GP-2B	10/26/16	0.0	19.0	-0.1
GP-2B	01/10/17	0.0	19.4	-0.2
GP-2B	04/05/17	0.0	17.3	-0.2
GP-2B	07/24/17	0.0	17.9	-0.1
GP-2B	10/30/17	0.0	17.5	1.0

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-03	08/27/08 ¹	0.0	12.5	0.0
GP-03	09/23/08	0.0	13.4	-0.3
GP-03	09/25/08	0.0	18.1	-0.2
GP-03	10/02/08	0.0	21.1	-0.3
GP-03	10/07/08	0.0	20.5	0.0
GP-03	10/15/08	0.0	20.5	-0.3
GP-03	10/30/08	0.0	20.2	-0.2
GP-03	11/13/08	0.0	20.5	-0.6
GP-03	11/26/08	0.0	20.5	-0.6
GP-03	01/22/09 ²	0.0	21.0	-0.6
GP-03	02/05/09	0.0	20.4	-0.5
GP-03	02/17/09	0.0	21.1	-0.7
GP-03	03/16/09	0.0	19.9	-0.8
GP-03	04/24/09	0.0	20.2	-0.5
GP-03	05/20/09	0.0	20.1	-0.3
GP-03	06/23/09	0.0	19.8	-0.4
GP-03	07/23/09	0.0	19.7	-0.2
GP-03	10/20/09	0.0	20.7	-0.3
GP-03	02/01/10	0.0	19.5	-0.2
GP-03	04/22/10	0.0	20.2	-0.2
GP-03	07/23/10	0.0	20.0	-0.3
GP-03	10/22/10	0.0	21.0	-0.1
GP-03	01/24/11	0.0	19.6	-0.2
GP-03	04/29/11	0.0	20.7	-0.2
GP-03	07/22/11	0.0	18.4	-0.1
GP-03	10/26/11	0.0	19.4	0.0
GP-03	01/26/12	0.0	20.5	0.0
GP-03	04/27/12	0.0	19.4	-0.2
GP-03	07/25/12	0.0	20.0	0.0
GP-03	11/21/12 ³	0.0	20.5	0.0
GP-03	12/21/12 ³	0.0	20.7	-0.2
GP-03	01/03/13 ³	0.0	20.6	-0.1
GP-03	04/26/13	0.0	20.4	-0.1
GP-03	07/25/13	0.0	20.0	-0.1
GP-03	10/23/13	0.0	20.7	0.0
GP-03	01/10/14	0.0	20.2	-0.2

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-03	02/07/14	0.0	20.8	0.4
GP-03	03/12/14	0.0	20.6	0.0
GP-03	04/14/14	0.0	19.9	-0.1
GP-03	05/13/14 ⁴	0.0	19.9	-1.0
GP-03	08/28/14	0.0	18.6	-0.1
GP-03	10/24/14	0.0	20.3	0.0
GP-03	01/21/15	0.0	20.9	-0.1
GP-03	04/17/15	0.0	19.9	-0.3
GP-03	07/31/15	0.0	20.7	0.0
GP-03	10/22/15	0.0	20.1	-0.1
GP-03	11/12/15	0.0	20.7	-0.2
GP-03	12/17/15	0.0	20.8	-0.4
GP-03	01/21/16	0.0	20.4	-0.4
GP-03	04/22/16	0.0	20.3	-0.3
GP-03	07/27/16	0.0	18.0	0.1
GP-03	10/26/16	0.0	19.1	-0.2
GP-03	01/10/17	0.0	20.5	-0.1
GP-03	04/05/17	0.0	20.2	-0.1
GP-03	07/24/17	0.0	20.0	-0.1
GP-03	10/30/17	0.0	20.2	0.9
GP-3A	08/27/08 ¹	0.0	12.2	0.0
GP-3A	09/23/08	0.1	12.2	-0.2
GP-3A	09/25/08	0.0	11.7	-0.2
GP-3A	10/02/08	0.0	14.8	-0.3
GP-3A	10/07/08	0.0	18.2	-0.2
GP-3A	10/15/08	0.0	18.0	-0.6
GP-3A	10/30/08	0.0	20.3	-0.4
GP-3A	11/13/08	0.0	20.5	-0.8
GP-3A	11/26/08	0.0	20.5	-0.8
GP-3A	01/22/09 ²	0.0	18.7	-0.8
GP-3A	02/05/09	0.0	19.1	-0.6
GP-3A	02/17/09	0.0	20.0	-0.6
GP-3A	03/16/09	0.0	19.4	-0.9
GP-3A	04/24/09	0.0	19.9	-0.8
GP-3A	05/20/09	0.0	19.7	-0.4

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-3A	06/23/09	0.0	19.2	-0.7
GP-3A	07/23/09	0.0	19.7	-0.4
GP-3A	10/20/09	0.0	20.7	-0.4
GP-3A	02/01/10	0.0	19.6	-0.1
GP-3A	04/22/10	0.0	20.0	-0.3
GP-3A	07/23/10	0.0	19.4	-0.5
GP-3A	10/22/10	0.0	20.9	-0.1
GP-3A	01/24/11	0.0	19.7	-0.4
GP-3A	04/29/11	0.0	20.8	-0.2
GP-3A	07/22/11	0.0	17.5	0.0
GP-3A	10/26/11	0.0	18.9	-0.2
GP-3A	01/26/12	0.0	19.7	-0.2
GP-3A	04/27/12	0.0	19.6	-0.4
GP-3A	07/25/12	0.0	19.4	0.0
GP-3A	11/21/12 ³	0.0	19.2	-0.1
GP-3A	12/21/12 ³	0.0	20.7	-0.3
GP-3A	01/03/13 ³	0.0	20.2	-0.2
GP-3A	04/26/13	0.0	19.5	-0.1
GP-3A	07/25/13	0.0	20.0	-0.4
GP-3A	10/23/13	0.0	19.4	-0.2
GP-3A	01/10/14	0.0	18.8	0.0
GP-3A	02/07/14	0.0	19.5	0.3
GP-3A	03/12/14	0.0	19.5	0.0
GP-3A	04/14/14	0.0	16.3	0.0
GP-3A	05/13/14 ⁴	0.0	20.0	-1.2
GP-3A	08/28/14	0.0	19.0	0.0
GP-3A	10/24/14	0.0	18.4	0.0
GP-3A	01/21/15	0.0	19.3	-0.1
GP-3A	04/17/15	0.0	19.2	-0.4
GP-3A	07/31/15	0.0	19.6	-0.1
GP-3A	10/22/15	0.0	18.4	-0.2
GP-3A	11/12/15	0.0	18.7	-0.6
GP-3A	12/17/15	0.0	17.6	-0.6
GP-3A	01/21/16	0.0	18.5	-0.2
GP-3A	04/22/16	0.0	18.1	-0.6
GP-3A	07/27/16	0.0	17.3	0.2

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-3A	10/26/16	0.0	17.9	-0.2
GP-3A	01/10/17	0.0	20.7	-0.4
GP-3A	04/05/17	0.0	20.2	0.0
GP-3A	07/24/17	0.0	20.4	0.0
GP-3A	10/30/17	0.0	19.9	0.9
GP-4A	08/27/08 ¹	46.6	0.0	0.0
GP-4A	09/23/08	46.2	0.0	-0.2
GP-4A	09/25/08	1.1	16.8	-2.7
GP-4A	10/02/08	0.0	20.5	-2.5
GP-4A	10/07/08	0.0	19.9	-2.6
GP-4A	10/15/08	-	-	-
GP-4A	10/30/08	0.0	20.3	-2.7
GP-4A	11/13/08	0.0	20.6	-4.6
GP-4A	11/26/08	0.0	21.2	-3.3
GP-4A	01/22/09 ²	0.0	20.4	-4.2
GP-4A	02/05/09	0.0	20.3	-3.1
GP-4A	02/17/09	0.0	21.1	-4.7
GP-4A	03/16/09	0.0	19.9	-4.1
GP-4A	04/24/09	0.0	20.3	-2.4
GP-4A	05/20/09	0.0	20.1	-1.9
GP-4A	06/23/09	0.0	19.9	-1.8
GP-4A	07/23/09	0.0	20.0	-1.4
GP-4A	10/20/09	0.0	20.7	-3.4
GP-4A	02/01/10	0.0	19.6	-3.2
GP-4A	04/22/10	0.0	20.1	-2.5
GP-4A	07/23/10	0.0	20.0	-2.1
GP-4A	10/22/10	0.0	20.9	-1.0
GP-4A	01/24/11	0.1	19.4	-2.8
GP-4A	04/29/11	0.0	20.6	-5.1
GP-4A	07/22/11	0.0	18.6	-1.5
GP-4A	10/26/11	0.0	19.8	-1.1
GP-4A	01/26/12	0.0	20.4	-2.4
GP-4A	04/27/12	0.0	19.6	-1.7
GP-4A	07/25/12	0.0	20.6	-2.2
GP-4A	11/21/12 ³	0.0	20.6	-0.6

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-4A	12/21/12 ³	0.0	20.4	-2.0
GP-4A	01/03/13 ³	0.0	20.5	0.0
GP-4A	04/26/13	0.0	20.5	-2.8
GP-4A	07/25/13	0.0	20.0	-1.1
GP-4A	10/23/13	0.0	20.8	-1.2
GP-4A	01/10/14	0.0	20.5	-0.6
GP-4A	02/07/14	0.0	20.7	0.0
GP-4A	03/12/14	0.0	20.6	0.0
GP-4A	04/14/14	0.0	20.9	0.0
GP-4A	05/13/14 ⁴	0.0	20.6	-2.5
GP-4A	08/28/14	0.0	20.8	-1.3
GP-4A	10/24/14	0.0	20.4	-1.0
GP-4A	01/21/15	0.0	20.8	-1.2
GP-4A	04/17/15	0.0	20.1	-1.6
GP-4A	07/31/15	0.0	20.6	-1.6
GP-4A	10/22/15	0.0	20.7	-1.4
GP-4A	11/12/15	0.0	20.7	-2.1
GP-4A	12/17/15	0.0	19.0	-0.3
GP-4A	01/21/16	0.0	20.8	-0.9
GP-4A	04/22/16	0.0	20.4	-0.4
GP-4A	07/27/16	0.0	18.9	0.0
GP-4A	10/26/16	0.0	19.9	-0.8
GP-4A	01/10/17	0.0	20.5	-0.4
GP-4A	04/05/17	0.0	20.5	-0.4
GP-4A	07/24/17	0.0	20.6	-0.3
GP-4A	10/30/17	0.0	20.4	0.8
GP-8A	08/27/08 ¹	0.9	1.4	0.2
GP-8A	09/23/08	1.0	1.3	0.0
GP-8A	09/25/08	0.9	0.5	-0.1
GP-8A	10/02/08	0.6	8.9	-0.1
GP-8A	10/07/08	0.4	11.6	-0.2
GP-8A	10/15/08	0.0	18.4	-1.5
GP-8A	10/30/08	0.0	20.5	-0.4
GP-8A	11/13/08	0.0	20.5	-0.1
GP-8A	11/26/08	0.0	20.5	-0.1

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-8A	01/22/09 ²	0.0	20.4	-0.8
GP-8A	02/05/09	0.0	20.4	0.3
GP-8A	02/17/09	0.0	20.2	1.0
GP-8A	03/16/09	0.0	18.0	-0.5
GP-8A	04/24/09	0.0	19.7	-1.2
GP-8A	05/20/09	0.0	20.4	0.0
GP-8A	06/23/09	0.0	20.1	-1.5
GP-8A	07/23/09	0.0	20.0	-0.6
GP-8A	10/20/09	0.0	20.8	0.0
GP-8A	02/01/10	0.0	19.5	0.0
GP-8A	04/22/10	0.0	20.3	-0.4
GP-8A	07/23/10	0.0	19.2	-1.5
GP-8A	10/22/10	0.0	20.0	-0.3
GP-8A	01/24/11	0.0	18.6	-0.8
GP-8A	04/29/11	0.0	20.6	-8.5
GP-8A	07/22/11	0.0	18.8	-0.9
GP-8A	10/26/11	0.0	19.5	-1.5
GP-8A	01/26/12	0.0	20.8	-0.5
GP-8A	04/27/12	0.0	19.7	-1.5
GP-8A	07/25/12	0.0	19.6	0.0
GP-8A	11/21/12 ³	0.0	19.6	0.0
GP-8A	12/21/12 ³	0.0	20.5	-2.2
GP-8A	01/03/13 ³	0.0	20.6	-1.4
GP-8A	04/26/13	0.0	20.0	0.0
GP-8A	07/25/13	0.0	20.2	-0.8
GP-8A	10/23/13	0.0	20.8	-0.6
GP-8A	01/10/14	0.0	19.2	-0.5
GP-8A	02/07/14	0.0	19.5	0.4
GP-8A	03/12/14	0.0	20.6	-3.2
GP-8A	04/14/14	0.0	19.6	-0.4
GP-8A	05/13/14 ⁴	0.0	20.5	-2.2
GP-8A	08/28/14	0.0	20.3	0.2
GP-8A	10/24/14	0.0	19.8	0.5
GP-8A	01/21/15	0.0	20.2	-2.1
GP-8A	04/17/15	0.0	19.9	-0.1
GP-8A	07/31/15	0.0	20.3	-0.9

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-8A	10/22/15	0.0	19.8	-1.1
GP-8A	11/12/15	0.0	20.8	-2.8
GP-8A	12/17/15	0.0	20.7	-1.5
GP-8A	01/21/16	0.0	20.8	-0.9
GP-8A	04/22/16	0.0	20.6	-2.3
GP-8A	07/27/16	0.0	19.2	0.6
GP-8A	10/26/16	0.0	19.5	0.3
GP-8A	01/10/17	0.0	19.7	-0.1
GP-8A	04/05/17	0.0	19.9	0.0
GP-8A	07/24/17	0.0	19.8	-0.1
GP-8A	10/30/17	0.0	19.7	1.0
GP-8B	08/27/08 ¹	0.2	3.8	0.3
GP-8B	09/23/08	0.2	3.8	0.5
GP-8B	09/25/08	0.0	2.8	0.3
GP-8B	10/02/08	0.0	2.3	0.3
GP-8B	10/07/08	0.0	3.0	-0.1
GP-8B	10/15/08	0.0	8.4	-1.2
GP-8B	10/30/08	0.0	18.7	0.0
GP-8B	11/13/08	0.0	16.1	0.3
GP-8B	11/26/08	0.0	16.1	0.3
GP-8B	01/22/09 ²	0.0	15.9	-0.4
GP-8B	02/05/09	0.0	18.9	0.5
GP-8B	02/17/09	0.0	16.8	1.5
GP-8B	03/16/09	0.0	17.0	-0.2
GP-8B	04/24/09	0.0	18.4	-0.9
GP-8B	05/20/09	0.0	19.3	0.2
GP-8B	06/23/09	0.0	20.1	-1.2
GP-8B	07/23/09	0.0	20.0	-0.3
GP-8B	10/20/09	0.0	20.2	-0.8
GP-8B	02/01/10	0.0	19.1	-0.6
GP-8B	04/22/10	0.0	19.5	-0.3
GP-8B	07/23/10	0.0	19.6	-1.2
GP-8B	10/22/10	0.0	20.3	0.0
GP-8B	01/24/11	0.0	18.8	-0.6
GP-8B	04/29/11	0.0	20.6	-3.8

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-8B	07/22/11	0.0	18.2	-0.6
GP-8B	10/26/11	0.0	19.1	-1.4
GP-8B	01/26/12	0.0	20.4	-0.6
GP-8B	04/27/12	0.0	19.7	-1.3
GP-8B	07/25/12	0.0	19.8	0.0
GP-8B	11/21/12 ³	0.0	19.8	0.0
GP-8B	12/21/12 ³	0.0	20.5	-2.2
GP-8B	01/03/13 ³	0.0	20.7	-1.2
GP-8B	04/26/13	0.0	19.9	0.0
GP-8B	07/25/13	0.0	19.5	-0.4
GP-8B	10/23/13	0.0	20.7	-0.8
GP-8B	01/10/14	0.0	19.7	-2.2
GP-8B	02/07/14	0.0	20.1	0.5
GP-8B	03/12/14	0.0	20.6	0.0
GP-8B	04/14/14	0.0	19.5	0.0
GP-8B	05/13/14 ⁴	0.0	19.3	-2.1
GP-8B	08/28/14	0.0	19.8	0.4
GP-8B	10/24/14	0.0	19.6	0.6
GP-8B	01/21/15	0.0	21.1	-2.2
GP-8B	04/17/15	0.0	19.7	0.0
GP-8B	07/31/15	0.0	19.9	-0.6
GP-8B	10/22/15	0.0	19.8	-1.3
GP-8B	11/12/15	0.0	20.1	-2.9
GP-8B	12/17/15	0.0	18.5	-1.4
GP-8B	01/21/16	0.0	20.2	-0.9
GP-8B	04/22/16	0.0	19.9	-2.2
GP-8B	07/27/16	0.0	18.9	0.6
GP-8B	10/26/16	0.0	19.5	0.1
GP-8B	01/10/17	0.0	20.1	0.0
GP-8B	04/05/17	0.0	20.4	0.0
GP-8B	07/24/17	0.0	20.6	-0.1
GP-8B	10/30/17	0.0	20.2	0.9
GP-09	08/27/08 ¹	0.0	13.9	0.0
GP-09	09/23/08	0.0	19.9	0.0
GP-09	09/25/08	0.0	19.3	0.0

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-09	10/02/08	0.0	21.1	0.0
GP-09	10/07/08	0.0	20.4	0.0
GP-09	10/15/08	0.0	20.5	0.0
GP-09	10/30/08	0.0	20.3	-0.1
GP-09	11/13/08	0.0	20.5	-0.2
GP-09	11/26/08	0.0	20.5	-0.2
GP-09	01/22/09 ²	0.0	21.0	0.0
GP-09	02/05/09	0.0	20.4	0.0
GP-09	02/17/09	0.0	21.0	-0.1
GP-09	03/16/09	0.0	19.9	-0.3
GP-09	04/24/09	0.0	20.2	-0.2
GP-09	05/20/09	0.0	19.9	0.0
GP-09	06/23/09	0.0	19.6	-0.2
GP-09	07/23/09	0.0	19.9	0.0
GP-09	10/20/09	0.0	20.8	0.0
GP-09	02/01/10	0.0	19.5	0.0
GP-09	04/22/10	0.0	19.7	0.0
GP-09	07/23/10	0.0	19.2	-0.1
GP-09	10/22/10	0.0	20.4	0.0
GP-09	01/24/11	0.0	19.4	0.0
GP-09	04/29/11	0.0	20.2	0.0
GP-09	07/22/11	0.0	17.9	0.0
GP-09	10/26/11	0.0	19.5	0.0
GP-09	01/26/12	0.0	20.8	0.0
GP-09	04/27/12	0.0	19.2	-0.1
GP-09	07/25/12	0.0	16.9	0.0
GP-09	11/21/12 ³	0.0	20.5	0.0
GP-09	12/21/12 ³	0.0	20.4	0.0
GP-09	01/03/13 ³	0.0	20.5	0.0
GP-09	04/26/13	0.0	20.2	0.0
GP-09	07/25/13	0.0	19.6	0.0
GP-09	10/23/13	0.0	20.7	-0.1
GP-09	01/10/14 ⁵	-	-	-
GP-09	02/07/14	0.0	20.3	0.0
GP-09	03/12/14	0.0	20.5	0.0
GP-09	04/14/14	0.0	17.2	0.0

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-09	05/13/14 ⁴	0.0	19.9	-0.4
GP-09	08/28/14	0.0	19.4	0.0
GP-09	10/24/14	0.0	20.0	0.2
GP-09	01/21/15	0.0	20.9	-0.5
GP-09	04/17/15	0.0	19.7	0.0
GP-09	07/31/15	0.0	20.2	0.0
GP-09	10/22/15	0.0	19.8	-0.1
GP-09	11/12/15	0.0	19.8	-0.2
GP-09	12/17/15	0.0	20.6	-0.8
GP-09	01/21/16	0.0	20.4	-0.1
GP-09	04/22/16	0.0	20.3	-0.6
GP-09	07/27/16	0.0	19.0	0.0
GP-09	10/26/16	0.0	19.2	0.0
GP-09	01/10/17	0.0	20.7	0.0
GP-09	04/05/17	0.0	20.0	0.0
GP-09	07/24/17	0.0	19.8	-0.1
GP-09	10/30/17	0.0	20.4	1.0
GP-9A	08/27/08 ¹	0.0	11.4	0.0
GP-9A	09/23/08	0.0	19.2	-0.2
GP-9A	09/25/08	0.0	19.4	-0.1
GP-9A	10/02/08	0.0	21.1	-0.1
GP-9A	10/07/08	0.0	20.4	0.0
GP-9A	10/15/08	0.0	20.6	-0.2
GP-9A	10/30/08	0.0	20.5	-0.2
GP-9A	11/13/08	0.0	20.6	-0.4
GP-9A	11/26/08	0.0	20.6	-0.4
GP-9A	01/22/09 ²	0.0	21.1	-0.2
GP-9A	02/05/09	0.0	20.5	-0.3
GP-9A	02/17/09	0.0	20.9	-0.3
GP-9A	03/16/09	0.0	20.1	-0.4
GP-9A	04/24/09	0.0	20.2	-0.4
GP-9A	05/20/09	0.0	20.0	-0.2
GP-9A	06/23/09	0.0	19.5	-0.2
GP-9A	07/23/09	0.0	20.0	-0.1
GP-9A	10/20/09	0.0	20.8	-0.2

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-9A	02/01/10	0.0	19.4	0.0
GP-9A	04/22/10	0.0	20.0	0.0
GP-9A	07/23/10	0.0	19.8	-0.2
GP-9A	10/22/10	0.0	20.3	0.0
GP-9A	01/24/11	0.0	19.5	0.0
GP-9A	04/29/11	0.0	20.7	-4.2
GP-9A	07/22/11	0.0	18.3	0.0
GP-9A	10/26/11	0.0	19.5	-0.1
GP-9A	01/26/12	0.0	20.9	0.0
GP-9A	04/27/12	0.0	19.6	-0.1
GP-9A	07/25/12	0.0	18.5	0.0
GP-9A	11/21/12 ³	0.0	20.4	0.0
GP-9A	12/21/12 ³	0.0	20.4	-0.1
GP-9A	01/03/13 ³	0.0	20.6	0.0
GP-9A	04/26/13	0.0	20.3	0.0
GP-9A	07/25/13	0.0	20.0	0.0
GP-9A	10/23/13	0.0	20.7	-0.1
GP-9A	1/10/14 ⁵	-	-	-
GP-9A	02/07/14	0.0	20.4	0.0
GP-9A	03/12/14	0.0	20.6	0.0
GP-9A	04/14/14	0.0	20.9	0.0
GP-9A	05/13/14 ⁴	0.0	19.9	-0.6
GP-9A	08/28/14	0.0	19.2	0.0
GP-9A	10/24/14	0.0	20.1	0.1
GP-9A	01/21/15	0.0	20.9	-0.1
GP-9A	04/17/15	0.0	20.1	0.0
GP-9A	07/31/15	0.0	20.5	0.0
GP-9A	10/22/15	0.0	20.0	-0.1
GP-9A	11/12/15	0.0	20.5	-0.4
GP-9A	12/17/15	0.0	20.7	0.0
GP-9A	01/21/16	0.0	20.4	-0.2
GP-9A	04/22/16	0.0	20.2	-0.6
GP-9A	07/27/16	0.0	18.7	0.1
GP-9A	10/26/16	0.0	19.1	0.0
GP-9A	01/10/17	0.0	19.6	0.0
GP-9A	04/05/17	0.0	18.8	-0.2

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-9A	07/24/17	0.0	18.6	-0.2
GP-9A	10/30/17	0.0	18.3	1.0
GP-10	08/27/08 ¹	1.2	5.3	0.0
GP-10	09/23/08	0.0	19.8	0.0
GP-10	09/25/08	0.0	19.2	-0.1
GP-10	10/02/08	0.0	20.8	-0.1
GP-10	10/07/08	0.0	20.6	0.0
GP-10	10/15/08	0.0	20.7	-0.1
GP-10	10/30/08	0.0	20.5	-0.1
GP-10	11/13/08	0.0	20.6	-0.2
GP-10	11/26/08	0.0	20.6	-0.2
GP-10	01/22/09 ²	0.0	21.3	-0.2
GP-10	02/05/09	0.0	21.3	-0.2
GP-10	02/17/09	0.0	20.9	-0.4
GP-10	03/16/09	0.0	20.6	-0.4
GP-10	04/24/09	0.0	20.4	-0.3
GP-10	05/20/09	0.0	20.3	-0.2
GP-10	06/23/09	0.0	20.0	-0.2
GP-10	07/23/09	0.0	19.9	0.0
GP-10	10/20/09	0.0	20.8	-0.1
GP-10	02/01/10	0.0	19.5	-0.1
GP-10	04/22/10	0.0	20.3	-0.1
GP-10	07/23/10	0.0	19.9	-0.1
GP-10	10/22/10	0.0	20.7	0.0
GP-10	01/24/11	0.0	19.5	-0.1
GP-10	04/29/11	0.0	20.9	-8.4
GP-10	07/22/11	0.0	19.0	0.0
GP-10	10/26/11	0.0	19.7	0.0
GP-10	01/26/12	0.0	21.0	-0.1
GP-10	04/27/12	0.0	19.7	0.0
GP-10	07/25/12	0.0	19.6	0.0
GP-10	11/21/12	0.0	20.6	0.0
GP-10	12/21/12 ³	0.0	20.6	0.0
GP-10	01/03/13 ³	0.0	20.5	-0.1
GP-10	04/26/13	0.0	20.3	0.0

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-10	07/25/13	0.0	20.0	0.0
GP-10	10/23/13	0.0	20.7	0.0
GP-10	01/10/14	0.0	19.8	-0.2
GP-10	02/07/14	0.0	20.2	0.0
GP-10	03/12/14	0.0	20.3	0.0
GP-10	04/14/14	0.0	20.2	0.0
GP-10	05/13/14 ⁴	0.0	20.3	-0.3
GP-10	08/28/14	0.0	19.8	-0.1
GP-10	10/24/14	0.0	20.4	0.0
GP-10	01/21/15	0.0	20.9	0.0
GP-10	04/17/15	0.0	20.4	0.0
GP-10	07/31/15	0.0	20.4	0.2
GP-10	10/22/15	0.0	20.4	-0.1
GP-10	11/12/15	0.0	20.7	-0.5
GP-10	12/17/15	0.0	19.9	-0.6
GP-10	01/21/16	0.0	20.7	-0.4
GP-10	04/22/16	0.0	20.5	-0.4
GP-10	07/27/16	0.0	18.7	0.0
GP-10	10/26/16	0.0	19.4	-0.3
GP-10	01/10/17	0.0	19.1	0.1
GP-10	04/05/17	0.0	19.0	0.2
GP-10	07/24/17	0.0	20.0	-0.2
GP-10	10/30/17	0.0	18.8	0.9
GP-10A	08/27/08 ¹	18.3	0.0	0.0
GP-10A	09/23/08	0.6	10.2	-0.3
GP-10A	09/25/08	0.0	18.8	-0.4
GP-10A	10/02/08	0.0	20.8	-0.4
GP-10A	10/07/08	0.0	20.3	0.0
GP-10A	10/15/08	0.0	20.6	-0.5
GP-10A	10/30/08	0.0	20.4	-0.6
GP-10A	11/13/08	0.0	20.6	-0.6
GP-10A	11/26/08	0.0	20.6	-0.6
GP-10A	01/22/09 ²	0.0	21.3	-0.6
GP-10A	02/05/09	0.0	21.3	-0.6
GP-10A	02/17/09	0.0	20.9	-0.7

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-10A	03/16/09	0.0	20.8	-0.9
GP-10A	04/24/09	0.0	20.3	-0.6
GP-10A	05/20/09	0.0	20.3	-0.4
GP-10A	06/23/09	0.0	20.2	-0.4
GP-10A	07/23/09	0.0	20.0	-0.2
GP-10A	10/20/09	0.0	20.9	-0.4
GP-10A	02/01/10	0.0	19.4	-0.3
GP-10A	04/22/10	0.0	20.4	-0.3
GP-10A	07/23/10	0.0	20.0	-0.3
GP-10A	10/22/10	0.0	20.9	-0.1
GP-10A	01/24/11	0.0	19.7	-0.3
GP-10A	04/29/11	0.0	20.9	-5.8
GP-10A	07/22/11	0.0	19.1	-0.2
GP-10A	10/26/11	0.0	19.6	0.0
GP-10A	01/26/12	0.0	21.0	-0.3
GP-10A	04/27/12	0.0	19.7	0.0
GP-10A	07/25/12	0.0	20.1	0.0
GP-10A	11/21/12	0.0	20.7	0.0
GP-10A	12/21/12 ³	0.0	20.3	-0.2
GP-10A	01/03/13 ³	0.0	20.6	0.0
GP-10A	04/26/13	0.0	20.4	-0.2
GP-10A	07/25/13	0.0	20.2	-0.1
GP-10A	10/23/13	0.0	20.7	-0.1
GP-10A	01/10/14	0.0	19.6	-0.2
GP-10A	02/07/14	0.0	20.2	0.0
GP-10A	03/12/14	0.0	19.8	0.0
GP-10A	04/14/14	0.0	19.0	-0.1
GP-10A	05/13/14 ⁴	0.0	17.9	-0.4
GP-10A	08/28/14	0.0	18.3	-0.1
GP-10A	10/24/14	0.0	20.3	0.0
GP-10A	01/21/15	0.0	21.1	0.0
GP-10A	04/17/15	0.0	20.4	0.0
GP-10A	07/31/15	0.0	20.7	-0.1
GP-10A	10/22/15	0.0	20.2	-0.1
GP-10A	11/12/15	0.0	20.3	-0.6
GP-10A	12/17/15	0.0	20.2	-0.7

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-10A	01/21/16	0.0	20.6	-0.6
GP-10A	04/22/16	0.0	20.3	-0.4
GP-10A	07/27/16	0.0	18.3	0.0
GP-10A	10/26/16	0.0	18.8	-0.3
GP-10A	01/10/17	0.0	18.8	0.0
GP-10A	04/05/17	0.0	18.7	0.0
GP-10A	07/24/17	0.0	20.1	-0.2
GP-10A	10/30/17	0.0	18.9	1.0
GP-11	08/27/08 ¹	0.0	14.9	0.0
GP-11	09/23/08	0.0	15.3	0.0
GP-11	09/25/08	0.0	16.5	0.0
GP-11	10/02/08	0.0	19.2	0.0
GP-11	10/07/08	0.0	19.0	0.0
GP-11	10/15/08	0.0	19.3	0.0
GP-11	10/30/08	0.0	19.7	0.0
GP-11	11/13/08	0.0	20.2	0.0
GP-11	11/26/08	0.0	20.2	0.0
GP-11	01/22/09 ²	0.0	20.5	-1.0
GP-11	02/05/09	0.0	20.5	-1.0
GP-11	02/17/09	0.0	21.0	0.0
GP-11	03/16/09	0.0	20.7	0.0
GP-11	04/24/09	0.0	19.4	0.0
GP-11	05/20/09	0.0	18.9	0.0
GP-11	06/23/09	0.0	18.2	0.0
GP-11	07/23/09	0.0	18.6	0.0
GP-11	10/20/09	0.0	20.3	0.0
GP-11	02/01/10	0.0	19.6	0.0
GP-11	04/22/10	0.0	17.6	0.0
GP-11	07/23/10	0.0	15.5	0.0
GP-11	10/22/10	0.0	17.2	0.0
GP-11	01/24/11	0.0	17.0	0.0
GP-11	04/29/11	0.0	19.0	-14.2
GP-11	07/22/11	0.0	15.5	0.0
GP-11	10/26/11	0.0	19.4	0.0
GP-11	01/26/12	0.0	20.6	0.0

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-11	04/27/12	0.0	18.3	0.0
GP-11	07/25/12	0.0	13.5	0.0
GP-11	11/21/12	0.0	20.2	0.0
GP-11	12/21/12 ³	0.0	19.9	0.0
GP-11	01/03/13 ³	0.0	20.4	-0.3
GP-11	04/26/13	0.0	18.1	0.0
GP-11	07/25/13	0.0	17.5	0.0
GP-11	10/23/13	0.0	19.9	-0.1
GP-11	01/10/14	0.0	19.3	-0.6
GP-11	02/07/14	0.0	19.3	0.0
GP-11	03/12/14	0.1	19.9	0.1
GP-11	04/14/14	0.0	23.1	-0.2
GP-11	05/13/14 ⁴	0.0	17.7	-0.2
GP-11	08/28/14	0.0	14.3	0.0
GP-11	10/24/14	0.0	19.7	0.0
GP-11	01/21/15	0.0	20.5	0.0
GP-11	04/17/15	0.0	20.1	0.0
GP-11	07/31/15	0.0	11.3	0.0
GP-11	10/22/15	0.0	19.9	0.0
GP-11	11/12/15	0.0	17.5	-2.0
GP-11	12/17/15	0.0	19.7	-0.4
GP-11	01/21/16	0.0	20.6	-0.1
GP-11	04/22/16	0.0	17.4	0.0
GP-11	07/27/16	0.0	16.2	0.0
GP-11	10/26/16	0.0	17.1	-0.3
GP-11	01/10/17	0.0	19.9	0.0
GP-11	04/05/17	0.0	18.7	0.0
GP-11	07/24/17	0.0	20.3	0.0
GP-11	10/30/17	0.0	18.2	0.9
GP-11A	08/27/08 ¹	4.1	0.0	0.0
GP-11A	09/23/08	3.4	0.0	-0.2
GP-11A	09/25/08	0.0	14.7	-0.6
GP-11A	10/02/08	0.0	19.1	-0.6
GP-11A	10/07/08	0.0	19.3	-0.4
GP-11A	10/15/08	0.0	19.5	-0.8

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-11A	10/30/08	0.0	20.0	-0.8
GP-11A	11/13/08	0.0	20.2	-0.9
GP-11A	11/26/08	0.0	20.2	-0.9
GP-11A	01/22/09 ²	0.0	21.2	0.0
GP-11A	02/05/09	0.0	21.2	0.0
GP-11A	02/17/09	0.0	20.9	-1.2
GP-11A	03/16/09	0.0	20.8	-1.5
GP-11A	04/24/09	0.0	20.0	-1.3
GP-11A	05/20/09	0.0	19.6	-0.9
GP-11A	06/23/09	0.0	20.0	-1.2
GP-11A	07/23/09	0.0	19.9	-1.0
GP-11A	10/20/09	0.0	20.8	-1.2
GP-11A	02/01/10	0.0	19.4	-0.9
GP-11A	04/22/10	0.0	20.4	-1.1
GP-11A	07/23/10	0.0	20.0	-1.2
GP-11A	10/22/10	0.0	19.1	-0.9
GP-11A	01/24/11	0.0	19.4	-1.2
GP-11A	04/29/11	0.0	20.7	-8.6
GP-11A	07/22/11	0.0	19.1	-1.2
GP-11A	10/26/11	0.0	19.6	-0.7
GP-11A	01/26/12	0.0	20.7	-0.8
GP-11A	04/27/12	0.0	18.5	-0.6
GP-11A	07/25/12	0.0	15.6	-0.4
GP-11A	11/21/12	0.0	20.6	-0.4
GP-11A	12/21/12 ³	0.0	20.2	-0.5
GP-11A	01/03/13 ³	0.0	20.2	-0.1
GP-11A	04/26/13	0.0	20.2	-1.0
GP-11A	07/25/13	0.0	18.1	-0.5
GP-11A	10/23/13	0.0	19.6	-0.4
GP-11A	01/10/14	0.0	19.6	0.0
GP-11A	02/07/14	0.0	19.7	0.9
GP-11A	03/12/14	0.1	19.6	0.0
GP-11A	04/14/14	0.0	19.0	0.1
GP-11A	05/13/14 ⁴	0.0	18.3	-1.2
GP-11A	08/28/14	0.0	16.1	-0.6
GP-11A	10/24/14	0.0	19.5	-0.3

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-11A	01/21/15	0.0	20.5	-0.4
GP-11A	04/17/15	0.0	20.3	0.0
GP-11A	07/31/15	0.0	20.5	-0.7
GP-11A	10/22/15	0.0	19.6	0.0
GP-11A	11/12/15	0.0	19.2	-0.6
GP-11A	12/17/15	0.0	19.9	-0.4
GP-11A	01/21/16	0.0	20.1	-0.2
GP-11A	04/22/16	0.0	19.0	-0.2
GP-11A	07/27/16	0.0	16.1	-0.1
GP-11A	10/26/16	0.0	15.6	-0.4
GP-11A	01/10/17	0.0	17.9	0.0
GP-11A	04/05/17	0.0	16.4	-0.1
GP-11A	07/24/17	0.0	17.7	0.0
GP-11A	10/30/17	0.0	17.0	0.9
GP-12	08/27/08 ¹	0.0	18.2	0.0
GP-12	09/23/08	0.0	18.9	0.0
GP-12	09/25/08	0.0	18.4	0.0
GP-12	10/02/08	0.0	20.4	0.0
GP-12	10/07/08	0.0	20.4	0.0
GP-12	10/15/08	0.0	20.4	0.0
GP-12	10/30/08	0.0	20.1	0.0
GP-12	11/13/08	0.0	20.4	0.0
GP-12	11/26/08	0.0	20.4	0.0
GP-12	01/22/09 ²	0.0	21.1	0.0
GP-12	02/05/09	0.0	21.1	0.0
GP-12	02/17/09	0.0	20.8	0.0
GP-12	03/16/09	0.0	20.7	0.0
GP-12	04/24/09	0.0	20.2	0.0
GP-12	05/20/09	0.0	20.3	0.0
GP-12	06/23/09	0.0	19.5	0.0
GP-12	07/23/09	0.0	19.5	-0.1
GP-12	10/20/09	0.0	20.8	0.0
GP-12	02/01/10	0.0	19.7	0.0
GP-12	04/22/10	0.0	19.9	0.0
GP-12	07/23/10	0.0	19.5	0.0

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-12	10/22/10	0.0	19.9	0.0
GP-12	01/24/11	0.0	19.5	0.0
GP-12	04/29/11	0.0	20.5	-8.4
GP-12	07/22/11	0.0	18.1	0.0
GP-12	10/26/11	0.0	19.5	0.0
GP-12	01/26/12	0.0	20.9	0.0
GP-12	04/27/12	0.0	19.1	0.0
GP-12	07/25/12	0.0	18.8	0.0
GP-12	11/21/12	0.0	20.5	0.0
GP-12	12/21/12 ³	0.0	20.4	0.0
GP-12	01/03/13 ³	0.0	20.6	0.0
GP-12	04/26/13	0.0	20.1	0.0
GP-12	07/25/13	0.0	20.0	0.0
GP-12	10/23/13	0.0	20.5	0.0
GP-12	01/10/14	0.0	19.9	-0.1
GP-12	02/07/14	0.0	20.2	0.8
GP-12	03/12/14	0.0	21.1	0.1
GP-12	04/14/14	0.0	17.9	-0.2
GP-12	05/13/14 ⁴	0.0	19.8	0.0
GP-12	08/28/14	0.0	19.7	0.0
GP-12	10/24/14	0.0	20.3	0.0
GP-12	01/21/15	0.0	20.7	0.0
GP-12	04/17/15	0.0	20.0	0.0
GP-12	07/31/15	0.0	19.4	0.0
GP-12	10/22/15	0.0	20.3	0.0
GP-12	11/12/15	0.0	19.9	-0.1
GP-12	12/17/15	0.0	20.4	-0.6
GP-12	01/21/16	0.0	20.8	0.0
GP-12	04/22/16	0.0	20.0	0.0
GP-12	07/27/16	0.0	19.2	0.0
GP-12	10/26/16	0.0	20.2	-0.4
GP-12	01/10/17	0.0	20.4	0.1

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-12	04/05/17	0.0	20.1	0.0
GP-12	07/24/17	0.0	20.2	0.0
GP-12	10/30/17	0.0	20.3	0.8

Notes:

¹ Pre-startup readings

² System was restarted on 1-19-2009 after being down for a month for SVE well cleaning and condensate collection system installation.

³ System was shutdown on 11/21/12 following monthly monitoring for 1 month shutdown period. Post 1 month shutdown monitoring was conducted at startup (12/21/12) and two weeks after startup (1/3/13).

⁴ System was shutdown on 01/10/13 for 4 month shutdown period. Post 4 month shutdown monitoring was conducted at startup (05/13/14). Based on the results, gas probes were not monitored on 05/28/14.

⁵ Not measured. Unable to locate.

With approval from the WDNR on 10/21/15, System modifications occurred on 10/29/15. Modifications included operating the system on a part time schedule (16 hrs/day), turning off select SVE wells, and adjusting the LFG wells to focus extraction in the vicinity of the GP-2 nest.

Appendix F

Unscheduled LFG/SVE System Shutdowns

Appendix F Unscheduled LFG/SVE System Shutdowns New Richmond Landfill (#2492) New Richmond, Wisconsin

There were nine (9) unscheduled LFG/SVE system shutdowns during 2017 (January 1, 2017 to December 31, 2017). They were as follows:

- On January 22, 2017, the system auto-dialer notified GHD personnel of a system shutdown due to a vapor/liquid separator high level alarm, because the condensate collection pump was unable to handle the excessive water infiltration and condensate generation. The knockout tank was drained, the condensate tanks and sump were pumped out, and the system was restarted on January 27, 2017.
- On February 11, 2017, the system auto-dialer notified GHD personnel of a system shutdown due to a vapor/liquid separator high level alarm, because the condensate collection pump was unable to handle the excessive water infiltration and condensate generation. The knockout tank was drained, the sump was pumped out, and the system was restarted on February 14, 2017.
- On February 21, 2017, the system auto-dialer notified GHD personnel of a system shutdown due to a vapor/liquid separator high level alarm, because the condensate collection pump was unable to handle the excessive water infiltration and condensate generation. The knockout tank was drained, the sump was pumped out, and the system was restarted on February 22, 2017.
- On April 12, 2017, the system auto-dialer notified GHD personnel of a system shutdown due to a vapor/liquid separator high level alarm, because the condensate collection pump was unable to handle the excessive water infiltration and condensate generation. The knockout tank was drained, the condensate tanks were pumped out, and the system was restarted on April 14, 2017.
- On May 10, 2017, the system auto-dialer notified GHD personnel of a system shutdown due to a vapor/liquid separator high level alarm, because the condensate collection pump was unable to handle the excessive water infiltration and condensate generation. The knockout tank was drained, and the sump was pumped until both condensate tanks were filled on May 11, 2017. The condensate tanks and sump were pumped out, and the system was restarted on May 18, 2017.
- On the May 25 site visit, GHD personnel noted a shutdown due to a high blower temperature alarm. The system auto-dialer did not call out when the shutdown occurred. The sump was pumped out and the system was restarted on May 25, 2017.
- On October 2, 2017, the system auto-dialer notified GHD personnel of a system shutdown due to a vapor/liquid separator high level alarm, because the condensate collection pump was unable to handle the excessive water infiltration and condensate generation. The condensate tanks and sump were pumped out, and the system was restarted on October 16, 2017.
- On October 27, 2017, the system auto-dialer notified GHD personnel of a system shutdown due to a vapor/liquid separator high level alarm, because the condensate collection pump was unable to handle the excessive water infiltration and condensate generation. The knockout tank was drained, the sump was pumped out, and the system was restarted on October 30, 2017.
- On November 19, 2017, the system auto-dialer notified GHD personnel of a system shutdown due to a vapor/liquid separator high level alarm, because the knockout tank was full. The knockout tank was drained and the system was restarted on November 21, 2017.



about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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