



2018 Annual Monitoring Report

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

New Richmond Landfill Settling
PRP Group





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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 2018 through December 2018 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 2018 and November 2018 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 2018 sampling round were submitted to the WDNR on August 7, 2018.

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 2018 and November 2018 sampling rounds. Water table contours based on the November 2018 measurements are presented on Figure 2.1. Water table contours from the 2018 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 two of the three residential wells were collected in May 2018 according to the Operation, Maintenance, and Monitoring Plan. A sample was not collected from 1070 192nd Avenue due to access issues. An additional sample was collected in November 2018 from 2055 County Road C.

The annual round of groundwater sampling was conducted in November 2018. 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. None of the results listed in Table 3.1 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-10A. The concentrations of 1,1,1-TCA and 1,1-DCA were 20 µg/L and 20 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 2018 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-two groundwater monitoring events. The SVE system has removed approximately 1,346 pounds of VOCs from the vadose zone through the end of 2018. 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 2018.

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 2018 from 2055 County Road C and 2056 County Road C. 2056 County Road C had no VOC detections while the 2055 County Road C sample had a concentration of 1,1-DCE at 2.1 µg/L, a concentration of 1,1-DCA at 2.3 µg/L, and a concentration of 1,1,1-TCA at 1.9 µg/L.

Another sample was collected from 2055 County Road C in November 2018. The sample had a concentration of 1,1-DCE at 1.7 µg/L, a concentration of 1,1-DCA at 2.5 µg/L, a concentration of 1,1,1-TCA at 1.6 µg/L, and a concentration of carbon disulfide at 3.5 µg/L. The ES for 1,1-DCE,



1,1-DCA, 1,1,1-TCA, and carbon disulfide are 7 µg/L, 850 µg/L, 200 µg/L, and 1,000 µg/L respectively. The Preventative Action Limits (PAL) for 1,1-DCE, 1,1-DCA, 1,1,1-TCA, and carbon disulfide are 0.7 µg/L, 85 µg/L, 40 µg/L, and 200 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 2018 (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 2018 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 2018. 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 2018, 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 2018 the LFG/SVE system experienced thirteen (13) unscheduled shutdowns. Details of the shutdowns are provided in Appendix F. The LFG/SVE system was operational for 2,567 out of 5,840 hours (44 percent) during 2018 (Based on the part-time system operation).

During the 2018 reporting period, several unscheduled system shutdowns occurred in which the system auto-dialer failed to notify GHD personnel of the shutdown condition. This contributed to a system down-time of approximately 56 percent. The auto-dialer failed to call out during shutdowns as a result of: a loss of system power in August, a phone line failure in September, and periodic system shutdowns in which a relay or controls component malfunction is suspected of disabling the blower starter until the blower breaker could be manually cycled.

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 May and November. Table 4.1 provides select field monitoring data for the SVE wells during 2018. 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 2018.

Combustible gas was only detected four times (SVE-3: 0.2% in November, SVE-5: 1.0% in November, and SVE-5: 3.2% and 1.2% in May and November, respectively) 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). Combustible gas was detected at nine SVE wells (SVE-3, SVE-4, SVE-5, SVE-6, SVE-7, SVE-11, SVE-12, SVE-13, and SVE-14) ranging from 0.1 percent to 5.4 percent during 2018.

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 2019.

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 2018 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 2018. 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 2018.

During 2018, the LFG system was noted to be operating as designed and controlling landfill gas. Combustible gas was detected in at least three LFG wells during each monitoring event in 2018. Well LFG-8 had the highest concentration of combustible gas (36.0 percent) detected in 2018 during the January 2018 monitoring event. The month of January 2018 had the most LFG wells (9) with combustible gas detected (all wells).

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 detected at the GP-2 nest in November 2018 (GP-02: 12.3%, GP-2A: 1.8%, and GP-2B: 1.2%). The combustible gas detections in the November 16, 2018 monitoring event were likely due to the extended period of system shutdown between October 4 and November 12, 2018 in which the auto-dialer failed to notify GHD personnel of the shutdown. Combustible gas was not detected in any other gas probe during all other 2018 monitoring events. All seventeen (17) gas probes were noted to be at zero pressure or under vacuum influence from the landfill at least once during 2018, 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 2018. 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 four (4) times during 2018 with approximately 2,850 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 January, May, July, and November 2018. 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 November 16, 2018 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 increased throughout 2018, but were in the same range of 2017 results.

Blower discharge mass loading calculations were performed for 2018 using the November 16, 2018 sample results and maximum flow rate recorded during 2018. Blower mass loading calculations are presented in Table 4.3 for the November 16, 2018 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 1,346 pounds of VOCs have been removed from the landfill and the underlying soil. Of the total VOCs removed, approximately 333 pounds have been in the form of 1,1,1-TCA, approximately 273 pounds have been in the form of 1,1-DCA, approximately 39.7 pounds have been in the form of 1,1-DCE, and approximately 50.6 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 3,000 $\mu\text{g}/\text{m}^3$ in November 2018.

4.6.2 Select SVE Well Monitoring

Annual monitoring of select SVE wells was performed on November 16, 2018. During the November 2018 monitoring round SVE wells SVE-4, SVE-6, SVE-7, SVE-12, 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 November 2018 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 generally 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 2018 sampling activities, the following conclusions are made:

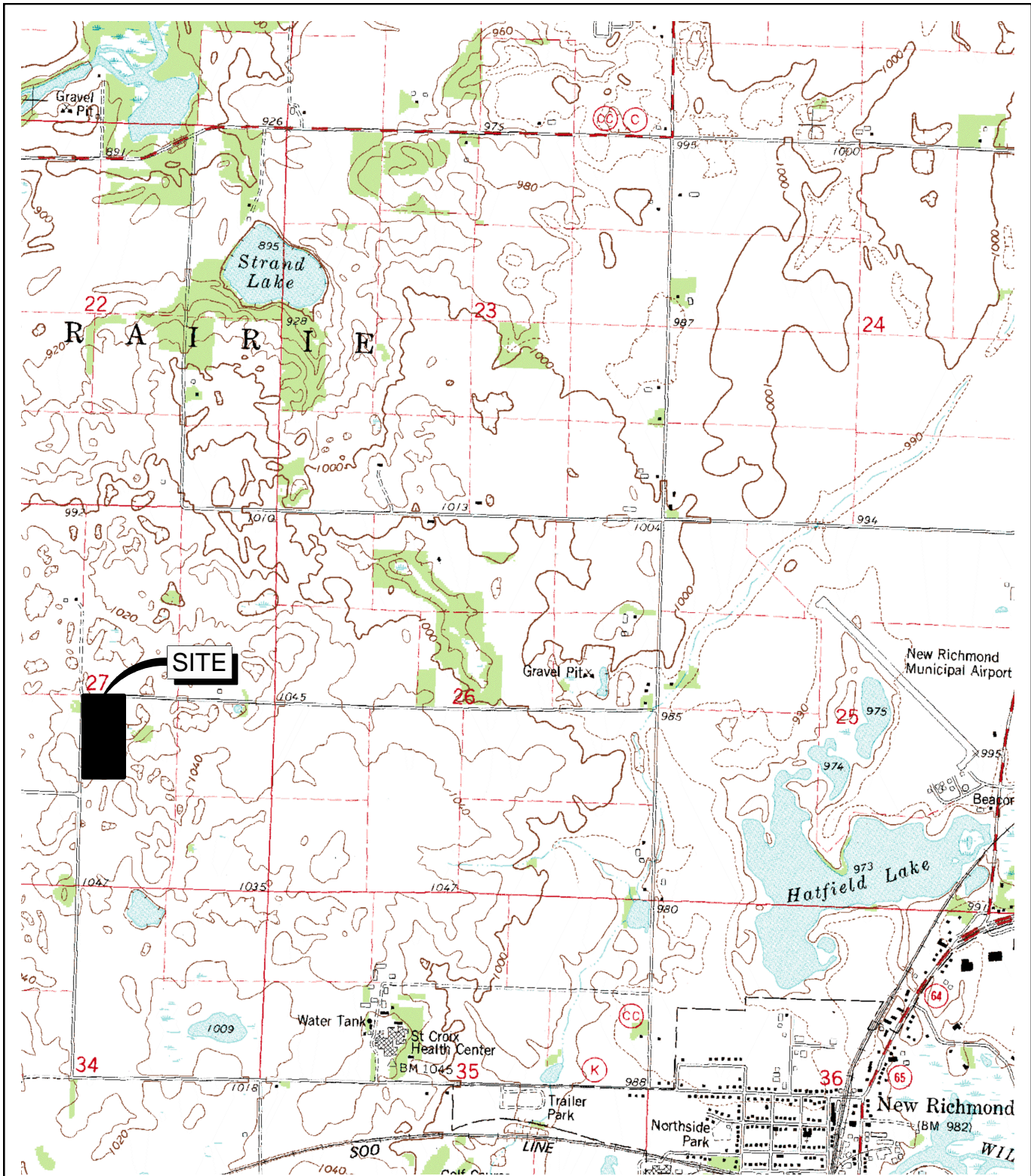
- The groundwater flows northwesterly towards the Apple River, consistent with historical findings.
- 1,1,1-Trichloroethane and 1,1-dichloroethane are the primary groundwater contaminants based on highest concentration. These VOCs do not exceed the Wisconsin ch. NR 140 ESs but are highlighted because 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 six 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.
- During gas probe monitoring in 2018 all gas probes were found to be at zero pressure or under vacuum during at least one monitoring event.
- The SVE/LFG system has shut down several times, without notifying GHD personnel via the auto-dialer, due to what is suspected to be a controls component issue. As a result, the auto-dialer is now called on a weekly basis to verify system operations.



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

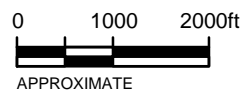


figure 1.1

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

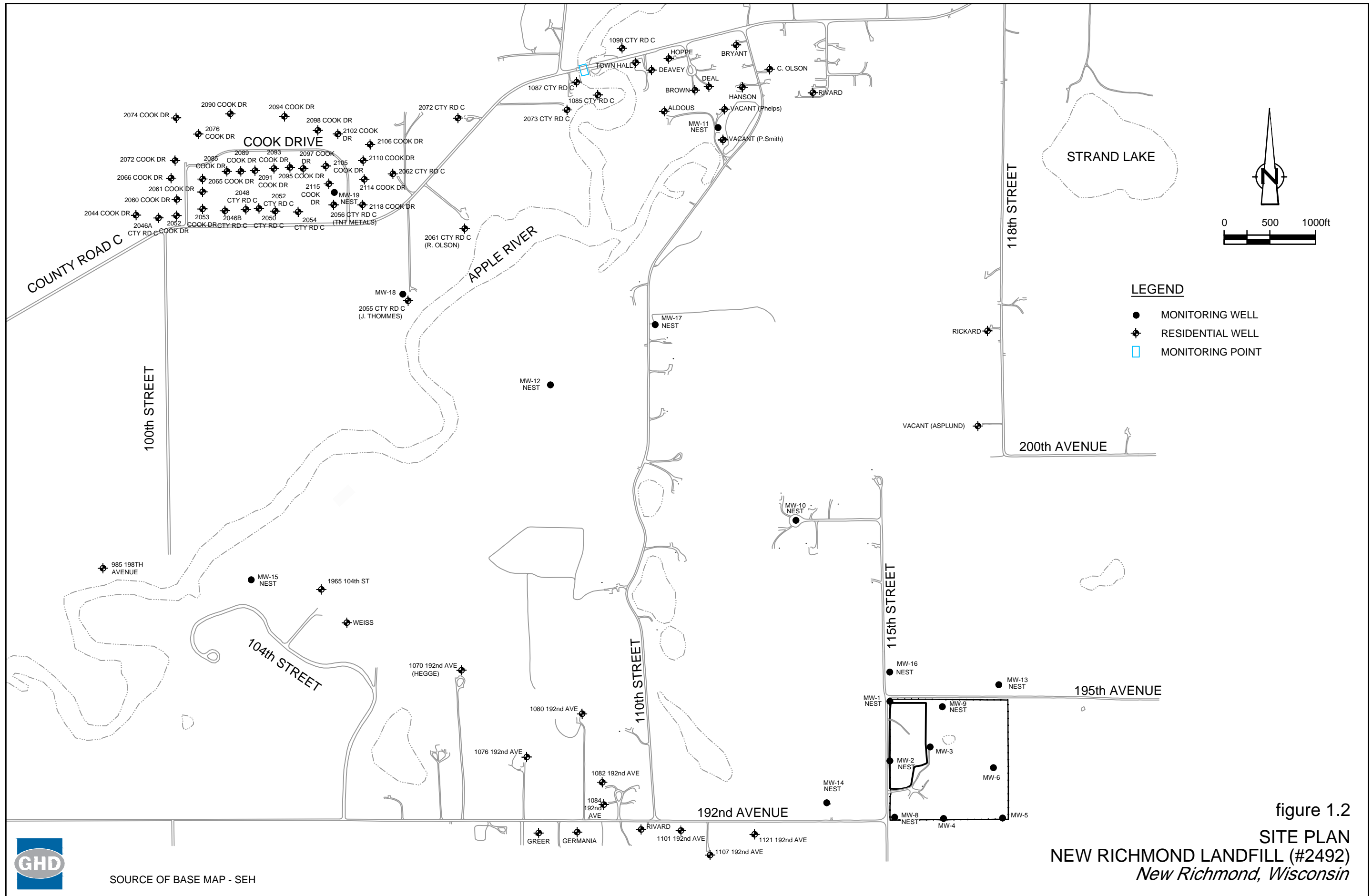
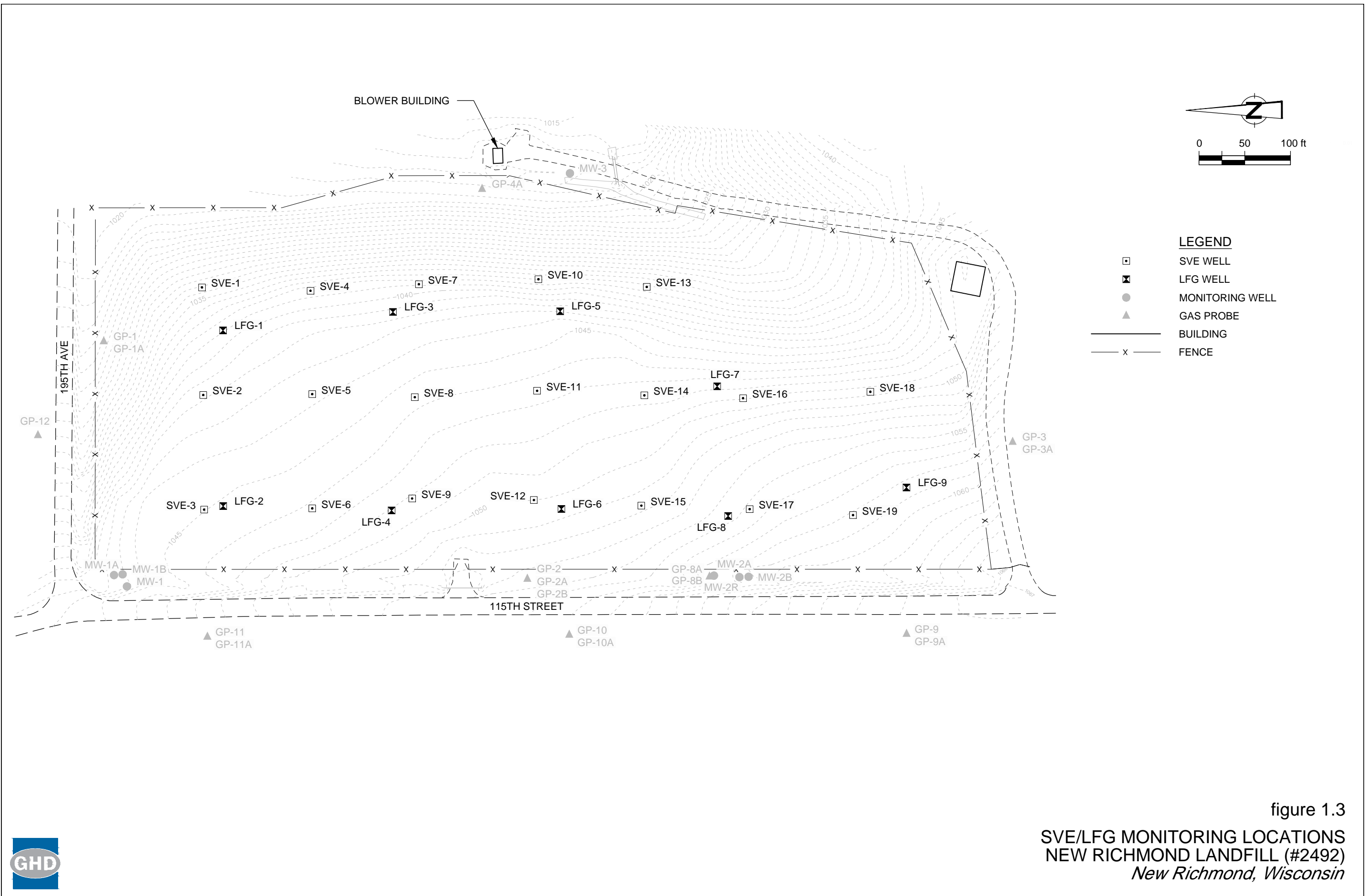


figure 1.2
SITE PLAN
 NEW RICHMOND LANDFILL (#2492)
New Richmond, Wisconsin



SOURCE OF BASE MAP - SEH



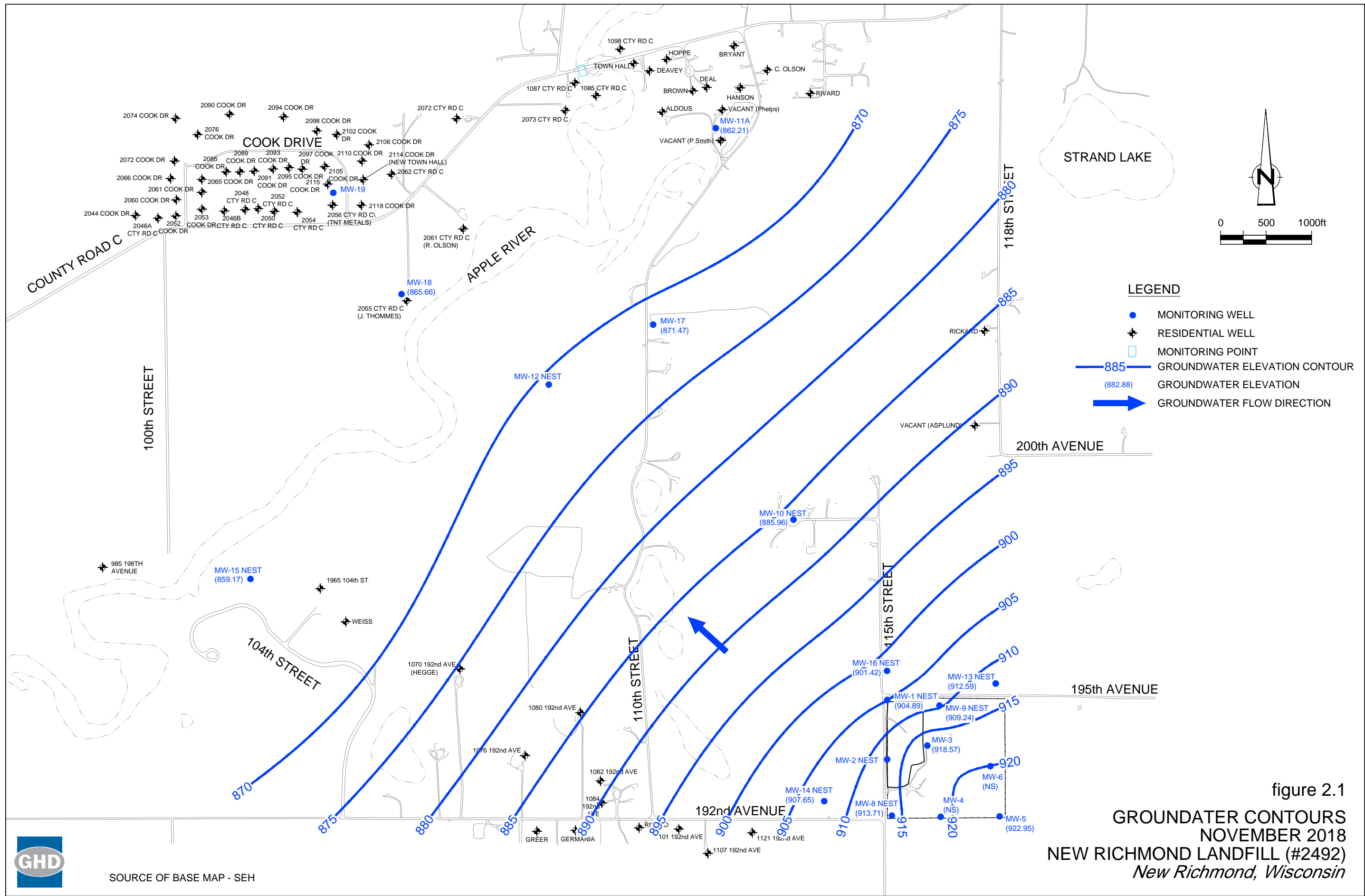


figure 2.1
 GROUNDWATER CONTOURS
 NOVEMBER 2018
 NEW RICHMOND LANDFILL (#2492)
 New Richmond, Wisconsin



SOURCE OF BASE MAP - SEH

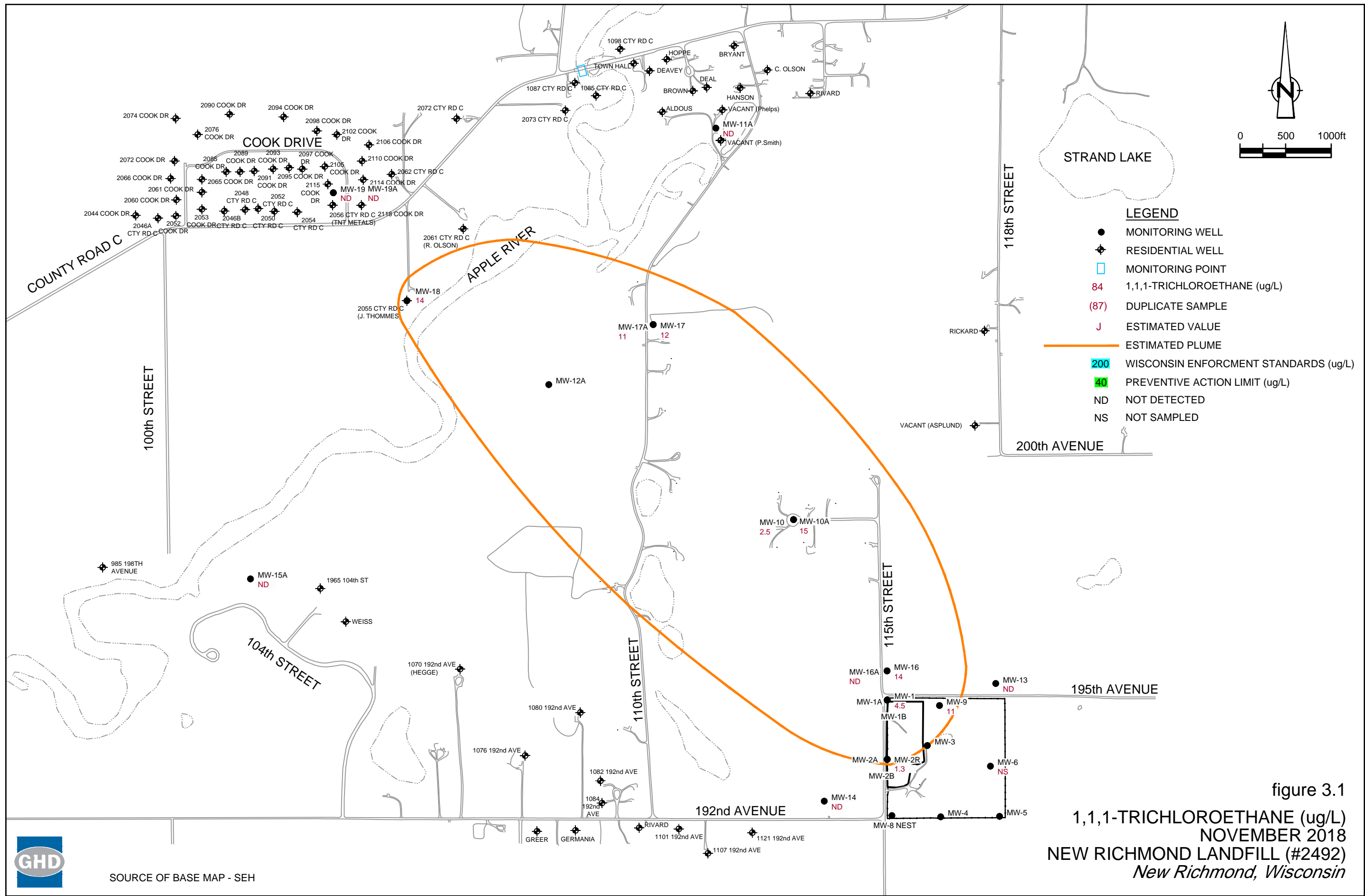


figure 3.1
 1,1,1-TRICHLOROETHANE (ug/L)
 NOVEMBER 2018
 NEW RICHMOND LANDFILL (#2492)
 New Richmond, Wisconsin



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

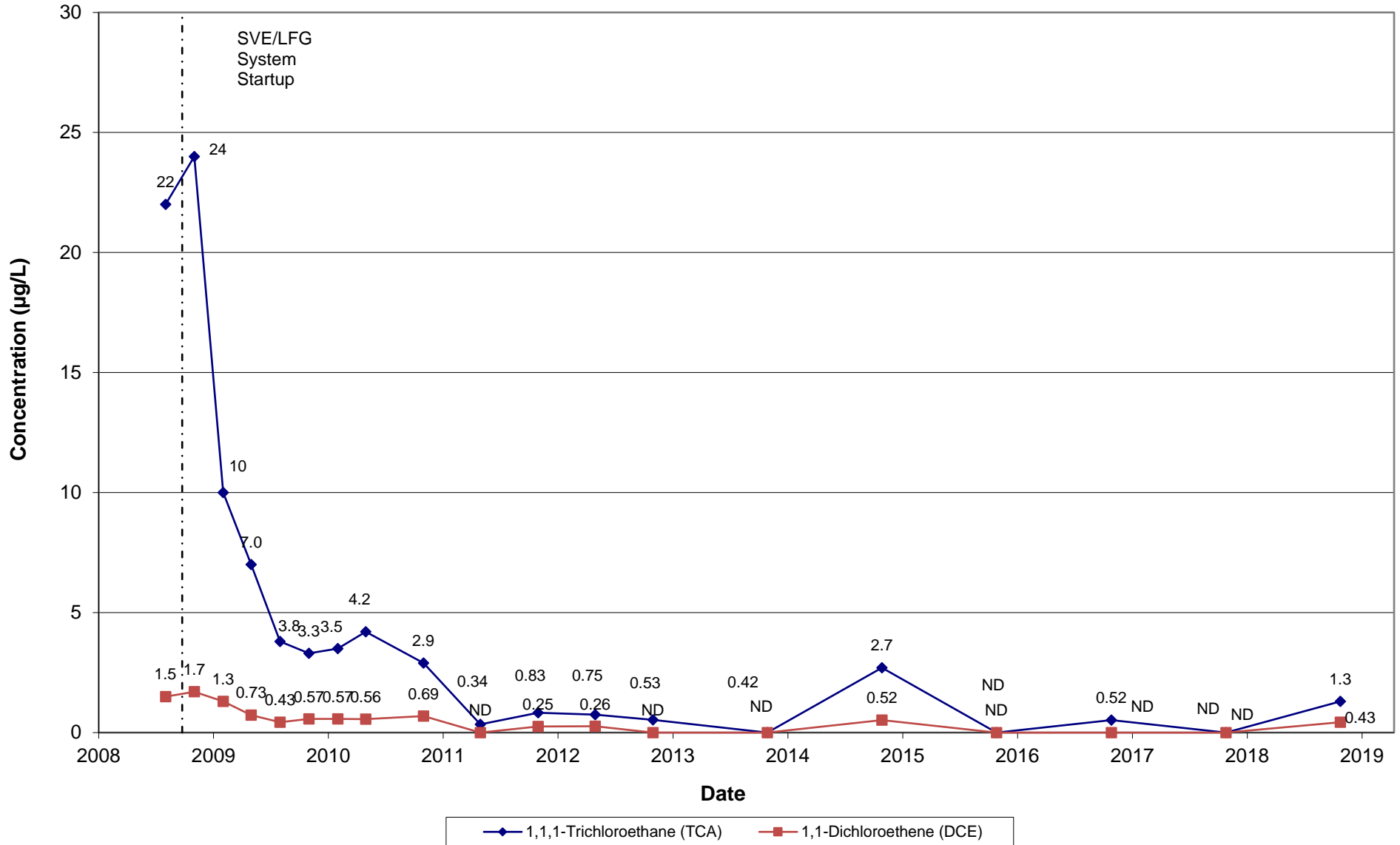


Figure 3.3

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

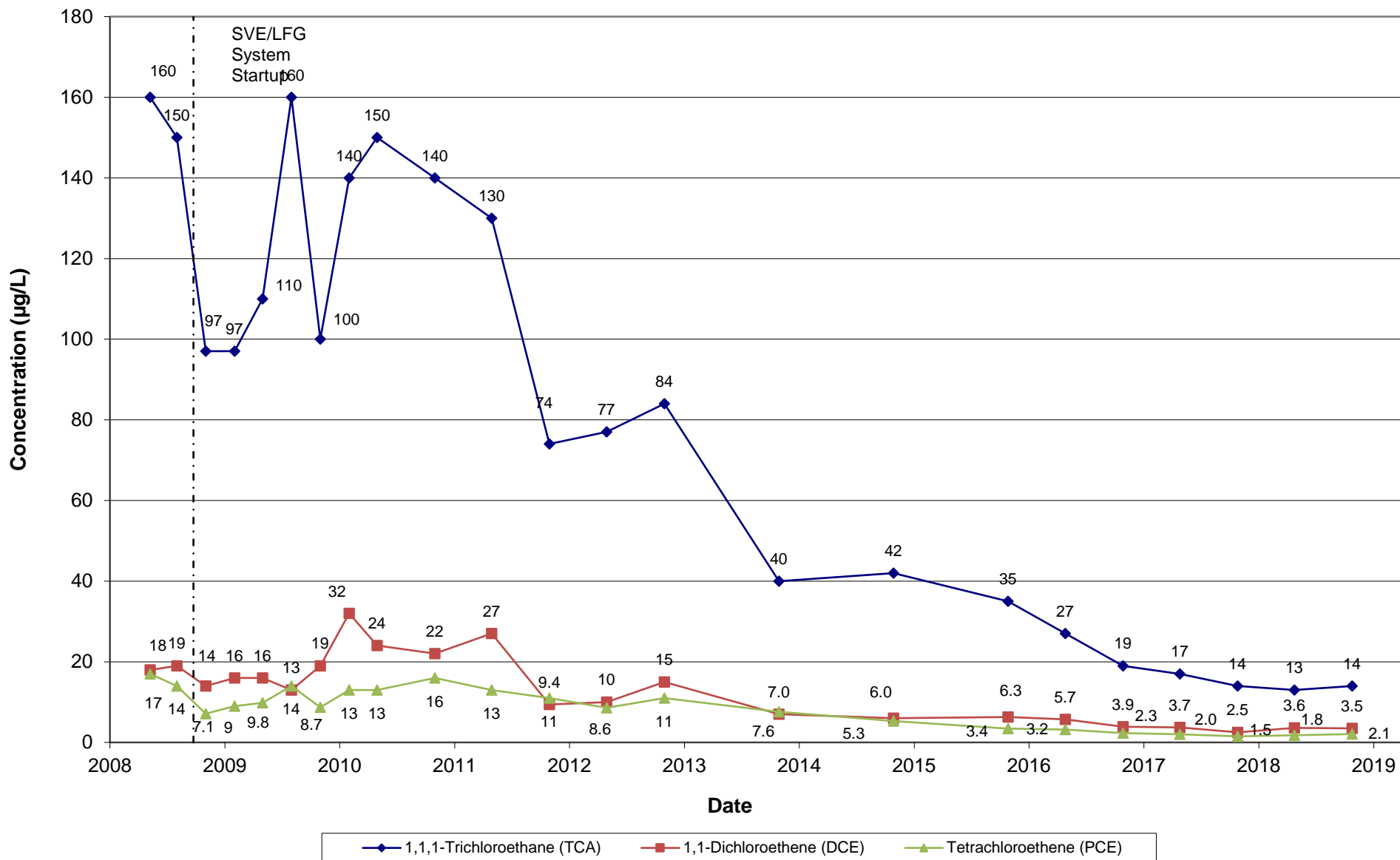


Figure 3.4

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

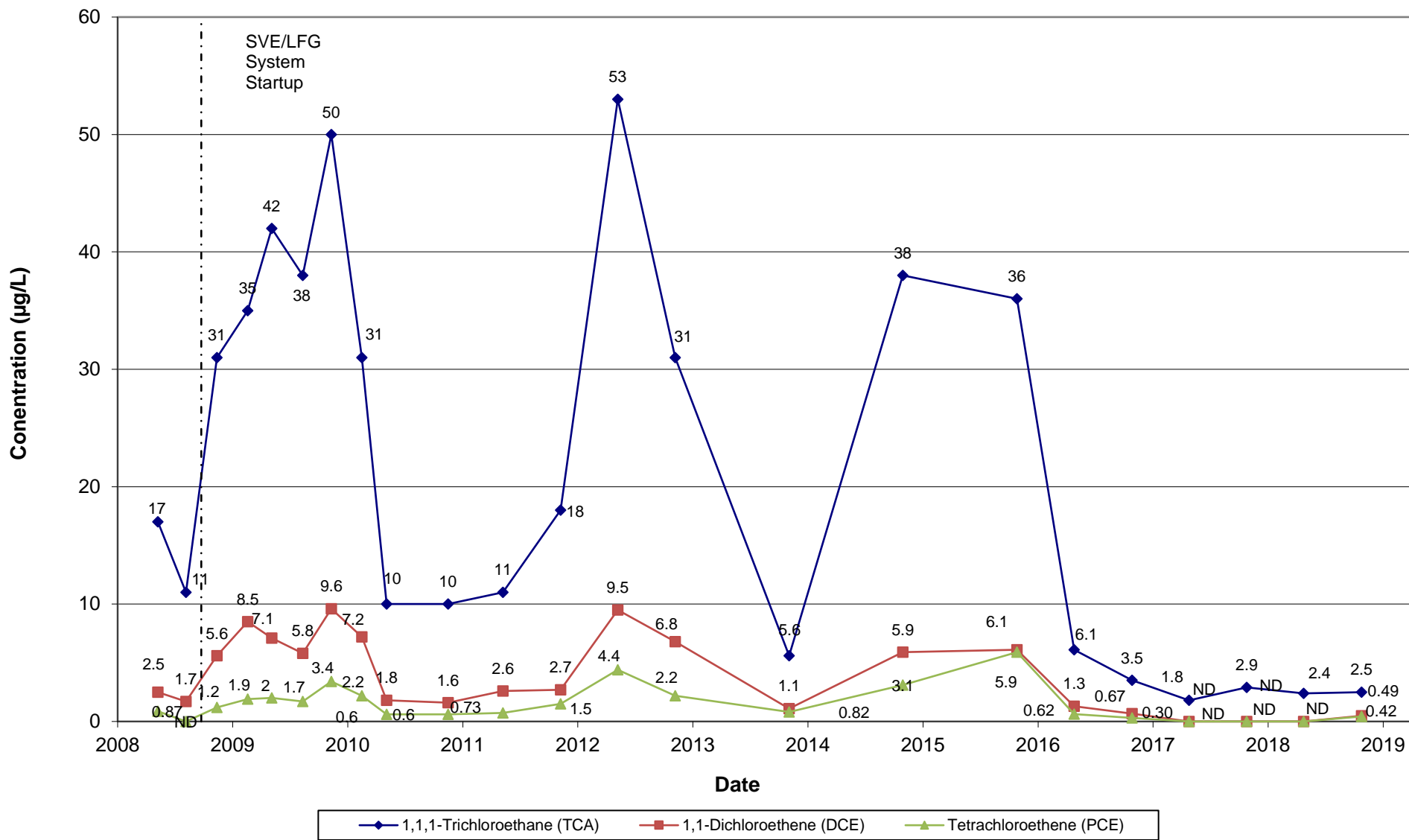


Figure 3.5
1,1,1-TCA, 1,1-DCE, and PCE Concentrations
(MW-10A)
New Richmond Landfill (#2492)
New Richmond, Wisconsin

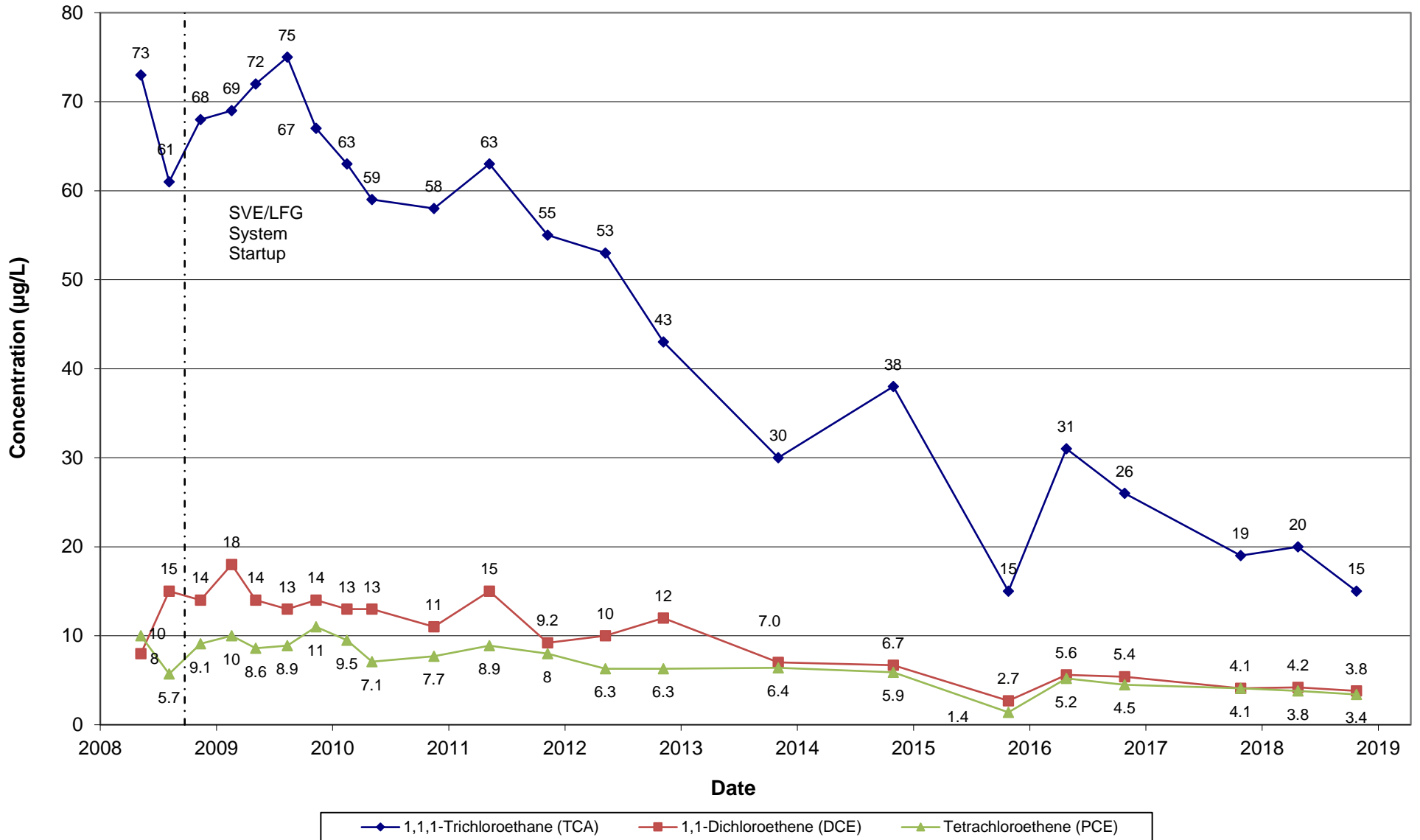


Figure 3.6

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

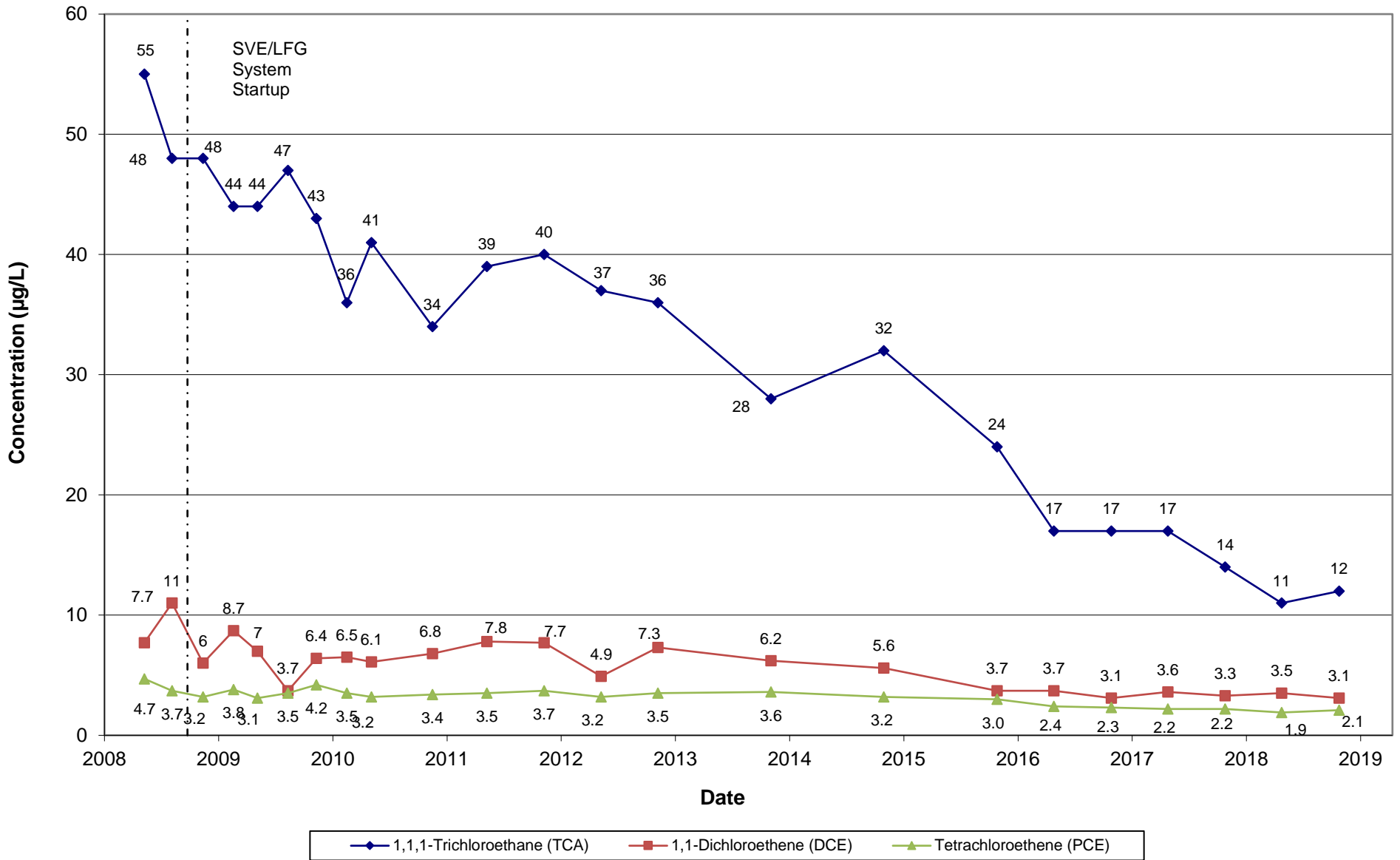
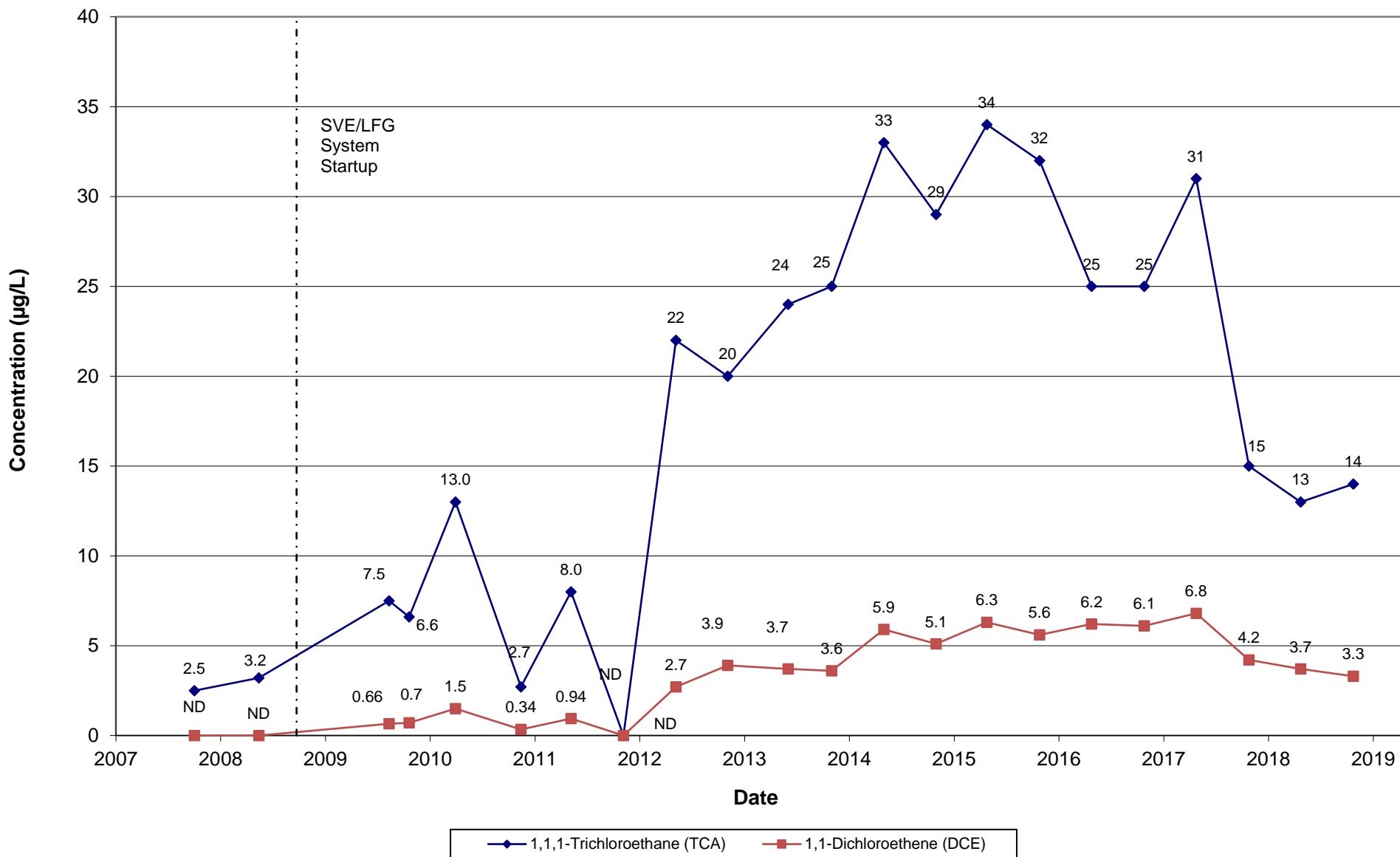


Figure 3.7

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



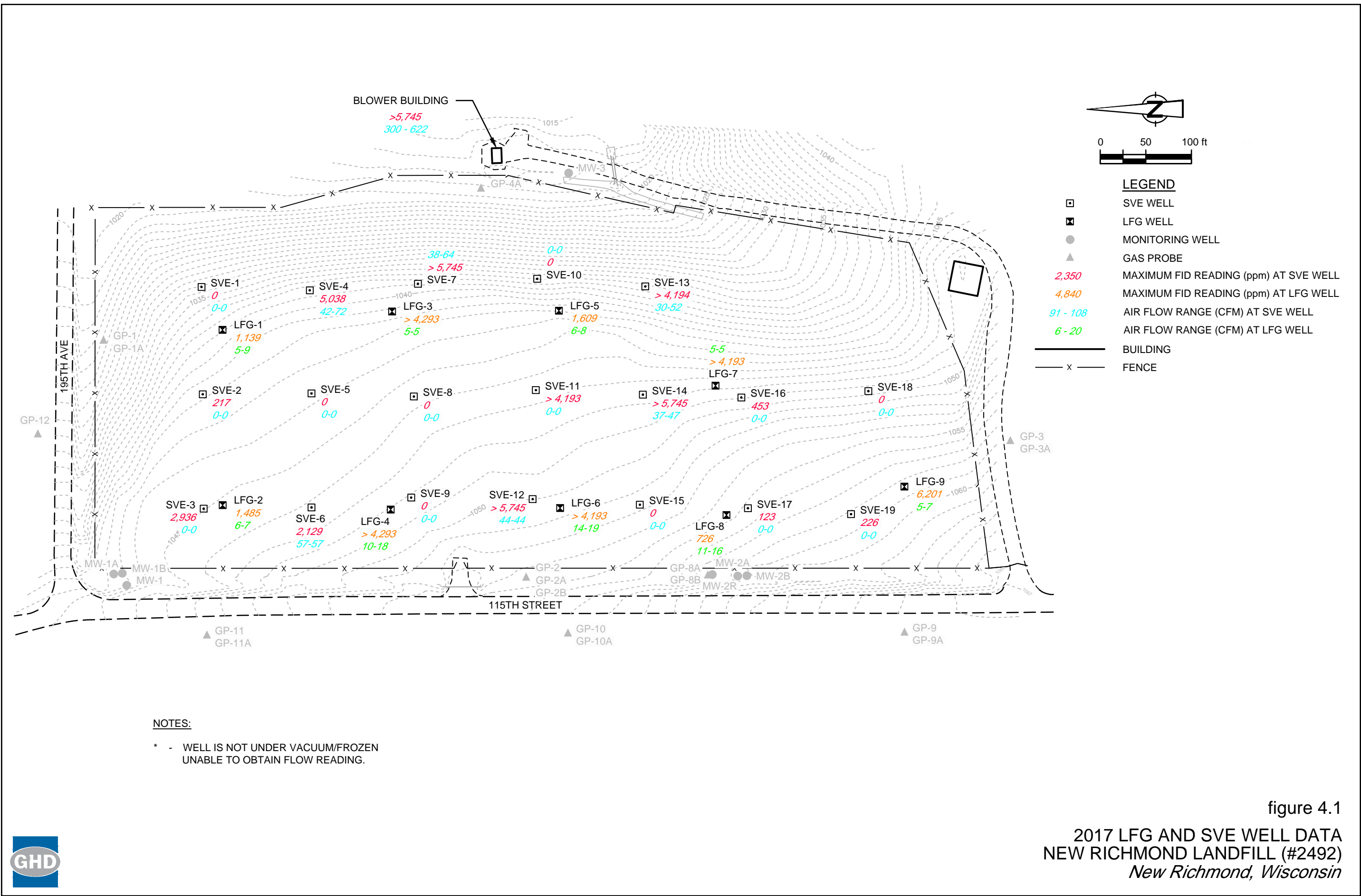


Figure 4.2

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

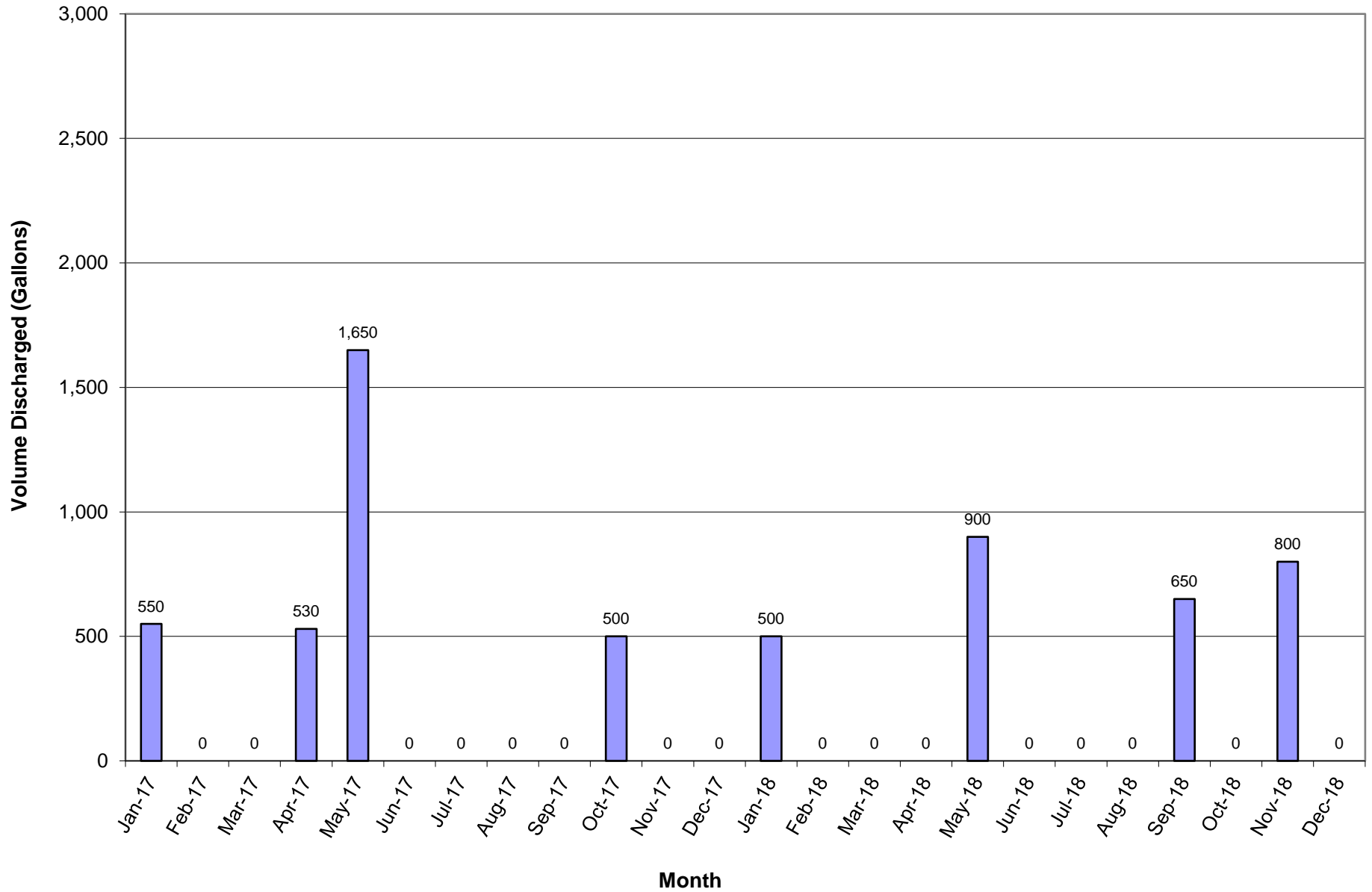


Figure 4.4

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

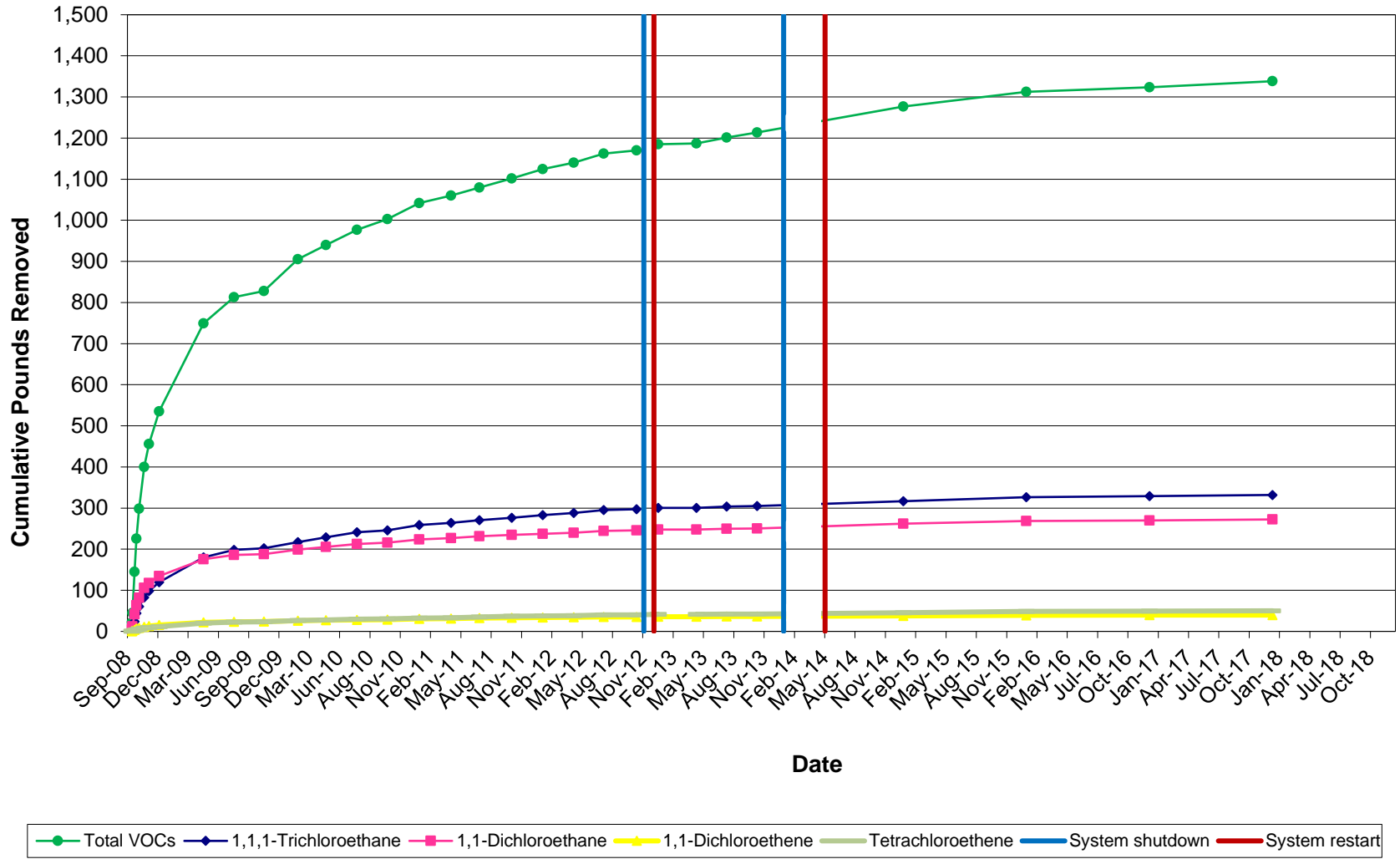


Figure 4.5

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

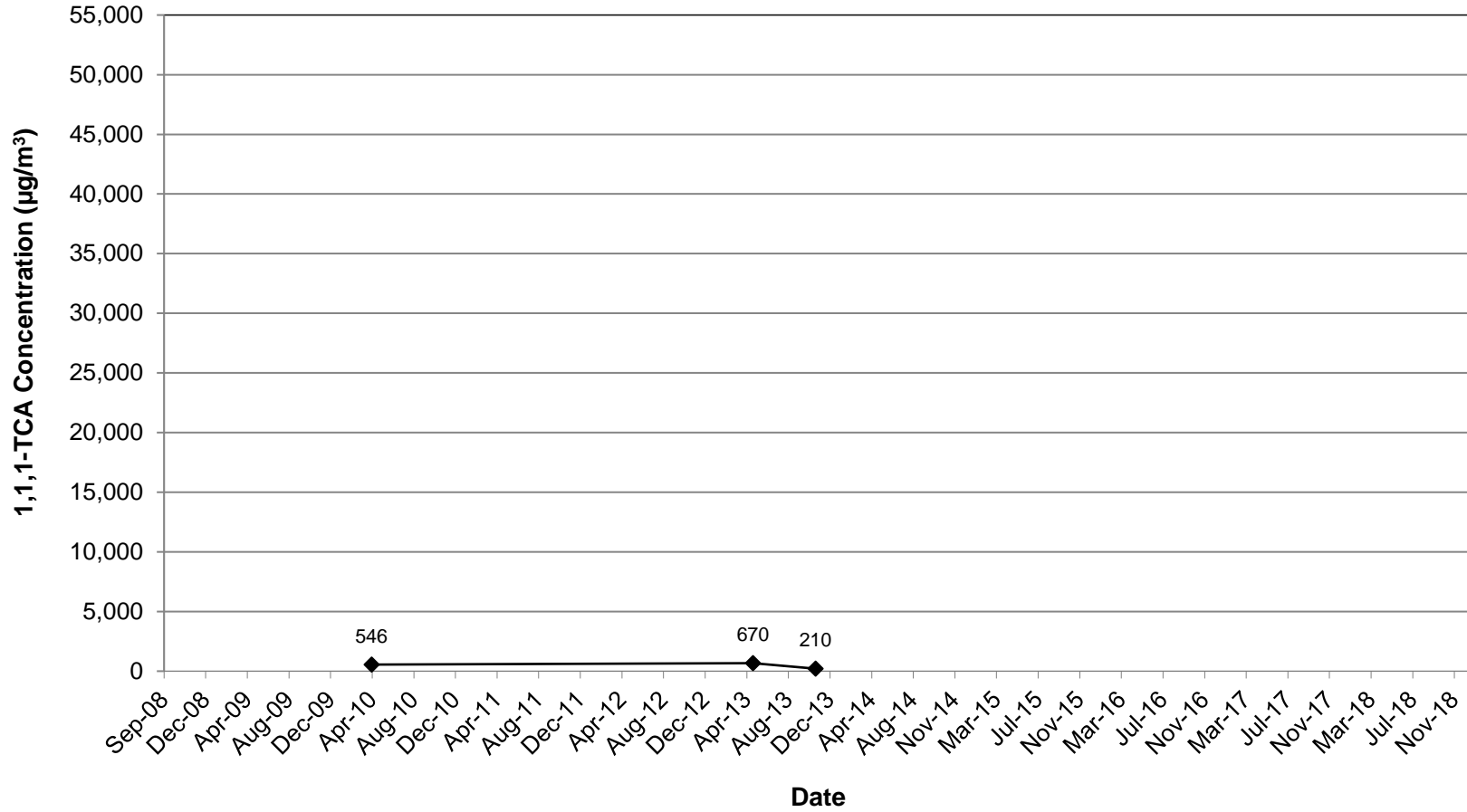


Figure 4.6

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

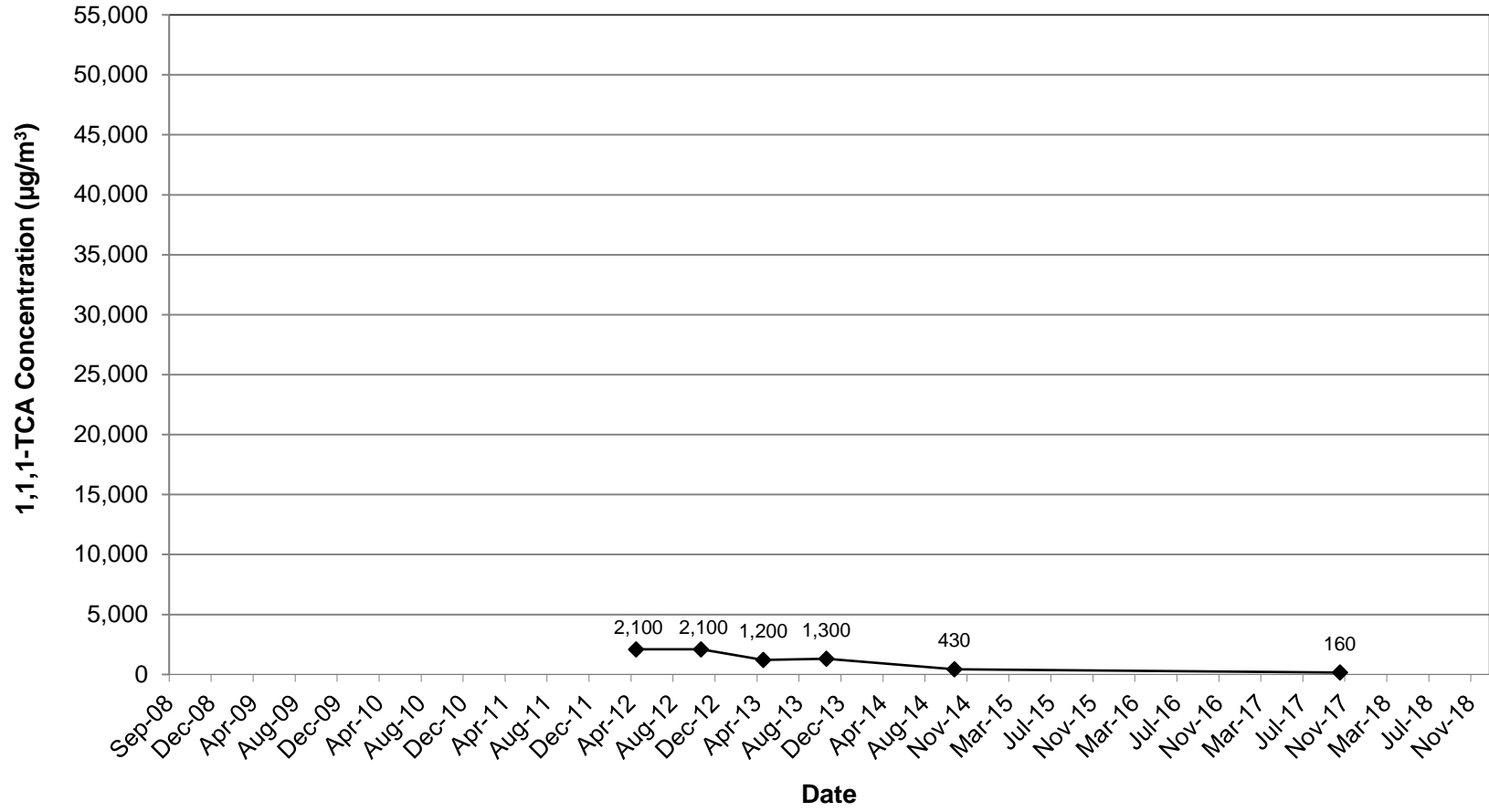


Figure 4.7

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

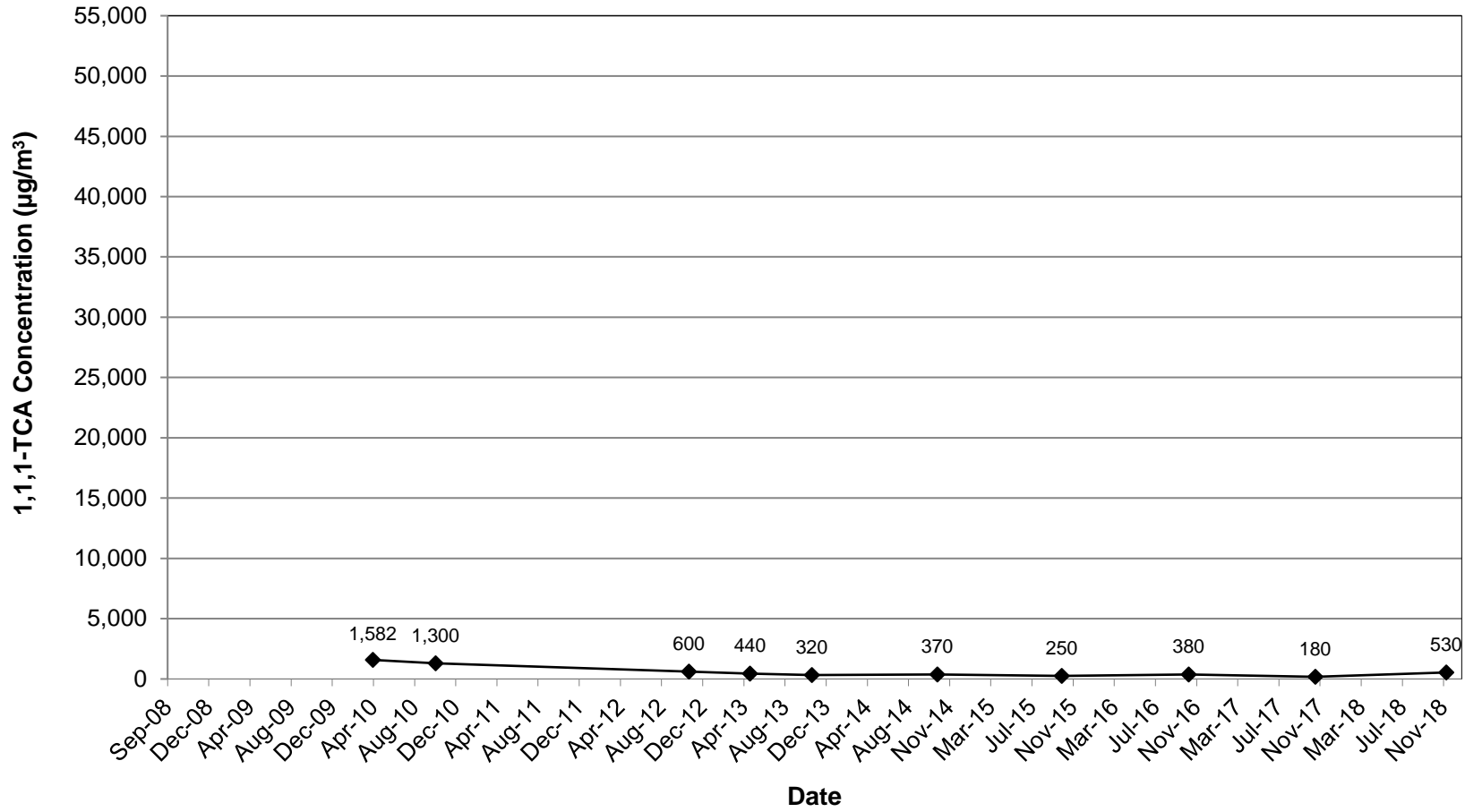


Figure 4.8

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

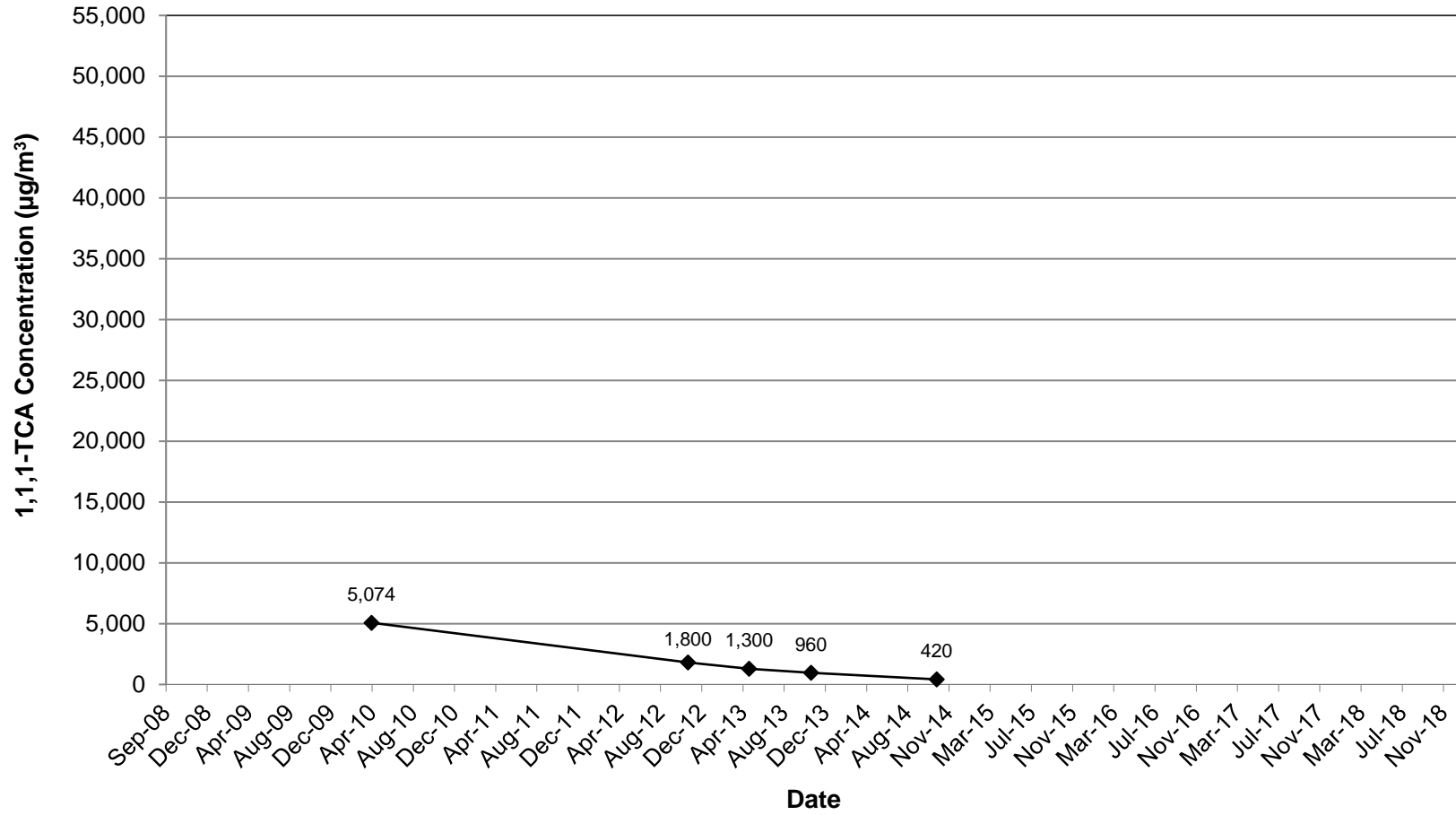


Figure 4.9

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

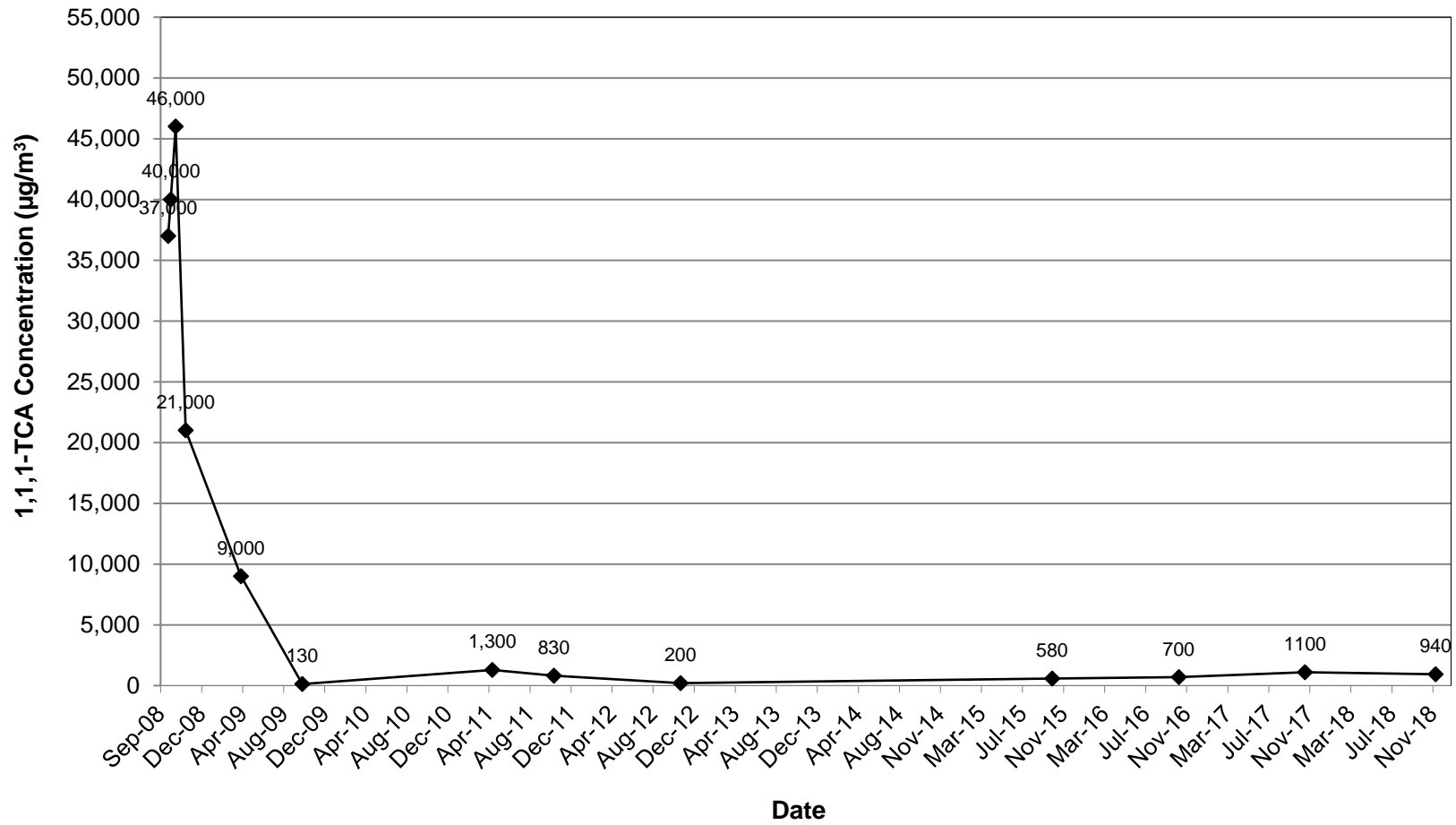


Figure 4.10

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

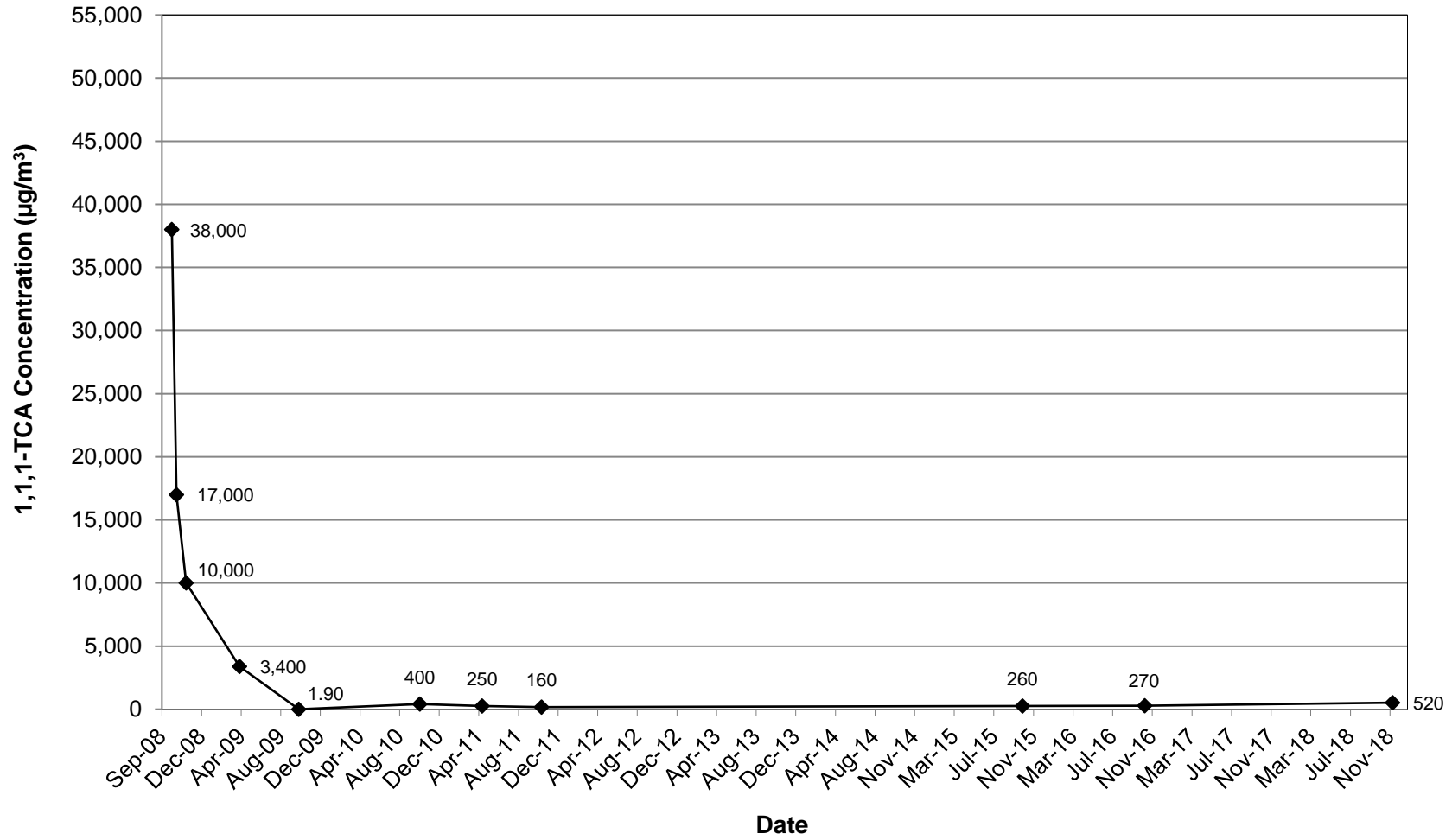


Figure 4.11

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

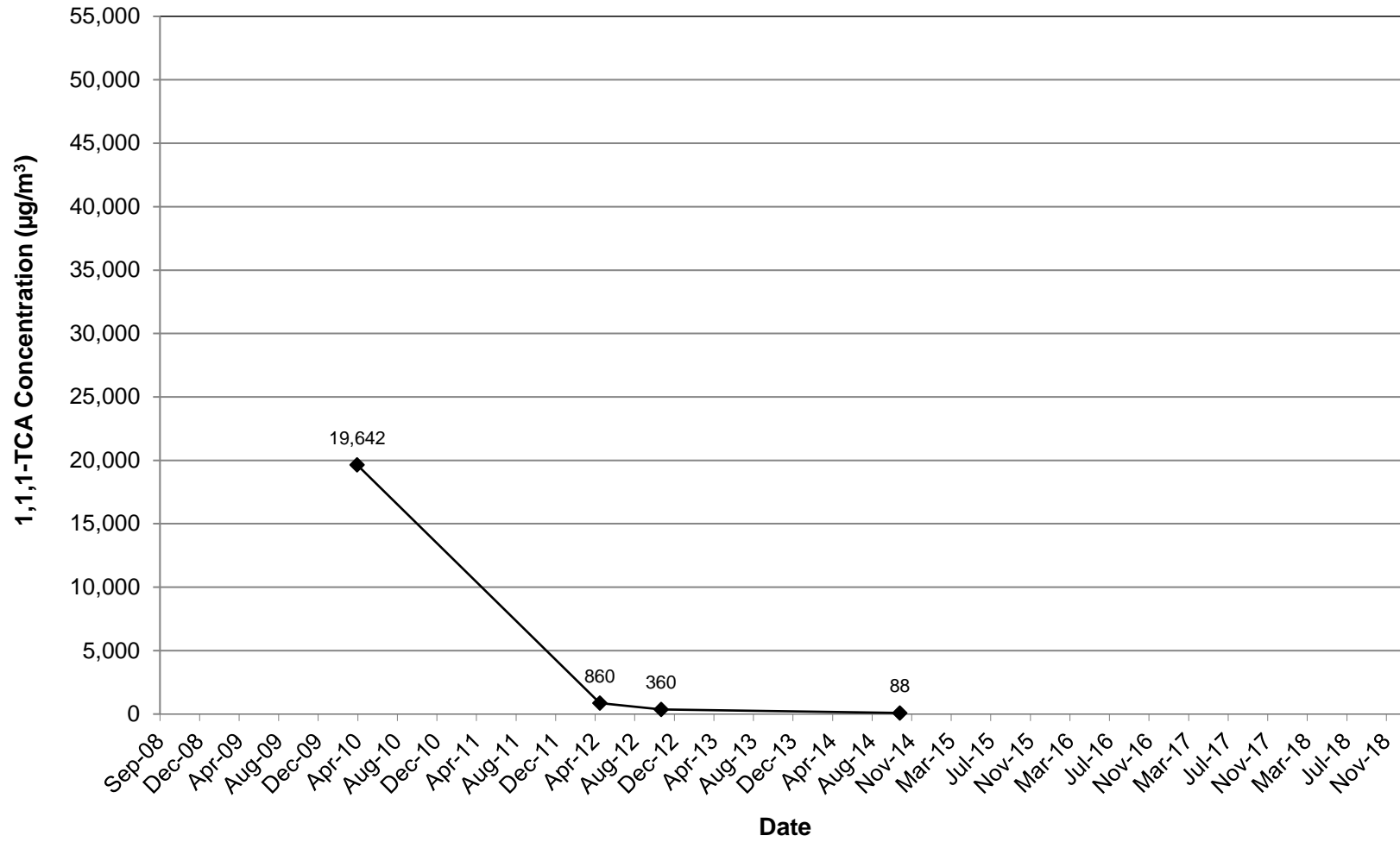


Figure 4.12

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

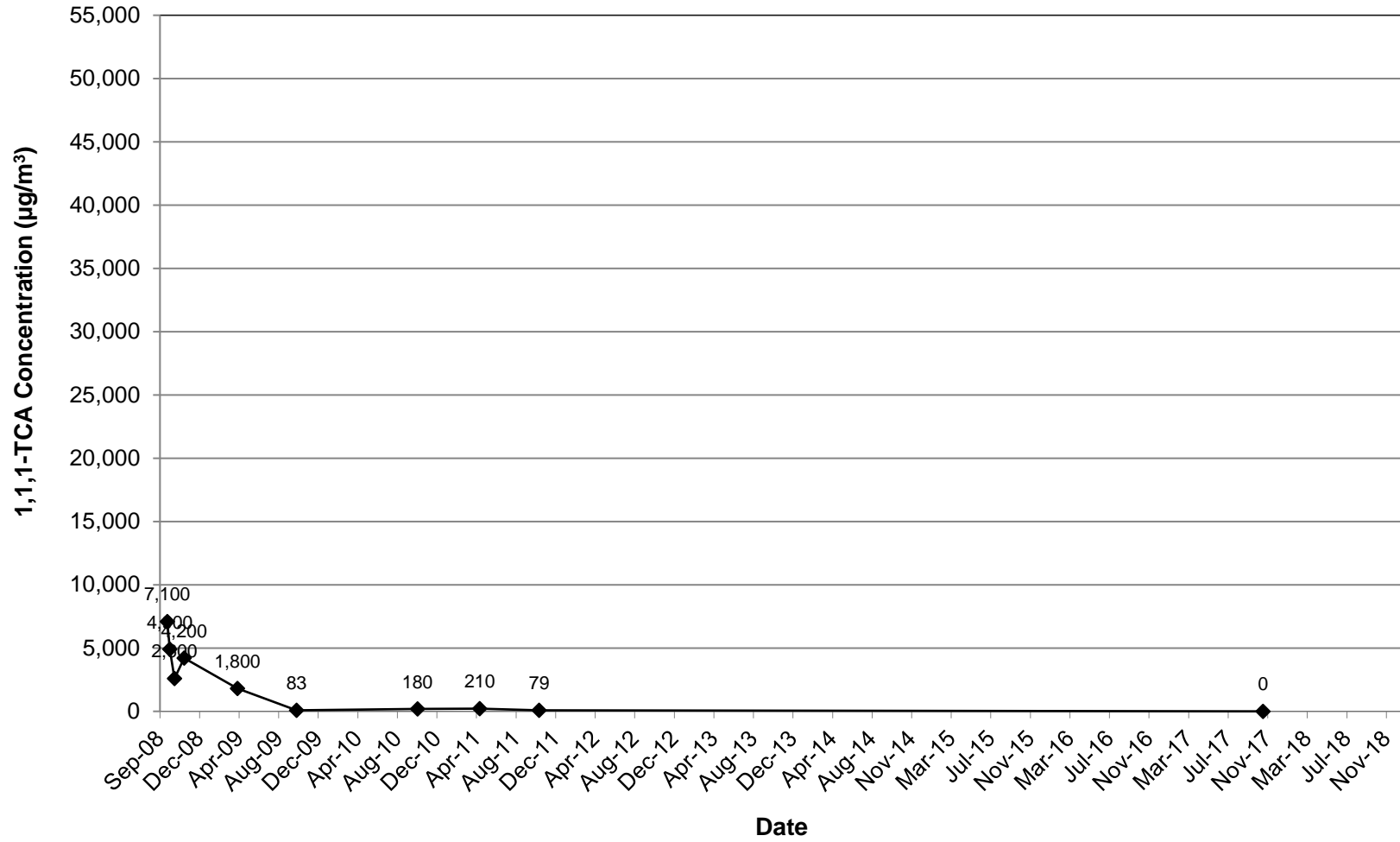


Figure 4.13

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

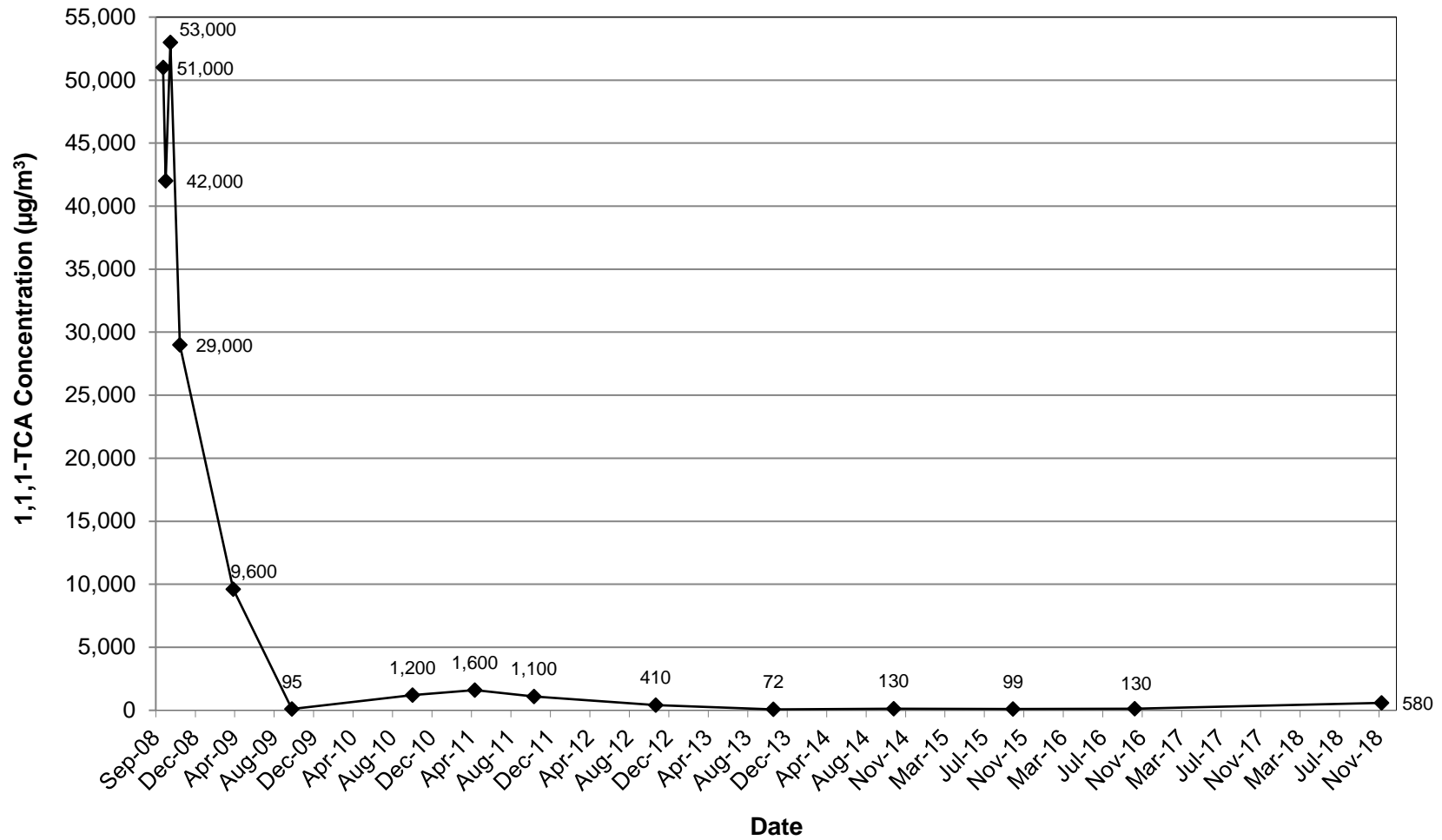


Figure 4.14

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

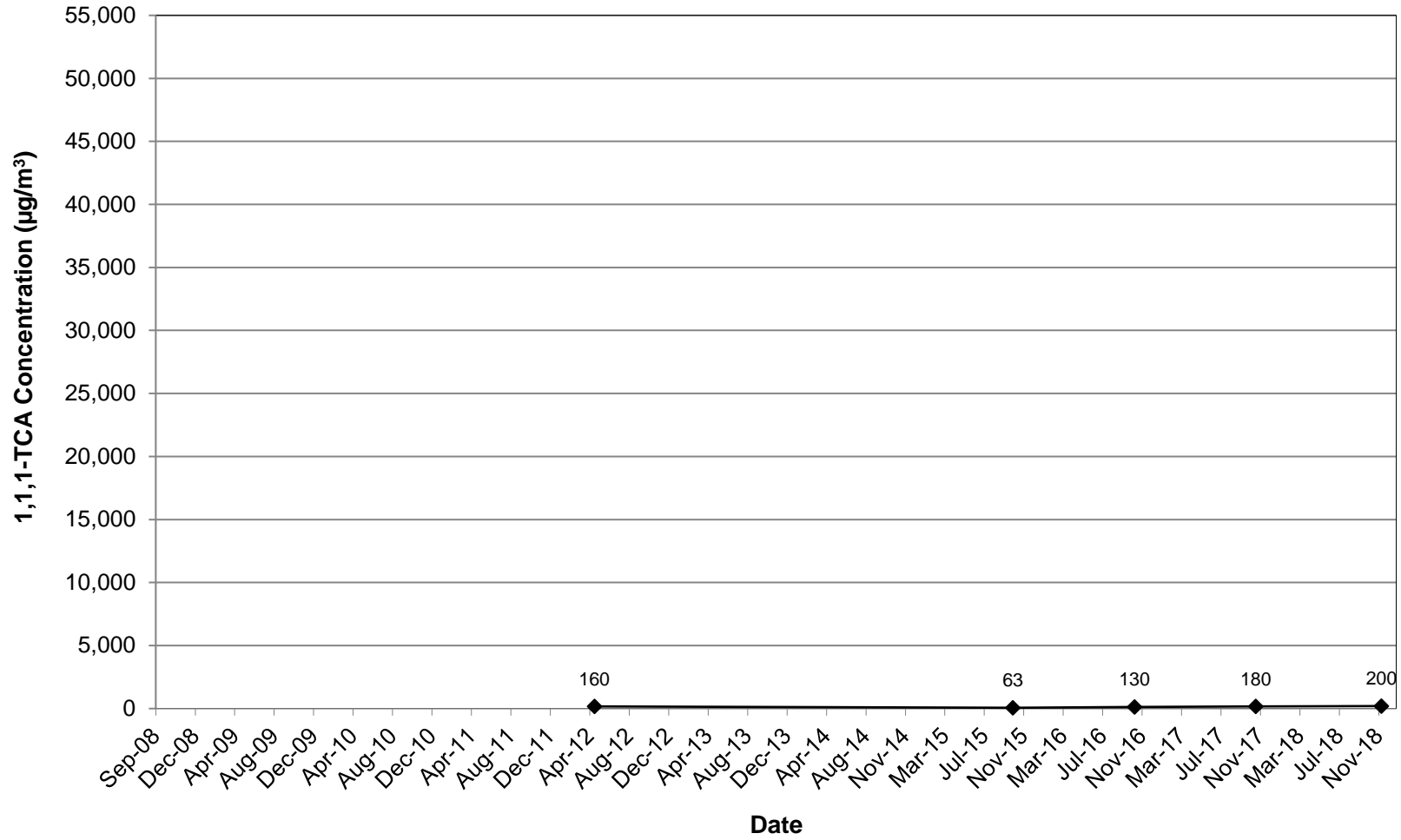


Figure 4.15

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

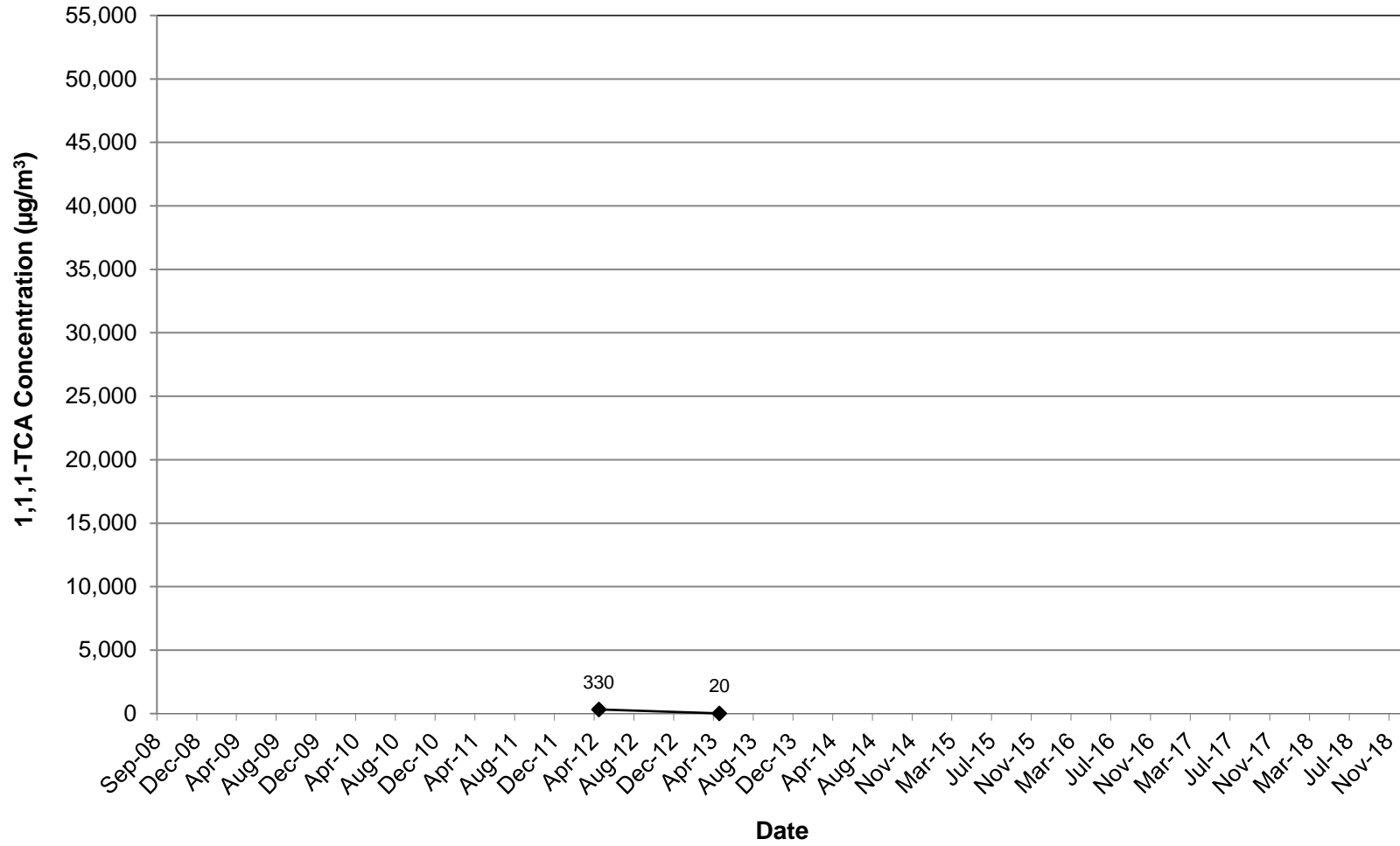


Figure 4.16

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

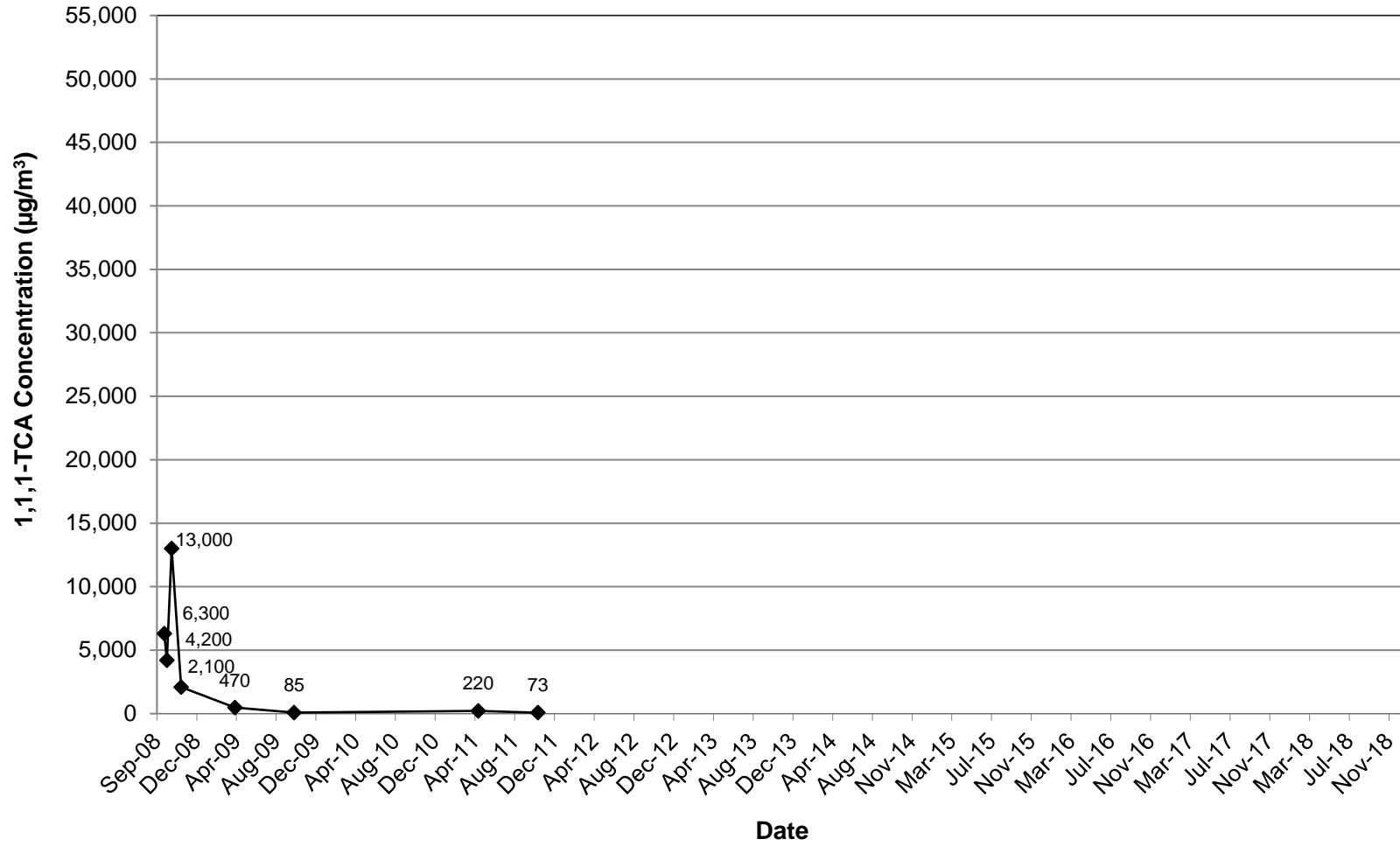


Table 2.1

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

Monitoring Well	Top of Casing Elevation	Groundwater Elevation	
		May 2018	November 2018
MW1	1044.71	-	904.89
MW1A	1044.00	905.73	904.29
MW1B	1044.86	907.77	904.29
MW2R	1058.23	910.45	909.72
MW2A	1058.62	910.06	908.71
MW2B	1058.59	910.04	908.70
MW3	1019.14	919.09	918.57
MW4	1072.50	-	-
MW5	1022.91	924.55	922.95
MW6**	1042.48	-	-
MW8	1049.91	915.37	913.71
MW8A	1049.67	914.89	913.74
MW9	1026.90	910.61	909.24
MW9A	1026.03	909.72	908.48
MW10	1029.08	-	885.96
MW10A	1028.94	887.36	886.24
MW10B	1028.79	886.85	885.74
MW11A	868.67	862.25	862.21
MW12	880.06	-	-
MW12A	879.67	-	-
MW13	1033.70	913.46	912.59
MW13A	1033.57	913.55	911.85
MW14	1028.94	909.28	907.65
MW14A	1027.84	908.95	907.38
MW15	880.76	859.37	859.17
MW15A	879.52	862.03	861.87
MW16	1039.90	902.93	901.42
MW16A	1040.08	902.99	901.42

Table 2.1

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

Monitoring Well	Top of Casing Elevation	Groundwater Elevation	
		May 2018	November 2018
MW17	907.23	872.13	871.47
MW17A	907.44	871.96	871.44
MW18	897.73	865.98	865.66
MW19	-	-	-
MW19A	-	-	-
Apple River*	870.68	-	-

Notes:

All elevations in feet above mean sea level (AMSL)

* - Measured from bridge on County Road C

** - Cover is stuck on well, repairs needed

MW-11 was abandoned in 2016

Table 2.2

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

Monitoring Well	May-18	Nov-18
MW1	V, L	V, L
MW1A	L	L
MW1B	L	L
MW2R	L	V, L
MW2A	L	L
MW2B	L	L
MW3	L	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	V, L	V, L
MW10B	L	L
MW11A	L	V, L
MW12	L	L
MW12A	L	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	L	V, L
MW19A	L	V, L

Notes:

V - Sample collected for VOCs

L - Water level measured

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

Location	Date	ES PAL Dup	1,1-Dichloroethene	Chloroform	Tetrachloroethene
			7.0 0.7 ug/L	6.0 0.6 ug/L	5.0 0.5 ug/L
MW1	5/4/18		< 1.0	1.8 J	< 1.0
MW1	11/14/18		1.0	1.7 J	< 1.0
MW2R	11/15/18		0.4 J	0.8 J	< 1.0
MW9	11/15/18		2.9	2.0	< 2.3
MW10	5/4/18		< 1.0	< 2.0	< 1.0
MW10	11/12/18		0.5 J	< 2.0	< 1.0
MW10A	5/4/18		4.2	< 2.0	3.8
MW10A	11/14/18		3.8	0.5 J	< 3.4
MW11A	11/12/18		< 1.0	< 2.0	< 1.0
MW13	11/14/18		< 1.0	< 2.0	< 1.0
MW14	11/14/18		< 1.0	< 2.0	< 1.0
MW14	11/14/18	D	< 1.0	< 2.0	< 1.0
MW15A	11/12/18		< 1.0	< 2.0	< 1.0
MW16	5/3/18		3.6	1.1 J	1.8
MW16	11/14/18		3.5	0.8 J	< 2.1
MW16A	5/3/18		< 1.0	< 2.0	< 1.0
MW16A	11/14/18		< 1.0	< 2.0	< 1.0
MW17	5/3/18		3.4	< 2.0	1.9
MW17	5/3/18	D	3.5	< 2.0	1.8
MW17	11/15/18		3.1	< 2.0	< 2.1
MW17A	5/4/18		< 1.0	< 2.0	1.3
MW17A	11/15/18		1.5	< 2.0	< 1.9
MW18	5/4/18		3.7	< 2.0	< 1.0
MW18	11/12/18		3.3	< 2.0	< 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 (February 2017).

D - Duplicate

J - Estimated concentration

Bold Lettering - Exceeds PAL

Exceeds ES

Table 3.2

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

Location	Date	ES PAL Dup	1,1,1-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	Carbon Disulfide	Chloroethane	Chloroform	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene
			200 40 ug/L	850 85 ug/L	7 0.7 ug/L	1000 200 ug/L	400 80 ug/L	6 0.6 ug/L	70 7 ug/L	5 0.5 ug/L	5 0.5 ug/L
MW1	5/4/18		5.7	6.6	< 1	< 2	< 1	1.8 J	< 1	< 1	< 0.5
MW1	11/14/18		4.5	15	1	< 2	< 1	1.7 J	< 1	< 1	0.5 J
MW2R	11/15/18		1.3	2.5	0.4 J	< 2	< 1	0.8 J	< 1	< 1	0.3 J
MW9	11/15/18		11	17	2.9	< 2	< 1	2	1	< 2.3	0.3 J
MW10	5/4/18		2.4	< 1	< 1	< 2	< 1	< 2	< 1	< 1	< 0.5
MW10	11/12/18		2.5	2.5	0.5 J	< 2	< 1	< 2	< 1	< 1	< 0.5
MW10A	5/4/18		20	20	4.2	< 2	< 1	< 2	1.6	3.8	< 0.5
MW10A	11/14/18		15	18	3.8	< 2	< 1	0.5 J	1.6	< 3.4	0.4 J
MW11A	11/12/18		< 1	< 1	< 1	< 2	< 1	< 2	< 1	< 1	< 0.5
MW16	5/3/18		13	16	3.6	< 2	< 1	1.1 J	1.2	1.8	0.3 J
MW16	11/14/18		14	16	3.5	< 2	< 1	0.8 J	1.1	< 2.1	0.3 J
MW17	5/3/18		11	15	3.4	< 2	1	< 2	1 J	1.9	0.3 J
MW17	5/3/18	D	11	16	3.5	< 2	1 J	< 2	1	1.8	0.3 J
MW17	11/15/18		12	16	3.1	< 2	1.2	< 2	0.9 J	< 2.1	0.4 J
MW17A	5/4/18		8.4	10	< 1	< 2	< 1	< 2	< 1	1.3	< 0.5
MW17A	11/15/18		11	11	1.5	< 2	0.7 J	< 2	0.5 J	< 1.9	< 0.5
MW18	5/4/18		13	2.5	3.7	< 2	< 1	< 2	< 1	< 1	< 0.5
MW18	11/12/18		14	3.8	3.3	4.6	< 1	< 2	< 1	< 1	< 0.5

Notes:

All results are in ug/L

Enforcement Standard (ES) and Preventative Action Limit (PAL) as found in Wisconsin Administrative Code Chapter NR 140 (February 2017).

D - Duplicate

J - Estimated concentration

Bold Lettering - Exceeds PAL

Exceeds ES

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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)
Stack	1/24/18	1.7	14.8	0.2	37	535	310-450	NA ¹
Stack	2/13/18	0.0	17.1	0.2	44	459	310-450	3,909
Stack	3/5/18	0.0	17.5	0.2	45	504	310-450	3,220
Stack	4/4/18	0.0	14.9	0.1	36	559	310-450	NA ¹
Stack	5/17/18	0.2	13.7	1	56	300	310-450	-
Stack	7/3/18	0.0	16.7	0.8	68	300	310-450	-
Stack	7/31/18	0.0	14.9	0.3	69	300	310-450	-
Stack	8/30/18	0.4	15.4	0.6	64	300	310-450	-
Stack	9/28/18	0.0	16.3	1.6	56	300	310-450	2,257
Stack	11/16/18	0.1	16.8	0.1	50	446	310-450	> 4,194
Stack	12/13/18	0.5	15.9	0.1	42	622	310-450	> 5,745
SVE-1	05/17/18	0.0	17.6	-8.0	56	0	-	-
SVE-1	11/16/18	0.0	16.4	-12.8	50	0	-	0
SVE-2	05/17/18	0.0	19.5	-6.5	56	0	-	-
SVE-2	11/16/18	0.0	17.1	-10.0	50	0	-	217
SVE-3	05/17/18	0.0	14.2	-9.0	56	0	-	-
SVE-3	11/16/18	0.2	13.2	-11.8	50	0	-	2,936
SVE-4	01/24/18	4.3	13.3	-11.6	37	0 ²	40-50	NA ¹
SVE-4	02/13/18	1.1	15.8	-16.1	44	42	40-50	NA ¹
SVE-4	03/05/18	1.6	15.7	-15.8	45	43	40-50	NA ¹
SVE-4	04/04/18	1.9	14.8	-11.3	36	0 ²	40-50	NA ¹
SVE-4	05/17/18	0.5	14.0	-9.1	56	0 ²	40-50	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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	07/03/18	0.3	16.1	-8.0	68	0 ²	40-50	-
SVE-4	07/31/18	0.0	15.0	-10.1	69	0 ²	40-50	-
SVE-4	08/30/18	0.0	19.0	-9.6	64	0 ²	40-50	-
SVE-4	09/28/18	0.7	14.2	-12.4	56	0 ²	40-50	2,873
SVE-4	11/16/18	1.5	15.4	-12.8	50	72	40-50	> 4,194
SVE-4	12/13/18	0.2	14.6	-12.6	42	0 ²	40-50	5,038
SVE-5	05/17/18	0.0	19.2	-8.8	56	0	-	-
SVE-5	11/16/18	1.0	21.2	-12.6	50	0	-	0
SVE-6	01/24/18	1.6	16.1	-11.7	37	0 ²	40-50	NA ¹
SVE-6	02/13/18	0.0	16.9	-16.2	44	0 ²	40-50	811
SVE-6	03/05/18	0.1	16.9	-15.8	45	0 ²	40-50	1,208
SVE-6	04/04/18	0.4	15.1	-11.1	36	0 ²	40-50	NA ¹
SVE-6	05/17/18	0.0	14.9	-9.3	56	0 ²	40-50	-
SVE-6	07/03/18	0.0	16.7	-8.4	68	0 ²	40-50	-
SVE-6	07/31/18	0.0	15.5	-10.1	69	0 ²	40-50	-
SVE-6	08/30/18	0.0	15.4	-9.4	64	0 ²	40-50	-
SVE-6	09/28/18	0.0	14.6	-12.0	56	0 ²	40-50	NA ¹
SVE-6	11/16/18	0.1	16.0	-13.1	50	57	40-50	2,129
SVE-6	12/13/18	0.0	14.7	-12.7	42	0 ²	40-50	1,073
SVE-7	01/24/18	4.1	14.8	-11.7	37	0 ²	40-50	NA ¹
SVE-7	02/13/18	0.8	17.1	-16.1	44	0 ²	40-50	1,092
SVE-7	03/05/18	0.0	18.2	-15.9	45	38	40-50	981
SVE-7	04/04/18	0.0	17.6	-11.3	36	0 ²	40-50	1,208

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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)
SVE-7	05/17/18	0.0	13.8	-9.1	56	0 ²	40-50	-
SVE-7	07/03/18	0.0	16.0	-8.1	68	0 ²	40-50	-
SVE-7	07/31/18	0.0	14.7	-10.2	69	0 ²	40-50	-
SVE-7	08/30/18	0.0	14.7	-9.6	64	0 ²	40-50	-
SVE-7	09/28/18	0.7	13.5	-12.5	56	0 ²	40-50	> 4,293
SVE-7	11/16/18	2.6	14.8	-12.5	50	64	40-50	NA ¹
SVE-7	12/13/18	0.5	14.2	-12.7	42	0 ²	40-50	> 5,745
SVE-8	05/17/18	0.0	18.1	-8.9	56	0	-	-
SVE-8	11/16/18	0.0	21.0	-12.8	50	0	-	0
SVE-9	05/17/18	0.0	18.4	-9.0	56	0	-	-
SVE-9	11/16/18	0.0	20.5	-12.6	50	0	-	0
SVE-10	05/17/18	0.0	19.4	-9.1	56	0	-	-
SVE-10	11/16/18	0.0	20.0	-12.5	50	0	-	0
SVE-11	05/17/18	3.2	12.8	-8.8	56	0	-	-
SVE-11	11/16/18	1.2	16.4	-12.9	50	0	-	> 4,193
SVE-12	01/24/18	5.4	18.8	-7.2	37	0 ²	40-50	1,691
SVE-12	02/13/18	0.4	19.0	-10.4	44	44	40-50	1,725
SVE-12	03/05/18	0.0	19.6	-16.1	45	0 ²	40-50	1,449
SVE-12	04/04/18	0.0	18.9	-6.8	36	0 ²	40-50	1,911
SVE-12	05/17/18	0.1	19.1	-9.6	56	0 ²	40-50	-
SVE-12	07/03/18	0.0	18.3	-7.6	68	0 ²	40-50	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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)
SVE-12	07/31/18	0.0	18.2	-7.0	69	0 ²	40-50	-
SVE-12	08/30/18	0.0	18.1	-8.8	64	0 ²	40-50	-
SVE-12	09/28/18	0.3	18.6	-12.1	56	0 ²	40-50	NA ¹
SVE-12	11/16/18	0.8	17.9	-11.7	50	0 ²	40-50	> 4,193
SVE-12	12/13/18	0.5	18.4	-11.8	42	0 ²	40-50	> 5,745
SVE-13	01/24/18	4.2	12.7	-11.9	37	0 ²	40-50	NA ¹
SVE-13	02/13/18	0.0	14.9	-16.4	44	0 ²	40-50	NA ¹
SVE-13	03/05/18	0.0	20.0	-15.9	45	52	40-50	727
SVE-13	04/04/18	0.0	19.5	-11.4	36	44	40-50	806
SVE-13	05/17/18	0.0	13.2	-9.1	56	0 ²	40-50	-
SVE-13	07/03/18	0.0	15.4	-8.2	68	0 ²	40-50	-
SVE-13	07/31/18	0.0	13.7	-10.3	69	0 ²	40-50	-
SVE-13	08/30/18	0.0	12.4	-9.7	64	0 ²	40-50	-
SVE-13	09/28/18	0.0	9.2	-12.8	56	0 ²	40-50	NA ¹
SVE-13	11/16/18	0.6	11.4	-13.4	50	30	40-50	> 4,194
SVE-13	12/13/18	0.0	11.6	-12.6	42	0 ²	40-50	951
SVE-14	01/24/18	4.3	14.9	-11.3	37	0 ²	40-50	NA ¹
SVE-14	02/13/18	0.2	15.4	-16.1	44	0 ²	40-50	NA ¹
SVE-14	03/05/18	0.0	18.7	-15.9	45	0 ²	40-50	899
SVE-14	04/04/18	0.0	19.5	-11.3	36	47	40-50	1,007
SVE-14	05/17/18	0.4	11.1	-8.1	56	0 ²	40-50	-
SVE-14	07/03/18	0.0	13.2	-7.6	68	0 ²	40-50	-
SVE-14	07/31/18	0.0	12.9	-9.6	69	0 ²	40-50	-
SVE-14	08/30/18	0.0	20.6	-7.2	64	0 ²	40-50	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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)
SVE-14	09/28/18	0.8	11.6	-12.0	56	0 ²	40-50	NA ¹
SVE-14	11/16/18	3.1	11.0	-12.8	50	37	40-50	NA ¹
SVE-14	12/13/18	0.6	13.5	-12.4	42	0 ²	40-50	> 5,745
SVE-15	05/17/18	0.0	20.2	-11.9	56	0	-	-
SVE-15	11/16/18	0.0	19.6	-12.2	50	0	-	0
SVE-16	05/17/18	0.0	17.3	-9.0	56	0	-	-
SVE-16	11/16/18	0.0	21.0	-12.9	50	0	-	453
SVE-17	05/17/18	0.0	19.3	-11.6	56	0	-	-
SVE-17	11/16/18	0.0	20.4	-12.8	50	0	-	123
SVE-18	05/17/18	0.0	14.8	-8.4	56	0	-	-
SVE-18	11/16/18	0.0	15.4	-8.9	50	0	-	0
SVE-19	05/17/18	0.0	19.7	-10.9	56	0	-	-
SVE-19	11/16/18	0.0	20.3	-13.2	50	0	-	226
LFG-1	01/24/18	3.1	9.7	-12.0	62	0 ²	5-10	NA ¹
LFG-1	02/13/18	0.2	18.0	-16.5	64	9	5-10	744
LFG-1	03/05/18	0.0	17.6	-16.2	49	8	5-10	811
LFG-1	04/04/18	0.0	19.0	-12.0	43	9	5-10	1,139
LFG-1	05/17/18	2.4	1.9	-9.1	56	0 ²	5-10	-
LFG-1	07/03/18	0.8	8.4	-8.2	60	0 ²	5-10	-
LFG-1	07/31/18	0.6	5.9	-10.2	70	0 ²	5-10	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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)
LFG-1	08/30/18	12.0	0.1	-9.6	64	0 ²	5-10	-
LFG-1	09/28/18	3.8	2.3	-12.4	54	0 ²	5-10	NA ¹
LFG-1	11/16/18	4.1	6.0	-12.6	50	6	5-10	NA ¹
LFG-1	12/13/18	1.6	2.8	-12.7	48	5	5-10	NA ¹
LFG-2	01/24/18	0.4	17.8	-12.1	49	0 ²	5-10	1,314
LFG-2	02/13/18	0.0	20.4	-16.4	55	0 ²	5-10	471
LFG-2	03/05/18	0.0	19.8	-16.1	52	0 ²	5-10	505
LFG-2	04/04/18	0.0	19.2	-11.9	48	0 ²	5-10	870
LFG-2	05/17/18	0.0	8.1	-9.2	56	0 ²	5-10	-
LFG-2	07/03/18	0.0	15.4	-8.2	58	0 ²	5-10	-
LFG-2	07/31/18	0.0	14.4	-10.2	68	0 ²	5-10	-
LFG-2	08/30/18	3.4	0.1	-9.2	61	0 ²	5-10	-
LFG-2	09/28/18	0.4	6.7	-11.7	54	0 ²	5-10	NA ¹
LFG-2	11/16/18	0.0	16.7	-12.5	50	7	5-10	1,485
LFG-2	12/13/18	11.4	1.2	-13.0	52	6	5-10	NA ¹
LFG-3	01/24/18	7.9	11.9	-12.0	60	0 ²	5-10	NA ¹
LFG-3	02/13/18	0.8	17.1	-16.6	59	5	5-10	1,480
LFG-3	03/05/18	0.1	19.2	-16.1	50	0 ²	5-10	1,277
LFG-3	04/04/18	0.5	18.7	-12.0	47	0 ²	5-10	1,413
LFG-3	05/17/18	0.6	11.8	-9.2	56	0 ²	5-10	-
LFG-3	07/03/18	0.0	14.5	-8.2	60	0 ²	5-10	-
LFG-3	07/31/18	0.0	13.8	-10.3	66	0 ²	5-10	-
LFG-3	08/30/18	2.4	5.5	-9.7	62	0 ²	5-10	-
LFG-3	09/28/18	1.2	12.1	-12.6	54	0 ²	5-10	> 4,293

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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)
LFG-3	11/16/18	3.3	15.0	-12.6	50	0 ²	5-10	NA ¹
LFG-3	12/13/18	3.1	11.6	-12.6	46	5	5-10	NA ¹
LFG-4	01/24/18	11.2	12.0	-12.0	56	0 ²	15-20	NA ¹
LFG-4	02/13/18	5.1	13.3	-16.5	60	0 ²	15-20	NA ¹
LFG-4	03/05/18	2.1	14.8	-16.1	52	0 ²	15-20	NA ¹
LFG-4	04/04/18	2.4	15.3	-11.9	41	0 ²	15-20	NA ¹
LFG-4	05/17/18	0.7	9.3	-9.4	56	0 ²	15-20	-
LFG-4	07/03/18	0.0	16.6	-7.8	58	10	15-20	-
LFG-4	07/31/18	0.0	15.9	-10.1	62	0 ²	15-20	-
LFG-4	08/30/18	3.6	1.7	-9.3	60	0 ²	15-20	-
LFG-4	09/28/18	0.4	10.3	-12.1	58	0 ²	15-20	> 4,293
LFG-4	11/16/18	0.3	16.7	-12.6	56	14	15-20	3,838
LFG-4	12/13/18	8.8	8.1	-12.8	52	18	15-20	NA ¹
LFG-5	01/24/18	10.3	15.6	-11.9	60	0 ²	5-10	NA ¹
LFG-5	02/13/18	3.0	15.6	-16.4	62	0 ²	5-10	NA ¹
LFG-5	03/05/18	0.8	18.4	-16.1	52	0 ²	5-10	1,340
LFG-5	04/04/18	0.7	17.7	-11.9	43	0 ²	5-10	986
LFG-5	05/17/18	3.3	4.7	-9.1	56	0 ²	5-10	-
LFG-5	07/03/18	0.5	12.3	-8.2	56	0 ²	5-10	-
LFG-5	07/31/18	0.6	11.0	-10.1	66	0 ²	5-10	-
LFG-5	08/30/18	11.1	1.0	-9.5	64	0 ²	5-10	-
LFG-5	09/28/18	2.1	6.2	-12.6	58	0 ²	5-10	1,123
LFG-5	11/16/18	0.0	17.3	-12.6	52	6	5-10	1,609
LFG-5	12/13/18	2.5	4.1	-12.6	48	8	5-10	NA ¹

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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)
LFG-6	01/24/18	18.9	6.8	-11.9	67	0 ²	15-20	NA ¹
LFG-6	02/13/18	3.1	15.2	-16.4	64	17	15-20	NA ¹
LFG-6	03/05/18	1.2	15.0	-16.0	55	15	15-20	NA ¹
LFG-6	04/04/18	1.0	14.6	-11.9	46	0 ²	15-20	NA ¹
LFG-6	05/17/18	0.7	9.9	-11.7	56	14	15-20	-
LFG-6	07/03/18	0.1	16.4	-8.6	60	0 ²	15-20	-
LFG-6	07/31/18	0.0	15.9	-9.8	64	0 ²	15-20	-
LFG-6	08/30/18	4.2	5.5	-9.0	62	0 ²	15-20	-
LFG-6	09/28/18	1.0	9.7	-12.4	60	0 ²	15-20	NA ¹
LFG-6	11/16/18	0.6	14.6	-11.7	58	14	15-20	> 4,193
LFG-6	12/13/18	2.1	8.5	-11.8	56	19	15-20	NA ¹
LFG-7	01/24/18	12.9	8.0	-1.4	42	0 ²	5-10	NA ¹
LFG-7	02/13/18	4.9	14.7	-16.5	48	0 ²	5-10	NA ¹
LFG-7	03/05/18	3.2	15.7	-16.1	47	0 ²	5-10	NA ¹
LFG-7	04/04/18	3.6	15.1	-2.3	42	0 ²	5-10	NA ¹
LFG-7	05/17/18	0.3	10.7	-8.9	56	0 ²	5-10	-
LFG-7	07/03/18	0.0	15.2	-8.0	58	0 ²	5-10	-
LFG-7	07/31/18	0.0	13.8	-10.0	66	0 ²	5-10	-
LFG-7	08/30/18	1.6	6.1	-9.6	60	0 ²	5-10	-
LFG-7	09/28/18	1.5	11.0	-12.6	54	0 ²	5-10	NA ¹
LFG-7	11/16/18	0.6	14.5	-12.7	44	0 ²	5-10	> 4,193
LFG-7	12/13/18	0.9	9.8	-12.4	44	5	5-10	3,178
LFG-8	01/24/18	36.0	1.4	-12.0	52	0 ²	15-20	NA ¹

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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)
LFG-8	02/13/18	12.3	11.0	-16.5	52	0 ²	15-20	NA ¹
LFG-8	03/05/18	10.3	14.1	-16.0	48	14	15-20	NA ¹
LFG-8	04/04/18	11.8	13.5	-12.0	39	16	15-20	NA ¹
LFG-8	05/17/18	9.2	1.8	-11.7	56	0 ²	15-20	-
LFG-8	07/03/18	2.4	9.4	-8.5	63	0 ²	15-20	-
LFG-8	07/31/18	2.4	8.5	-10.0	68	0 ²	15-20	-
LFG-8	08/30/18	11.0	0.1	-9.2	60	0 ²	15-20	-
LFG-8	09/28/18	8.6	0.8	-12.6	50	0 ²	15-20	726
LFG-8	11/16/18	7.7	2.5	-12.2	38	0 ²	15-20	NA ¹
LFG-8	12/13/18	26.5	0.0	-12.3	44	11	15-20	NA ¹
LFG-9	01/24/18	6.4	13.7	-12.0	50	0 ²	5-10	NA ¹
LFG-9	02/13/18	1.8	17.4	-16.3	48	6	5-10	6,201
LFG-9	03/05/18	2.1	17.2	-16.0	44	7	5-10	2,056
LFG-9	04/04/18	2.2	16.7	-11.9	38	5	5-10	1,883
LFG-9	05/17/18	0.0	10.2	-11.8	56	0 ²	5-10	-
LFG-9	07/03/18	0.0	16.2	-8.1	60	0 ²	5-10	-
LFG-9	07/31/18	0.0	15.2	-0.1	62	0 ²	5-10	-
LFG-9	08/30/18	0.0	7.9	-9.2	59	0 ²	5-10	-
LFG-9	09/28/18	0.0	9.8	-12.5	52	0 ²	5-10	NA ¹
LFG-9	11/16/18	0.0	10.6	-12.8	52	0 ²	5-10	0
LFG-9	12/13/18	0.0	14.7	-12.3	48	6	5-10	> 5,745
GP-01	01/24/18	0.0	20.1	0.0	-	-	-	-
GP-01	05/17/18	0.0	18.5	-0.1	-	-	-	-
GP-01	07/31/18	0.0	17.5	0.0	-	-	-	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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	11/16/18	0.0	20.8	0.0	-	-	-	-
GP-1A	01/24/18	0.0	20.6	0.0	-	-	-	-
GP-1A	05/17/18	0.0	19.1	-0.3	-	-	-	-
GP-1A	07/31/18	0.0	18.4	0.0	-	-	-	-
GP-1A	11/16/18	0.0	20.8	-0.1	-	-	-	-
GP-02	01/24/18	0.0	20.4	-0.2	-	-	-	-
GP-02	05/17/18	0.0	18.3	-0.3	-	-	-	-
GP-02	07/31/18	0.0	15.4	0.0	-	-	-	-
GP-02	11/16/18	12.3	0.0	-0.1	-	-	-	-
GP-2A	01/24/18	0.0	20.0	-0.1	-	-	-	-
GP-2A	05/17/18	0.0	18.7	0.0	-	-	-	-
GP-2A	07/31/18	0.0	16.3	0.1	-	-	-	-
GP-2A	11/16/18	1.8	10.9	-0.9	-	-	-	-
GP-2B	01/24/18	0.0	18.8	-0.1	-	-	-	-
GP-2B	05/17/18	0.0	18.6	0.0	-	-	-	-
GP-2B	07/31/18	0.0	17.4	0.4	-	-	-	-
GP-2B	11/16/18	1.2	16.0	-1.2	-	-	-	-
GP-03	01/24/18	0.0	20.5	0.0	-	-	-	-
GP-03	05/17/18	0.0	16.3	-0.3	-	-	-	-
GP-03	07/31/18	0.0	17.9	0.0	-	-	-	-
GP-03	11/16/18	0.0	20.4	0.0	-	-	-	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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-3A	01/24/18	0.0	20.1	-0.1	-	-	-	-
GP-3A	05/17/18	0.0	17.6	-0.4	-	-	-	-
GP-3A	07/31/18	0.0	19.3	0.2	-	-	-	-
GP-3A	11/16/18	0.0	20.4	0.0	-	-	-	-
GP-4A	01/24/18	0.0	20.7	-0.4	-	-	-	-
GP-4A	05/17/18	0.0	15.9	0.0	-	-	-	-
GP-4A	07/31/18	0.0	18.3	0.0	-	-	-	-
GP-4A	11/16/18	0.0	21.1	-0.2	-	-	-	-
GP-8A	01/24/18	0.0	20.9	-0.2	-	-	-	-
GP-8A	05/17/18	0.0	19.0	-0.1	-	-	-	-
GP-8A	07/31/18	0.0	19.3	0.0	-	-	-	-
GP-8A	11/16/18	0.0	20.1	-1.2	-	-	-	-
GP-8B	01/24/18	0.0	20.8	-0.3	-	-	-	-
GP-8B	05/17/18	0.0	18.3	-0.4	-	-	-	-
GP-8B	07/31/18	0.0	19.2	0.0	-	-	-	-
GP-8B	11/16/18	0.0	20.3	-1.1	-	-	-	-
GP-09	01/24/18	0.0	20.4	0.0	-	-	-	-
GP-09	05/17/18	0.0	18.7	0.0	-	-	-	-
GP-09	07/31/18	0.0	18.0	0.0	-	-	-	-
GP-09	11/16/18	0.0	20.1	0.0	-	-	-	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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-9A	01/24/18	0.0	19.8	-0.1	-	-	-	-
GP-9A	05/17/18	0.0	16.6	-0.1	-	-	-	-
GP-9A	07/31/18	0.0	17.9	0.0	-	-	-	-
GP-9A	11/16/18	0.0	19.5	0.0	-	-	-	-
GP-10	01/24/18	0.0	20.7	0.0	-	-	-	-
GP-10	05/17/18	0.0	18.8	0.0	-	-	-	-
GP-10	07/31/18	0.0	18.3	0.0	-	-	-	-
GP-10	11/16/18	0.0	20.8	0.0	-	-	-	-
GP-10A	01/24/18	0.0	20.2	0.0	-	-	-	-
GP-10A	05/17/18	0.0	18.9	0.0	-	-	-	-
GP-10A	07/31/18	0.0	17.6	0.0	-	-	-	-
GP-10A	11/16/18	0.0	19.5	0.0	-	-	-	-
GP-11	01/24/18	0.0	20.8	0.1	-	-	-	-
GP-11	05/17/18	0.0	17.0	0.0	-	-	-	-
GP-11	07/31/18	0.0	17.5	0.0	-	-	-	-
GP-11	11/16/18	0.0	21.1	0.0	-	-	-	-
GP-11A	01/24/18	0.0	20.8	0.0	-	-	-	-
GP-11A	05/17/18	0.0	18.3	0.0	-	-	-	-
GP-11A	07/31/18	0.0	16.8	0.0	-	-	-	-
GP-11A	11/16/18	0.0	21.1	-0.1	-	-	-	-
GP-12	01/24/18	0.0	20.3	0.0	-	-	-	-

Table 4.1

**SVE/LFG Gas Extraction System Summary
(January - December 2018)
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-12	05/17/18	0.0	18.7	0.0	-	-	-	-
GP-12	07/31/18	0.0	18.1	0.1	-	-	-	-
GP-12	11/16/18	0.0	20.9	-0.2	-	-	-	-

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.

Table 4.2

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

Table 4.2

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
Trifluorotrichloroethane (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

Table 4.2

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 (µg/m³)
 New Richmond Landfill (#2492)
 New Richmond, Wisconsin

Parameter	Blower Discharge 10/30/17	Blower Discharge 01/24/18	Blower Discharge 05/22/18	Blower Discharge 07/31/18	Blower Discharge 11/16/18	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
1,1,1-Trichloroethane	330	100	260	400	510	44.0	546	670	210	2100	2100	1200	1300	430	160	1,582
1,1,2,2-Tetrachloroethane	< 14	< 14	< 14	< 6.9	< 14	< 14	< 13.73	< 14	< 14	< 14	< 14	< 14	< 14	< 1.4	< 14	< 13.73
1,1,2-Trichloroethane	< 11	< 11	< 11	< 5.5	< 11	< 11	< 10.91	< 11	< 11	< 11	< 11	< 11	< 11	< 1.5	< 11	< 10.91
1,1-Dichloroethane	280	58	250	280	450	35.0	567	580	220	690	650	450	340	150	91	809
1,1-Dichloroethene	33	< 7.9	30	48	54	< 7.9	83.3	50	18	610.0	520.0	310	260	95	12	178.4
1,2,4-Trichlorobenzene	< 74	< 74	< 74	< 37	< 74	< 74	< 74.21	< 74	< 74	< 74	< 74	< 74	< 74	< 7.4	< 74	< 74.21
1,2,4-Trimethylbenzene	< 9.8	< 9.8	< 9.8	< 4.9	< 9.8	< 9.8	< 9.83	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 0.98	< 9.8	< 9.83
1,2-Dibromoethane (Ethylene dibromide)	< 15	< 15	< 15	< 7.7	< 15	< 15	< 15.37	< 15	< 15	< 15	< 15	< 15	< 15	< 1.5	< 15	< 15.37
1,2-Dichlorobenzene	< 12	< 12	< 12	< 6.0	< 24	< 12	< 12.02	< 12	< 12	< 12	< 12	< 12	< 12	< 1.2	< 12	< 12.02
1,2-Dichloroethane	< 8.1	< 8.1	< 8.1	< 4.0	< 8.1	< 8.1	< 8.09	< 8.1	< 8.1	< 8.1	< 8.1	< 8.1	< 8.1	< 0.81	< 8.1	< 8.09
1,2-Dichloropropane	< 9.2	< 9.2	< 9.2	< 4.6	< 9.2	< 9.2	< 9.24	< 9.2	< 9.2	< 9.2	< 9.2	< 9.2	< 9.2	0.97	< 9.2	< 9.24
1,2-Dichlorotetrafluoroethane (CFC 114)	62	76	28	23	60	< 14	26	82	< 14	< 14	< 14	< 14	< 14	3.1	94	15
1,3,5-Trimethylbenzene	< 9.8	< 9.8	< 9.8	< 4.9	< 9.8	< 9.8	< 9.83	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 0.98	< 9.8	< 9.83
1,3-Butadiene	< 8.8	< 8.8	< 8.8	< 4.4	< 8.8	< 8.8	< 8.85	< 8.8	< 8.8	< 8.8	< 8.8	< 8.8	< 8.8	< 0.88	< 8.8	< 8.85
1,3-Dichlorobenzene	< 12	< 12	< 12	< 6.0	< 12	< 12	< 12.02	< 12	< 12	< 12	< 12	< 12	< 12	< 1.2	< 12	< 12.02
1,4-Dichlorobenzene	< 12	< 12	< 12	< 6.0	< 12	< 12	< 12.02	< 12	< 12	< 12	< 12	< 12	< 12	< 1.2	< 12	< 12.02
2-Butanone (Methyl ethyl ketone) (MEK)	< 29	31	< 29	< 15	< 29	< 29	< 29.49	< 29	< 29	< 29	< 29	< 29	< 29	< 2.9	< 29	< 29.49
2-Hexanone	< 20	< 20	< 20	< 10	< 16	< 20	< 20.48	< 20	< 20	< 20	< 20	< 20	< 20	< 2	< 20	< 20.48
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	< 20	< 20	< 20	< 10	< 41	< 20	< 20.48	< 20	< 20	< 20	< 20	< 20	< 20	< 2	< 20	< 20.48
Acetone	< 120	170	< 120	< 59	< 180	< 120	< 118.77	< 120	< 120	< 120	< 120	< 120	< 120	< 12	< 120	< 118.77
Acetonitrile	< 17	< 17	< 17	< 8.4	< 17	< 17	< 16.79	< 17	< 17	< 17	< 17	< 17	< 17	< 1.7	< 17	< 16.79
Acrolein	< 23	< 23	< 23	< 11	< 23	< 18	< 18.34	< 18	< 23	< 18	< 18	< 18	< 23	< 2.3	< 23	< 18.34
Acrylonitrile	< 43	< 43	< 43	< 22	< 43	< 43	< 43.4	< 43	< 43	< 43	< 43	< 43	< 43	< 4.3	< 43	< 43.4
Allyl chloride (3-Chloropropene)	< 6.3	< 6.3	< 6.3	< 3.1	< 6.3	< 6.3	< 6.26	< 6.3	< 6.3	< 6.3	< 6.3	< 6.3	< 6.3	< 0.63	< 6.3	< 6.26
alpha-Methylstyrene	< 19	< 19	< 19	< 9.7	< 19	< 19	< -999	< 19	< 19	< 19	< 19	< 19	< 19	< 1.9	< 19	< -999
Benzene	< 6.4	< 6.4	< 6.4	3.3	6.3	< 6.4	< 6.39	< 6.4	< 6.4	< 6.4	< 6.4	< 6.4	< 6.4	< 0.64	< 6.4	< 6.39
Benzyl chloride	< 21	< 21	< 21	< 10	< 21	< 21	< 20.71	< 21	< 21	< 21	< 21	< 21	< 21	< 2.1	< 21	< 20.71
Bromodichloromethane	< 13	< 13	< 13	< 6.7	< 13	< 13	< 13.4	< 13	< 13	< 13	< 13	< 13	< 13	< 1.3	< 13	< 13.4
Bromoform	< 21	< 21	< 21	< 10	< 21	< 21	< 20.67	< 21	< 21	< 21	< 21	< 21	< 21	< 2.1	< 21	< 20.67
Bromomethane (Methyl bromide)	< 7.8	< 7.8	< 7.8	< 3.9	< 7.8	< 7.8	< 7.77	< 7.8	< 7.8	< 7.8	< 7.8	< 7.8	< 7.8	< 0.78	< 7.8	< 7.77
Butane	69	70	27	23	75	< 9.5	22.8	40	10	< 9.5	< 9.5	< 9.5	< 9.5	1.2	< 9.5	18.8
Carbon disulfide	< 16	< 16	< 16	< 7.8	< 12	< 16	< 15.57	< 16	< 16	< 16	< 16	< 16	< 16	< 1.6	< 16	< 15.57
Carbon tetrachloride	< 13	< 13	< 13	< 6.3	< 13	< 13	< 12.58	< 13	< 13	< 13	< 13	< 13	< 13	< 1.3	< 13	< 12.58
Chlorobenzene	< 9.2	< 9.2	< 9.2	< 4.6	13	< 9.2	< 9.21	< 9.2	< 9.2	< 9.2	< 9.2	< 9.2	< 9.2	< 0.92	< 9.2	< 9.21
Chlorodifluoromethane	49	22	21	21	59	< 7.1	7.1	27	< 7.1	< 7.1	< 7.1	< 7.1	< 7.1	3	< 7.1	< -999
Chloroethane	48	6.5	61	56	100	8.5	60.7	34	12	27.0	22.0	12	9.7	11	< 5.3	55.4
Chloroform (Trichloromethane)	33	< 9.8	30	42	48	< 9.8	< 9.77	< 9.8	< 9.8	37.0	43.0	31	31	15	< 9.8	12.7

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

Parameter	SVE-4 10/22/10	SVE-4 10/30/12	SVE-4 04/26/13	SVE-4 10/23/13	SVE-4 10/24/14	SVE-4 10/22/15	SVE-4 10/26/16	SVE-4 10/30/17	SVE-4 11/16/18	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
1,1,1-Trichloroethane	1,300	600	440	320	370	250	380	180	530	5,074	1,800	1300	960	420	37,000	40,000
1,1,2,2-Tetrachloroethane	< 14	< 14	< 5.5	< 14	< 1.4	< 2.7	< 6.9	< 14	< 14	< 51.49	< 14	< 27	< 14	< 1.4	< 1200	< 550
1,1,2-Trichloroethane	< 11	< 11	< 4.4	< 11	1.3	< 2.2	< 5.5	< 11	< 11	< 40.92	< 11	< 22	< 11	< 1.5	< 960	< 440
1,1-Dichloroethane	800	410	320	220	330	200	420	250	530	2,590	1,200	1800	540	240	90,000	65,000
1,1-Dichloroethene	150.0	85.0	70	34	55	34	41	22	73	634.4	330.0	350	200	110	4,400	7,700
1,2,4-Trichlorobenzene	< 74	< 74	< 30	< 74	< 7.4	< 15	< 37	< 74	< 74	< 274.59	< 74	< 150	< 74	< 7.4	< 6500	< 3000
1,2,4-Trimethylbenzene	< 9.8	< 9.8	< 3.9	< 9.8	< 0.98	< 2.0	< 4.9	< 9.8	< 9.8	< 36.87	< 9.8	< 20	< 9.8	< 0.98	< 860	< 390
1,2-Dibromoethane (Ethylene dibromide)	< 15	< 15	< 6.1	< 15	< 1.5	< 3.1	< 7.7	< 15	< 15	< 57.63	< 15	< 31	< 15	< 1.5	< 1300	< 610
1,2-Dichlorobenzene	< 12	< 12	< 4.8	< 12	< 1.2	< 2.4	< 6.0	< 12	< 24	< 45.09	< 12	< 24	< 12	< 1.2	< 1100	< 480
1,2-Dichloroethane	< 8.1	< 8.1	< 3.2	< 8.1	1.2	< 1.6	< 4.0	< 8.1	< 8.1	< 30.36	< 8.1	< 16	< 8.1	0.83	< 710	< 320
1,2-Dichloropropane	< 9.2	< 9.2	< 3.7	< 9.2	2.1	< 1.8	< 4.6	< 9.2	< 9.2	< 34.66	< 9.2	< 18	< 9.2	2.4	< 810	< 370
1,2-Dichlorotetrafluoroethane (CFC 114)	37	23	16	26	10	7.6	74	92	63	< 52.43	25.0	< 28	< 14	< 1.4	< 1200	< 560
1,3,5-Trimethylbenzene	< 9.8	< 9.8	< 3.9	< 9.8	< 0.98	< 2.0	< 4.9	< 9.8	< 9.8	< 36.87	< 9.8	< 20	< 9.8	< 0.98	< 860	< 390
1,3-Butadiene	< 8.8	< 8.8	< 3.5	< 8.8	< 0.88	< 1.8	< 4.4	< 8.8	< 8.8	< 33.18	< 8.8	< 18	< 8.8	< 0.88	< 780	< 350
1,3-Dichlorobenzene	< 12	< 12	< 4.8	< 12	< 1.2	< 2.4	< 6.0	< 12	< 12	< 45.09	< 12	< 24	< 12	< 1.2	< 1100	< 480
1,4-Dichlorobenzene	< 12	< 12	< 4.8	< 12	< 1.2	< 2.4	< 6.0	< 12	< 12	< 45.09	< 12	< 24	< 12	< 1.2	< 1100	< 480
2-Butanone (Methyl ethyl ketone) (MEK)	< 29	< 29	< 12	< 29	< 2.9	< 5.9	< 15	< 29	< 29	< 109.12	< 29	< 59	< 29	5.3	< 2600	2,500
2-Hexanone	< 20	< 20	< 8.2	< 20	< 2	< 4.1	< 10	< 20	< 16	< 77.83	< 20	< 41	< 20	< 2	< 1800	< 820
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	< 20	< 20	< 8.2	< 20	< 2	< 4.1	< 10	< 20	< 41	< 77.83	< 20	< 41	< 20	2.4	< 1800	< 820
Acetone	< 120	< 120	< 48	< 120	< 12	< 24	< 59	< 120	< 180	< 451.34	< 120	< 240	< 120	23	< 10000	< 4700
Acetonitrile	< 17	< 17	< 6.7	< 17	< 1.7	< 3.4	< 8.4	< 17	< 17	< 62.12	< 17	< 34	< 17	< 1.7	< 1500	< 670
Acrolein	< 18	< 18	< 7.3	< 23	< 2.3	< 4.6	< 11	< 23	< 23	< 68.79	< 18	< 37	< 23	< 2.3	< 1600	< 730
Acrylonitrile	< 43	< 43	< 17	< 43	< 4.3	< 8.7	< 22	< 43	< 43	< 162.76	< 43	< 87	< 43	< 4.3	< 3800	< 1700
Allyl chloride (3-Chloropropene)	< 6.3	< 6.3	< 2.5	< 6.3	< 0.63	< 1.3	< 3.1	< 6.3	< 6.3	< 23.47	< 6.3	< 13	< 6.3	< 0.63	< 550	< 250
alpha-Methylstyrene	< 19	< 19	< 7.7	< 19	< 1.9	< 3.9	< 9.7	< 19	< 19	< -999	< 19	< 39	< 19	< 1.9	< 1700	< 770
Benzene	< 6.4	< 6.4	< 2.6	< 6.4	0.69	< 1.3	< 3.2	< 6.4	8.20	< 23.96	< 6.4	< 13	< 6.4	< 0.64	660	310
Benzyl chloride	< 21	< 21	< 8.3	< 21	< 2.1	< 4.1	< 10	< 21	< 21	< 77.66	< 21	< 41	< 21	< 2.1	< 1800	< 830
Bromodichloromethane	< 13	< 13	< 5.4	< 13	< 1.3	< 2.7	< 6.7	< 13	< 13	< 50.25	< 13	< 27	< 13	< 1.3	< 1200	< 530
Bromoform	< 21	< 21	< 8.3	< 21	< 2.1	< 4.1	< 10	< 21	< 21	< 77.52	< 21	< 41	< 21	< 2.1	< 1800	< 820
Bromomethane (Methyl bromide)	< 7.8	< 7.8	< 3.1	< 7.8	< 0.78	< 1.6	< 3.9	< 7.8	< 7.8	< 29.12	< 7.8	< 16	< 7.8	< 0.78	< 680	< 310
Butane	67.0	26.0	21	20	6.8	3	67	66	75	< 35.66	< 9.5	< 19	< 9.5	3.2	970	< 380
Carbon disulfide	< 16	< 16	< 6.2	< 16	< 1.6	< 3.1	< 7.8	< 16	< 12	< 59.17	< 16	36	< 16	< 1.6	< 1400	< 620
Carbon tetrachloride	< 13	< 13	< 5.0	< 13	< 1.3	< 2.5	< 6.3	< 13	< 13	< 47.18	< 13	< 25	< 13	< 1.3	< 1100	< 500
Chlorobenzene	< 9.2	< 9.2	< 3.7	< 9.2	< 0.92	< 1.8	< 4.6	< 9.2	< 9.2	< 34.53	< 9.2	< 18	< 9.2	< 0.92	1,200	< 370
Chlorodifluoromethane	28.0	9.3	7.4	16 J	4.1	2.4	45	47	70	< -999	< 7.1	16	< 7.1	2	5,200	1,400
Chloroethane	140.0	72.0	63	42	32	9.9	150	110	310	343.0	250.0	1300	84	26	68,000	29,000
Chloroform (Trichloromethane)	14.0	12.0	11	< 9.8	12	8.3	18	< 9.8	36	42	60	54	46	29	< 860	< 390

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

Parameter	SVE-4 10/22/10	SVE-4 10/30/12	SVE-4 04/26/13	SVE-4 10/23/13	SVE-4 10/24/14	SVE-4 10/22/15	SVE-4 10/26/16	SVE-4 10/30/17	SVE-4 11/16/18	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
Chloromethane (Methyl chloride)	15.0	< 10	4.9	< 10	1.8	< 2.1	< 5.2	< 10	< 21	< 39.24	23.0	55	15	2.5	< 910	< 410
cis-1,2-Dichloroethene	74	57	11	39	95	20	87	66	38	107.1	56.0	94	15	10	9,000	8,100
cis-1,3-Dichloropropene	< 9.1	< 9.1	< 3.6	< 9.1	< 0.91	< 1.8	< 4.5	< 9.1	< 18	< 34.04	< 9.1	< 18	< 9.1	< 0.91	< 800	< 360
Cyclohexane	94.0	31.0	40	< 17	14	< 3.4	26	24	40	< 65.4	< 17	< 34	< 17	< 1.7	3,800	1,100
Dibromochloromethane	< 17	< 17	< 6.8	< 17	< 1.7	< 3.4	< 8.5	< 17	< 17	< 63.89	< 17	< 34	< 17	< 1.7	< 1500	< 680
Dibromomethane	< 28	< 28	< 11	< 28	< 2.8	< 5.7	< 14	< 28	< 28	< 999	< 28	< 57	< 28	< 2.8	< 2500	< 1100
Dichlorodifluoromethane (CFC-12)	110	39	53	71	17	22	99	110	110	84.1	59.0	52	51	13	4,000	2,600
Ethyl ether	< 61	< 61	< 24	< 61	6.9	< 12	< 30	< 61	< 61	< 227.36	< 61	< 120	< 61	10	< 5300	< 2400
Ethylbenzene	< 8.7	< 8.7	< 3.5	< 8.7	< 0.87	< 1.7	< 4.3	< 8.7	< 8.7	< 32.57	< 8.7	< 17	< 8.7	< 0.87	7,000	460
Hexachlorobutadiene	< 110	< 110	< 43	< 110	< 11	< 21	< 53	< 110	< 110	< 394.61	< 110	< 210	< 110	< 11	< 9400	< 4300
Hexane	570	33	55	< 18	6.1	< 3.5	53	53	94	< 66.97	< 18	< 35	< 18	< 1.8	1,600	< 700
Isopropyl benzene (Cumene)	< 20	< 20	< 7.9	< 20	< 2	< 3.9	< 9.8	< 20	< 20	< 73.74	< 20	< 39	< 20	< 2	< 1700	< 780
m&p-Xylenes	< 8.7	< 8.7	< 3.5	< 8.7	< 0.87	< 1.7	< 4.3	< 8.7	< 8.7	< 32.57	< 8.7	< 17	< 8.7	< 0.87	13,000	1,000
Methyl tert butyl ether (MTBE)	< 36	< 36	< 14	< 36	< 3.6	< 7.2	< 18	< 36	< 36	< 133.4	< 36	< 72	< 36	< 3.6	< 3200	< 1400
Methylene chloride	23	< 17	< 6.9	< 17	7.9	3.7	40	24	< 35	240	120.0	150	32	9.8	15,000	14,000
Naphthalene	< 26	< 26	< 10	< 26	< 2.6	< 5.2	< 29	< 58	< 58	< 99.6	< 26	< 52	< 26	< 2.6	< 2300	< 1000
N-Decane	< 58	< 58	< 23	< 58	< 5.8	< 12	< 35	< 70	< 70	< 215.33	< 58	< 120	< 58	< 5.8	< 5100	< 2300
N-Dodecane	< 70	< 70	< 28	< 70	< 7	< 14	< 10	< 20	19	< 257.77	< 70	< 140	< 70	< 7	< 6100	< 2800
N-Heptane	34	< 20	21	< 20	< 2	< 4.1	< 9.8	< 20	< 20	< 77.87	< 20	< 41	< 20	< 2	9,500	970
Nonane	< 26	< 26	< 10	< 26	< 2.6	< 5.2	< 32	< 64	< 64	< 99.67	< 26	< 52	< 26	< 2.6	< 2300	< 1000
N-Propylbenzene	< 20	< 20	< 7.9	< 20	< 2	< 3.9	< 13	< 26	< 21	< 73.74	< 20	< 39	< 20	< 2	< 1700	< 780
N-Undecane	< 64	< 64	< 26	< 64	< 6.4	< 13	< 13	< 26	< 21	< 236.54	< 64	< 130	< 64	< 6.4	< 5600	< 2600
Octane	< 19	< 19	< 7.5	< 19	< 1.9	< 3.7	< 4.3	< 8.7	< 8.7	< 70.08	< 19	< 37	< 19	< 1.9	1,700	< 750
o-Xylene	< 8.7	< 8.7	< 3.5	< 8.7	< 0.87	< 1.7	< 9.3	< 19	< 19	< 32.57	< 8.7	< 17	< 8.7	< 0.87	2,900	< 350
Pentane	55	< 30	13	< 30	4.3	< 5.9	26	< 30	< 74	< 109.18	< 30	< 59	< 30	< 3	< 2600	< 1200
Styrene	< 8.5	< 8.5	< 3.4	< 8.5	< 0.85	< 1.7	< 4.3	< 8.5	< 8.5	< 31.95	< 8.5	< 17	< 8.5	< 0.85	< 750	< 340
Tetrachloroethene	49	90	28	50	85	82	67	26	75	< 50.87	52.0	77	16	32	2,300	690
Toluene	< 7.5	< 7.5	< 3.0	< 7.5	< 0.75	< 1.5	< 3.8	< 7.5	< 38	< 28.22	< 7.5	25	< 7.5	< 0.75	44,000	11,000
trans-1,2-Dichloroethene	< 7.9	< 7.9	< 3.2	< 7.9	< 0.79	< 1.6	< 4.0	< 7.9	< 7.9	< 29.74	< 7.9	< 16	< 7.9	< 0.79	< 700	< 320
trans-1,3-Dichloropropene	< 9.1	< 9.1	< 3.6	< 9.1	< 0.91	< 1.8	< 4.5	< 9.1	< 9.1	< 34.04	< 9.1	< 18	< 9.1	< 0.91	< 800	< 360
Trichloroethene	19	12	6	< 11	10	6.4	13	< 11	12	< 40.3	12	< 21	< 11	4	< 940	< 430
Trichlorofluoromethane (CFC-11)	41	31	11	32	17	13	28	22	26	51.7	33	< 22	27	8.3	< 990	800
Trifluorotrchloroethane (Freon 113)	< 15	< 15	< 6.1	< 15	< 1.5	< 3.1	< 7.7	< 15	< 15	< 57.48	< 15	< 31	< 15	< 1.5	< 1300	< 610
Vinyl acetate	< 35	< 35	< 14	< 35	< 3.5	< 7.0	< 18	< 35	< 35	< 130.28	< 35	< 70	< 35	< 3.5	< 3100	< 1400
Vinyl chloride	120	27	33	18	15	2.3	69	53	97	46	10	45	8.1	1.7	14,000	4,900
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-6 10/15/08	SVE-6 11/13/08	SVE-6 04/24/09	SVE-6 10/20/09	SVE-6 04/29/11	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-6 11/16/18	SVE-7 10/01/08	SVE-7 10/15/08	SVE-7 11/13/08	SVE-7 04/24/09
1,1,1-Trichloroethane	46,000	21,000	9,000	130	1,300	830	200	580	700	1100	940	38,000	17,000	10,000	3,400
1,1,2,2-Tetrachloroethane	< 440	< 96	< 88	< 1.4	< 14	< 14	< 2.7	< 4.6	< 9.2	< 14 U	< 14	< 840	< 430	< 74	< 14
1,1,2-Trichloroethane	< 350	< 76	< 70	< 1.1	< 11	< 11	< 2.2	< 3.6	< 7.3	< 11 U	< 11	< 670	< 340	98	16
1,1-Dichloroethane	49,000	15,000	3,500	58.0	550	330	100.0	200	600	680	330	100,000	37,000	12,000	2,900
1,1-Dichloroethene	5,100	3,100	830	19	250	120	36	130	68	160	160	6,300	2,000	1,300	460
1,2,4-Trichlorobenzene	< 2400	< 520	< 470	< 7.4	< 74	< 74	< 15	< 25	< 49	< 74 U	< 74	< 4500	< 2300	< 400	< 74
1,2,4-Trimethylbenzene	< 310	< 69	< 63	< 0.98	< 9.8	< 9.8	< 2.0	< 3.3	< 6.6	< 9.8 U	< 9.8	< 600	< 300	< 53	< 9.8
1,2-Dibromoethane (Ethylene dibromide)	< 490	< 110	< 98	< 1.5	< 15	< 15	< 3.1	< 5.1	< 10	< 15 U	< 15	< 940	< 480	< 83	< 15
1,2-Dichlorobenzene	< 380	< 84	< 77	< 1.2	< 12	< 12	< 2.4	< 4.0	< 8.0	< 12 U	< 24	< 740	< 370	< 65	< 12
1,2-Dichloroethane	< 260	69	< 52	< 0.81	< 8.1	< 8.1	< 1.6	< 2.7	< 5.4	< 8.1 U	< 8.1	< 500	< 250	73	26
1,2-Dichloropropane	< 300	130	< 59	< 0.92	< 9.2	< 9.2	< 1.8	< 3.1	< 6.2	< 9.2 U	< 9.2	< 570	< 290	97	24
1,2-Dichlorotetrafluoroethane (CFC 114)	< 450	< 98	< 89	3.8	< 14	< 14	< 2.8	6.2	110	51	31	< 860	< 430	< 75	< 14
1,3,5-Trimethylbenzene	< 310	< 69	< 63	< 0.98	< 9.8	< 9.8	< 2.0	< 3.3	< 6.6	< 9.8 U	< 9.8	< 600	< 300	< 53	< 9.8
1,3-Butadiene	< 280	< 62	< 57	< 0.88	< 8.8	< 8.8	< 1.8	< 2.9	< 5.9	< 8.8 U	< 8.8	< 540	< 270	< 48	< 8.8
1,3-Dichlorobenzene	< 380	< 84	< 77	< 1.2	< 12	< 12	< 2.4	< 4.0	< 8.0	< 12 U	< 12	< 740	< 370	< 65	< 12
1,4-Dichlorobenzene	< 380	< 84	< 77	< 1.2	< 12	< 12	< 2.4	< 4.0	< 8.0	< 12 U	< 12	< 740	< 370	< 65	< 12
2-Butanone (Methyl ethyl ketone) (MEK)	5,400	4,700	3,800	7	< 29	< 29	< 5.9	< 9.8	< 20	< 29 U	< 29	8,200	3,400	2,000	960
2-Hexanone	< 660	< 140	< 130	< 2.0	< 20	< 20	< 4.1	< 6.8	< 14	< 20 U	< 16	< 1300	< 630	< 110	< 20
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	1,500	3,000	480	< 2.0	< 20	< 20	< 4.1	< 6.8	< 14	< 20 U	< 41	< 1300	< 630	590	120
Acetone	11,000	8,100	14,000	35	< 120	< 120	< 24	< 40	< 79	< 120 U	< 180	8,800	4,400	1,900	1,100
Acetonitrile	< 540	< 120	< 110	2.30	< 17	< 17	< 3.4	< 5.6	< 11	< 17 U	< 17	< 1000	< 520	< 91	< 17
Acrolein	< 590	< 130	< 120	< 1.8	< 18	< 18	< 3.7	< 7.6	< 15	< 23 U	< 23	< 1100	< 570	< 99	< 18
Acrylonitrile	< 1400	< 300	< 280	< 4.3	< 43	< 43	< 8.7	< 14	< 29	< 43 U	< 43	< 2700	< 1300	< 230	< 43
Allyl chloride (3-Chloropropene)	< 200	< 44	< 40	< 0.63	< 6.3	< 6.3	< 1.3	< 2.1	< 4.2	< 6.3 U	< 6.3	< 380	< 190	< 34	< 6.3
alpha-Methylstyrene	< 620	< 140	< 120	< 1.9	< 19	< 19	< 3.9	< 6.4	< 13	< 19 U	< 19	< 1200	< 600	< 100	< 19
Benzene	250	68	< 41	< 0.64	< 6.4	< 6.4	< 1.3	< 2.1	< 4.3	< 6.4 U	< 6.4	1,400	300	72	10
Benzyl chloride	< 660	< 140	< 130	< 2.1	< 21	< 21	< 4.1	< 6.9	< 14	< 21 U	< 21	< 1300	< 640	< 110	< 21
Bromodichloromethane	< 430	< 94	< 86	< 1.3	< 13	< 13	< 2.7	< 4.5	< 8.9	< 13 U	< 13	< 820	< 410	< 72	< 13
Bromoform	< 660	< 140	< 130	< 2.1	< 21	< 21	< 4.1	< 6.9	< 14	< 21 U	< 21	< 1300	< 640	< 110	< 21
Bromomethane (Methyl bromide)	< 250	< 54	< 50	< 0.78	< 7.8	< 7.8	< 1.6	< 2.6	< 5.2	< 7.8 U	< 7.8	< 480	< 240	< 42	< 7.8
Butane	< 300	< 67	< 61	5	23	11	4	< 3.2	24	< 9.5 U	< 24	< 580	< 290	< 51	27
Carbon disulfide	< 500	250	< 100	< 1.6	< 16	< 16	< 3.1	< 5.2	< 10	< 16 U	< 12	< 950	630	380	47
Carbon tetrachloride	< 400	< 88	< 81	< 1.3	< 13	< 13	< 2.5	< 4.2	< 8.4	< 13 U	< 13	< 770	< 390	< 68	< 13
Chlorobenzene	< 290	< 64	< 59	< 0.92	< 9.2	< 9.2	< 1.8	< 3.1	< 6.1	< 9.2 U	< 9.2	< 560	< 290	< 50	< 9.2
Chlorodifluoromethane	320	150	< 45	2	< 7.1	9	< 1.4	< 2.4	33	11	12	2,300	440	91	12
Chloroethane	6,700	1,100	140	3	17	6	2	2.5	< 3.5	7.8	< 5.3	23,000	4,700	1,300	240
Chloroform (Trichloromethane)	< 310	240	87	2	31	21	9	41	23	37	38	< 600	< 300	96	53

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

Parameter	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	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-6 11/16/18	SVE-7 10/01/08	SVE-7 10/15/08	SVE-7 11/13/08	SVE-7 04/24/09
Chloromethane (Methyl chloride)	< 330	< 72	< 66	1	< 10	< 10	< 2.1	< 3.4	< 6.9	< 10 U	< 21	< 630	< 320	< 56	< 10
cis-1,2-Dichloroethene	6,700	2,700	390	2.8	28.0	16.0	5	11	< 5.3	9	< 7.9	23,000	7,700	2,400	260
cis-1,3-Dichloropropene	< 290	< 64	< 58	< 0.91	< 9.1	< 9.1	< 1.8	< 3.0	< 6.1	< 9.1 U	< 18	< 560	< 280	< 49	< 9.1
Cyclohexane	< 550	140	< 110	< 1.7	< 17	< 17	< 3.4	< 5.7	< 11	< 17 U	< 14	2,300	< 530	290	94
Dibromochloromethane	< 550	< 120	< 110	< 1.7	< 17	< 17	< 3.4	< 5.7	< 11	< 17 U	< 17	< 1000	< 530	< 92	< 17
Dibromomethane	< 910	< 200	< 180	< 2.8	< 28	< 28	< 5.7	< 9.5	< 19	< 28 U	< 28	< 1700	< 880	< 150	< 28
Dichlorodifluoromethane (CFC-12)	1,900	3,300	660	21.0	70.0	46.0	16.0	84	380	140	67	1,900	520	300	66
Ethyl ether	< 1900	840	< 390	< 6.1	< 61	< 61	< 12	< 20	< 40	< 61 U	< 61	< 3700	< 1900	520	380
Ethylbenzene	1,200	770	290	< 0.87	< 8.7	< 8.7	< 1.7	< 2.9	< 5.8	< 8.7 U	< 8.7	5,300	1,400	620	< 8.7
Hexachlorobutadiene	< 3400	< 750	< 680	< 11	< 110	< 110	< 21	< 36	< 71	< 110 U	< 110	< 6500	< 3300	< 580	< 110
Hexane	< 560	< 120	< 110	3.4	< 18	< 18	< 3.5	< 5.9	< 12	< 18 U	< 14	1,300	< 550	180	72
Isopropyl benzene (Cumene)	< 630	< 140	< 130	< 2.0	< 20	< 20	< 3.9	< 6.6	< 13	< 20 U	< 20	< 1200	< 610	< 110	< 20
m&p-Xylenes	3,600	2,800	970	< 0.87	< 8.7	< 8.7	< 1.7	< 2.9	< 5.8	< 8.7 U	< 8.7	12,000	3,300	1,700	13
Methyl tert butyl ether (MTBE)	< 1200	< 250	< 230	< 3.6	< 36	< 36	< 7.2	< 12	< 24	< 36 U	< 36	< 2200	< 1100	< 190	< 36
Methylene chloride	13,000	6,900	970	7.7	68.0	27.0	13	7.8	44	< 17 U	< 35	12,000	6,600	3,600	370
Naphthalene	< 840	< 180	< 170	< 2.6	< 26	< 26	< 5.2	< 8.7	< 39	< 58 U	< 58	< 1600	< 810	< 140	< 26
N-Decane	< 1900	< 410	< 370	< 5.8	< 58	< 58	< 12	< 19	< 46	< 70 U	< 70	< 3600	< 1800	< 310	< 58
N-Dodecane	< 2200	< 490	< 450	< 7.0	< 70	< 70	< 14	< 23	< 14	< 20 U	< 16	< 4300	< 2200	< 380	< 70
N-Heptane	< 660	160	170	< 2.0	< 20	< 20	< 4.1	< 6.8	< 13	< 20 U	< 20	3,100	< 630	200	52
Nonane	< 840	190	< 170	< 2.6	< 26	< 26	< 5.2	< 8.7	< 43	< 64 U	< 64	< 1600	< 810	< 140	< 26
N-Propylbenzene	< 630	< 140	< 130	< 2.0	< 20	< 20	< 3.9	< 6.6	< 17	< 26 U	< 21	< 1200	< 610	< 110	< 20
N-Undecane	< 2000	< 450	< 410	< 6.4	< 64	< 64	< 13	< 21	< 17	< 26 U	< 21	< 3900	< 2000	< 350	< 64
Octane	< 600	140	< 120	< 1.9	< 19	< 19	< 3.7	< 6.2	< 5.8	< 8.7 U	< 8.7	< 1100	< 580	< 100	< 19
o-Xylene	950	730	120	< 0.87	< 8.7	< 8.7	< 1.7	< 2.9	< 12	< 19 U	< 19	1,800	680	420	< 8.7
Pentane	< 940	< 210	< 190	3.7	42.0	< 30	< 5.9	< 9.8	< 20	< 30 U	< 74	< 1800	< 910	< 160	< 30
Styrene	< 270	< 60	< 55	< 0.85	< 8.5	< 8.5	< 1.7	< 2.8	< 5.7	< 8.5 U	< 8.5	< 520	< 260	< 46	< 8.5
Tetrachloroethene	2,000	1,600	470	1.8	43.0	45.0	9	82	66	86	79	7,700	2,200	1,300	180
Toluene	17,000	6,800	2,400	3.5	< 7.5	< 7.5	5	< 2.5	< 5.0	< 7.5 U	< 38	84,000	20,000	5,900	250
trans-1,2-Dichloroethene	< 250	< 56	< 51	< 0.79	< 7.9	< 7.9	< 1.6	< 2.6	< 5.3	< 7.9 U	< 7.9	< 490	< 250	< 43	< 7.9
trans-1,3-Dichloropropene	< 290	< 64	< 58	< 0.91	< 9.1	< 9.1	< 1.8	< 3.0	< 6.1	< 9.1 U	< 9.1	< 560	< 280	< 49	< 9.1
Trichloroethene	430	240	< 69	1.1	15.0	< 11	4	10	10	13	13	1,900	360	160	35
Trichlorofluoromethane (CFC-11)	920	1,400	990	7.1	28.0	18.0	6	14	15	20	22	< 690	< 350	160	57
Trifluorotrchloroethane (Freon 113)	< 490	< 110	< 98	< 1.5	< 15	< 15	< 3.1	< 5.1	< 10	< 15 U	< 15	< 940	< 470	< 83	< 15
Vinyl acetate	< 1100	< 250	< 230	< 3.5	< 35	< 35	< 7.0	< 21	< 23	< 35 U	< 35	< 2200	< 1100	< 190	< 35
Vinyl chloride	960	160	91	2.1	< 5.1	< 5.1	< 1.0	< 1.7	18	5.3	< 10	13,000	1,700	380	50
Total VOCs	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-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-7 11/16/18	SVE-8 04/22/10	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
1,1,1-Trichloroethane	1.90	400	250	160	260	270	520	19,642	860	360	88	158	7,100	4,900	2,600	4,200
1,1,2,2-Tetrachloroethane	< 1.4	< 3.4	< 2.7	< 14	< 5.5	< 6.9	< 14	< 274.6	< 14	< 14	< 1.4	< 1.37	< 580	< 130	< 33	< 72
1,1,2-Trichloroethane	< 1.1	< 2.7	< 2.2	< 11	< 4.4	< 5.5	< 11	< 218.24	< 11	< 11	< 1.5	< 1.09	< 460	< 100	< 26	< 57
1,1-Dichloroethane	1	210	130	90	180	360	930	9,714	790	430	86	109.3	12,000	5,100	2,500	2,900
1,1-Dichloroethene	< 0.79	41	39	23	41	34	76	555	67	49	15	15	1,400	850	510	440
1,2,4-Trichlorobenzene	< 7.4	< 19	< 15	< 74	< 30	< 37	< 74	< 1484.25	< 74	< 74	< 7.4	< 7.42	< 3100	< 700	< 180	< 390
1,2,4-Trimethylbenzene	< 0.98	< 2.5	< 2.0	< 9.8	< 3.9	< 4.9	< 9.8	< 196.63	< 9.8	< 9.8	< 0.98	< 0.98	800	< 93	< 24	< 52
1,2-Dibromoethane (Ethylene dibromide)	< 1.5	< 3.8	< 3.1	< 15	< 6.1	< 7.7	< 15	< 307.34	< 15	< 15	< 1.5	< 1.54	< 640	< 150	< 37	< 81
1,2-Dichlorobenzene	< 1.2	< 3.0	< 2.4	< 12	< 4.8	< 6.0	< 24	< 240.49	< 12	< 12	< 1.2	< 1.2	< 500	< 110	< 29	< 63
1,2-Dichloroethane	< 0.81	< 2.0	< 1.6	< 8.1	< 3.2	< 4.0	< 8.1	< 161.9	< 8.1	< 8.1	< 0.81	< 0.81	< 340	< 76	< 20	< 42
1,2-Dichloropropane	< 0.92	< 2.3	< 1.8	< 9.2	< 3.7	< 4.6	< 9.2	< 184.85	< 9.2	< 9.2	< 0.92	1	< 390	90	< 22	< 48
1,2-Dichlorotetrafluoroethane (CFC 114)	< 1.4	< 3.5	< 2.8	< 14	15	64	73	< 279.62	< 14	15	< 1.4	2.8	< 590	< 130	< 34	< 73
1,3,5-Trimethylbenzene	< 0.98	< 2.5	< 2.0	< 9.8	< 3.9	< 4.9	< 9.8	< 196.63	< 9.8	< 9.8	< 0.98	< 0.98	460	< 93	< 24	< 52
1,3-Butadiene	< 0.88	< 2.2	< 1.8	< 8.8	< 3.5	< 4.4	< 8.8	< 179.19	< 8.8	< 8.8	< 0.88	< 0.88	< 370	< 84	< 21	< 46
1,3-Dichlorobenzene	< 1.2	< 3.0	< 2.4	< 12	< 4.8	< 6.0	< 12	< 240.49	< 12	< 12	< 1.2	< 1.2	< 500	< 110	< 29	< 63
1,4-Dichlorobenzene	< 1.2	< 3.0	< 2.4	< 12	< 4.8	< 6.0	< 12	< 240.49	< 12	< 12	< 1.2	< 1.2	< 500	< 110	< 29	< 63
2-Butanone (Methyl ethyl ketone) (MEK)	< 2.9	33	8	< 29	< 12	< 15	< 29	1,858	< 29	< 29	< 2.9	8.3	7,500	4,800	2,900	5,100
2-Hexanone	< 2.0	< 4.9	< 4.1	< 20	< 8.2	< 10	< 16	< 409.65	< 20	< 20	< 2	< 2.05	< 860	< 190	< 50	< 110
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	< 2.0	< 4.9	< 4.1	< 20	< 8.2	< 10	< 41	1,352	52	< 20	2	5.74	890	< 190	81	170
Acetone	< 12	86.00	54.00	< 120	48	< 59	< 180	3,563	< 120	< 120	13 J	21.6	6,400	3,600	2,900	4,000
Acetonitrile	< 1.7	< 4.2	< 3.4	< 17	< 6.7	< 8.4	< 17	< 335.79	< 17	< 17	< 1.7	< 1.68	< 700	< 160	< 41	< 88
Acrolein	< 1.8	< 4.6	< 3.7	< 18	< 9.2	< 11	< 23	< 366.85	< 18	< 18	< 2.3	< 1.83	< 770	< 170	< 45	< 96
Acrylonitrile	< 4.3	< 11	< 8.7	< 43	< 17	< 22	< 43	< 868.06	< 43	< 43	< 4.3	< 4.34	< 1800	< 410	< 110	< 230
Allyl chloride (3-Chloropropene)	< 0.63	< 1.6	< 1.3	< 6.3	< 2.5	< 3.1	< 6.3	< 125.19	< 6.3	< 6.3	< 0.63	< 0.63	< 260	< 59	< 15	< 33
alpha-Methylstyrene	< 1.9	< 4.8	< 3.9	< 19	< 7.7	< 9.7	< 19	< -999	< 19	< 19	< 1.9	< -999	< 810	< 180	< 47	< 100
Benzene	< 0.64	< 1.6	< 1.3	< 6.4	< 2.6	4.2	< 6.4	< 127.79	< 6.4	< 6.4	< 0.64	< 0.64	1,300	250	39	44
Benzyl chloride	< 2.1	< 5.2	< 4.1	< 21	< 8.3	< 10	< 21	< 419.34	< 21	< 21	< 2.1	< 2.07	< 870	< 200	< 50	< 110
Bromodichloromethane	< 1.3	< 3.4	< 2.7	< 13	< 5.4	< 6.7	< 13	< 268.02	< 13	< 13	< 1.3	< 1.34	< 560	< 130	< 33	< 70
Bromoform	< 2.1	< 5.2	< 4.1	< 21	< 8.3	< 10	< 21	< 413.46	< 21	< 21	< 2.1	< 2.07	< 870	< 200	< 50	< 110
Bromomethane (Methyl bromide)	< 0.78	< 1.9	< 1.6	< 7.8	< 3.1	< 3.9	< 7.8	< 155.32	< 7.8	< 7.8	< 0.78	< 0.78	< 330	< 73	< 19	< 41
Butane	2	18	3	< 9.5	17	110	100	< 192.54	< 9.5	< 9.5	12	1.9	1,300	140	58	61
Carbon disulfide	< 1.6	9	< 3.1	< 16	< 6.2	< 7.8	< 12	< 311.41	< 16	< 16	< 1.6	2.1	< 650	270	190	230
Carbon tetrachloride	< 1.3	< 3.1	< 2.5	< 13	< 5.0	< 6.3	< 13	< 251.65	< 13	< 13	< 1.3	< 1.26	< 530	< 120	< 31	< 66
Chlorobenzene	< 0.92	4	< 1.8	< 9.2	< 3.7	< 4.6	< 9.2	< 184.15	< 9.2	< 9.2	< 0.92	< 0.92	450	< 87	< 22	< 48
Chlorodifluoromethane	1	2.8	2.1	8.5	5.8	51	48	< -999	< 7.1	< 7.1	3.2	-999.0	5,600	550	140	70
Chloroethane	< 0.53	16.0	2.5	< 5.3	24	37	61	422	130	89	6.9	2.0	3,000	800	390	180
Chloroform (Trichloromethane)	< 0.98	9.2	7.4	< 9.8	20	15	40	< 195.3	10	11	5.6	1.7	< 410	< 92	35	75

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

Parameter	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-7 11/16/18	SVE-8 04/22/10	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
Chloromethane (Methyl chloride)	1	2.6	< 2.1	< 10	< 4.1	< 5.2	< 21	< 206.5	< 10	< 10	1.7	1.1	< 430	< 97	< 25	< 54
cis-1,2-Dichloroethene	< 0.79	17.0	8.0	< 7.9	30	110	140	436	46	16	3.5	14.3	26,000	8,000	2,600	3,700
cis-1,3-Dichloropropene	< 0.91	< 2.3	< 1.8	< 9.1	< 3.6	< 4.5	< 18	< 181.55	< 9.1	< 9.1	< 0.91	< 0.91	< 380	< 86	< 22	< 48
Cyclohexane	< 1.7	21.0	< 3.4	< 17	16	29	44	< 344.21	< 17	< 17	< 1.7	2	9,300	750	160	220
Dibromochloromethane	< 1.7	< 4.3	< 3.4	< 17	< 6.8	< 8.5	< 17	< 340.74	< 17	< 17	< 1.7	< 1.7	< 720	< 160	< 41	< 89
Dibromomethane	< 2.8	< 7.1	< 5.7	< 28	< 11	< 14	< 28	< -999	< 28	< 28	< 2.8	< -999	< 1200	< 270	< 69	< 150
Dichlorodifluoromethane (CFC-12)	3.30	21	7	< 9.9	38	68	100	< 197.81	23	30	7.7	10.4	3,100	470	290	260
Ethyl ether	< 6.1	< 15	< 12	< 61	< 24	< 30	< 61	< 1212.6	< 61	< 61	< 6.1	6.7	3,600	2,400	390	360
Ethylbenzene	< 0.87	53.0	< 1.7	< 8.7	< 3.5	< 4.3	< 8.7	< 173.69	< 8.7	< 8.7	< 0.87	< 0.87	4,200	230	56	110
Hexachlorobutadiene	< 11	< 27	< 21	< 110	< 43	< 53	< 110	< 2133.01	< 110	< 110	< 11	< 10.67	< 4500	< 1000	< 260	< 560
Hexane	5	11.0	< 3.5	< 18	< 7.0	25	27	< 352.47	< 18	< 18	2.3	< 1.76	4,400	380	110	100
Isopropyl benzene (Cumene)	< 2.0	< 4.9	< 3.9	< 20	< 7.9	< 9.8	< 20	< 398.18	< 20	< 20	< 2	< 1.97	< 830	< 190	< 48	< 100
m&p-Xylenes	< 0.87	82.0	< 1.7	< 8.7	< 3.5	< 4.3	< 8.7	< 173.69	< 8.7	< 8.7	< 0.87	< 0.87	6,200	390	110	250
Methyl tert butyl ether (MTBE)	< 3.6	< 9.0	< 7.2	< 36	< 14	< 18	< 36	< 721.06	< 36	< 36	< 3.6	< 3.61	< 1500	< 340	< 88	< 190
Methylene chloride	< 1.7	6.2	4.6	< 17	9.6	20	< 35	556	37	29	17	5.9	1,700	700	400	600
Naphthalene	< 2.6	< 6.3	< 5.2	< 26	< 10	< 29	< 58	< 524.21	< 26	< 26	< 2.6	< 2.62	< 1100	< 250	< 64	< 140
N-Decane	< 5.8	< 15	< 12	< 58	< 23	< 35	< 70	< 1163.93	< 58	< 58	< 5.8	< 5.82	< 2400	< 550	< 140	< 310
N-Dodecane	< 7.0	< 17	< 14	< 70	< 28	< 10	18.00	< 1393.37	< 70	< 70	< 7	< 6.97	< 2900	< 660	< 170	< 370
N-Heptane	< 2.0	13.0	< 4.1	< 20	< 8.2	< 9.8	< 20	3,689	150.0	< 20	< 2	9.4	5,700	450	63	< 110
Nonane	< 2.6	26.0	< 5.2	< 26	< 10	< 32	< 64	< 524.56	< 26	< 26	< 2.6	< 2.62	3,200	< 250	< 64	< 140
N-Propylbenzene	< 2.0	< 4.9	< 3.9	< 20	< 7.9	< 13	< 21	< 398.18	< 20	< 20	< 2	< 1.97	< 830	< 190	< 48	< 100
N-Undecane	< 6.4	< 16	< 13	< 64	< 26	< 13	< 21	< 1278.61	< 64	< 64	< 6.4	< 6.39	< 2700	< 600	< 160	< 340
Octane	< 1.9	14.0	< 3.7	< 19	< 7.5	< 4.3	< 8.7	< 378.43	< 19	< 19	< 1.9	< 1.87	3,600	180	< 45	< 98
o-Xylene	< 0.87	14.0	< 1.7	< 8.7	< 3.5	< 9.3	< 19	< 173.69	< 8.7	< 8.7	< 0.87	< 0.87	1,700	< 82	34	92
Pentane	< 3.0	16.0	< 5.9	< 30	< 12	41	< 74	< 590.18	< 30	< 30	2.9	< 2.95	< 1200	< 280	< 72	< 150
Styrene	< 0.85	< 2.1	< 1.7	< 8.5	< 3.4	< 4.3	< 8.5	< 170.39	< 8.5	< 8.5	< 0.85	< 0.85	< 360	< 80	< 21	< 45
Tetrachloroethene	< 1.4	110	23	19	120	100	160	< 271.3	22	28	8.5	6.1	5,700	1,400	540	1,400
Toluene	< 0.75	23.0	< 1.5	< 7.5	< 3.0	< 3.8	< 38	1,091	20.0	< 7.5	1.2	3.8	9,100	1,800	610	970
trans-1,2-Dichloroethene	< 0.79	< 2.0	< 1.6	< 7.9	< 3.2	< 4.0	< 7.9	< 158.59	< 7.9	< 7.9	< 0.79	< 0.79	370	100	47	< 42
trans-1,3-Dichloropropene	< 0.91	< 2.3	< 1.8	< 9.1	< 3.6	< 4.5	< 9.1	< 181.55	< 9.1	< 9.1	< 0.91	< 0.91	< 380	< 86	< 22	< 48
Trichloroethene	< 1.1	16.0	6.3	< 11	14	18	34	< 214.95	< 11	< 11	1.5	2.5	1,200	450	120	250
Trichlorofluoromethane (CFC-11)	2	11	4	< 11	28	35	41	< 224.74	< 11	< 11	4.7	6	< 470	220	190	200
Trifluorotrchloroethane (Freon 113)	< 1.5	< 3.8	< 3.1	< 15	< 6.1	< 7.7	< 15	< 306.54	< 15	< 15	< 1.5	< 1.53	< 640	< 140	< 37	< 80
Vinyl acetate	< 3.5	< 8.8	< 7.0	< 35	< 14	< 18	< 35	< 704.21	< 35	< 35	< 3.5	< 3.52	< 1500	< 330	< 85	< 180
Vinyl chloride	< 0.51	4	< 1.0	< 5.1	24	340	640	146	19	7	0.52	< 0.51	25,000	2,700	660	310
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-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	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
1,1,1-Trichloroethane	1,800	83	180	210	79	< 11	180	51,000	42,000	53,000	29,000	9,600	95	1,200	1,600	1,100
1,1,2,2-Tetrachloroethane	< 25	< 1.4	< 2.7	< 2.7	< 14	< 14	< 14	< 2500	< 990	< 830	< 320	< 95	< 1.4	< 14	< 27	< 14
1,1,2-Trichloroethane	< 20	< 1.1	< 2.2	3	< 11	< 11	< 11	< 2000	< 790	< 660	< 250	< 75	< 1.1	< 11	< 22	< 11
1,1-Dichloroethane	1,400	75.0	150.0	170.0	68.0	< 8.1	330	140,000	130,000	100,000	35,000	15,000	160.0	1,500	1,900	1,200
1,1-Dichloroethene	160	7	13	18	< 7.9	< 7.9	25	17,000	9,400	6,200	4,300	1,100	17	200	330	160
1,2,4-Trichlorobenzene	< 130	< 7.4	< 15	< 15	< 74	< 74	< 74	< 14000	< 5300	< 4500	< 1700	< 510	< 7.4	< 74	< 150	< 74
1,2,4-Trimethylbenzene	< 18	< 0.98	< 2.0	< 2.0	< 9.8	< 9.8	< 9.8	< 1800	< 710	< 600	< 230	< 68	< 0.98	< 9.8	< 20	< 9.8
1,2-Dibromoethane (Ethylene dibromide)	< 28	< 1.5	< 3.1	< 3.1	< 15	< 15	< 15	< 2800	< 1100	< 930	< 350	< 110	< 1.5	< 15	< 31	< 15
1,2-Dichlorobenzene	< 22	< 1.2	< 2.4	< 2.4	< 12	< 12	< 12	< 2200	< 870	< 730	< 280	< 83	< 1.2	< 12	< 24	< 12
1,2-Dichloroethane	< 15	< 0.81	< 1.6	2	< 8.1	< 8.1	< 8.1	< 1500	< 580	< 490	< 190	< 56	< 0.81	< 8.1	< 16	< 8.1
1,2-Dichloropropane	< 17	1	4	< 1.8	< 9.2	< 9.2	< 9.2	< 1700	750	610	210	110	< 0.92	14	< 18	< 9.2
1,2-Dichlorotetrafluoroethane (CFC 114)	28	3.0	21.0	5.9	< 14	< 14	23.0	< 2600	< 1000	< 850	< 320	< 97	3.7	37	< 28	< 14
1,3,5-Trimethylbenzene	< 18	< 0.98	< 2.0	< 2.0	< 9.8	< 9.8	< 9.8	< 1800	< 710	< 600	< 230	< 68	< 0.98	< 9.8	< 20	< 9.8
1,3-Butadiene	< 16	< 0.88	< 1.8	< 1.8	< 8.8	< 8.8	< 8.8	< 1600	< 640	< 540	< 200	< 61	< 0.88	< 8.8	< 18	< 8.8
1,3-Dichlorobenzene	< 22	< 1.2	< 2.4	< 2.4	< 12	< 12	< 12	< 2200	< 870	< 730	< 280	< 83	< 1.2	< 12	< 24	< 12
1,4-Dichlorobenzene	< 22	< 1.2	< 2.4	< 2.4	< 12	< 12	< 12	< 2200	< 870	< 730	< 280	< 83	< 1.2	< 12	< 24	< 12
2-Butanone (Methyl ethyl ketone) (MEK)	930	21.00	< 5.9	< 5.9	< 29	< 29	< 29	< 5400	7,900	10,000	5,100	1,500	16	150	110	< 29
2-Hexanone	< 37	< 2.0	< 4.1	< 4.1	< 20	< 20	< 20	< 3800	< 1500	< 1200	< 470	< 140	< 2.0	< 20	< 41	< 20
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	< 37	< 2.0	< 4.1	< 4.1	< 20	< 20	< 20	< 3800	< 1500	3,800	1,600	770	2.2	47	74	< 20
Acetone	1,100	46	< 24	< 24	< 120	< 120	< 120	< 22000	< 8600	8,700	5,500	2,400	63	230	< 240	< 120
Acetonitrile	< 31	2.30	< 3.4	< 3.4	< 17	< 17	< 17	< 3100	< 1200	< 1000	< 390	< 120	2.70	< 17	< 34	< 17
Acrolein	< 33	< 1.8	< 3.7	< 3.7	< 18	< 23	< 18	< 3400	< 1300	< 1100	< 420	< 130	< 1.8	< 18	< 37	< 18
Acrylonitrile	< 79	< 4.3	< 8.7	< 8.7	< 43	< 43	< 43	< 8000	< 3100	< 2600	< 1000	< 300	< 4.3	< 43	< 87	< 43
Allyl chloride (3-Chloropropene)	< 11	< 0.63	< 1.3	< 1.3	< 6.3	< 6.3	< 6.3	< 1200	< 450	< 380	< 140	< 43	< 0.63	< 6.3	< 13	< 6.3
alpha-Methylstyrene	< 35	< 1.9	< 3.9	< 3.9	< 19	< 19	< 19	< 3600	< 1400	< 1200	< 440	< 130	< 1.9	< 19	< 39	< 19
Benzene	14	1.2	5	< 1.3	< 6.4	< 6.4	8	1,300	1,100	490	< 150	< 44	< 0.64	< 6.4	< 13	< 6.4
Benzyl chloride	< 38	< 2.1	< 4.1	< 4.1	< 21	< 21	< 21	< 3800	< 1500	< 1300	< 480	< 140	< 2.1	< 21	< 41	< 21
Bromodichloromethane	< 24	< 1.3	< 2.7	< 2.7	< 13	< 13	< 13	< 2500	< 960	< 810	< 310	< 93	< 1.3	< 13	< 27	< 13
Bromoform	< 38	< 2.1	< 4.1	< 4.1	< 21	< 21	< 21	< 3800	< 1500	< 1300	< 480	< 140	< 2.1	< 21	< 41	< 21
Bromomethane (Methyl bromide)	< 14	< 0.78	< 1.6	< 1.6	< 7.8	< 7.8	< 7.8	< 1400	< 560	< 470	< 180	< 54	< 0.78	< 7.8	< 16	< 7.8
Butane	49	9	71	10	30	< 9.5	56	< 1800	< 680	< 580	< 220	72	4	67	23	10
Carbon disulfide	35	2.00	29.0	7.4	< 16	< 16	< 16	< 2900	< 1100	< 940	810	340	4	91	64	27
Carbon tetrachloride	< 23	< 1.3	< 2.5	< 2.5	< 13	< 13	< 13	< 2300	< 910	< 760	< 290	< 87	< 1.3	< 13	< 25	< 13
Chlorobenzene	< 17	< 0.92	< 1.8	< 1.8	< 9.2	< 9.2	< 9.2	< 1700	< 660	< 560	< 210	< 64	< 0.92	< 9.2	< 18	< 9.2
Chlorodifluoromethane	21	2.9	45.0	8.9	23.0	< 7.1	60	1,900	740	< 430	< 160	< 49	2.9	60	40	8
Chloroethane	56	6	14	7	6	< 5.3	250	4,800	3,000	1,400	360	160	6	67	65	11
Chloroform (Trichloromethane)	39	2	8.5	12.0	< 9.8	< 9.8	< 9.8	< 1800	< 700	< 590	360	160	2	46	82	72

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

Parameter	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	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
Chloromethane (Methyl chloride)	< 19	1	6.30	< 2.1	< 10	< 10	< 10	< 1900	< 740	< 630	< 240	< 71	2	34.0	35.0	14.0
cis-1,2-Dichloroethene	890	26.0	68	91.0	22	< 7.9	24	23,000	26,000	17,000	4,500	4,900	67	1,100	900	120
cis-1,3-Dichloropropene	< 17	< 0.91	< 1.8	< 1.8	< 9.1	< 9.1	< 9.1	< 1700	< 650	< 550	< 210	< 63	< 0.91	< 9.1	< 18	< 9.1
Cyclohexane	110	11.0	81.0	17.0	31.0	< 17	100.0	3,500	1,400	< 1000	< 400	260	2.60	61	44	< 17
Dibromochloromethane	< 31	< 1.7	< 3.4	< 3.4	< 17	< 17	< 17	< 3100	< 1200	< 1000	< 390	< 120	< 1.7	< 17	< 34	< 17
Dibromomethane	< 52	< 2.8	< 5.7	< 5.7	< 28	< 28	< 28	< 5200	< 2000	< 1700	< 650	< 200	< 2.8	< 28	< 57	< 28
Dichlorodifluoromethane (CFC-12)	82	16.0	72	32.0	31	< 9.9	120.0	3,000	2,300	1,700	1,100	1,400	32.0	410	140	90
Ethyl ether	170	22.0	27.0	30.0	< 61	< 61	< 61	< 11000	< 4400	< 3700	< 1400	510	9	84.0	< 120	< 61
Ethylbenzene	< 16	1.5	7	< 1.7	< 8.7	< 8.7	< 8.7	2,600	1,600	1,200	< 200	< 60	< 0.87	12	< 17	< 8.7
Hexachlorobutadiene	< 190	< 11	< 21	< 21	< 110	< 110	< 110	< 20000	< 7700	< 6500	< 2500	< 740	< 11	< 110	< 210	< 110
Hexane	57	6.8	50	8	< 18	< 18	70	< 3200	< 1300	< 1100	< 410	< 120	1.8	30	< 35	< 18
Isopropyl benzene (Cumene)	< 36	< 2.0	< 3.9	< 3.9	< 20	< 20	< 20	< 3600	< 1400	< 1200	< 450	< 140	< 2.0	< 20	< 39	< 20
m&p-Xylenes	20	2.4	10	< 1.7	< 8.7	< 8.7	< 8.7	4,600	4,100	3,000	260	65	< 0.87	42	32	< 8.7
Methyl tert butyl ether (MTBE)	< 66	< 3.6	< 7.2	< 7.2	< 36	< 36	< 36	< 6600	< 2600	< 2200	< 830	< 250	< 3.6	< 36	< 72	< 36
Methylene chloride	180	6.9	10	8	< 17	< 17	< 17	34,000	20,000	13,000	5,500	1,300	8.9	120	150	68
Naphthalene	< 48	< 2.6	< 5.2	< 5.2	< 26	< 58	< 26	< 4800	< 1900	< 1600	< 600	< 180	< 2.6	< 26	< 52	< 26
N-Decane	< 110	< 5.8	< 12	< 12	< 58	< 70	< 58	< 11000	< 4200	< 3500	< 1300	< 400	< 5.8	< 58	< 120	< 58
N-Dodecane	< 130	< 7.0	< 14	< 14	< 70	< 20	< 70	< 13000	< 5000	< 4200	< 1600	< 480	< 7.0	< 70	< 140	< 70
N-Heptane	38	8.9	27	< 4.1	< 20	< 20	130	< 3800	< 1500	< 1200	< 470	320	5.9	50	< 41	< 20
Nonane	< 48	< 2.6	< 5.2	< 5.2	< 26	< 64	< 26	< 4800	< 1900	< 1600	< 600	< 180	< 2.6	< 26	< 52	< 26
N-Propylbenzene	< 36	< 2.0	< 3.9	< 3.9	< 20	< 26	< 20	< 3600	< 1400	< 1200	< 450	< 140	< 2.0	< 20	< 39	< 20
N-Undecane	< 120	< 6.4	< 13	< 13	< 64	< 26	< 64	< 12000	< 4600	< 3900	< 1500	< 440	< 6.4	< 64	< 130	< 64
Octane	< 34	< 1.9	7	< 3.7	< 19	< 8.7	< 19	< 3400	< 1300	< 1100	< 430	< 130	< 1.9	< 19	< 37	< 19
o-Xylene	< 16	< 0.87	2	< 1.7	< 8.7	< 19	< 8.7	< 1600	970	860	< 200	< 60	< 0.87	9	< 17	< 8.7
Pentane	54	6.1	34	8	< 30	< 30	39	< 5400	< 2100	< 1800	< 680	< 200	3.0	46	< 59	< 30
Styrene	< 15	< 0.85	< 1.7	< 1.7	< 8.5	< 8.5	< 8.5	< 1600	< 610	< 520	< 200	< 59	< 0.85	< 8.5	< 17	< 8.5
Tetrachloroethene	170	5.3	39	89	29	< 14	< 14	7,200	5,900	5,900	1,300	530	2.2	68	130	33
Toluene	130	9.1	37	< 1.5	< 7.5	< 7.5	9	27,000	20,000	10,000	1,300	320	2.4	490	55	< 7.5
trans-1,2-Dichloroethene	< 14	< 0.79	< 1.6	< 1.6	< 7.9	< 7.9	< 7.9	< 1500	< 570	< 480	< 180	< 55	< 0.79	10	< 16	< 7.9
trans-1,3-Dichloropropene	< 17	< 0.91	< 1.8	< 1.8	< 9.1	< 9.1	< 9.1	< 1700	< 650	< 550	< 210	< 63	< 0.91	< 9.1	< 18	< 9.1
Trichloroethene	50	3.2	18	17	< 11	< 11	< 11	2,500	2,000	1,300	280	930	5.6	140	130	< 11
Trichlorofluoromethane (CFC-11)	85	20.0	76.0	38.0	25.0	< 11	25.0	< 2100	960	1,100	660	510	12	76.0	59.0	30.0
Trifluorotrchloroethane (Freon 113)	< 28	< 1.5	< 3.1	< 3.1	< 15	< 15	< 15	< 2800	< 1100	< 930	< 350	< 110	< 1.5	< 15	< 31	< 15
Vinyl acetate	< 64	< 3.5	< 7.0	< 7.0	< 35	< 35	< 35	< 6500	< 2500	< 2100	< 810	< 240	< 3.5	< 35	< 70	< 35
Vinyl chloride	95	11.0	77.0	7.7	21.0	< 5.1	220.0	8,700	2,600	660	< 120	46	3	62	32	< 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-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-12 11/16/18	SVE-13 04/27/12	SVE-14 04/27/12	SVE-14 10/22/15	SVE-14 10/26/16	SVE-14 10/30/17	SVE-14 11/16/18	SVE-15 04/27/12	SVE-15 04/26/13	SVE-16 09/23/08	SVE-16 10/01/08
1,1,1-Trichloroethane	410	72	130	99	130	580	130	160	63	130	180	200	330	20	6,300	4,200
1,1,2,2-Tetrachloroethane	< 14	< 14	< 1.4	< 5.5	< 9.2	< 14	< 14	< 14	< 5.5	< 3.4	< 14	< 14 U	< 14	< 1.4	< 82	< 82
1,1,2-Trichloroethane	< 11	< 11	< 1.5	< 4.4	< 7.3	< 11	< 11	< 11	< 4.4	< 2.7	< 11	< 11 U	< 11	< 1.1	81	< 65
1,1-Dichloroethane	400	76	150	96	140	350	130	100	31	59	56	53	320	14	8,800	4,500
1,1-Dichloroethene	60	13	26	18	21	88	< 7.9	22	7.8	15	22	22	60	< 0.79	1,100	550
1,2,4-Trichlorobenzene	< 74	< 74	< 7.4	< 30	< 49	< 74	< 74	< 74	< 30	< 19	< 74	< 74 U	< 74	< 7.4	< 450	< 440
1,2,4-Trimethylbenzene	< 9.8	< 9.8	< 0.98	< 3.9	< 6.6	< 9.8	< 9.8	< 9.8	< 3.9	< 2.5	< 9.8	< 9.8 U	< 9.8	< 0.98	120	< 59
1,2-Dibromoethane (Ethylene dibromide)	< 15	< 15	< 1.5	< 6.1	< 10	< 15	< 15	< 15	< 6.1	< 3.8	< 15	< 15 U	< 15	< 1.5	< 92	< 92
1,2-Dichlorobenzene	< 12	< 12	< 1.2	< 4.8	< 8.0	< 24	< 12	< 12	< 4.8	< 3.0	< 12	< 24 U	< 12	< 1.2	< 72	< 72
1,2-Dichloroethane	< 8.1	< 8.1	< 0.81	< 3.2	< 5.4	< 8.1	< 8.1	< 8.1	< 3.2	< 2.0	< 8.1	< 8.1 U	< 8.1	< 0.81	< 49	< 48
1,2-Dichloropropane	< 9.2	< 9.2	1.9	< 3.7	< 6.2	< 9.2	< 9.2	< 9.2	< 3.7	< 2.3	< 9.2	< 9.2 U	< 9.2	< 0.92	100	< 55
1,2-Dichlorotetrafluoroethane (CFC 114)	< 14	17	7.2	< 5.6	16	35	< 14	28	250	35	54	54	< 14	< 1.4	290	< 84
1,3,5-Trimethylbenzene	< 9.8	< 9.8	< 0.98	< 3.9	< 6.6	< 9.8	< 9.8	< 9.8	< 3.9	< 2.5	< 9.8	< 9.8 U	< 9.8	< 0.98	130	< 59
1,3-Butadiene	< 8.8	< 8.8	< 0.88	< 3.5	< 5.9	< 8.8	< 8.8	< 8.8	< 3.5	< 2.2	< 8.8	< 8.8 U	< 8.8	< 0.88	< 53	< 53
1,3-Dichlorobenzene	< 12	< 12	< 1.2	< 4.8	< 8.0	< 12	< 12	< 12	< 4.8	< 3.0	< 12	< 12 U	< 12	< 1.2	< 72	< 72
1,4-Dichlorobenzene	< 12	< 12	< 1.2	< 4.8	< 8.0	< 12	< 12	< 12	< 4.8	< 3.0	< 12	< 12 U	< 12	< 1.2	< 72	< 72
2-Butanone (Methyl ethyl ketone) (MEK)	< 29	< 29	< 2.9	< 12	< 20	< 29	< 29	< 29	< 12	< 7.4	< 29	< 29 U	< 29	< 2.9	1,500	510
2-Hexanone	< 20	< 20	< 2	< 8.2	< 14	< 16	< 20	< 20	< 8.2	< 5.1	< 20	< 16 U	< 20	< 2.0	< 120	< 120
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	< 20	< 20	< 2	< 8.2	< 14	< 41	< 20	< 20	< 8.2	6.8	< 20	< 41 U	< 20	< 2.0	230	< 120
Acetone	< 120	< 120	14 J	< 48	< 79	< 180	< 120	< 120	< 48	< 30	< 120	< 180 U	< 120	< 12	1,100	< 710
Acetonitrile	< 17	< 17	< 1.7	< 6.7	< 11	< 17	< 17	< 17	< 6.7	< 4.2	< 17	< 17 U	< 17	< 1.7	< 100	< 100
Acrolein	< 18	< 23	< 2.3	< 9.2	< 15	< 23	< 18	< 18	< 9.2	< 5.7	< 23	< 23 U	< 18	< 1.8	< 110	< 110
Acrylonitrile	< 43	< 43	< 4.3	< 17	< 29	< 43	< 43	< 43	< 17	< 11	< 43	< 43 U	< 43	< 4.3	< 260	< 260
Allyl chloride (3-Chloropropene)	< 6.3	< 6.3	< 0.63	< 2.5	< 4.2	< 6.3	< 6.3	< 6.3	< 2.5	< 1.6	< 6.3	< 6.3 U	< 6.3	< 0.63	< 38	< 37
alpha-Methylstyrene	< 19	< 19	< 1.9	< 7.7	< 13	< 19	< 19	< 19	< 7.7	< 4.8	< 19	< 19 U	< 19	< 1.9	< 120	< 120
Benzene	< 6.4	< 6.4	0.68	< 2.6	< 4.3	< 6.4	< 6.4	< 6.4	2.6	11	7	8.9	< 6.4	< 0.64	350	62
Benzyl chloride	< 21	< 21	< 2.1	< 8.3	< 14	< 21	< 21	< 21	< 8.3	< 5.2	< 21	< 21 U	< 21	< 2.1	< 120	< 120
Bromodichloromethane	< 13	< 13	< 1.3	< 5.4	< 8.9	< 13	< 13	< 13	< 5.4	< 3.4	< 13	< 13 U	< 13	< 1.3	< 80	< 80
Bromoform	< 21	< 21	< 2.1	< 8.3	< 14	< 21	< 21	< 21	< 8.3	< 5.2	< 21	< 21 U	< 21	< 2.1	< 120	< 120
Bromomethane (Methyl bromide)	< 7.8	< 7.8	< 0.78	< 3.1	< 5.2	< 7.8	< 7.8	< 7.8	< 3.1	< 1.9	< 7.8	< 7.8 U	< 7.8	< 0.78	< 47	< 46
Butane	< 9.5	< 9.5	4.5	3.8	24	45	< 9.5	37	12	130	88	120	< 9.5	2	1,200	260
Carbon disulfide	< 16	< 16	< 1.6	< 6.2	< 10	< 12	< 16	< 16	< 6.2	< 3.9	< 16	< 12 U	< 16	< 1.6	< 93	98
Carbon tetrachloride	< 13	< 13	< 1.3	< 5.0	< 8.4	< 13	< 13	< 13	< 5.0	< 3.1	< 13	< 13 U	< 13	< 1.3	< 75	< 75
Chlorobenzene	< 9.2	< 9.2	< 0.92	< 3.7	< 6.1	< 9.2	< 9.2	< 9.2	6.1	11	< 9.2	12	< 9.2	< 0.92	300	< 55
Chlorodifluoromethane	< 7.1	< 7.1	3.5	< 2.8	14	32	< 7.1	23	9.4	110	82	130	< 7.1	0.83	3,900	510
Chloroethane	11	11	10	7.3	37	43	9	9	7.8	53	54	110	< 5.3	< 0.53	1,900	230
Chloroform (Trichloromethane)	32	< 9.8	22	24	26	110	< 9.8	24	32	68	83	110	17	1.1	160	100

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

Parameter	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-12 11/16/18	SVE-13 04/27/12	SVE-14 04/27/12	SVE-14 10/22/15	SVE-14 10/26/16	SVE-14 10/30/17	SVE-14 11/16/18	SVE-15 04/27/12	SVE-15 04/26/13	SVE-16 09/23/08	SVE-16 10/01/08
Chloromethane (Methyl chloride)	< 10	< 10	2.5	< 4.1	< 6.9	< 21	< 10	< 10	< 4.1	< 2.6	< 10	< 21 U	< 10	< 1.0	< 62	< 62
cis-1,2-Dichloroethene	67	9	14	19	26	36	< 7.9	< 7.9	< 3.2	4.8	< 7.9	< 7.9 U	21	< 0.79	340	150
cis-1,3-Dichloropropene	< 9.1	< 9.1	< 0.91	< 3.6	< 6.1	< 18	< 9.1	< 9.1	< 3.6	< 2.3	< 9.1	< 18 U	< 9.1	< 0.91	< 54	< 54
Cyclohexane	< 17	< 17	3.7	< 6.9	19	27	< 17	26	14	38	< 17	36	< 17	< 1.7	1,400	140
Dibromochloromethane	< 17	< 17	< 1.7	< 6.8	< 11	< 17	< 17	< 17	< 6.8	< 4.3	< 17	< 17 U	< 17	< 1.7	< 100	< 100
Dibromomethane	< 28	< 28	< 2.8	< 11	< 19	< 28	< 28	< 28	< 11	< 7.1	< 28	< 28 U	< 28	< 2.8	< 170	< 170
Dichlorodifluoromethane (CFC-12)	49	30	26	23	42	95	15	130	150	160	670	470	50	2.5	1,600	860
Ethyl ether	< 61	< 61	< 6.1	< 24	< 40	< 61	< 61	< 61	< 24	< 15	< 61	< 61 U	< 61	< 6.1	600	< 360
Ethylbenzene	< 8.7	< 8.7	5.6	< 3.5	< 5.8	< 8.7	< 8.7	< 8.7	< 3.5	< 2.2	< 8.7	< 8.7 U	< 8.7	< 0.87	2,500	180
Hexachlorobutadiene	< 110	< 110	< 11	< 43	< 71	< 110	< 110	< 110	< 43	< 27	< 110	< 110 U	< 110	< 11	< 640	< 640
Hexane	< 18	< 18	1.8	< 7.0	< 12	18	< 18	38	< 7.0	9.8	< 18	31	< 18	< 1.8	1,800	170
Isopropyl benzene (Cumene)	< 20	< 20	< 2	< 7.9	< 13	< 20	< 20	< 20	< 7.9	< 4.9	< 20	< 20 U	< 20	< 2.0	170	< 120
m&p-Xylenes	< 8.7	< 8.7	3	< 3.5	< 5.8	< 8.7	< 8.7	< 8.7	< 3.5	< 2.2	< 8.7	< 8.7 U	< 8.7	< 0.87	1,900	320
Methyl tert butyl ether (MTBE)	< 36	< 36	< 3.6	< 14	< 24	< 36	< 36	< 36	< 14	< 9.0	< 36	< 36 U	< 36	< 3.6	< 220	< 220
Methylene chloride	22	< 17	4	7.7	28	< 35	< 17	18	< 6.9	21	< 17	41	< 17	< 1.7	430	150
Naphthalene	< 26	< 26	< 2.6	< 10	< 39	< 58	< 26	< 26	< 10	< 15	< 58	< 58 U	< 26	< 2.6	< 160	< 160
N-Decane	< 58	< 58	< 5.8	< 23	< 46	< 70	< 58	< 58	< 23	< 17	< 70	< 70 U	< 58	< 5.8	370	< 350
N-Dodecane	< 70	< 70	< 7	< 28	17	25	< 70	< 70	< 28	< 5.1	< 20	19	< 70	< 7.0	< 420	< 420
N-Heptane	< 20	< 20	3.6	< 8.2	< 13	< 20	< 20	< 20	< 8.2	< 4.9	< 20	< 20 U	< 20	< 2.0	1,300	< 120
Nonane	< 26	< 26	4.4	< 10	< 43	< 64	< 26	< 26	< 10	< 16	< 64	< 64 U	< 26	< 2.6	1,000	< 160
N-Propylbenzene	< 20	< 20	< 2	< 7.9	< 17	< 21	< 20	< 20	< 7.9	< 6.6	< 26	< 21 U	< 20	< 2.0	< 120	< 120
N-Undecane	< 64	< 64	< 6.4	< 26	< 17	< 21	< 64	< 64	< 26	< 6.6	< 26	< 21 U	< 64	< 6.4	< 380	< 380
Octane	< 19	< 19	1.9	< 7.5	< 5.8	< 8.7	< 19	< 19	< 7.5	< 2.2	< 8.7	< 8.7 U	< 19	< 1.9	780	< 110
o-Xylene	< 8.7	< 8.7	1.4	< 3.5	< 12	< 19	< 8.7	< 8.7	< 3.5	< 4.7	< 19	< 19 U	< 8.7	< 0.87	380	56
Pentane	< 30	< 30	< 3	< 12	< 20	< 74	< 30	32	< 12	45	31	< 74 U	< 30	< 3.0	590	< 180
Styrene	< 8.5	< 8.5	< 0.85	< 3.4	< 5.7	< 8.5	< 8.5	< 8.5	< 3.4	< 2.1	< 8.5	< 8.5 U	< 8.5	< 0.85	< 51	< 51
Tetrachloroethene	15	< 14	11	10	13	50	< 14	< 14	13	23	22	28	< 14	6.1	730	200
Toluene	< 7.5	< 7.5	2.2	< 3.0	< 5.0	< 38	< 7.5	< 7.5	< 3.0	< 1.9	< 7.5	< 38 U	< 7.5	< 0.75	1,800	620
trans-1,2-Dichloroethene	< 7.9	< 7.9	< 0.79	< 3.2	< 5.3	< 7.9	< 7.9	< 7.9	< 3.2	< 2.0	< 7.9	< 7.9 U	< 7.9	< 0.79	< 48	< 47
trans-1,3-Dichloropropene	< 9.1	< 9.1	< 0.91	< 3.6	< 6.1	< 9.1	< 9.1	< 9.1	< 3.6	< 2.3	< 9.1	< 9.1 U	< 9.1	< 0.91	< 54	< 54
Trichloroethene	< 11	< 11	2.8	< 4.3	< 7.2	11.00	< 11	< 11	< 4.3	5.9	< 11	< 11 U	< 11	2	200	< 64
Trichlorofluoromethane (CFC-11)	19.0	11.0	6.7	6.0	15	21	< 11	130.0	65	80	230	130	45.0	1.4	190	740
Trifluorotrchloroethane (Freon 113)	< 15	< 15	< 1.5	< 6.1	< 10	< 15	< 15	< 15	< 6.1	< 3.8	< 15	< 15 U	< 15	< 1.5	< 92	< 92
Vinyl acetate	< 35	< 35	< 3.5	< 14	< 23	< 35	< 35	< 35	< 14	< 8.8	< 35	< 35 U	< 35	< 3.5	< 210	< 210
Vinyl chloride	18	100	76	82	340	700	< 5.1	35.0	6.3	84	58	66	< 5.1	< 0.51	1,400	350
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-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	13,000	2,100	470	85	220	73	340	77	14
1,1,2,2-Tetrachloroethane	< 83	< 14	< 12	< 1.4	< 1.4	< 14	< 3.4	< 14	< 14
1,1,2-Trichloroethane	< 66	24	< 9.9	< 1.1	< 1.1	< 11	< 2.7	< 11	< 11
1,1-Dichloroethane	5,800	1,200	170	22.0	49.0	15.0	110	< 8.1	< 8.1
1,1-Dichloroethene	2,400	220	46	9	25	11	43	9	< 7.9
1,2,4-Trichlorobenzene	< 450	< 74	< 67	< 7.4	< 7.4	< 74	< 19	< 74	< 74
1,2,4-Trimethylbenzene	< 60	< 9.8	< 8.9	< 0.98	< 0.98	< 9.8	< 2.5	< 9.8	< 9.8
1,2-Dibromoethane (Ethylene dibromide)	< 93	< 15	< 14	< 1.5	< 1.5	< 15	< 3.8	< 15	< 15
1,2-Dichlorobenzene	< 73	< 12	< 11	< 1.2	< 1.2	< 12	< 3.0	< 12	< 12
1,2-Dichloroethane	< 49	< 8.1	< 7.4	< 0.81	< 0.81	< 8.1	< 2.0	< 8.1	< 8.1
1,2-Dichloropropane	< 56	12	< 8.4	< 0.92	2	< 9.2	< 2.3	< 9.2	< 9.2
1,2-Dichlorotetrafluoroethane (CFC 114)	< 85	< 14	< 13	3	38	< 14	14.0	< 14	< 14
1,3,5-Trimethylbenzene	< 60	< 9.8	< 8.9	< 0.98	< 0.98	< 9.8	< 2.5	< 9.8	< 9.8
1,3-Butadiene	< 54	< 8.8	< 8.0	< 0.88	< 0.88	< 8.8	< 2.2	< 8.8	< 8.8
1,3-Dichlorobenzene	< 73	< 12	< 11	< 1.2	< 1.2	< 12	< 3.0	< 12	< 12
1,4-Dichlorobenzene	< 73	< 12	< 11	< 1.2	< 1.2	< 12	< 3.0	< 12	< 12
2-Butanone (Methyl ethyl ketone) (MEK)	< 180	320	70	3	< 2.9	< 29	< 7.4	< 29	< 29
2-Hexanone	< 120	< 20	< 19	< 2.0	< 2.0	< 20	< 4.9	< 20	< 20
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	< 120	< 20	< 19	< 2.0	< 2.0	< 20	< 4.9	< 20	< 20
Acetone	< 720	380	< 110	17	12	< 120	< 29	< 120	< 120
Acetonitrile	< 100	< 17	< 15	< 1.7	< 1.7	< 17	< 4.2	< 17	< 17
Acrolein	< 110	< 18	< 17	< 1.8	< 1.8	< 18	< 4.6	< 18	< 18
Acrylonitrile	< 260	< 43	< 39	< 4.3	< 4.3	< 43	< 11	< 43	< 43
Allyl chloride (3-Chloropropene)	< 38	< 6.3	< 5.7	< 0.63	< 0.63	< 6.3	< 1.6	< 6.3	< 6.3
alpha-Methylstyrene	< 120	< 19	< 18	< 1.9	< 1.9	< 19	< 4.8	< 19	< 19
Benzene	< 39	6	< 5.8	< 0.64	4.8	< 6.4	< 1.6	< 6.4	< 6.4
Benzyl chloride	< 130	< 21	< 19	< 2.1	< 2.1	< 21	< 5.2	< 21	< 21
Bromodichloromethane	< 81	< 13	< 12	< 1.3	< 1.3	< 13	< 3.4	< 13	< 13
Bromoform	< 130	< 21	< 19	< 2.1	< 2.1	< 21	< 5.2	< 21	< 21
Bromomethane (Methyl bromide)	< 47	< 7.8	< 7.1	< 0.78	< 0.78	< 7.8	< 1.9	< 7.8	< 7.8
Butane	< 58	41	18	5	11	14	12.0	< 9.5	< 9.5
Carbon disulfide	< 95	81	15	2	4	< 16	< 3.7	< 16	< 16
Carbon tetrachloride	< 77	< 13	< 11	< 1.3	< 1.3	< 13	< 3.1	< 13	< 13
Chlorobenzene	< 56	< 9.2	< 8.4	< 0.92	< 0.92	< 9.2	< 2.3	< 9.2	< 9.2
Chlorodifluoromethane	< 43	31	< 6.4	3.10	6.5	9.00	10.0	< 7.1	< 7.1
Chloroethane	40	13	< 4.8	< 0.53	4	< 5.3	4.3	< 5.3	< 5.3
Chloroform (Trichloromethane)	240	81	23	4	21	10	19.0	< 9.8	< 9.8

Table 4.2

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

Parameter	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)	< 63	< 10	< 9.4	1	< 1.0	< 10	< 2.5	< 10	< 10
cis-1,2-Dichloroethene	57	27	< 7.2	2	4	< 7.9	< 2.0	< 7.9	< 7.9
cis-1,3-Dichloropropene	< 55	< 9.1	< 8.3	< 0.91	< 0.91	< 9.1	< 2.3	< 9.1	< 9.1
Cyclohexane	< 100	36	< 16	2.30	17.0	< 17	11.0	< 17	< 17
Dibromochloromethane	< 100	< 17	< 15	< 1.7	< 1.7	< 17	< 4.3	< 17	< 17
Dibromomethane	< 170	< 28	< 26	< 2.8	< 2.8	< 28	< 7.1	< 28	< 28
Dichlorodifluoromethane (CFC-12)	1,000	130	51	40.0	110	82	91.0	110	25.0
Ethyl ether	< 370	100	< 55	< 6.1	11.0	< 61	< 15	< 61	< 61
Ethylbenzene	< 53	27	< 7.9	< 0.87	3	< 8.7	< 2.2	< 8.7	< 8.7
Hexachlorobutadiene	< 650	< 110	< 97	< 11	< 11	< 110	< 27	< 110	< 110
Hexane	< 110	37	20	6	36	< 18	< 4.2	< 18	< 18
Isopropyl benzene (Cumene)	< 120	< 20	< 18	< 2.0	< 2.0	< 20	< 4.9	< 20	< 20
m&p-Xylenes	< 53	83	< 7.9	< 0.87	10	< 8.7	< 2.2	< 8.7	< 8.7
Methyl tert butyl ether (MTBE)	< 220	< 36	< 33	< 3.6	< 3.6	< 36	< 9.0	< 36	< 36
Methylene chloride	130	41	< 16	2	3	< 17	5.30	< 17	< 17
Naphthalene	< 160	< 26	< 24	< 2.6	< 2.6	< 26	< 6.3	< 26	< 26
N-Decane	< 350	< 58	< 53	< 5.8	< 5.8	< 58	< 15	< 58	< 58
N-Dodecane	< 420	< 70	< 63	< 7.0	< 7.0	< 70	< 17	< 70	< 70
N-Heptane	< 120	31	< 19	4	16	< 20	< 4.9	< 20	< 20
Nonane	< 160	31	< 24	< 2.6	9	< 26	< 6.3	< 26	< 26
N-Propylbenzene	< 120	< 20	< 18	< 2.0	< 2.0	< 20	< 4.9	< 20	< 20
N-Undecane	< 390	< 64	< 58	< 6.4	< 6.4	< 64	< 16	< 64	< 64
Octane	< 110	27	< 17	< 1.9	12	< 19	< 4.7	< 19	< 19
o-Xylene	< 53	29	< 7.9	< 0.87	3	< 8.7	< 2.2	< 8.7	< 8.7
Pentane	< 180	30	< 27	< 3.0	8	< 30	< 7.4	< 30	< 30
Styrene	< 52	< 8.5	< 7.7	< 0.85	< 0.85	< 8.5	< 2.1	< 8.5	< 8.5
Tetrachloroethene	500	120	< 12	3	15	< 14	11.00	< 14	< 14
Toluene	< 46	140	< 6.9	2	4	< 7.5	9.30	< 7.5	< 7.5
trans-1,2-Dichloroethene	< 48	< 7.9	< 7.2	< 0.79	< 0.79	< 7.9	< 2.0	< 7.9	< 7.9
trans-1,3-Dichloropropene	< 55	< 9.1	< 8.3	< 0.91	< 0.91	< 9.1	< 2.3	< 9.1	< 9.1
Trichloroethene	< 65	22	< 9.8	< 1.1	4	< 11	< 2.7	< 11	< 11
Trichlorofluoromethane (CFC-11)	830	160	57	53	130	71	44	160	14
Trifluorotrchloroethane (Freon 113)	< 93	< 15	< 14	< 1.5	< 1.5	< 15	< 3.8	< 15	< 15
Vinyl acetate	< 210	< 35	< 32	< 3.5	< 3.5	< 35	< 8.8	< 35	< 35
Vinyl chloride	< 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

Notes:

¹ - Summa Canister was taken with only SVE wells operatingFor 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 - November 16, 2018
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⁾	25 - 40' stack height	(lbs/hr)	(lbs/yr)
1,1-Dichloroethane	75-34-3	450	0.450	622	0.0010	9.2	84.5	-	
1,1,1-Trichloroethane	71-55-6	510	0.510	622	0.0012	10.4	-	-	
1,1,2-Trichloroethane	79-00-5	< 11	0.006	622	0.0000	0.1	11.4	-	
1,1-Dichloroethene	75-35-4	54	0.054	622	0.0001	1.1	4.14	-	
1,2,4-Trimethylbenzene	95-63-6	< 9.8	0.005	622	0.0000	0.1	25.6	-	
1,2-Dichlorobenzene	95-50-1	< 24	0.012	622	0.0000	0.2	31.4	-	
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	110	0.110	622	0.0003	2.2	-	-	
1,2-Dichloroethane	107-06-2	< 8.1	0.004	622	0.0000	0.1	8.45	281	
1,2-Dichloropropane	78-87-5	< 9.2	0.005	622	0.0000	0.1	72.3	2,920	
1,3,5-Trimethylbenzene	108-67-8	< 9.8	0.005	622	0.0000	0.1	25.6	-	
1,4-Dichlorobenzene	106-46-7	< 12	0.006	622	0.0000	0.1	664	584,000	
2-Butanone (MEK)	78-93-3	< 54	0.027	622	0.0001	0.6	-	-	
2-Hexanone	591-78-6	< 16	0.008	622	0.0000	0.2	4.27	-	
Acetone	67-64-1	< 180	0.090	622	0.0002	1.8	-	-	
Acetonitrile	75-05-8	< 17	0.009	622	0.0000	0.2	14	-	
Benzene	71-43-2	6.3	0.006	622	0.0000	0.1	-	936	
Carbon disulfide	75-15-0	< 12	0.006	622	0.0000	0.1	6.5	511,000	
Chlorobenzene	108-90-7	13	0.013	622	0.0000	0.3	9.61	-	
Chlorodifluoromethane	75-45-6	59	0.059	622	0.0001	1.2	-	36,500,000	
Chloroethane	75-00-3	100	0.100	622	0.0002	2.0	55.1	7,300,000	
Chloroform	67-66-3	36	0.036	622	0.0001	0.7	10.2	317	
Chloromethane	74-87-3	< 19	0.010	622	0.0000	0.2	21.5	-	
cis-1,2-Dichloroethene	156-59-2	32	0.032	622	0.0001	0.7	166	-	
Cyclohexane	110-82-7	34	0.034	622	0.0001	0.7	-	-	
Dichlorodifluoromethane	75-71-8	370	0.370	622	0.0009	7.6	-	-	
Ethylbenzene	100-41-4	< 8.7	0.004	622	0.0000	0.1	90.6	730,000	
Ethyl Ether	60-29-7	< 61	0.031	622	0.0001	0.6	-	-	
Isopropylbenzene (Cumene)	98-82-8	< 36	0.018	622	0.0000	0.4	51.3	-	
Methyl isobutyl ketone	108-10-1	< 37	0.019	622	0.0000	0.4	42.7	-	
Methylene chloride	75-09-2	< 35	0.018	622	0.0000	0.4	36.2	15,532	
N-Butane	106-97-8	250	0.250	622	0.0006	5.1	-	-	
N-Decane	124-18-5	< 70	0.035	622	0.0001	0.7	-	-	

Table 4.3

**Mass Loading Calculations - November 16, 2018
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	622	0.0000	0.2	-	-
N-hexane	110-54-3	88	0.088	622	0.0002	1.8	36.8	146,000
N-Octane	111-65-9	53	0.053	622	0.0001	1.1	-	-
Nonane	111-84-2	< 64	0.032	622	0.0001	0.7	-	-
Pentane	2672-01-7	< 74	0.037	622	0.0001	0.8	-	-
Tetrachloroethene	127-18-4	150	0.150	622	0.0003	3.1	35.4	1,237
Toluene	108-88-3	< 38	0.019	622	0.0000	0.4	39.3	292,000
trans-1,2-Dichloroethene	156-60-5	< 7.9	0.004	622	0.0000	0.1	166	-
Trichloroethene	79-01-6	15	0.015	622	0.0000	0.3	56.1	3,650
Trichlorofluoromethane	75-69-4	100	0.100	622	0.0002	2.0	-	-
Undecane	1120-21-4	< 120	0.060	622	0.0001	1.2	-	-
Vinyl chloride	75-01-4	160	0.160	622	0.0004	3.3	830	73,000
Xylenes, m,p	1330-20-7	88	0.088	622	0.0002	1.8	90.6	-
Xylenes, o	95-47-6	16	0.016	622	0.0000	0.3	90.6	-
Xylenes, Total	1330-20-7	104	0.104	622	0.0002	2.1	90.6	-

Notes:

⁽¹⁾ Historically detected analands regulated under WDNR NR445.

⁽²⁾ The blower discharge sample collected on November 18, 2018 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 2018.

⁽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	Total VOC Mass Removed lbs.
09/23/08		Day 1	194,930	1,250	22
09/25/08		Day 2	205,020	1,250	23
10/01/08		Days 3-8	145,510	1,275	100
10/07/08		Week 2	115,070	1,300	81
10/15/08		Week 3	78,800	1,280	73
10/30/08		Weeks 4-5	68,360	1,100	101
11/13/08	1,229.9	Weeks 6-7	40,581	1,100	56
12/13/08	1,705.1	3rd Month	40,581	1,100	79
04/24/09	3,964.0	2nd Quarter 2009	20,243	1,290	214
07/23/09	2,160.0	3rd Quarter 2009	7,023	1,120	64
10/20/09	2,136.0	4th Quarter 2009	1,427	1,290	15
01/29/10	2,953.0	1st Quarter 2010	6,651	1,280	77
04/22/10	4,562.9	2nd Quarter 2010	4,453	1,290	35
07/23/10	6,590.5	3rd Quarter 2010	4,175	1,180	37
10/22/10	7,573.2	4th Quarter 2010	5,629	1,250	26
01/24/11	9,478.3	1st Quarter 2011	4,521	1,200	39
04/29/11	10,931.3	2nd Quarter 2011	3,145	1,080	18
07/22/11	12,495.8	3rd Quarter 2011	2,633	1,250	19
10/26/11	14,482.5	4th Quarter 2011	2,369	1,250	22
01/26/12	1,808.2	1st Quarter 2012	2,821	1,220	23
04/27/12	1,566.7	2nd Quarter 2012	2,149	1,200	15
07/25/12	1,479.8	3rd Quarter 2012	3,116	1,310	23
10/30/12	1,414.8	4th Quarter 2012	1,102	1,250	7.3
01/03/13	1,558.2	1st Quarter 2013	2,202	1,200	15
04/26/13	931.8	2nd Quarter 2013	338	1,270	1.5
07/25/13	2,165.2	3rd Quarter 2013	1,454	1,250	15
10/23/13	1,984.0	4th Quarter 2013	1,296	1,250	12

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	Total VOC Mass Removed lbs.
12/31/14	3,664.7	2014 ¹	2,522	1,832	63
12/31/15	6,506.4	2015 ¹	823	1,786	36
12/31/16	4,809.3	2016 ¹	1,286	471	11
12/31/17	3,950.9	2017 ¹	1,695	584	15
12/31/18	2,567.3	2018 ¹	1,974	420	8
				Total	1,346

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
12/31/18	2018 ¹	318	420	1.3
Total				333

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
12/31/18	2018 ¹	260	420	1.0
			Total	273

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
12/31/18	2018 ¹	44	420	0.2
			Total	39.7

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
12/31/18	2018 ¹	97	420	0.4
Total				50.6

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	May 2018	November 2018
MW-1	1044.71	DRY	906.17	906.42	905.40	906.98	907.19	906.56	907.64	-	904.89
MW-1A	1044.00	901.56	905.57	905.80	904.51	906.58	906.50	905.57	906.63	905.73	904.29
MW-1B	1044.86	901.63	905.73	905.82	904.72	906.36	906.55	905.62	906.71	907.77	904.29
MW-2R	1058.23	905.47	909.78	910.15	909.13	910.65	911.07	910.30	910.82	910.45	909.72
MW-2A	1058.62	905.74	909.95	910.14	909.11	910.67	910.85	909.91	911.00	910.06	908.71
MW-2B	1058.59	905.68	909.90	910.12	909.08	910.66	910.83	909.88	910.99	910.04	908.7
MW-3	1019.14	918.75	920.98	919.58	919.54	920.39	919.66	919.43	919.30	919.09	918.57
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	924.55	922.95
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	915.37	913.71
MW-8A	1049.67	910.76	915.25	915.33	914.27	915.70	915.75	915.12	916.22	914.89	913.74
MW-9	1026.90	906.27	911.18	910.65	909.64	911.74	911.49	910.60	911.76	910.61	909.24
MW-9A	1026.03	905.54	909.82	909.76	908.64	910.44	910.46	909.68	910.60	909.72	908.48
MW-10	1029.08	883.96	886.10	887.30	886.33	887.44	887.63	886.95	887.53	-	885.96
MW-10A	1028.94	884.27	887.23	887.58	886.64	887.77	887.94	886.80	887.77	887.36	886.24
MW-10B	1028.79	883.78	886.71	886.96	886.17	887.28	887.38	887.03	887.30	886.85	885.74
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	862.25	862.21
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	913.46	912.59
MW-13A	1033.57	909.29	913.36	913.22	912.13	913.94	914.02	913.26	914.23	913.55	911.85
MW-14	1028.94	904.69	909.02	909.44	908.06	910.02	909.91	909.20	916.14	909.28	907.65
MW-14A	1027.84	904.31	908.70	909.15	908.05	909.82	909.73	908.88	910.34	908.95	907.38

**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	May 2018	November 2018
MW-15	880.76	860.33	858.87	858.65	859.41	859.60	858.95	860.14	858.93	859.37	859.17
MW-15A	879.52	862.25	861.61	861.39	861.44	862.25	861.74	862.47	861.75	862.03	861.87
MW-16	1039.90	898.95	902.49	902.90	901.70	903.40	903.21	902.78	903.70	902.93	901.42
MW-16A	1040.08	898.94	902.49	902.72	901.86	903.45	903.49	902.72	903.71	902.99	901.42
MW-17	907.23	870.85	872.20	871.66	871.77	872.48	872.09	871.89	871.95	872.13	871.47
MW-17A	907.44	870.77	872.12	871.56	871.49	872.39	872.01	871.78	872.04	871.96	871.44
MW-18	897.73	865.51	865.26	864.83	865.61	865.84	865.61	865.72	864.36	865.98	865.66
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

January 29, 2019

To: Tom Hobday, GHD

Ref. No.: 048038-70-05

From:  Grant Anderson/sb/37

Tel: 651-639-0913

**Subject: Analytical Results and Reduced Validation
Air Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018**

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 November 2018. 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 form, finished report forms, method blank data, recovery data from surrogate spikes, and laboratory control samples (LCS).

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 2 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", 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 document and analytical report were used to determine sample holding times. The samples were prepared and analyzed within the required holding time.

The sample was 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". The LCS recoveries were within the control limits demonstrating acceptable analytical accuracy.

6. Field QA/QC Samples

There were no field QA/QC samples associated with this 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 Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters
G-111618-JH-01	SVE-7	air	11/16/2018	14:53	VOC
G-111618-JH-02	SVE-4	air	11/16/2018	14:59	VOC
G-111618-JH-03	SVE-6	air	11/16/2018	15:05	VOC
G-111618-JH-04	SVE-12	air	11/16/2018	15:11	VOC
G-111618-JH-05	SVE-14	air	11/16/2018	15:16	VOC
G-111618-JH-06	Blower Discharge	air	11/16/2018	15:59	VOC

Notes:

VOC - Volatile Organic Compounds

Validated Analytical Results Summary
Air Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018

Location ID:	SVE-4	SVE-6	SVE-7	SVE-12	SVE-14	Blower Discharge
Sample Name:	G-111618-JH-02	G-111618-JH-03	G-111618-JH-01	G-111618-JH-04	G-111618-JH-05	G-111618-JH-06
Sample Date:	11/16/2018	11/16/2018	11/16/2018	11/16/2018	11/16/2018	11/16/2018

Parameters	Unit						
Volatile Organic Compounds							
1,1,1-Trichloroethane	ppbv	96	170	95	110	36	94
1,1,1,2-Tetrachloroethane	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	ppbv	130	81	230	86	13	110
1,1-Dichloroethene	ppbv	18	40	19	22	5.6	14
1,2,4-Trichlorobenzene	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trimethylbenzene	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromoethane (Ethylene dibromide)	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,2-Dichloroethane	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorotetrafluoroethane (CFC 114)	ppbv	9.1	4.4	10	5.0	7.8	8.5
1,3,5-Trimethylbenzene	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Butadiene	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
1,3-Dichlorobenzene	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	ppbv	75 U	75 U	75 U	75 U	75 U	75 U
Acetonitrile	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
Acrolein	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
Acrylonitrile	ppbv	20 U	20 U	20 U	20 U	20 U	20 U
Allyl chloride	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
alpha-Methylstyrene	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Benzene	ppbv	2.6	2.0 U	2.0 U	2.0 U	2.8	2.0
Benzyl chloride	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Bromodichloromethane	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromomethane (Methyl bromide)	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Butane	ppbv	31	10 U	43	19	52	31
Carbon disulfide	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U

Validated Analytical Results Summary
Air Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018

Location ID:	SVE-4	SVE-6	SVE-7	SVE-12	SVE-14	Blower Discharge
Sample Name:	G-111618-JH-02	G-111618-JH-03	G-111618-JH-01	G-111618-JH-04	G-111618-JH-05	G-111618-JH-06
Sample Date:	11/16/2018	11/16/2018	11/16/2018	11/16/2018	11/16/2018	11/16/2018

Parameters	Unit						
Volatile Organic Compounds							
Carbon tetrachloride	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chlorobenzene	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.6	2.9
Chlorodifluoromethane	ppbv	20	3.3	14	9.1	38	17
Chloroethane	ppbv	120	2.0 U	23	16	41	38
Chloroform (Trichloromethane)	ppbv	7.4	7.7	8.1	23	22	9.9
Chloromethane (Methyl chloride)	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	ppbv	9.5	2.0 U	34	9.1	2.0 U	8.2
cis-1,3-Dichloropropene	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Cyclohexane	ppbv	12	4.0 U	13	8.0	10	10
Dibromochloromethane	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Dichlorodifluoromethane (CFC-12)	ppbv	21	13	21	19	94	49
Ethyl ether	ppbv	20 U	20 U	20 U	20 U	20 U	20 U
Ethylbenzene	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorobutadiene	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
Hexane	ppbv	27	4.0 U	7.6	5.1	8.8	11
Isopropyl benzene	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
m&p-Xylenes	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.2
Methyl tert butyl ether (MTBE)	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	ppbv	10 U	10 U	10 U	10 U	12	10 U
N-Decane	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
N-Dodecane	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
N-Heptane	ppbv	4.5	4.0 U	4.3	6.1	4.6	6.9
N-Propylbenzene	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
N-Undecane	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Nonane	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
o-Xylene	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Octane	ppbv	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Pentane	ppbv	25 U	25 U	25 U	25 U	25 U	25 U
Styrene	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	ppbv	11	12	24	7.3	4.1	23

Validated Analytical Results Summary
Air Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018

Location ID:	SVE-4	SVE-6	SVE-7	SVE-12	SVE-14	Blower Discharge
Sample Name:	G-111618-JH-02	G-111618-JH-03	G-111618-JH-01	G-111618-JH-04	G-111618-JH-05	G-111618-JH-06
Sample Date:	11/16/2018	11/16/2018	11/16/2018	11/16/2018	11/16/2018	11/16/2018

Parameters	Unit						
Volatile Organic Compounds							
Toluene	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	ppbv	2.3	2.3	6.3	2.0	2.0 U	2.7
Trichlorofluoromethane (CFC-11)	ppbv	4.6	3.9	7.3	3.8	23	24
Trifluorotrichloroethane (CFC-113)	ppbv	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl acetate	ppbv	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	ppbv	38	4.0 U	250	270	26	63
1,1,1-Trichloroethane	µg/m3	530	940	520	580	200	510
1,1,2,2-Tetrachloroethane	µg/m3	14 U	14 U	14 U	14 U	14 U	14 U
1,1,2-Trichloroethane	µg/m3	11 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	µg/m3	530	330	930	350	53	450
1,1-Dichloroethene	µg/m3	73	160	76	88	22	54
1,2,4-Trichlorobenzene	µg/m3	74 U	74 U	74 U	74 U	74 U	74 U
1,2,4-Trimethylbenzene	µg/m3	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U
1,2-Dibromoethane (Ethylene dibromide)	µg/m3	15 U	15 U	15 U	15 U	15 U	15 U
1,2-Dichlorobenzene	µg/m3	24 U	24 U	24 U	24 U	24 U	24 U
1,2-Dichloroethane	µg/m3	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U
1,2-Dichloropropane	µg/m3	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U
1,2-Dichlorotetrafluoroethane (CFC 114)	µg/m3	63	31	73	35	54	60
1,3,5-Trimethylbenzene	µg/m3	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U
1,3-Butadiene	µg/m3	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U
1,3-Dichlorobenzene	µg/m3	12 U	12 U	12 U	12 U	12 U	12 U
1,4-Dichlorobenzene	µg/m3	12 U	12 U	12 U	12 U	12 U	12 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/m3	29 U	29 U	29 U	29 U	29 U	29 U
2-Hexanone	µg/m3	16 U	16 U	16 U	16 U	16 U	16 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/m3	41 U	41 U	41 U	41 U	41 U	41 U
Acetone	µg/m3	180 U	180 U	180 U	180 U	180 U	180 U
Acetonitrile	µg/m3	17 U	17 U	17 U	17 U	17 U	17 U
Acrolein	µg/m3	23 U	23 U	23 U	23 U	23 U	23 U
Acrylonitrile	µg/m3	43 U	43 U	43 U	43 U	43 U	43 U

Validated Analytical Results Summary
Air Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018

Location ID:	SVE-4	SVE-6	SVE-7	SVE-12	SVE-14	Blower Discharge
Sample Name:	G-111618-JH-02	G-111618-JH-03	G-111618-JH-01	G-111618-JH-04	G-111618-JH-05	G-111618-JH-06
Sample Date:	11/16/2018	11/16/2018	11/16/2018	11/16/2018	11/16/2018	11/16/2018

Parameters	Unit						
Volatile Organic Compounds							
Allyl chloride	µg/m3	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U
alpha-Methylstyrene	µg/m3	19 U	19 U	19 U	19 U	19 U	19 U
Benzene	µg/m3	8.2	6.4 U	6.4 U	6.4 U	8.9	6.3
Benzyl chloride	µg/m3	21 U	21 U	21 U	21 U	21 U	21 U
Bromodichloromethane	µg/m3	13 U	13 U	13 U	13 U	13 U	13 U
Bromoform	µg/m3	21 U	21 U	21 U	21 U	21 U	21 U
Bromomethane (Methyl bromide)	µg/m3	7.8 U	7.8 U	7.8 U	7.8 U	7.8 U	7.8 U
Butane	µg/m3	75	24 U	100	45	120	75
Carbon disulfide	µg/m3	12 U	12 U	12 U	12 U	12 U	12 U
Carbon tetrachloride	µg/m3	13 U	13 U	13 U	13 U	13 U	13 U
Chlorobenzene	µg/m3	9.2 U	9.2 U	9.2 U	9.2 U	12	13
Chlorodifluoromethane	µg/m3	70	12	48	32	130	59
Chloroethane	µg/m3	310	5.3 U	61	43	110	100
Chloroform (Trichloromethane)	µg/m3	36	38	40	110	110	48
Chloromethane (Methyl chloride)	µg/m3	21 U	21 U	21 U	21 U	21 U	21 U
cis-1,2-Dichloroethene	µg/m3	38	7.9 U	140	36	7.9 U	32
cis-1,3-Dichloropropene	µg/m3	18 U	18 U	18 U	18 U	18 U	18 U
Cyclohexane	µg/m3	40	14 U	44	27	36	34
Dibromochloromethane	µg/m3	17 U	17 U	17 U	17 U	17 U	17 U
Dibromomethane	µg/m3	28 U	28 U	28 U	28 U	28 U	28 U
Dichlorodifluoromethane (CFC-12)	µg/m3	110	67	100	95	470	240
Ethyl ether	µg/m3	61 U	61 U	61 U	61 U	61 U	61 U
Ethylbenzene	µg/m3	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U
Hexachlorobutadiene	µg/m3	110 U	110 U	110 U	110 U	110 U	110 U
Hexane	µg/m3	94	14 U	27	18	31	38
Isopropyl benzene	µg/m3	20 U	20 U	20 U	20 U	20 U	20 U
m&p-Xylenes	µg/m3	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	9.7
Methyl tert butyl ether (MTBE)	µg/m3	36 U	36 U	36 U	36 U	36 U	36 U
Methylene chloride	µg/m3	35 U	35 U	35 U	35 U	41	35 U
N-Decane	µg/m3	58 U	58 U	58 U	58 U	58 U	58 U
N-Dodecane	µg/m3	70 U	70 U	70 U	70 U	70 U	70 U
N-Heptane	µg/m3	19	16 U	18	25	19	28

Validated Analytical Results Summary
Air Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018

Location ID:	SVE-4	SVE-6	SVE-7	SVE-12	SVE-14	Blower Discharge
Sample Name:	G-111618-JH-02	G-111618-JH-03	G-111618-JH-01	G-111618-JH-04	G-111618-JH-05	G-111618-JH-06
Sample Date:	11/16/2018	11/16/2018	11/16/2018	11/16/2018	11/16/2018	11/16/2018

Parameters	Unit						
Volatile Organic Compounds							
N-Propylbenzene	µg/m3	20 U	20 U	20 U	20 U	20 U	20 U
N-Undecane	µg/m3	64 U	64 U	64 U	64 U	64 U	64 U
Naphthalene	µg/m3	21 U	21 U	21 U	21 U	21 U	21 U
Nonane	µg/m3	21 U	21 U	21 U	21 U	21 U	21 U
o-Xylene	µg/m3	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U
Octane	µg/m3	19 U	19 U	19 U	19 U	19 U	19 U
Pentane	µg/m3	74 U	74 U	74 U	74 U	74 U	74 U
Styrene	µg/m3	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U
Tetrachloroethene	µg/m3	75	79	160	50	28	150
Toluene	µg/m3	38 U	38 U	38 U	38 U	38 U	38 U
trans-1,2-Dichloroethene	µg/m3	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U
trans-1,3-Dichloropropene	µg/m3	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Trichloroethene	µg/m3	12	13	34	11	11 U	15
Trichlorofluoromethane (CFC-11)	µg/m3	26	22	41	21	130	140
Trifluorotrchloroethane (CFC-113)	µg/m3	15 U	15 U	15 U	15 U	15 U	15 U
Vinyl acetate	µg/m3	35 U	35 U	35 U	35 U	35 U	35 U
Vinyl chloride	µg/m3	97	10 U	640	700	66	160

Note

U - Not detected at the associated reporting limit

Table 3

Analytical Method
Air Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Volatile Organic Compounds (VOC)	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

THE LEADER IN ENVIRONMENTAL TESTING

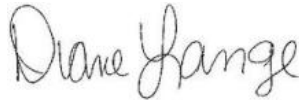
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

TestAmerica Job ID: 140-10570-1
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:
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Definitions/Glossary

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

TestAmerica Job ID: 140-10570-1

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: 140-10570-1

Job ID: 140-10570-1

Laboratory: TestAmerica Knoxville

Narrative

**Job Narrative
140-10570-1**

Comments

No additional comments.

Receipt

The sample was received on 1/26/2018 9:30 AM; the sample 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.

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

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Detection Summary

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

TestAmerica Job ID: 140-10570-1

Client Sample ID: G-180124-MB-01

Lab Sample ID: 140-10570-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	19		2.0		ppb v/v	3.47		TO-15	Total/NA
1,1-Dichloroethane	14		2.0		ppb v/v	3.47		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	11		2.0		ppb v/v	3.47		TO-15	Total/NA
2-Butanone (MEK)	11		10		ppb v/v	3.47		TO-15	Total/NA
Acetone	70		50		ppb v/v	3.47		TO-15	Total/NA
Butane	29		4.0		ppb v/v	3.47		TO-15	Total/NA
Chlorodifluoromethane	6.1		2.0		ppb v/v	3.47		TO-15	Total/NA
Chloroethane	2.5		2.0		ppb v/v	3.47		TO-15	Total/NA
Dichlorodifluoromethane	30		2.0		ppb v/v	3.47		TO-15	Total/NA
Tetrachloroethene	5.1		2.0		ppb v/v	3.47		TO-15	Total/NA
Trichlorofluoromethane	9.0		2.0		ppb v/v	3.47		TO-15	Total/NA
Vinyl chloride	6.1		2.0		ppb v/v	3.47		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	100		11		ug/m3	3.47		TO-15	Total/NA
1,1-Dichloroethane	58		8.1		ug/m3	3.47		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76		14		ug/m3	3.47		TO-15	Total/NA
2-Butanone (MEK)	31		29		ug/m3	3.47		TO-15	Total/NA
Acetone	170		120		ug/m3	3.47		TO-15	Total/NA
Butane	70		9.5		ug/m3	3.47		TO-15	Total/NA
Chlorodifluoromethane	22		7.1		ug/m3	3.47		TO-15	Total/NA
Chloroethane	6.5		5.3		ug/m3	3.47		TO-15	Total/NA
Dichlorodifluoromethane	150		9.9		ug/m3	3.47		TO-15	Total/NA
Tetrachloroethene	34		14		ug/m3	3.47		TO-15	Total/NA
Trichlorofluoromethane	51		11		ug/m3	3.47		TO-15	Total/NA
Vinyl chloride	16		5.1		ug/m3	3.47		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: 140-10570-1

Client Sample ID: G-180124-MB-01

Lab Sample ID: 140-10570-1

Date Collected: 01/24/18 11:35

Matrix: Air

Date Received: 01/26/18 09:30

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	19		2.0		ppb v/v			01/30/18 09:54	3.47
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			01/30/18 09:54	3.47
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			01/30/18 09:54	3.47
1,1,2-Trichloroethane	ND		2.0		ppb v/v			01/30/18 09:54	3.47
1,1-Dichloroethane	14		2.0		ppb v/v			01/30/18 09:54	3.47
1,1-Dichloroethene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
1,2,4-Trichlorobenzene	ND		10		ppb v/v			01/30/18 09:54	3.47
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			01/30/18 09:54	3.47
1,2-Dichloro-1,1,2,2-tetrafluoroethane	11		2.0		ppb v/v			01/30/18 09:54	3.47
1,2-Dichlorobenzene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
1,2-Dichloroethane	ND		2.0		ppb v/v			01/30/18 09:54	3.47
1,2-Dichloropropane	ND		2.0		ppb v/v			01/30/18 09:54	3.47
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
1,3-Butadiene	ND		4.0		ppb v/v			01/30/18 09:54	3.47
1,3-Dichlorobenzene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
1,4-Dichlorobenzene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
2-Butanone (MEK)	11		10		ppb v/v			01/30/18 09:54	3.47
2-Hexanone	ND		5.0		ppb v/v			01/30/18 09:54	3.47
3-Chloropropene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
4-Methyl-2-pentanone (MIBK)	ND		5.0		ppb v/v			01/30/18 09:54	3.47
Acetone	70		50		ppb v/v			01/30/18 09:54	3.47
Acetonitrile	ND		10		ppb v/v			01/30/18 09:54	3.47
Acrolein	ND		10		ppb v/v			01/30/18 09:54	3.47
Acrylonitrile	ND		20		ppb v/v			01/30/18 09:54	3.47
Alpha Methyl Styrene	ND		4.0		ppb v/v			01/30/18 09:54	3.47
Benzene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Benzyl chloride	ND		4.0		ppb v/v			01/30/18 09:54	3.47
Bromodichloromethane	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Bromoform	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Bromomethane	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Butane	29		4.0		ppb v/v			01/30/18 09:54	3.47
Carbon disulfide	ND		5.0		ppb v/v			01/30/18 09:54	3.47
Carbon tetrachloride	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Chlorobenzene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Chlorodifluoromethane	6.1		2.0		ppb v/v			01/30/18 09:54	3.47
Chloroethane	2.5		2.0		ppb v/v			01/30/18 09:54	3.47
Chloroform	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Chloromethane	ND		5.0		ppb v/v			01/30/18 09:54	3.47
cis-1,2-Dichloroethene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
cis-1,3-Dichloropropene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Cumene	ND		4.0		ppb v/v			01/30/18 09:54	3.47
Cyclohexane	ND		5.0		ppb v/v			01/30/18 09:54	3.47
Decane	ND		10		ppb v/v			01/30/18 09:54	3.47
Dibromochloromethane	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Dibromomethane	ND		4.0		ppb v/v			01/30/18 09:54	3.47
Dichlorodifluoromethane	30		2.0		ppb v/v			01/30/18 09:54	3.47

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-10570-1

Client Sample ID: G-180124-MB-01

Lab Sample ID: 140-10570-1

Date Collected: 01/24/18 11:35

Matrix: Air

Date Received: 01/26/18 09:30

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			01/30/18 09:54	3.47
Ethyl ether	ND		20		ppb v/v			01/30/18 09:54	3.47
Ethylbenzene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Heptane	ND		5.0		ppb v/v			01/30/18 09:54	3.47
Hexachlorobutadiene	ND		10		ppb v/v			01/30/18 09:54	3.47
Hexane	ND		5.0		ppb v/v			01/30/18 09:54	3.47
Methyl tert-butyl ether	ND		10		ppb v/v			01/30/18 09:54	3.47
Methylene Chloride	ND		5.0		ppb v/v			01/30/18 09:54	3.47
m-Xylene & p-Xylene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Naphthalene	ND		5.0		ppb v/v			01/30/18 09:54	3.47
Nonane	ND		5.0		ppb v/v			01/30/18 09:54	3.47
Octane	ND		4.0		ppb v/v			01/30/18 09:54	3.47
o-Xylene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Pentane	ND		10		ppb v/v			01/30/18 09:54	3.47
Propylbenzene	ND		4.0		ppb v/v			01/30/18 09:54	3.47
Styrene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Tetrachloroethene	5.1		2.0		ppb v/v			01/30/18 09:54	3.47
Toluene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Trichloroethene	ND		2.0		ppb v/v			01/30/18 09:54	3.47
Trichlorofluoromethane	9.0		2.0		ppb v/v			01/30/18 09:54	3.47
Undecane	ND		10		ppb v/v			01/30/18 09:54	3.47
Vinyl acetate	ND		10		ppb v/v			01/30/18 09:54	3.47
Vinyl chloride	6.1		2.0		ppb v/v			01/30/18 09:54	3.47
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	100		11		ug/m3			01/30/18 09:54	3.47
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			01/30/18 09:54	3.47
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			01/30/18 09:54	3.47
1,1,2-Trichloroethane	ND		11		ug/m3			01/30/18 09:54	3.47
1,1-Dichloroethane	58		8.1		ug/m3			01/30/18 09:54	3.47
1,1-Dichloroethene	ND		7.9		ug/m3			01/30/18 09:54	3.47
1,2,4-Trichlorobenzene	ND		74		ug/m3			01/30/18 09:54	3.47
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			01/30/18 09:54	3.47
1,2-Dibromoethane (EDB)	ND		15		ug/m3			01/30/18 09:54	3.47
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76		14		ug/m3			01/30/18 09:54	3.47
1,2-Dichlorobenzene	ND		12		ug/m3			01/30/18 09:54	3.47
1,2-Dichloroethane	ND		8.1		ug/m3			01/30/18 09:54	3.47
1,2-Dichloropropane	ND		9.2		ug/m3			01/30/18 09:54	3.47
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			01/30/18 09:54	3.47
1,3-Butadiene	ND		8.8		ug/m3			01/30/18 09:54	3.47
1,3-Dichlorobenzene	ND		12		ug/m3			01/30/18 09:54	3.47
1,4-Dichlorobenzene	ND		12		ug/m3			01/30/18 09:54	3.47
2-Butanone (MEK)	31		29		ug/m3			01/30/18 09:54	3.47
2-Hexanone	ND		20		ug/m3			01/30/18 09:54	3.47
3-Chloropropene	ND		6.3		ug/m3			01/30/18 09:54	3.47
4-Methyl-2-pentanone (MIBK)	ND		20		ug/m3			01/30/18 09:54	3.47

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-10570-1

Client Sample ID: G-180124-MB-01

Lab Sample ID: 140-10570-1

Date Collected: 01/24/18 11:35

Matrix: Air

Date Received: 01/26/18 09:30

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	170		120		ug/m3			01/30/18 09:54	3.47
Acetonitrile	ND		17		ug/m3			01/30/18 09:54	3.47
Acrolein	ND		23		ug/m3			01/30/18 09:54	3.47
Acrylonitrile	ND		43		ug/m3			01/30/18 09:54	3.47
Alpha Methyl Styrene	ND		19		ug/m3			01/30/18 09:54	3.47
Benzene	ND		6.4		ug/m3			01/30/18 09:54	3.47
Benzyl chloride	ND		21		ug/m3			01/30/18 09:54	3.47
Bromodichloromethane	ND		13		ug/m3			01/30/18 09:54	3.47
Bromoform	ND		21		ug/m3			01/30/18 09:54	3.47
Bromomethane	ND		7.8		ug/m3			01/30/18 09:54	3.47
Butane	70		9.5		ug/m3			01/30/18 09:54	3.47
Carbon disulfide	ND		16		ug/m3			01/30/18 09:54	3.47
Carbon tetrachloride	ND		13		ug/m3			01/30/18 09:54	3.47
Chlorobenzene	ND		9.2		ug/m3			01/30/18 09:54	3.47
Chlorodifluoromethane	22		7.1		ug/m3			01/30/18 09:54	3.47
Chloroethane	6.5		5.3		ug/m3			01/30/18 09:54	3.47
Chloroform	ND		9.8		ug/m3			01/30/18 09:54	3.47
Chloromethane	ND		10		ug/m3			01/30/18 09:54	3.47
cis-1,2-Dichloroethene	ND		7.9		ug/m3			01/30/18 09:54	3.47
cis-1,3-Dichloropropene	ND		9.1		ug/m3			01/30/18 09:54	3.47
Cumene	ND		20		ug/m3			01/30/18 09:54	3.47
Cyclohexane	ND		17		ug/m3			01/30/18 09:54	3.47
Decane	ND		58		ug/m3			01/30/18 09:54	3.47
Dibromochloromethane	ND		17		ug/m3			01/30/18 09:54	3.47
Dibromomethane	ND		28		ug/m3			01/30/18 09:54	3.47
Dichlorodifluoromethane	150		9.9		ug/m3			01/30/18 09:54	3.47
Dodecane	ND		70		ug/m3			01/30/18 09:54	3.47
Ethyl ether	ND		61		ug/m3			01/30/18 09:54	3.47
Ethylbenzene	ND		8.7		ug/m3			01/30/18 09:54	3.47
Heptane	ND		20		ug/m3			01/30/18 09:54	3.47
Hexachlorobutadiene	ND		110		ug/m3			01/30/18 09:54	3.47
Hexane	ND		18		ug/m3			01/30/18 09:54	3.47
Methyl tert-butyl ether	ND		36		ug/m3			01/30/18 09:54	3.47
Methylene Chloride	ND		17		ug/m3			01/30/18 09:54	3.47
m-Xylene & p-Xylene	ND		8.7		ug/m3			01/30/18 09:54	3.47
Naphthalene	ND		26		ug/m3			01/30/18 09:54	3.47
Nonane	ND		26		ug/m3			01/30/18 09:54	3.47
Octane	ND		19		ug/m3			01/30/18 09:54	3.47
o-Xylene	ND		8.7		ug/m3			01/30/18 09:54	3.47
Pentane	ND		30		ug/m3			01/30/18 09:54	3.47
Propylbenzene	ND		20		ug/m3			01/30/18 09:54	3.47
Styrene	ND		8.5		ug/m3			01/30/18 09:54	3.47
Tetrachloroethene	34		14		ug/m3			01/30/18 09:54	3.47
Toluene	ND		7.5		ug/m3			01/30/18 09:54	3.47
trans-1,2-Dichloroethene	ND		7.9		ug/m3			01/30/18 09:54	3.47
trans-1,3-Dichloropropene	ND		9.1		ug/m3			01/30/18 09:54	3.47
Trichloroethene	ND		11		ug/m3			01/30/18 09:54	3.47
Trichlorofluoromethane	51		11		ug/m3			01/30/18 09:54	3.47

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-10570-1

Client Sample ID: G-180124-MB-01

Lab Sample ID: 140-10570-1

Date Collected: 01/24/18 11:35

Matrix: Air

Date Received: 01/26/18 09:30

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			01/30/18 09:54	3.47
Vinyl acetate	ND		35		ug/m3			01/30/18 09:54	3.47
Vinyl chloride	16		5.1		ug/m3			01/30/18 09:54	3.47
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		60 - 140					01/30/18 09:54	3.47

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Default Detection Limits

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

TestAmerica Job ID: 140-10570-1

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: 140-10570-1

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: 140-10570-1

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: 140-10570-1

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)
140-10570-1	G-180124-MB-01	99
LCS 140-17732/1006	Lab Control Sample	102
MB 140-17732/9	Method Blank	98

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: 140-10570-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 140-17732/9

Matrix: Air

Analysis Batch: 17732

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			01/29/18 15:12	1
1,1,2,2-Tetrachloroethane	ND		0.20		ppb v/v			01/29/18 15:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20		ppb v/v			01/29/18 15:12	1
1,1,2-Trichloroethane	ND		0.20		ppb v/v			01/29/18 15:12	1
1,1-Dichloroethane	ND		0.20		ppb v/v			01/29/18 15:12	1
1,1-Dichloroethene	ND		0.20		ppb v/v			01/29/18 15:12	1
1,2,4-Trichlorobenzene	ND		1.0		ppb v/v			01/29/18 15:12	1
1,2,4-Trimethylbenzene	ND		0.20		ppb v/v			01/29/18 15:12	1
1,2-Dibromoethane (EDB)	ND		0.20		ppb v/v			01/29/18 15:12	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.20		ppb v/v			01/29/18 15:12	1
1,2-Dichlorobenzene	ND		0.20		ppb v/v			01/29/18 15:12	1
1,2-Dichloroethane	ND		0.20		ppb v/v			01/29/18 15:12	1
1,2-Dichloropropane	ND		0.20		ppb v/v			01/29/18 15:12	1
1,3,5-Trimethylbenzene	ND		0.20		ppb v/v			01/29/18 15:12	1
1,3-Butadiene	ND		0.40		ppb v/v			01/29/18 15:12	1
1,3-Dichlorobenzene	ND		0.20		ppb v/v			01/29/18 15:12	1
1,4-Dichlorobenzene	ND		0.20		ppb v/v			01/29/18 15:12	1
2-Butanone (MEK)	ND		1.0		ppb v/v			01/29/18 15:12	1
2-Hexanone	ND		0.50		ppb v/v			01/29/18 15:12	1
3-Chloropropene	ND		0.20		ppb v/v			01/29/18 15:12	1
4-Methyl-2-pentanone (MIBK)	ND		0.50		ppb v/v			01/29/18 15:12	1
Acetone	ND		5.0		ppb v/v			01/29/18 15:12	1
Acetonitrile	ND		1.0		ppb v/v			01/29/18 15:12	1
Acrolein	ND		1.0		ppb v/v			01/29/18 15:12	1
Acrylonitrile	ND		2.0		ppb v/v			01/29/18 15:12	1
Alpha Methyl Styrene	ND		0.40		ppb v/v			01/29/18 15:12	1
Benzene	ND		0.20		ppb v/v			01/29/18 15:12	1
Benzyl chloride	ND		0.40		ppb v/v			01/29/18 15:12	1
Bromodichloromethane	ND		0.20		ppb v/v			01/29/18 15:12	1
Bromoform	ND		0.20		ppb v/v			01/29/18 15:12	1
Bromomethane	ND		0.20		ppb v/v			01/29/18 15:12	1
Butane	ND		0.40		ppb v/v			01/29/18 15:12	1
Carbon disulfide	ND		0.50		ppb v/v			01/29/18 15:12	1
Carbon tetrachloride	ND		0.20		ppb v/v			01/29/18 15:12	1
Chlorobenzene	ND		0.20		ppb v/v			01/29/18 15:12	1
Chlorodifluoromethane	ND		0.20		ppb v/v			01/29/18 15:12	1
Chloroethane	ND		0.20		ppb v/v			01/29/18 15:12	1
Chloroform	ND		0.20		ppb v/v			01/29/18 15:12	1
Chloromethane	ND		0.50		ppb v/v			01/29/18 15:12	1
cis-1,2-Dichloroethene	ND		0.20		ppb v/v			01/29/18 15:12	1
cis-1,3-Dichloropropene	ND		0.20		ppb v/v			01/29/18 15:12	1
Cumene	ND		0.40		ppb v/v			01/29/18 15:12	1
Cyclohexane	ND		0.50		ppb v/v			01/29/18 15:12	1
Decane	ND		1.0		ppb v/v			01/29/18 15:12	1
Dibromochloromethane	ND		0.20		ppb v/v			01/29/18 15:12	1
Dibromomethane	ND		0.40		ppb v/v			01/29/18 15:12	1
Dichlorodifluoromethane	ND		0.20		ppb v/v			01/29/18 15:12	1
Dodecane	ND		1.0		ppb v/v			01/29/18 15:12	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-10570-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-17732/9
Matrix: Air
Analysis Batch: 17732

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			01/29/18 15:12	1
Ethylbenzene	ND		0.20		ppb v/v			01/29/18 15:12	1
Heptane	ND		0.50		ppb v/v			01/29/18 15:12	1
Hexachlorobutadiene	ND		1.0		ppb v/v			01/29/18 15:12	1
Hexane	ND		0.50		ppb v/v			01/29/18 15:12	1
Methyl tert-butyl ether	ND		1.0		ppb v/v			01/29/18 15:12	1
Methylene Chloride	ND		0.50		ppb v/v			01/29/18 15:12	1
m-Xylene & p-Xylene	ND		0.20		ppb v/v			01/29/18 15:12	1
Naphthalene	ND		0.50		ppb v/v			01/29/18 15:12	1
Nonane	ND		0.50		ppb v/v			01/29/18 15:12	1
Octane	ND		0.40		ppb v/v			01/29/18 15:12	1
o-Xylene	ND		0.20		ppb v/v			01/29/18 15:12	1
Pentane	ND		1.0		ppb v/v			01/29/18 15:12	1
Propylbenzene	ND		0.40		ppb v/v			01/29/18 15:12	1
Styrene	ND		0.20		ppb v/v			01/29/18 15:12	1
Tetrachloroethene	ND		0.20		ppb v/v			01/29/18 15:12	1
Toluene	ND		0.20		ppb v/v			01/29/18 15:12	1
trans-1,2-Dichloroethene	ND		0.20		ppb v/v			01/29/18 15:12	1
trans-1,3-Dichloropropene	ND		0.20		ppb v/v			01/29/18 15:12	1
Trichloroethene	ND		0.20		ppb v/v			01/29/18 15:12	1
Trichlorofluoromethane	ND		0.20		ppb v/v			01/29/18 15:12	1
Undecane	ND		1.0		ppb v/v			01/29/18 15:12	1
Vinyl acetate	ND		1.0		ppb v/v			01/29/18 15:12	1
Vinyl chloride	ND		0.20		ppb v/v			01/29/18 15:12	1

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.1		ug/m3			01/29/18 15:12	1
1,1,2,2-Tetrachloroethane	ND		1.4		ug/m3			01/29/18 15:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5		ug/m3			01/29/18 15:12	1
1,1,2-Trichloroethane	ND		1.1		ug/m3			01/29/18 15:12	1
1,1-Dichloroethane	ND		0.81		ug/m3			01/29/18 15:12	1
1,1-Dichloroethene	ND		0.79		ug/m3			01/29/18 15:12	1
1,2,4-Trichlorobenzene	ND		7.4		ug/m3			01/29/18 15:12	1
1,2,4-Trimethylbenzene	ND		0.98		ug/m3			01/29/18 15:12	1
1,2-Dibromoethane (EDB)	ND		1.5		ug/m3			01/29/18 15:12	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		1.4		ug/m3			01/29/18 15:12	1
1,2-Dichlorobenzene	ND		1.2		ug/m3			01/29/18 15:12	1
1,2-Dichloroethane	ND		0.81		ug/m3			01/29/18 15:12	1
1,2-Dichloropropane	ND		0.92		ug/m3			01/29/18 15:12	1
1,3,5-Trimethylbenzene	ND		0.98		ug/m3			01/29/18 15:12	1
1,3-Butadiene	ND		0.88		ug/m3			01/29/18 15:12	1
1,3-Dichlorobenzene	ND		1.2		ug/m3			01/29/18 15:12	1
1,4-Dichlorobenzene	ND		1.2		ug/m3			01/29/18 15:12	1
2-Butanone (MEK)	ND		2.9		ug/m3			01/29/18 15:12	1
2-Hexanone	ND		2.0		ug/m3			01/29/18 15:12	1
3-Chloropropene	ND		0.63		ug/m3			01/29/18 15:12	1
4-Methyl-2-pentanone (MIBK)	ND		2.0		ug/m3			01/29/18 15:12	1
Acetone	ND		12		ug/m3			01/29/18 15:12	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-10570-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-17732/9
Matrix: Air
Analysis Batch: 17732

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			01/29/18 15:12	1
Acrolein	ND		2.3		ug/m3			01/29/18 15:12	1
Acrylonitrile	ND		4.3		ug/m3			01/29/18 15:12	1
Alpha Methyl Styrene	ND		1.9		ug/m3			01/29/18 15:12	1
Benzene	ND		0.64		ug/m3			01/29/18 15:12	1
Benzyl chloride	ND		2.1		ug/m3			01/29/18 15:12	1
Bromodichloromethane	ND		1.3		ug/m3			01/29/18 15:12	1
Bromoform	ND		2.1		ug/m3			01/29/18 15:12	1
Bromomethane	ND		0.78		ug/m3			01/29/18 15:12	1
Butane	ND		0.95		ug/m3			01/29/18 15:12	1
Carbon disulfide	ND		1.6		ug/m3			01/29/18 15:12	1
Carbon tetrachloride	ND		1.3		ug/m3			01/29/18 15:12	1
Chlorobenzene	ND		0.92		ug/m3			01/29/18 15:12	1
Chlorodifluoromethane	ND		0.71		ug/m3			01/29/18 15:12	1
Chloroethane	ND		0.53		ug/m3			01/29/18 15:12	1
Chloroform	ND		0.98		ug/m3			01/29/18 15:12	1
Chloromethane	ND		1.0		ug/m3			01/29/18 15:12	1
cis-1,2-Dichloroethene	ND		0.79		ug/m3			01/29/18 15:12	1
cis-1,3-Dichloropropene	ND		0.91		ug/m3			01/29/18 15:12	1
Cumene	ND		2.0		ug/m3			01/29/18 15:12	1
Cyclohexane	ND		1.7		ug/m3			01/29/18 15:12	1
Decane	ND		5.8		ug/m3			01/29/18 15:12	1
Dibromochloromethane	ND		1.7		ug/m3			01/29/18 15:12	1
Dibromomethane	ND		2.8		ug/m3			01/29/18 15:12	1
Dichlorodifluoromethane	ND		0.99		ug/m3			01/29/18 15:12	1
Dodecane	ND		7.0		ug/m3			01/29/18 15:12	1
Ethyl ether	ND		6.1		ug/m3			01/29/18 15:12	1
Ethylbenzene	ND		0.87		ug/m3			01/29/18 15:12	1
Heptane	ND		2.0		ug/m3			01/29/18 15:12	1
Hexachlorobutadiene	ND		11		ug/m3			01/29/18 15:12	1
Hexane	ND		1.8		ug/m3			01/29/18 15:12	1
Methyl tert-butyl ether	ND		3.6		ug/m3			01/29/18 15:12	1
Methylene Chloride	ND		1.7		ug/m3			01/29/18 15:12	1
m-Xylene & p-Xylene	ND		0.87		ug/m3			01/29/18 15:12	1
Naphthalene	ND		2.6		ug/m3			01/29/18 15:12	1
Nonane	ND		2.6		ug/m3			01/29/18 15:12	1
Octane	ND		1.9		ug/m3			01/29/18 15:12	1
o-Xylene	ND		0.87		ug/m3			01/29/18 15:12	1
Pentane	ND		3.0		ug/m3			01/29/18 15:12	1
Propylbenzene	ND		2.0		ug/m3			01/29/18 15:12	1
Styrene	ND		0.85		ug/m3			01/29/18 15:12	1
Tetrachloroethene	ND		1.4		ug/m3			01/29/18 15:12	1
Toluene	ND		0.75		ug/m3			01/29/18 15:12	1
trans-1,2-Dichloroethene	ND		0.79		ug/m3			01/29/18 15:12	1
trans-1,3-Dichloropropene	ND		0.91		ug/m3			01/29/18 15:12	1
Trichloroethene	ND		1.1		ug/m3			01/29/18 15:12	1
Trichlorofluoromethane	ND		1.1		ug/m3			01/29/18 15:12	1
Undecane	ND		6.4		ug/m3			01/29/18 15:12	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-10570-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-17732/9

Matrix: Air

Analysis Batch: 17732

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			01/29/18 15:12	1
Vinyl chloride	ND		0.51		ug/m3			01/29/18 15:12	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		60 - 140					01/29/18 15:12	1

Lab Sample ID: LCS 140-17732/1006

Matrix: Air

Analysis Batch: 17732

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	2.28		ppb v/v		114	70 - 130
1,1,2,2-Tetrachloroethane	2.00	2.05		ppb v/v		102	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	2.00	2.15		ppb v/v		107	70 - 130
1,1,2-Trichloroethane	2.00	2.03		ppb v/v		102	70 - 130
1,1-Dichloroethane	2.00	2.16		ppb v/v		108	70 - 130
1,1-Dichloroethene	2.00	2.08		ppb v/v		104	70 - 130
1,2,4-Trichlorobenzene	2.00	1.63		ppb v/v		81	60 - 140
1,2,4-Trimethylbenzene	2.00	2.07		ppb v/v		103	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	2.28		ppb v/v		114	60 - 140
1,2-Dichlorobenzene	2.00	1.88		ppb v/v		94	70 - 130
1,2-Dichloroethane	2.00	2.06		ppb v/v		103	70 - 130
1,2-Dichloropropane	2.00	2.02		ppb v/v		101	70 - 130
1,3,5-Trimethylbenzene	2.00	2.01		ppb v/v		100	70 - 130
1,3-Butadiene	2.00	2.07		ppb v/v		103	60 - 140
1,3-Dichlorobenzene	2.00	1.87		ppb v/v		94	70 - 130
1,4-Dichlorobenzene	2.00	1.87		ppb v/v		93	70 - 130
2-Butanone (MEK)	2.00	2.01		ppb v/v		100	60 - 140
2-Hexanone	2.00	1.79		ppb v/v		90	60 - 140
3-Chloropropene	2.00	1.66		ppb v/v		83	60 - 140
4-Methyl-2-pentanone (MIBK)	2.00	1.73		ppb v/v		86	60 - 140
Acetone	6.00	5.73		ppb v/v		95	60 - 140
Acetonitrile	2.00	2.05		ppb v/v		103	60 - 140
Acrolein	2.00	2.36		ppb v/v		118	60 - 140
Acrylonitrile	2.00	2.10		ppb v/v		105	60 - 140
Alpha Methyl Styrene	2.00	2.19		ppb v/v		109	60 - 140
Benzene	2.00	1.98		ppb v/v		99	70 - 130
Benzyl chloride	2.00	2.21		ppb v/v		111	70 - 130
Bromodichloromethane	2.00	2.18		ppb v/v		109	70 - 130
Bromoform	2.00	1.86		ppb v/v		93	60 - 140
Bromomethane	2.00	2.21		ppb v/v		111	70 - 130
Butane	2.00	1.98		ppb v/v		99	60 - 140
Carbon disulfide	2.00	2.05		ppb v/v		103	70 - 130
Carbon tetrachloride	2.00	2.22		ppb v/v		111	70 - 130
Chlorobenzene	2.00	2.02		ppb v/v		101	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-10570-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-17732/1006

Matrix: Air

Analysis Batch: 17732

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	2.33		ppb v/v		116	60 - 140
Chloroethane	2.00	2.16		ppb v/v		108	70 - 130
Chloroform	2.00	2.23		ppb v/v		112	70 - 130
Chloromethane	2.00	2.14		ppb v/v		107	60 - 140
cis-1,2-Dichloroethene	2.00	2.15		ppb v/v		107	70 - 130
cis-1,3-Dichloropropene	2.00	2.16		ppb v/v		108	70 - 130
Cumene	2.00	2.12		ppb v/v		106	70 - 130
Cyclohexane	2.00	2.00		ppb v/v		100	70 - 130
Decane	2.00	2.05		ppb v/v		102	60 - 140
Dibromochloromethane	2.00	2.12		ppb v/v		106	70 - 130
Dibromomethane	2.00	1.99		ppb v/v		99	70 - 130
Dichlorodifluoromethane	2.00	2.36		ppb v/v		118	60 - 140
Dodecane	2.00	1.63		ppb v/v		82	60 - 140
Ethyl ether	2.00	1.65		ppb v/v		82	60 - 140
Ethylbenzene	2.00	2.09		ppb v/v		104	70 - 130
Heptane	2.00	2.02		ppb v/v		101	70 - 130
Hexachlorobutadiene	2.00	1.77		ppb v/v		88	60 - 140
Hexane	2.00	2.09		ppb v/v		104	70 - 130
Methyl tert-butyl ether	2.00	2.26		ppb v/v		113	60 - 140
Methylene Chloride	2.00	1.84		ppb v/v		92	70 - 130
m-Xylene & p-Xylene	4.00	4.33		ppb v/v		108	70 - 130
Naphthalene	2.00	1.54		ppb v/v		77	60 - 140
Nonane	2.00	2.04		ppb v/v		102	60 - 140
Octane	2.00	2.11		ppb v/v		105	70 - 130
o-Xylene	2.00	2.06		ppb v/v		103	70 - 130
Pentane	2.00	2.21		ppb v/v		110	70 - 130
Propylbenzene	2.00	2.12		ppb v/v		106	70 - 130
Styrene	2.00	2.21		ppb v/v		110	70 - 130
Tetrachloroethene	2.00	2.00		ppb v/v		100	70 - 130
Toluene	2.00	2.02		ppb v/v		101	70 - 130
trans-1,2-Dichloroethene	2.00	2.04		ppb v/v		102	70 - 130
trans-1,3-Dichloropropene	2.00	2.19		ppb v/v		110	70 - 130
Trichloroethene	2.00	1.89		ppb v/v		94	70 - 130
Trichlorofluoromethane	2.00	2.35		ppb v/v		117	60 - 140
Undecane	2.00	1.97		ppb v/v		98	60 - 140
Vinyl acetate	2.00	2.14		ppb v/v		107	60 - 140
Vinyl chloride	2.00	2.14		ppb v/v		107	70 - 130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	11	12.4		ug/m3		114	70 - 130
1,1,1,2-Tetrachloroethane	14	14.1		ug/m3		102	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	15	16.5		ug/m3		107	70 - 130
1,1,2-Trichloroethane	11	11.1		ug/m3		102	70 - 130
1,1-Dichloroethane	8.1	8.75		ug/m3		108	70 - 130
1,1-Dichloroethene	7.9	8.25		ug/m3		104	70 - 130
1,2,4-Trichlorobenzene	15	12.1		ug/m3		81	60 - 140
1,2,4-Trimethylbenzene	9.8	10.2		ug/m3		103	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-10570-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-17732/1006

Matrix: Air

Analysis Batch: 17732

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	15.9		ug/m3		114	60 - 140
1,2-Dichlorobenzene	12	11.3		ug/m3		94	70 - 130
1,2-Dichloroethane	8.1	8.32		ug/m3		103	70 - 130
1,2-Dichloropropane	9.2	9.32		ug/m3		101	70 - 130
1,3,5-Trimethylbenzene	9.8	9.88		ug/m3		100	70 - 130
1,3-Butadiene	4.4	4.58		ug/m3		103	60 - 140
1,3-Dichlorobenzene	12	11.3		ug/m3		94	70 - 130
1,4-Dichlorobenzene	12	11.2		ug/m3		93	70 - 130
2-Butanone (MEK)	5.9	5.92		ug/m3		100	60 - 140
2-Hexanone	8.2	7.35		ug/m3		90	60 - 140
3-Chloropropene	6.3	5.19		ug/m3		83	60 - 140
4-Methyl-2-pentanone (MIBK)	8.2	7.07		ug/m3		86	60 - 140
Acetone	14	13.6		ug/m3		95	60 - 140
Acetonitrile	3.4	3.44		ug/m3		103	60 - 140
Acrolein	4.6	5.41		ug/m3		118	60 - 140
Acrylonitrile	4.3	4.56		ug/m3		105	60 - 140
Alpha Methyl Styrene	9.7	10.6		ug/m3		109	60 - 140
Benzene	6.4	6.31		ug/m3		99	70 - 130
Benzyl chloride	10	11.5		ug/m3		111	70 - 130
Bromodichloromethane	13	14.6		ug/m3		109	70 - 130
Bromoform	21	19.2		ug/m3		93	60 - 140
Bromomethane	7.8	8.59		ug/m3		111	70 - 130
Butane	4.8	4.71		ug/m3		99	60 - 140
Carbon disulfide	6.2	6.40		ug/m3		103	70 - 130
Carbon tetrachloride	13	14.0		ug/m3		111	70 - 130
Chlorobenzene	9.2	9.28		ug/m3		101	70 - 130
Chlorodifluoromethane	7.1	8.24		ug/m3		116	60 - 140
Chloroethane	5.3	5.70		ug/m3		108	70 - 130
Chloroform	9.8	10.9		ug/m3		112	70 - 130
Chloromethane	4.1	4.42		ug/m3		107	60 - 140
cis-1,2-Dichloroethene	7.9	8.53		ug/m3		107	70 - 130
cis-1,3-Dichloropropene	9.1	9.81		ug/m3		108	70 - 130
Cumene	9.8	10.4		ug/m3		106	70 - 130
Cyclohexane	6.9	6.89		ug/m3		100	70 - 130
Decane	12	11.9		ug/m3		102	60 - 140
Dibromochloromethane	17	18.1		ug/m3		106	70 - 130
Dibromomethane	14	14.1		ug/m3		99	70 - 130
Dichlorodifluoromethane	9.9	11.7		ug/m3		118	60 - 140
Dodecane	14	11.4		ug/m3		82	60 - 140
Ethyl ether	6.1	4.99		ug/m3		82	60 - 140
Ethylbenzene	8.7	9.07		ug/m3		104	70 - 130
Heptane	8.2	8.28		ug/m3		101	70 - 130
Hexachlorobutadiene	21	18.8		ug/m3		88	60 - 140
Hexane	7.1	7.37		ug/m3		104	70 - 130
Methyl tert-butyl ether	7.2	8.16		ug/m3		113	60 - 140
Methylene Chloride	7.0	6.38		ug/m3		92	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-10570-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-17732/1006

Matrix: Air

Analysis Batch: 17732

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	18.8		ug/m3		108	70 - 130
Naphthalene	10	8.06		ug/m3		77	60 - 140
Nonane	10	10.7		ug/m3		102	60 - 140
Octane	9.3	9.85		ug/m3		105	70 - 130
o-Xylene	8.7	8.94		ug/m3		103	70 - 130
Pentane	5.9	6.51		ug/m3		110	70 - 130
Propylbenzene	9.8	10.4		ug/m3		106	70 - 130
Styrene	8.5	9.40		ug/m3		110	70 - 130
Tetrachloroethene	14	13.5		ug/m3		100	70 - 130
Toluene	7.5	7.63		ug/m3		101	70 - 130
trans-1,2-Dichloroethene	7.9	8.09		ug/m3		102	70 - 130
trans-1,3-Dichloropropene	9.1	9.96		ug/m3		110	70 - 130
Trichloroethene	11	10.1		ug/m3		94	70 - 130
Trichlorofluoromethane	11	13.2		ug/m3		117	60 - 140
Undecane	13	12.6		ug/m3		98	60 - 140
Vinyl acetate	7.0	7.53		ug/m3		107	60 - 140
Vinyl chloride	5.1	5.47		ug/m3		107	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	102		60 - 140

QC Association Summary

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

TestAmerica Job ID: 140-10570-1

Air - GC/MS VOA

Analysis Batch: 17732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-10570-1	G-180124-MB-01	Total/NA	Air	TO-15	
MB 140-17732/9	Method Blank	Total/NA	Air	TO-15	
LCS 140-17732/1006	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: 140-10570-1

Client Sample ID: G-180124-MB-01

Lab Sample ID: 140-10570-1

Date Collected: 01/24/18 11:35

Matrix: Air

Date Received: 01/26/18 09:30

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		3.47	69.4 mL	500 mL	17732	01/30/18 09:54	HMT	TAL KNX
Instrument ID: MG										

Client Sample ID: Method Blank

Lab Sample ID: MB 140-17732/9

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	17732	01/29/18 15:12	HMT	TAL KNX
Instrument ID: MG										

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-17732/1006

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	17732	01/29/18 12:28	HMT	TAL KNX
Instrument ID: MG										

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: 140-10570-1

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: 140-10570-1

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: 140-10570-1

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: 140-10570-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-10570-1	G-180124-MB-01	Air	01/24/18 11:35	01/26/18 09:30

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TAL Knoxville


5815 Middlebrook Pike
 Knoxville, TN 37921
 phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.



THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information		Project Manager: Tom Holiday		Sampled By: M. Barnes		1 of 1 COCs													
Company: GHD Services Inc.		Phone:		Site Contact:		TAL Contact:													
Address: 1801 Old Hwy 8 NW		City/State/Zip: St. Paul MN 55112		Phone: 651-639-0913		FAX: 651-639-0923													
Project Name: NRLF		Analysis Turnaround Time		Standard (Specify) X		Rush (Specify)													
Site/location: New Richmond WI		PO #: 048038-70-05		Barcode: 		140-10570 Chain of Custody													
Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
G-180124-MB-01	1-24-18	11:30	11:35	-29.7	-2	-	11679	X											
Sampled by: M. Barnes		Temperature (Fahrenheit)		Pressure (Inches of Hg)		Received @ ambient, 1 box FedEx 2 day tck#7713 1762 0850 Received @ ambient KW 1/26/18													
		Interior		Ambient															
Start		55°																	
Stop		55°																	
		Interior		Ambient															
Start		30.35"																	
Stop																			
Special Instructions/QC Requirements & Comments:																			
Canisters Shipped by: M. Barnes		Date/Time: 1-24-18 16:00		Canisters Received by: [Signature] 1/26/18 0930															
Samples Relinquished by: [Signature]		Date/Time:		Received by:															
Relinquished by:		Date/Time:		Received by:															

1 can
1 gauge



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: Ke Date: 1/26/18

QA026R30.doc, 080916



TestAmerica Knoxville - Air Canister Initial Pressure Check

Gauge ID: G5
Date: 1/28/2018

Analyst	Sample ID	Asset #	Cleaning Job	Cert	Size (L)	Pressure @ Receipt (-in Hg or +psig)	Time	Comments
afb	140-10570-A-1	11679	10252	b	6	-1.8	1315	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

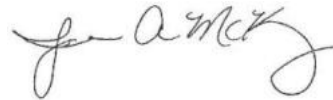
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

TestAmerica Job ID: 140-12358-1
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:
8/20/2018 12:24:15 PM

Jamie McKinney, Senior Project Manager
(865)291-3000
jamie.mckinney@testamericainc.com

LINKS

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Definitions/Glossary

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

TestAmerica Job ID: 140-12358-1

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: 140-12358-1

Job ID: 140-12358-1

Laboratory: TestAmerica Knoxville

Narrative

Job Narrative 140-12358-1

Comments

No additional comments.

Receipt

The sample was received on 8/10/2018 9:45 AM; the sample 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 140-22570 exhibited % difference of > 30% for the following analyte(s) Dodecane; 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.

Method(s) TO-15: The following analyte(s) recovered outside control limits for the LCS associated with analytical batch 140-22570: Dodecane. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results 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: 140-12358-1

Client Sample ID: G-180731-JH-01

Lab Sample ID: 140-12358-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	73		1.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	69		1.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	12		1.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	3.2		1.0		ppb v/v	1		TO-15	Total/NA
Benzene	1.0		1.0		ppb v/v	1		TO-15	Total/NA
Butane	9.7		2.0		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	5.9		1.0		ppb v/v	1		TO-15	Total/NA
Chloroethane	21		1.0		ppb v/v	1		TO-15	Total/NA
Chloroform	8.6		1.0		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	3.6		1.0		ppb v/v	1		TO-15	Total/NA
Cyclohexane	4.9		2.5		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	18		1.0		ppb v/v	1		TO-15	Total/NA
Heptane	2.7		2.5		ppb v/v	1		TO-15	Total/NA
Hexane	3.9		2.5		ppb v/v	1		TO-15	Total/NA
Methylene Chloride	2.9		2.5		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	17		1.0		ppb v/v	1		TO-15	Total/NA
Trichloroethene	2.0		1.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	14		1.0		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	21		1.0		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	400		5.5		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	280		4.0		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	48		4.0		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	23		7.0		ug/m3	1		TO-15	Total/NA
Benzene	3.3		3.2		ug/m3	1		TO-15	Total/NA
Butane	23		4.8		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	21		3.5		ug/m3	1		TO-15	Total/NA
Chloroethane	56		2.6		ug/m3	1		TO-15	Total/NA
Chloroform	42		4.9		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	14		4.0		ug/m3	1		TO-15	Total/NA
Cyclohexane	17		8.6		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	89		4.9		ug/m3	1		TO-15	Total/NA
Heptane	11		10		ug/m3	1		TO-15	Total/NA
Hexane	14		8.8		ug/m3	1		TO-15	Total/NA
Methylene Chloride	10		8.7		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	110		6.8		ug/m3	1		TO-15	Total/NA
Trichloroethene	11		5.4		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	78		5.6		ug/m3	1		TO-15	Total/NA
Vinyl chloride	55		2.6		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: 140-12358-1

Client Sample ID: G-180731-JH-01

Lab Sample ID: 140-12358-1

Date Collected: 07/31/18 12:25

Matrix: Air

Date Received: 08/10/18 09:45

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	73		1.0		ppb v/v			08/10/18 18:08	1
1,1,2,2-Tetrachloroethane	ND		1.0		ppb v/v			08/10/18 18:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0		ppb v/v			08/10/18 18:08	1
1,1,2-Trichloroethane	ND		1.0		ppb v/v			08/10/18 18:08	1
1,1-Dichloroethane	69		1.0		ppb v/v			08/10/18 18:08	1
1,1-Dichloroethene	12		1.0		ppb v/v			08/10/18 18:08	1
1,2,4-Trichlorobenzene	ND		5.0		ppb v/v			08/10/18 18:08	1
1,2,4-Trimethylbenzene	ND		1.0		ppb v/v			08/10/18 18:08	1
1,2-Dibromoethane (EDB)	ND		1.0		ppb v/v			08/10/18 18:08	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	3.2		1.0		ppb v/v			08/10/18 18:08	1
1,2-Dichlorobenzene	ND		1.0		ppb v/v			08/10/18 18:08	1
1,2-Dichloroethane	ND		1.0		ppb v/v			08/10/18 18:08	1
1,2-Dichloropropane	ND		1.0		ppb v/v			08/10/18 18:08	1
1,3,5-Trimethylbenzene	ND		1.0		ppb v/v			08/10/18 18:08	1
1,3-Butadiene	ND		2.0		ppb v/v			08/10/18 18:08	1
1,3-Dichlorobenzene	ND		1.0		ppb v/v			08/10/18 18:08	1
1,4-Dichlorobenzene	ND		1.0		ppb v/v			08/10/18 18:08	1
2-Butanone (MEK)	ND		5.0		ppb v/v			08/10/18 18:08	1
2-Hexanone	ND		2.5		ppb v/v			08/10/18 18:08	1
3-Chloropropene	ND		1.0		ppb v/v			08/10/18 18:08	1
4-Methyl-2-pentanone (MIBK)	ND		2.5		ppb v/v			08/10/18 18:08	1
Acetone	ND		25		ppb v/v			08/10/18 18:08	1
Acetonitrile	ND		5.0		ppb v/v			08/10/18 18:08	1
Acrolein	ND		5.0		ppb v/v			08/10/18 18:08	1
Acrylonitrile	ND		10		ppb v/v			08/10/18 18:08	1
Alpha Methyl Styrene	ND		2.0		ppb v/v			08/10/18 18:08	1
Benzene	1.0		1.0		ppb v/v			08/10/18 18:08	1
Benzyl chloride	ND		2.0		ppb v/v			08/10/18 18:08	1
Bromodichloromethane	ND		1.0		ppb v/v			08/10/18 18:08	1
Bromoform	ND		1.0		ppb v/v			08/10/18 18:08	1
Bromomethane	ND		1.0		ppb v/v			08/10/18 18:08	1
Butane	9.7		2.0		ppb v/v			08/10/18 18:08	1
Carbon disulfide	ND		2.5		ppb v/v			08/10/18 18:08	1
Carbon tetrachloride	ND		1.0		ppb v/v			08/10/18 18:08	1
Chlorobenzene	ND		1.0		ppb v/v			08/10/18 18:08	1
Chlorodifluoromethane	5.9		1.0		ppb v/v			08/10/18 18:08	1
Chloroethane	21		1.0		ppb v/v			08/10/18 18:08	1
Chloroform	8.6		1.0		ppb v/v			08/10/18 18:08	1
Chloromethane	ND		2.5		ppb v/v			08/10/18 18:08	1
cis-1,2-Dichloroethene	3.6		1.0		ppb v/v			08/10/18 18:08	1
cis-1,3-Dichloropropene	ND		1.0		ppb v/v			08/10/18 18:08	1
Cumene	ND		2.0		ppb v/v			08/10/18 18:08	1
Cyclohexane	4.9		2.5		ppb v/v			08/10/18 18:08	1
Decane	ND		5.0		ppb v/v			08/10/18 18:08	1
Dibromochloromethane	ND		1.0		ppb v/v			08/10/18 18:08	1
Dibromomethane	ND		2.0		ppb v/v			08/10/18 18:08	1
Dichlorodifluoromethane	18		1.0		ppb v/v			08/10/18 18:08	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-12358-1

Client Sample ID: G-180731-JH-01

Lab Sample ID: 140-12358-1

Date Collected: 07/31/18 12:25

Matrix: Air

Date Received: 08/10/18 09:45

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	*	5.0		ppb v/v			08/10/18 18:08	1
Ethyl ether	ND		10		ppb v/v			08/10/18 18:08	1
Ethylbenzene	ND		1.0		ppb v/v			08/10/18 18:08	1
Heptane	2.7		2.5		ppb v/v			08/10/18 18:08	1
Hexachlorobutadiene	ND		5.0		ppb v/v			08/10/18 18:08	1
Hexane	3.9		2.5		ppb v/v			08/10/18 18:08	1
Methyl tert-butyl ether	ND		5.0		ppb v/v			08/10/18 18:08	1
Methylene Chloride	2.9		2.5		ppb v/v			08/10/18 18:08	1
m-Xylene & p-Xylene	ND		1.0		ppb v/v			08/10/18 18:08	1
Naphthalene	ND		2.5		ppb v/v			08/10/18 18:08	1
Nonane	ND		2.5		ppb v/v			08/10/18 18:08	1
Octane	ND		2.0		ppb v/v			08/10/18 18:08	1
o-Xylene	ND		1.0		ppb v/v			08/10/18 18:08	1
Pentane	ND		5.0		ppb v/v			08/10/18 18:08	1
Propylbenzene	ND		2.0		ppb v/v			08/10/18 18:08	1
Styrene	ND		1.0		ppb v/v			08/10/18 18:08	1
Tetrachloroethene	17		1.0		ppb v/v			08/10/18 18:08	1
Toluene	ND		1.0		ppb v/v			08/10/18 18:08	1
trans-1,2-Dichloroethene	ND		1.0		ppb v/v			08/10/18 18:08	1
trans-1,3-Dichloropropene	ND		1.0		ppb v/v			08/10/18 18:08	1
Trichloroethene	2.0		1.0		ppb v/v			08/10/18 18:08	1
Trichlorofluoromethane	14		1.0		ppb v/v			08/10/18 18:08	1
Undecane	ND		5.0		ppb v/v			08/10/18 18:08	1
Vinyl acetate	ND		5.0		ppb v/v			08/10/18 18:08	1
Vinyl chloride	21		1.0		ppb v/v			08/10/18 18:08	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	400		5.5		ug/m3			08/10/18 18:08	1
1,1,2,2-Tetrachloroethane	ND		6.9		ug/m3			08/10/18 18:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		7.7		ug/m3			08/10/18 18:08	1
1,1,2-Trichloroethane	ND		5.5		ug/m3			08/10/18 18:08	1
1,1-Dichloroethane	280		4.0		ug/m3			08/10/18 18:08	1
1,1-Dichloroethene	48		4.0		ug/m3			08/10/18 18:08	1
1,2,4-Trichlorobenzene	ND		37		ug/m3			08/10/18 18:08	1
1,2,4-Trimethylbenzene	ND		4.9		ug/m3			08/10/18 18:08	1
1,2-Dibromoethane (EDB)	ND		7.7		ug/m3			08/10/18 18:08	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	23		7.0		ug/m3			08/10/18 18:08	1
1,2-Dichlorobenzene	ND		6.0		ug/m3			08/10/18 18:08	1
1,2-Dichloroethane	ND		4.0		ug/m3			08/10/18 18:08	1
1,2-Dichloropropane	ND		4.6		ug/m3			08/10/18 18:08	1
1,3,5-Trimethylbenzene	ND		4.9		ug/m3			08/10/18 18:08	1
1,3-Butadiene	ND		4.4		ug/m3			08/10/18 18:08	1
1,3-Dichlorobenzene	ND		6.0		ug/m3			08/10/18 18:08	1
1,4-Dichlorobenzene	ND		6.0		ug/m3			08/10/18 18:08	1
2-Butanone (MEK)	ND		15		ug/m3			08/10/18 18:08	1
2-Hexanone	ND		10		ug/m3			08/10/18 18:08	1
3-Chloropropene	ND		3.1		ug/m3			08/10/18 18:08	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/m3			08/10/18 18:08	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-12358-1

Client Sample ID: G-180731-JH-01

Lab Sample ID: 140-12358-1

Date Collected: 07/31/18 12:25

Matrix: Air

Date Received: 08/10/18 09:45

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		59		ug/m3			08/10/18 18:08	1
Acetonitrile	ND		8.4		ug/m3			08/10/18 18:08	1
Acrolein	ND		11		ug/m3			08/10/18 18:08	1
Acrylonitrile	ND		22		ug/m3			08/10/18 18:08	1
Alpha Methyl Styrene	ND		9.7		ug/m3			08/10/18 18:08	1
Benzene	3.3		3.2		ug/m3			08/10/18 18:08	1
Benzyl chloride	ND		10		ug/m3			08/10/18 18:08	1
Bromodichloromethane	ND		6.7		ug/m3			08/10/18 18:08	1
Bromoform	ND		10		ug/m3			08/10/18 18:08	1
Bromomethane	ND		3.9		ug/m3			08/10/18 18:08	1
Butane	23		4.8		ug/m3			08/10/18 18:08	1
Carbon disulfide	ND		7.8		ug/m3			08/10/18 18:08	1
Carbon tetrachloride	ND		6.3		ug/m3			08/10/18 18:08	1
Chlorobenzene	ND		4.6		ug/m3			08/10/18 18:08	1
Chlorodifluoromethane	21		3.5		ug/m3			08/10/18 18:08	1
Chloroethane	56		2.6		ug/m3			08/10/18 18:08	1
Chloroform	42		4.9		ug/m3			08/10/18 18:08	1
Chloromethane	ND		5.2		ug/m3			08/10/18 18:08	1
cis-1,2-Dichloroethene	14		4.0		ug/m3			08/10/18 18:08	1
cis-1,3-Dichloropropene	ND		4.5		ug/m3			08/10/18 18:08	1
Cumene	ND		9.8		ug/m3			08/10/18 18:08	1
Cyclohexane	17		8.6		ug/m3			08/10/18 18:08	1
Decane	ND		29		ug/m3			08/10/18 18:08	1
Dibromochloromethane	ND		8.5		ug/m3			08/10/18 18:08	1
Dibromomethane	ND		14		ug/m3			08/10/18 18:08	1
Dichlorodifluoromethane	89		4.9		ug/m3			08/10/18 18:08	1
Dodecane	ND *		35		ug/m3			08/10/18 18:08	1
Ethyl ether	ND		30		ug/m3			08/10/18 18:08	1
Ethylbenzene	ND		4.3		ug/m3			08/10/18 18:08	1
Heptane	11		10		ug/m3			08/10/18 18:08	1
Hexachlorobutadiene	ND		53		ug/m3			08/10/18 18:08	1
Hexane	14		8.8		ug/m3			08/10/18 18:08	1
Methyl tert-butyl ether	ND		18		ug/m3			08/10/18 18:08	1
Methylene Chloride	10		8.7		ug/m3			08/10/18 18:08	1
m-Xylene & p-Xylene	ND		4.3		ug/m3			08/10/18 18:08	1
Naphthalene	ND		13		ug/m3			08/10/18 18:08	1
Nonane	ND		13		ug/m3			08/10/18 18:08	1
Octane	ND		9.3		ug/m3			08/10/18 18:08	1
o-Xylene	ND		4.3		ug/m3			08/10/18 18:08	1
Pentane	ND		15		ug/m3			08/10/18 18:08	1
Propylbenzene	ND		9.8		ug/m3			08/10/18 18:08	1
Styrene	ND		4.3		ug/m3			08/10/18 18:08	1
Tetrachloroethene	110		6.8		ug/m3			08/10/18 18:08	1
Toluene	ND		3.8		ug/m3			08/10/18 18:08	1
trans-1,2-Dichloroethene	ND		4.0		ug/m3			08/10/18 18:08	1
trans-1,3-Dichloropropene	ND		4.5		ug/m3			08/10/18 18:08	1
Trichloroethene	11		5.4		ug/m3			08/10/18 18:08	1
Trichlorofluoromethane	78		5.6		ug/m3			08/10/18 18:08	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-12358-1

Client Sample ID: G-180731-JH-01

Lab Sample ID: 140-12358-1

Date Collected: 07/31/18 12:25

Matrix: Air

Date Received: 08/10/18 09:45

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		32		ug/m3			08/10/18 18:08	1
Vinyl acetate	ND		18		ug/m3			08/10/18 18:08	1
Vinyl chloride	55		2.6		ug/m3			08/10/18 18:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		60 - 140					08/10/18 18:08	1



Default Detection Limits

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

TestAmerica Job ID: 140-12358-1

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: 140-12358-1

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: 140-12358-1

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: 140-12358-1

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)
140-12358-1	G-180731-JH-01	103
LCS 140-22570/1010	Lab Control Sample	102
MB 140-22570/12	Method Blank	96

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: 140-12358-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 140-22570/12

Matrix: Air

Analysis Batch: 22570

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			08/10/18 16:36	1
1,1,2,2-Tetrachloroethane	ND		0.20		ppb v/v			08/10/18 16:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20		ppb v/v			08/10/18 16:36	1
1,1,2-Trichloroethane	ND		0.20		ppb v/v			08/10/18 16:36	1
1,1-Dichloroethane	ND		0.20		ppb v/v			08/10/18 16:36	1
1,1-Dichloroethene	ND		0.20		ppb v/v			08/10/18 16:36	1
1,2,4-Trichlorobenzene	ND		1.0		ppb v/v			08/10/18 16:36	1
1,2,4-Trimethylbenzene	ND		0.20		ppb v/v			08/10/18 16:36	1
1,2-Dibromoethane (EDB)	ND		0.20		ppb v/v			08/10/18 16:36	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.20		ppb v/v			08/10/18 16:36	1
1,2-Dichlorobenzene	ND		0.20		ppb v/v			08/10/18 16:36	1
1,2-Dichloroethane	ND		0.20		ppb v/v			08/10/18 16:36	1
1,2-Dichloropropane	ND		0.20		ppb v/v			08/10/18 16:36	1
1,3,5-Trimethylbenzene	ND		0.20		ppb v/v			08/10/18 16:36	1
1,3-Butadiene	ND		0.40		ppb v/v			08/10/18 16:36	1
1,3-Dichlorobenzene	ND		0.20		ppb v/v			08/10/18 16:36	1
1,4-Dichlorobenzene	ND		0.20		ppb v/v			08/10/18 16:36	1
2-Butanone (MEK)	ND		1.0		ppb v/v			08/10/18 16:36	1
2-Hexanone	ND		0.50		ppb v/v			08/10/18 16:36	1
3-Chloropropene	ND		0.20		ppb v/v			08/10/18 16:36	1
4-Methyl-2-pentanone (MIBK)	ND		0.50		ppb v/v			08/10/18 16:36	1
Acetone	ND		5.0		ppb v/v			08/10/18 16:36	1
Acetonitrile	ND		1.0		ppb v/v			08/10/18 16:36	1
Acrolein	ND		1.0		ppb v/v			08/10/18 16:36	1
Acrylonitrile	ND		2.0		ppb v/v			08/10/18 16:36	1
Alpha Methyl Styrene	ND		0.40		ppb v/v			08/10/18 16:36	1
Benzene	ND		0.20		ppb v/v			08/10/18 16:36	1
Benzyl chloride	ND		0.40		ppb v/v			08/10/18 16:36	1
Bromodichloromethane	ND		0.20		ppb v/v			08/10/18 16:36	1
Bromoform	ND		0.20		ppb v/v			08/10/18 16:36	1
Bromomethane	ND		0.20		ppb v/v			08/10/18 16:36	1
Butane	ND		0.40		ppb v/v			08/10/18 16:36	1
Carbon disulfide	ND		0.50		ppb v/v			08/10/18 16:36	1
Carbon tetrachloride	ND		0.20		ppb v/v			08/10/18 16:36	1
Chlorobenzene	ND		0.20		ppb v/v			08/10/18 16:36	1
Chlorodifluoromethane	ND		0.20		ppb v/v			08/10/18 16:36	1
Chloroethane	ND		0.20		ppb v/v			08/10/18 16:36	1
Chloroform	ND		0.20		ppb v/v			08/10/18 16:36	1
Chloromethane	ND		0.50		ppb v/v			08/10/18 16:36	1
cis-1,2-Dichloroethene	ND		0.20		ppb v/v			08/10/18 16:36	1
cis-1,3-Dichloropropene	ND		0.20		ppb v/v			08/10/18 16:36	1
Cumene	ND		0.40		ppb v/v			08/10/18 16:36	1
Cyclohexane	ND		0.50		ppb v/v			08/10/18 16:36	1
Decane	ND		1.0		ppb v/v			08/10/18 16:36	1
Dibromochloromethane	ND		0.20		ppb v/v			08/10/18 16:36	1
Dibromomethane	ND		0.40		ppb v/v			08/10/18 16:36	1
Dichlorodifluoromethane	ND		0.20		ppb v/v			08/10/18 16:36	1
Dodecane	ND		1.0		ppb v/v			08/10/18 16:36	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-12358-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-22570/12
Matrix: Air
Analysis Batch: 22570

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			08/10/18 16:36	1
Ethylbenzene	ND		0.20		ppb v/v			08/10/18 16:36	1
Heptane	ND		0.50		ppb v/v			08/10/18 16:36	1
Hexachlorobutadiene	ND		1.0		ppb v/v			08/10/18 16:36	1
Hexane	ND		0.50		ppb v/v			08/10/18 16:36	1
Methyl tert-butyl ether	ND		1.0		ppb v/v			08/10/18 16:36	1
Methylene Chloride	ND		0.50		ppb v/v			08/10/18 16:36	1
m-Xylene & p-Xylene	ND		0.20		ppb v/v			08/10/18 16:36	1
Naphthalene	ND		0.50		ppb v/v			08/10/18 16:36	1
Nonane	ND		0.50		ppb v/v			08/10/18 16:36	1
Octane	ND		0.40		ppb v/v			08/10/18 16:36	1
o-Xylene	ND		0.20		ppb v/v			08/10/18 16:36	1
Pentane	ND		1.0		ppb v/v			08/10/18 16:36	1
Propylbenzene	ND		0.40		ppb v/v			08/10/18 16:36	1
Styrene	ND		0.20		ppb v/v			08/10/18 16:36	1
Tetrachloroethene	ND		0.20		ppb v/v			08/10/18 16:36	1
Toluene	ND		0.20		ppb v/v			08/10/18 16:36	1
trans-1,2-Dichloroethene	ND		0.20		ppb v/v			08/10/18 16:36	1
trans-1,3-Dichloropropene	ND		0.20		ppb v/v			08/10/18 16:36	1
Trichloroethene	ND		0.20		ppb v/v			08/10/18 16:36	1
Trichlorofluoromethane	ND		0.20		ppb v/v			08/10/18 16:36	1
Undecane	ND		1.0		ppb v/v			08/10/18 16:36	1
Vinyl acetate	ND		1.0		ppb v/v			08/10/18 16:36	1
Vinyl chloride	ND		0.20		ppb v/v			08/10/18 16:36	1

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.1		ug/m3			08/10/18 16:36	1
1,1,2,2-Tetrachloroethane	ND		1.4		ug/m3			08/10/18 16:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5		ug/m3			08/10/18 16:36	1
1,1,2-Trichloroethane	ND		1.1		ug/m3			08/10/18 16:36	1
1,1-Dichloroethane	ND		0.81		ug/m3			08/10/18 16:36	1
1,1-Dichloroethene	ND		0.79		ug/m3			08/10/18 16:36	1
1,2,4-Trichlorobenzene	ND		7.4		ug/m3			08/10/18 16:36	1
1,2,4-Trimethylbenzene	ND		0.98		ug/m3			08/10/18 16:36	1
1,2-Dibromoethane (EDB)	ND		1.5		ug/m3			08/10/18 16:36	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		1.4		ug/m3			08/10/18 16:36	1
1,2-Dichlorobenzene	ND		1.2		ug/m3			08/10/18 16:36	1
1,2-Dichloroethane	ND		0.81		ug/m3			08/10/18 16:36	1
1,2-Dichloropropane	ND		0.92		ug/m3			08/10/18 16:36	1
1,3,5-Trimethylbenzene	ND		0.98		ug/m3			08/10/18 16:36	1
1,3-Butadiene	ND		0.88		ug/m3			08/10/18 16:36	1
1,3-Dichlorobenzene	ND		1.2		ug/m3			08/10/18 16:36	1
1,4-Dichlorobenzene	ND		1.2		ug/m3			08/10/18 16:36	1
2-Butanone (MEK)	ND		2.9		ug/m3			08/10/18 16:36	1
2-Hexanone	ND		2.0		ug/m3			08/10/18 16:36	1
3-Chloropropene	ND		0.63		ug/m3			08/10/18 16:36	1
4-Methyl-2-pentanone (MIBK)	ND		2.0		ug/m3			08/10/18 16:36	1
Acetone	ND		12		ug/m3			08/10/18 16:36	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-12358-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-22570/12
Matrix: Air
Analysis Batch: 22570

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			08/10/18 16:36	1
Acrolein	ND		2.3		ug/m3			08/10/18 16:36	1
Acrylonitrile	ND		4.3		ug/m3			08/10/18 16:36	1
Alpha Methyl Styrene	ND		1.9		ug/m3			08/10/18 16:36	1
Benzene	ND		0.64		ug/m3			08/10/18 16:36	1
Benzyl chloride	ND		2.1		ug/m3			08/10/18 16:36	1
Bromodichloromethane	ND		1.3		ug/m3			08/10/18 16:36	1
Bromoform	ND		2.1		ug/m3			08/10/18 16:36	1
Bromomethane	ND		0.78		ug/m3			08/10/18 16:36	1
Butane	ND		0.95		ug/m3			08/10/18 16:36	1
Carbon disulfide	ND		1.6		ug/m3			08/10/18 16:36	1
Carbon tetrachloride	ND		1.3		ug/m3			08/10/18 16:36	1
Chlorobenzene	ND		0.92		ug/m3			08/10/18 16:36	1
Chlorodifluoromethane	ND		0.71		ug/m3			08/10/18 16:36	1
Chloroethane	ND		0.53		ug/m3			08/10/18 16:36	1
Chloroform	ND		0.98		ug/m3			08/10/18 16:36	1
Chloromethane	ND		1.0		ug/m3			08/10/18 16:36	1
cis-1,2-Dichloroethene	ND		0.79		ug/m3			08/10/18 16:36	1
cis-1,3-Dichloropropene	ND		0.91		ug/m3			08/10/18 16:36	1
Cumene	ND		2.0		ug/m3			08/10/18 16:36	1
Cyclohexane	ND		1.7		ug/m3			08/10/18 16:36	1
Decane	ND		5.8		ug/m3			08/10/18 16:36	1
Dibromochloromethane	ND		1.7		ug/m3			08/10/18 16:36	1
Dibromomethane	ND		2.8		ug/m3			08/10/18 16:36	1
Dichlorodifluoromethane	ND		0.99		ug/m3			08/10/18 16:36	1
Dodecane	ND		7.0		ug/m3			08/10/18 16:36	1
Ethyl ether	ND		6.1		ug/m3			08/10/18 16:36	1
Ethylbenzene	ND		0.87		ug/m3			08/10/18 16:36	1
Heptane	ND		2.0		ug/m3			08/10/18 16:36	1
Hexachlorobutadiene	ND		11		ug/m3			08/10/18 16:36	1
Hexane	ND		1.8		ug/m3			08/10/18 16:36	1
Methyl tert-butyl ether	ND		3.6		ug/m3			08/10/18 16:36	1
Methylene Chloride	ND		1.7		ug/m3			08/10/18 16:36	1
m-Xylene & p-Xylene	ND		0.87		ug/m3			08/10/18 16:36	1
Naphthalene	ND		2.6		ug/m3			08/10/18 16:36	1
Nonane	ND		2.6		ug/m3			08/10/18 16:36	1
Octane	ND		1.9		ug/m3			08/10/18 16:36	1
o-Xylene	ND		0.87		ug/m3			08/10/18 16:36	1
Pentane	ND		3.0		ug/m3			08/10/18 16:36	1
Propylbenzene	ND		2.0		ug/m3			08/10/18 16:36	1
Styrene	ND		0.85		ug/m3			08/10/18 16:36	1
Tetrachloroethene	ND		1.4		ug/m3			08/10/18 16:36	1
Toluene	ND		0.75		ug/m3			08/10/18 16:36	1
trans-1,2-Dichloroethene	ND		0.79		ug/m3			08/10/18 16:36	1
trans-1,3-Dichloropropene	ND		0.91		ug/m3			08/10/18 16:36	1
Trichloroethene	ND		1.1		ug/m3			08/10/18 16:36	1
Trichlorofluoromethane	ND		1.1		ug/m3			08/10/18 16:36	1
Undecane	ND		6.4		ug/m3			08/10/18 16:36	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-12358-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-22570/12
Matrix: Air
Analysis Batch: 22570

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			08/10/18 16:36	1
Vinyl chloride	ND		0.51		ug/m3			08/10/18 16:36	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		60 - 140					08/10/18 16:36	1

Lab Sample ID: LCS 140-22570/1010
Matrix: Air
Analysis Batch: 22570

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	1.99		ppb v/v		99	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.81		ppb v/v		90	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	2.00	2.06		ppb v/v		103	70 - 130
1,1,2-Trichloroethane	2.00	1.79		ppb v/v		89	70 - 130
1,1-Dichloroethane	2.00	2.09		ppb v/v		104	70 - 130
1,1-Dichloroethene	2.00	2.01		ppb v/v		101	70 - 130
1,2,4-Trichlorobenzene	2.00	1.39		ppb v/v		70	60 - 140
1,2,4-Trimethylbenzene	2.00	1.77		ppb v/v		89	70 - 130
1,2-Dibromoethane (EDB)	2.00	1.69		ppb v/v		85	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	1.61		ppb v/v		80	70 - 130
1,2-Dichloroethane	2.00	1.96		ppb v/v		98	70 - 130
1,2-Dichloropropane	2.00	1.72		ppb v/v		86	70 - 130
1,3,5-Trimethylbenzene	2.00	1.71		ppb v/v		86	70 - 130
1,3-Butadiene	2.00	2.20		ppb v/v		110	60 - 140
1,3-Dichlorobenzene	2.00	1.61		ppb v/v		80	70 - 130
1,4-Dichlorobenzene	2.00	1.62		ppb v/v		81	70 - 130
2-Butanone (MEK)	2.00	1.84		ppb v/v		92	60 - 140
2-Hexanone	2.00	1.54		ppb v/v		77	60 - 140
3-Chloropropene	2.00	2.04		ppb v/v		102	60 - 140
4-Methyl-2-pentanone (MIBK)	2.00	1.64		ppb v/v		82	60 - 140
Acetone	6.00	6.12		ppb v/v		102	60 - 140
Acetonitrile	2.00	2.03		ppb v/v		102	60 - 140
Acrolein	2.00	2.02		ppb v/v		101	60 - 140
Acrylonitrile	2.00	1.94		ppb v/v		97	60 - 140
Alpha Methyl Styrene	2.00	1.65		ppb v/v		83	60 - 140
Benzene	2.00	1.84		ppb v/v		92	70 - 130
Benzyl chloride	2.00	1.78		ppb v/v		89	70 - 130
Bromodichloromethane	2.00	1.88		ppb v/v		94	70 - 130
Bromoform	2.00	1.53		ppb v/v		76	60 - 140
Bromomethane	2.00	2.20		ppb v/v		110	70 - 130
Butane	2.00	2.31		ppb v/v		116	60 - 140
Carbon disulfide	2.00	2.10		ppb v/v		105	70 - 130
Carbon tetrachloride	2.00	1.95		ppb v/v		98	70 - 130
Chlorobenzene	2.00	1.70		ppb v/v		85	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-12358-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-22570/1010

Matrix: Air

Analysis Batch: 22570

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	2.24		ppb v/v		112	70 - 130
Chloroform	2.00	1.95		ppb v/v		98	70 - 130
Chloromethane	2.00	2.19		ppb v/v		109	60 - 140
cis-1,2-Dichloroethene	2.00	1.96		ppb v/v		98	70 - 130
cis-1,3-Dichloropropene	2.00	1.78		ppb v/v		89	70 - 130
Cumene	2.00	1.78		ppb v/v		89	70 - 130
Cyclohexane	2.00	1.89		ppb v/v		95	70 - 130
Decane	2.00	1.84		ppb v/v		92	60 - 140
Dibromochloromethane	2.00	1.78		ppb v/v		89	70 - 130
Dibromomethane	2.00	1.79		ppb v/v		90	70 - 130
Dichlorodifluoromethane	2.00	2.33		ppb v/v		116	60 - 140
Dodecane	2.00	1.09	*	ppb v/v		55	60 - 140
Ethyl ether	2.00	1.90		ppb v/v		95	60 - 140
Ethylbenzene	2.00	1.79		ppb v/v		90	70 - 130
Heptane	2.00	1.80		ppb v/v		90	70 - 130
Hexachlorobutadiene	2.00	1.76		ppb v/v		88	60 - 140
Hexane	2.00	2.02		ppb v/v		101	70 - 130
Methyl tert-butyl ether	2.00	1.90		ppb v/v		95	60 - 140
Methylene Chloride	2.00	1.80		ppb v/v		90	70 - 130
m-Xylene & p-Xylene	4.00	3.64		ppb v/v		91	70 - 130
Naphthalene	2.00	1.50		ppb v/v		75	60 - 140
Nonane	2.00	1.81		ppb v/v		91	60 - 140
Octane	2.00	1.73		ppb v/v		87	70 - 130
o-Xylene	2.00	1.81		ppb v/v		91	70 - 130
Pentane	2.00	2.04		ppb v/v		102	70 - 130
Propylbenzene	2.00	1.70		ppb v/v		85	70 - 130
Styrene	2.00	1.71		ppb v/v		86	70 - 130
Tetrachloroethene	2.00	1.79		ppb v/v		89	70 - 130
Toluene	2.00	1.75		ppb v/v		88	70 - 130
trans-1,2-Dichloroethene	2.00	2.01		ppb v/v		101	70 - 130
trans-1,3-Dichloropropene	2.00	1.81		ppb v/v		91	70 - 130
Trichloroethene	2.00	1.78		ppb v/v		89	70 - 130
Trichlorofluoromethane	2.00	2.38		ppb v/v		119	60 - 140
Undecane	2.00	1.80		ppb v/v		90	60 - 140
Vinyl acetate	2.00	1.94		ppb v/v		97	60 - 140
Vinyl chloride	2.00	2.33		ppb v/v		116	70 - 130
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	11	10.8		ug/m3		99	70 - 130
1,1,1,2-Tetrachloroethane	14	12.4		ug/m3		90	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	15	15.8		ug/m3		103	70 - 130
1,1,2-Trichloroethane	11	9.75		ug/m3		89	70 - 130
1,1-Dichloroethane	8.1	8.45		ug/m3		104	70 - 130
1,1-Dichloroethene	7.9	7.98		ug/m3		101	70 - 130
1,2,4-Trichlorobenzene	15	10.3		ug/m3		70	60 - 140
1,2,4-Trimethylbenzene	9.8	8.70		ug/m3		89	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-12358-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-22570/1010

Matrix: Air

Analysis Batch: 22570

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	13.0		ug/m3		85	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	14	15.2		ug/m3		108	60 - 140
1,2-Dichlorobenzene	12	9.66		ug/m3		80	70 - 130
1,2-Dichloroethane	8.1	7.95		ug/m3		98	70 - 130
1,2-Dichloropropane	9.2	7.95		ug/m3		86	70 - 130
1,3,5-Trimethylbenzene	9.8	8.43		ug/m3		86	70 - 130
1,3-Butadiene	4.4	4.86		ug/m3		110	60 - 140
1,3-Dichlorobenzene	12	9.68		ug/m3		80	70 - 130
1,4-Dichlorobenzene	12	9.72		ug/m3		81	70 - 130
2-Butanone (MEK)	5.9	5.42		ug/m3		92	60 - 140
2-Hexanone	8.2	6.30		ug/m3		77	60 - 140
3-Chloropropene	6.3	6.39		ug/m3		102	60 - 140
4-Methyl-2-pentanone (MIBK)	8.2	6.71		ug/m3		82	60 - 140
Acetone	14	14.5		ug/m3		102	60 - 140
Acetonitrile	3.4	3.41		ug/m3		102	60 - 140
Acrolein	4.6	4.63		ug/m3		101	60 - 140
Acrylonitrile	4.3	4.22		ug/m3		97	60 - 140
Alpha Methyl Styrene	9.7	8.00		ug/m3		83	60 - 140
Benzene	6.4	5.86		ug/m3		92	70 - 130
Benzyl chloride	10	9.24		ug/m3		89	70 - 130
Bromodichloromethane	13	12.6		ug/m3		94	70 - 130
Bromoform	21	15.8		ug/m3		76	60 - 140
Bromomethane	7.8	8.53		ug/m3		110	70 - 130
Butane	4.8	5.50		ug/m3		116	60 - 140
Carbon disulfide	6.2	6.55		ug/m3		105	70 - 130
Carbon tetrachloride	13	12.3		ug/m3		98	70 - 130
Chlorobenzene	9.2	7.83		ug/m3		85	70 - 130
Chlorodifluoromethane	7.1	8.10		ug/m3		114	60 - 140
Chloroethane	5.3	5.92		ug/m3		112	70 - 130
Chloroform	9.8	9.53		ug/m3		98	70 - 130
Chloromethane	4.1	4.51		ug/m3		109	60 - 140
cis-1,2-Dichloroethene	7.9	7.79		ug/m3		98	70 - 130
cis-1,3-Dichloropropene	9.1	8.10		ug/m3		89	70 - 130
Cumene	9.8	8.77		ug/m3		89	70 - 130
Cyclohexane	6.9	6.52		ug/m3		95	70 - 130
Decane	12	10.7		ug/m3		92	60 - 140
Dibromochloromethane	17	15.1		ug/m3		89	70 - 130
Dibromomethane	14	12.7		ug/m3		90	70 - 130
Dichlorodifluoromethane	9.9	11.5		ug/m3		116	60 - 140
Dodecane	14	7.62	*	ug/m3		55	60 - 140
Ethyl ether	6.1	5.77		ug/m3		95	60 - 140
Ethylbenzene	8.7	7.79		ug/m3		90	70 - 130
Heptane	8.2	7.40		ug/m3		90	70 - 130
Hexachlorobutadiene	21	18.7		ug/m3		88	60 - 140
Hexane	7.0	7.13		ug/m3		101	70 - 130
Methyl tert-butyl ether	7.2	6.83		ug/m3		95	60 - 140
Methylene Chloride	6.9	6.27		ug/m3		90	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-12358-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-22570/1010

Matrix: Air

Analysis Batch: 22570

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	15.8		ug/m3		91	70 - 130
Naphthalene	10	7.87		ug/m3		75	60 - 140
Nonane	10	9.51		ug/m3		91	60 - 140
Octane	9.3	8.09		ug/m3		87	70 - 130
o-Xylene	8.7	7.88		ug/m3		91	70 - 130
Pentane	5.9	6.01		ug/m3		102	70 - 130
Propylbenzene	9.8	8.36		ug/m3		85	70 - 130
Styrene	8.5	7.29		ug/m3		86	70 - 130
Tetrachloroethene	14	12.1		ug/m3		89	70 - 130
Toluene	7.5	6.61		ug/m3		88	70 - 130
trans-1,2-Dichloroethene	7.9	7.97		ug/m3		101	70 - 130
trans-1,3-Dichloropropene	9.1	8.22		ug/m3		91	70 - 130
Trichloroethene	11	9.55		ug/m3		89	70 - 130
Trichlorofluoromethane	11	13.3		ug/m3		119	60 - 140
Undecane	13	11.5		ug/m3		90	60 - 140
Vinyl acetate	7.0	6.84		ug/m3		97	60 - 140
Vinyl chloride	5.1	5.95		ug/m3		116	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	102		60 - 140

QC Association Summary

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

TestAmerica Job ID: 140-12358-1

Air - GC/MS VOA

Analysis Batch: 22570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-12358-1	G-180731-JH-01	Total/NA	Air	TO-15	
MB 140-22570/12	Method Blank	Total/NA	Air	TO-15	
LCS 140-22570/1010	Lab Control Sample	Total/NA	Air	TO-15	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Lab Chronicle

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

TestAmerica Job ID: 140-12358-1

Client Sample ID: G-180731-JH-01

Date Collected: 07/31/18 12:25

Date Received: 08/10/18 09:45

Lab Sample ID: 140-12358-1

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	40 mL	500 mL	22570	08/10/18 18:08	P1P	TAL KNX
Instrument ID: MJ										

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 140-22570/12

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	22570	08/10/18 16:36	P1P	TAL KNX
Instrument ID: MJ										

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 140-22570/1010

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	22570	08/10/18 15:11	P1P	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: 140-12358-1

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	08-31-19

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: 140-12358-1

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	08-31-19

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: 140-12358-1

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: 140-12358-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-12358-1	G-180731-JH-01	Air	07/31/18 12:25	08/10/18 09:45

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

TAL Knoxville

5815 Middlebrook Pike

Knoxville, TN 37921

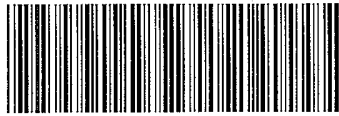
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.



THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information		Project Manager: <i>Tom Hobday</i>		Sampled By: <i>Johan Hedblom</i>		1 of 1 COCs													
Company: <i>GHD Services Inc.</i>		Phone: <i>651-639-0913</i>																	
Address: <i>1801 Old Hwy 8 NW, Suite 114</i>		Site Contact:																	
City/State/Zip: <i>St. Paul, MN, 55129</i>		TAL Contact:																	
Phone: <i>651-639-0913</i>																			
FAX: <i>651-639-0923</i>																			
Project Name: <i>New Richmond Landfill</i>		Analysis Turnaround Time		 140-12358 Chain of Custody															
Site/location: <i>New Richmond, WI</i>		Standard (Specify)																	
PO # <i>048038-70-05</i>		Rush (Specify)																	
Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
<i>G-180731-JH-01</i>	<i>7-31-18</i>	<i>12:25</i>	<i>12:25</i>	<i>20.9</i>	<i>0.0</i>	<i>-</i>	<i>10047</i>	<i>X</i>											
Sampled by: <i>Johan Hedblom / GHD</i>		Temperature (Fahrenheit)				Received @ ambient, 1 box FedEx Exp SVR, Custody seal intact to #860 2372 3703 KW 8/10/18													
		Interior	Ambient																
		Start																	
		Stop																	
		Pressure (inches of Hg)																	
		Interior	Ambient																
		Start																	
		Stop																	
Special Instructions/QC Requirements & Comments:																			
Canisters Shipped by: <i>Fed Ex</i>		Date/Time: <i>8/7/18 16:00</i>		Canisters Received by:															
Samples Relinquished by: <i>Johan Hedblom / GHD</i>		Date/Time: <i>8/7/18 16:00</i>		Received by: <i>[Signature]</i>															
Relinquished by:		Date/Time:		Received by:															

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8/20/2018

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: _____ Exp Date: _____ Analyst: _____
17. Were VOA samples received without headspace?			/	<input type="checkbox"/> Headspace (VOA only)	Date: _____ Time: _____
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>14001850</u> PM Instructions: _____					

Sample Receiving Associate: Heub Date: 8/10/18



TestAmerica Knoxville - Air Canister Initial Pressure Check

Gauge ID: G5
 Date: 8/10/2018

Analyst	Sample ID	Asset #	Cleaning Job	Cert	Size (L)	Pressure @ Receipt (-in Hg or +psig)	Time	Comments
HMT	140-12358-a-1	10047	12002	B	6	-2.5	14:14	
<input type="checkbox"/> Receiving -Air Can -Calve Open (NCM # _____) <input type="checkbox"/> Air - Can P -24 to -25 " - Flow Contr. Works (NCM# _____) <input type="checkbox"/> Air - Can P -24 to -25 " - Flow Contr. Faulty (NCM# _____) <input type="checkbox"/> Air - Can P Out -26" - Flow Contr. Works (NCM# _____)						<input type="checkbox"/> Air - Can P Out -26" - Flow Contr. Faulty (NCM# _____) <input type="checkbox"/> Air - Can P Low -24 to -25 " - Grab Sample (NCM# _____) <input type="checkbox"/> Air - Can P Low -26 "- Grab Sample (NCM# _____)		



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: 140-11634-1
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:
5/31/2018 2:54:56 PM
Diana Lange, Project Management Assistant II
diane.lange@testamericainc.com

Designee for
Jamie McKinney, Senior Project Manager
(865)291-3000
jamie.mckinney@testamericainc.com

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Definitions/Glossary

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

TestAmerica Job ID: 140-11634-1

Qualifiers

Air - GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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: 140-11634-1

Job ID: 140-11634-1

Laboratory: TestAmerica Knoxville

Narrative

Job Narrative 140-11634-1

Comments

No additional comments.

Receipt

The sample was received on 5/25/2018 10:00 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.

Method(s) TO-15: The continuing calibration verification (CCV) associated with batch 140-20618 exhibited % difference of > 30% for the following analyte(s) Isopropyl alcohol and/or acrolein; 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: 140-11634-1

Client Sample ID: G-180522-JH-01

Lab Sample ID: 140-11634-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	49		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	7.5		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	4.0		2.0		ppb v/v	1		TO-15	Total/NA
Butane	11		4.0		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	6.0		2.0		ppb v/v	1		TO-15	Total/NA
Chloroethane	23		2.0		ppb v/v	1		TO-15	Total/NA
Chloroform	6.2		2.0		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	3.6		2.0		ppb v/v	1		TO-15	Total/NA
Cyclohexane	7.0		5.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	32		2.0		ppb v/v	1		TO-15	Total/NA
Heptane	5.4		5.0		ppb v/v	1		TO-15	Total/NA
Hexane	5.5		5.0		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	14		2.0		ppb v/v	1		TO-15	Total/NA
Trichloroethene	2.2		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	22		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	260		11		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	250		8.1		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	30		7.9		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	28		14		ug/m3	1		TO-15	Total/NA
Butane	27		9.5		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	21		7.1		ug/m3	1		TO-15	Total/NA
Chloroethane	61		5.3		ug/m3	1		TO-15	Total/NA
Chloroform	30		9.8		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	14		7.9		ug/m3	1		TO-15	Total/NA
Cyclohexane	24		17		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	160		9.9		ug/m3	1		TO-15	Total/NA
Heptane	22		20		ug/m3	1		TO-15	Total/NA
Hexane	19		18		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	95		14		ug/m3	1		TO-15	Total/NA
Trichloroethene	12		11		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	120		11		ug/m3	1		TO-15	Total/NA
Vinyl chloride	54		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: 140-11634-1

Client Sample ID: G-180522-JH-01

Lab Sample ID: 140-11634-1

Date Collected: 05/22/18 08:32

Matrix: Air

Date Received: 05/25/18 10:00

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	49		2.0		ppb v/v			05/29/18 16:49	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			05/29/18 16:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			05/29/18 16:49	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			05/29/18 16:49	1
1,1-Dichloroethane	63		2.0		ppb v/v			05/29/18 16:49	1
1,1-Dichloroethene	7.5		2.0		ppb v/v			05/29/18 16:49	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			05/29/18 16:49	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			05/29/18 16:49	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			05/29/18 16:49	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	4.0		2.0		ppb v/v			05/29/18 16:49	1
1,2-Dichlorobenzene	ND		2.0		ppb v/v			05/29/18 16:49	1
1,2-Dichloroethane	ND		2.0		ppb v/v			05/29/18 16:49	1
1,2-Dichloropropane	ND		2.0		ppb v/v			05/29/18 16:49	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			05/29/18 16:49	1
1,3-Butadiene	ND		4.0		ppb v/v			05/29/18 16:49	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			05/29/18 16:49	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			05/29/18 16:49	1
2-Butanone (MEK)	ND		10		ppb v/v			05/29/18 16:49	1
2-Hexanone	ND		5.0		ppb v/v			05/29/18 16:49	1
3-Chloropropene	ND		2.0		ppb v/v			05/29/18 16:49	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ppb v/v			05/29/18 16:49	1
Acetone	ND		50		ppb v/v			05/29/18 16:49	1
Acetonitrile	ND		10		ppb v/v			05/29/18 16:49	1
Acrolein	ND		10		ppb v/v			05/29/18 16:49	1
Acrylonitrile	ND		20		ppb v/v			05/29/18 16:49	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			05/29/18 16:49	1
Benzene	ND		2.0		ppb v/v			05/29/18 16:49	1
Benzyl chloride	ND		4.0		ppb v/v			05/29/18 16:49	1
Bromodichloromethane	ND		2.0		ppb v/v			05/29/18 16:49	1
Bromoform	ND		2.0		ppb v/v			05/29/18 16:49	1
Bromomethane	ND		2.0		ppb v/v			05/29/18 16:49	1
Butane	11		4.0		ppb v/v			05/29/18 16:49	1
Carbon disulfide	ND		5.0		ppb v/v			05/29/18 16:49	1
Carbon tetrachloride	ND		2.0		ppb v/v			05/29/18 16:49	1
Chlorobenzene	ND		2.0		ppb v/v			05/29/18 16:49	1
Chlorodifluoromethane	6.0		2.0		ppb v/v			05/29/18 16:49	1
Chloroethane	23		2.0		ppb v/v			05/29/18 16:49	1
Chloroform	6.2		2.0		ppb v/v			05/29/18 16:49	1
Chloromethane	ND		5.0		ppb v/v			05/29/18 16:49	1
cis-1,2-Dichloroethene	3.6		2.0		ppb v/v			05/29/18 16:49	1
cis-1,3-Dichloropropene	ND		2.0		ppb v/v			05/29/18 16:49	1
Cumene	ND		4.0		ppb v/v			05/29/18 16:49	1
Cyclohexane	7.0		5.0		ppb v/v			05/29/18 16:49	1
Decane	ND		10		ppb v/v			05/29/18 16:49	1
Dibromochloromethane	ND		2.0		ppb v/v			05/29/18 16:49	1
Dibromomethane	ND		4.0		ppb v/v			05/29/18 16:49	1
Dichlorodifluoromethane	32		2.0		ppb v/v			05/29/18 16:49	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-11634-1

Client Sample ID: G-180522-JH-01

Lab Sample ID: 140-11634-1

Date Collected: 05/22/18 08:32

Matrix: Air

Date Received: 05/25/18 10:00

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			05/29/18 16:49	1
Ethyl ether	ND		20		ppb v/v			05/29/18 16:49	1
Ethylbenzene	ND		2.0		ppb v/v			05/29/18 16:49	1
Heptane	5.4		5.0		ppb v/v			05/29/18 16:49	1
Hexachlorobutadiene	ND		10		ppb v/v			05/29/18 16:49	1
Hexane	5.5		5.0		ppb v/v			05/29/18 16:49	1
Methyl tert-butyl ether	ND		10		ppb v/v			05/29/18 16:49	1
Methylene Chloride	ND		5.0		ppb v/v			05/29/18 16:49	1
m-Xylene & p-Xylene	ND		2.0		ppb v/v			05/29/18 16:49	1
Naphthalene	ND		5.0		ppb v/v			05/29/18 16:49	1
Nonane	ND		5.0		ppb v/v			05/29/18 16:49	1
Octane	ND		4.0		ppb v/v			05/29/18 16:49	1
o-Xylene	ND		2.0		ppb v/v			05/29/18 16:49	1
Pentane	ND		10		ppb v/v			05/29/18 16:49	1
Propylbenzene	ND		4.0		ppb v/v			05/29/18 16:49	1
Styrene	ND		2.0		ppb v/v			05/29/18 16:49	1
Tetrachloroethene	14		2.0		ppb v/v			05/29/18 16:49	1
Toluene	ND		2.0		ppb v/v			05/29/18 16:49	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			05/29/18 16:49	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			05/29/18 16:49	1
Trichloroethene	2.2		2.0		ppb v/v			05/29/18 16:49	1
Trichlorofluoromethane	22		2.0		ppb v/v			05/29/18 16:49	1
Undecane	ND		10		ppb v/v			05/29/18 16:49	1
Vinyl acetate	ND		10		ppb v/v			05/29/18 16:49	1
Vinyl chloride	21		2.0		ppb v/v			05/29/18 16:49	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	260		11		ug/m3			05/29/18 16:49	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			05/29/18 16:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			05/29/18 16:49	1
1,1,2-Trichloroethane	ND		11		ug/m3			05/29/18 16:49	1
1,1-Dichloroethane	250		8.1		ug/m3			05/29/18 16:49	1
1,1-Dichloroethene	30		7.9		ug/m3			05/29/18 16:49	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			05/29/18 16:49	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			05/29/18 16:49	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			05/29/18 16:49	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	28		14		ug/m3			05/29/18 16:49	1
1,2-Dichlorobenzene	ND		12		ug/m3			05/29/18 16:49	1
1,2-Dichloroethane	ND		8.1		ug/m3			05/29/18 16:49	1
1,2-Dichloropropane	ND		9.2		ug/m3			05/29/18 16:49	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			05/29/18 16:49	1
1,3-Butadiene	ND		8.8		ug/m3			05/29/18 16:49	1
1,3-Dichlorobenzene	ND		12		ug/m3			05/29/18 16:49	1
1,4-Dichlorobenzene	ND		12		ug/m3			05/29/18 16:49	1
2-Butanone (MEK)	ND		29		ug/m3			05/29/18 16:49	1
2-Hexanone	ND		20		ug/m3			05/29/18 16:49	1
3-Chloropropene	ND		6.3		ug/m3			05/29/18 16:49	1
4-Methyl-2-pentanone (MIBK)	ND		20		ug/m3			05/29/18 16:49	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-11634-1

Client Sample ID: G-180522-JH-01

Lab Sample ID: 140-11634-1

Date Collected: 05/22/18 08:32

Matrix: Air

Date Received: 05/25/18 10:00

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			05/29/18 16:49	1
Acetonitrile	ND		17		ug/m3			05/29/18 16:49	1
Acrolein	ND		23		ug/m3			05/29/18 16:49	1
Acrylonitrile	ND		43		ug/m3			05/29/18 16:49	1
Alpha Methyl Styrene	ND		19		ug/m3			05/29/18 16:49	1
Benzene	ND		6.4		ug/m3			05/29/18 16:49	1
Benzyl chloride	ND		21		ug/m3			05/29/18 16:49	1
Bromodichloromethane	ND		13		ug/m3			05/29/18 16:49	1
Bromoform	ND		21		ug/m3			05/29/18 16:49	1
Bromomethane	ND		7.8		ug/m3			05/29/18 16:49	1
Butane	27		9.5		ug/m3			05/29/18 16:49	1
Carbon disulfide	ND		16		ug/m3			05/29/18 16:49	1
Carbon tetrachloride	ND		13		ug/m3			05/29/18 16:49	1
Chlorobenzene	ND		9.2		ug/m3			05/29/18 16:49	1
Chlorodifluoromethane	21		7.1		ug/m3			05/29/18 16:49	1
Chloroethane	61		5.3		ug/m3			05/29/18 16:49	1
Chloroform	30		9.8		ug/m3			05/29/18 16:49	1
Chloromethane	ND		10		ug/m3			05/29/18 16:49	1
cis-1,2-Dichloroethene	14		7.9		ug/m3			05/29/18 16:49	1
cis-1,3-Dichloropropene	ND		9.1		ug/m3			05/29/18 16:49	1
Cumene	ND		20		ug/m3			05/29/18 16:49	1
Cyclohexane	24		17		ug/m3			05/29/18 16:49	1
Decane	ND		58		ug/m3			05/29/18 16:49	1
Dibromochloromethane	ND		17		ug/m3			05/29/18 16:49	1
Dibromomethane	ND		28		ug/m3			05/29/18 16:49	1
Dichlorodifluoromethane	160		9.9		ug/m3			05/29/18 16:49	1
Dodecane	ND		70		ug/m3			05/29/18 16:49	1
Ethyl ether	ND		61		ug/m3			05/29/18 16:49	1
Ethylbenzene	ND		8.7		ug/m3			05/29/18 16:49	1
Heptane	22		20		ug/m3			05/29/18 16:49	1
Hexachlorobutadiene	ND		110		ug/m3			05/29/18 16:49	1
Hexane	19		18		ug/m3			05/29/18 16:49	1
Methyl tert-butyl ether	ND		36		ug/m3			05/29/18 16:49	1
Methylene Chloride	ND		17		ug/m3			05/29/18 16:49	1
m-Xylene & p-Xylene	ND		8.7		ug/m3			05/29/18 16:49	1
Naphthalene	ND		26		ug/m3			05/29/18 16:49	1
Nonane	ND		26		ug/m3			05/29/18 16:49	1
Octane	ND		19		ug/m3			05/29/18 16:49	1
o-Xylene	ND		8.7		ug/m3			05/29/18 16:49	1
Pentane	ND		30		ug/m3			05/29/18 16:49	1
Propylbenzene	ND		20		ug/m3			05/29/18 16:49	1
Styrene	ND		8.5		ug/m3			05/29/18 16:49	1
Tetrachloroethene	95		14		ug/m3			05/29/18 16:49	1
Toluene	ND		7.5		ug/m3			05/29/18 16:49	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			05/29/18 16:49	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			05/29/18 16:49	1
Trichloroethene	12		11		ug/m3			05/29/18 16:49	1
Trichlorofluoromethane	120		11		ug/m3			05/29/18 16:49	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-11634-1

Client Sample ID: G-180522-JH-01

Lab Sample ID: 140-11634-1

Date Collected: 05/22/18 08:32

Matrix: Air

Date Received: 05/25/18 10:00

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			05/29/18 16:49	1
Vinyl acetate	ND		35		ug/m3			05/29/18 16:49	1
Vinyl chloride	54		5.1		ug/m3			05/29/18 16:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		60 - 140					05/29/18 16:49	1

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Default Detection Limits

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

TestAmerica Job ID: 140-11634-1

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: 140-11634-1

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: 140-11634-1

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: 140-11634-1

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)
140-11634-1	G-180522-JH-01	99
LCS 140-20618/1006	Lab Control Sample	97
MB 140-20618/9	Method Blank	94

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
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- 9
- 10
- 11
- 12
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- 14
- 15
- 16

QC Sample Results

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

TestAmerica Job ID: 140-11634-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 140-20618/9

Matrix: Air

Analysis Batch: 20618

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			05/29/18 13:32	1
1,1,2,2-Tetrachloroethane	ND		0.20		ppb v/v			05/29/18 13:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20		ppb v/v			05/29/18 13:32	1
1,1,2-Trichloroethane	ND		0.20		ppb v/v			05/29/18 13:32	1
1,1-Dichloroethane	ND		0.20		ppb v/v			05/29/18 13:32	1
1,1-Dichloroethene	ND		0.20		ppb v/v			05/29/18 13:32	1
1,2,4-Trichlorobenzene	ND		1.0		ppb v/v			05/29/18 13:32	1
1,2,4-Trimethylbenzene	ND		0.20		ppb v/v			05/29/18 13:32	1
1,2-Dibromoethane (EDB)	ND		0.20		ppb v/v			05/29/18 13:32	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.20		ppb v/v			05/29/18 13:32	1
1,2-Dichlorobenzene	ND		0.20		ppb v/v			05/29/18 13:32	1
1,2-Dichloroethane	ND		0.20		ppb v/v			05/29/18 13:32	1
1,2-Dichloropropane	ND		0.20		ppb v/v			05/29/18 13:32	1
1,3,5-Trimethylbenzene	ND		0.20		ppb v/v			05/29/18 13:32	1
1,3-Butadiene	ND		0.40		ppb v/v			05/29/18 13:32	1
1,3-Dichlorobenzene	ND		0.20		ppb v/v			05/29/18 13:32	1
1,4-Dichlorobenzene	ND		0.20		ppb v/v			05/29/18 13:32	1
2-Butanone (MEK)	ND		1.0		ppb v/v			05/29/18 13:32	1
2-Hexanone	ND		0.50		ppb v/v			05/29/18 13:32	1
3-Chloropropene	ND		0.20		ppb v/v			05/29/18 13:32	1
4-Methyl-2-pentanone (MIBK)	ND		0.50		ppb v/v			05/29/18 13:32	1
Acetone	ND		5.0		ppb v/v			05/29/18 13:32	1
Acetonitrile	ND		1.0		ppb v/v			05/29/18 13:32	1
Acrolein	ND		1.0		ppb v/v			05/29/18 13:32	1
Acrylonitrile	ND		2.0		ppb v/v			05/29/18 13:32	1
Alpha Methyl Styrene	ND		0.40		ppb v/v			05/29/18 13:32	1
Benzene	ND		0.20		ppb v/v			05/29/18 13:32	1
Benzyl chloride	ND		0.40		ppb v/v			05/29/18 13:32	1
Bromodichloromethane	ND		0.20		ppb v/v			05/29/18 13:32	1
Bromoform	ND		0.20		ppb v/v			05/29/18 13:32	1
Bromomethane	ND		0.20		ppb v/v			05/29/18 13:32	1
Butane	ND		0.40		ppb v/v			05/29/18 13:32	1
Carbon disulfide	ND		0.50		ppb v/v			05/29/18 13:32	1
Carbon tetrachloride	ND		0.20		ppb v/v			05/29/18 13:32	1
Chlorobenzene	ND		0.20		ppb v/v			05/29/18 13:32	1
Chlorodifluoromethane	ND		0.20		ppb v/v			05/29/18 13:32	1
Chloroethane	ND		0.20		ppb v/v			05/29/18 13:32	1
Chloroform	ND		0.20		ppb v/v			05/29/18 13:32	1
Chloromethane	ND		0.50		ppb v/v			05/29/18 13:32	1
cis-1,2-Dichloroethene	ND		0.20		ppb v/v			05/29/18 13:32	1
cis-1,3-Dichloropropene	ND		0.20		ppb v/v			05/29/18 13:32	1
Cumene	ND		0.40		ppb v/v			05/29/18 13:32	1
Cyclohexane	ND		0.50		ppb v/v			05/29/18 13:32	1
Decane	ND		1.0		ppb v/v			05/29/18 13:32	1
Dibromochloromethane	ND		0.20		ppb v/v			05/29/18 13:32	1
Dibromomethane	ND		0.40		ppb v/v			05/29/18 13:32	1
Dichlorodifluoromethane	ND		0.20		ppb v/v			05/29/18 13:32	1
Dodecane	ND		1.0		ppb v/v			05/29/18 13:32	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-11634-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-20618/9
Matrix: Air
Analysis Batch: 20618

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			05/29/18 13:32	1
Ethylbenzene	ND		0.20		ppb v/v			05/29/18 13:32	1
Heptane	ND		0.50		ppb v/v			05/29/18 13:32	1
Hexachlorobutadiene	ND		1.0		ppb v/v			05/29/18 13:32	1
Hexane	ND		0.50		ppb v/v			05/29/18 13:32	1
Methyl tert-butyl ether	ND		1.0		ppb v/v			05/29/18 13:32	1
Methylene Chloride	ND		0.50		ppb v/v			05/29/18 13:32	1
m-Xylene & p-Xylene	ND		0.20		ppb v/v			05/29/18 13:32	1
Naphthalene	ND		0.50		ppb v/v			05/29/18 13:32	1
Nonane	ND		0.50		ppb v/v			05/29/18 13:32	1
Octane	ND		0.40		ppb v/v			05/29/18 13:32	1
o-Xylene	ND		0.20		ppb v/v			05/29/18 13:32	1
Pentane	ND		1.0		ppb v/v			05/29/18 13:32	1
Propylbenzene	ND		0.40		ppb v/v			05/29/18 13:32	1
Styrene	ND		0.20		ppb v/v			05/29/18 13:32	1
Tetrachloroethene	ND		0.20		ppb v/v			05/29/18 13:32	1
Toluene	ND		0.20		ppb v/v			05/29/18 13:32	1
trans-1,2-Dichloroethene	ND		0.20		ppb v/v			05/29/18 13:32	1
trans-1,3-Dichloropropene	ND		0.20		ppb v/v			05/29/18 13:32	1
Trichloroethene	ND		0.20		ppb v/v			05/29/18 13:32	1
Trichlorofluoromethane	ND		0.20		ppb v/v			05/29/18 13:32	1
Undecane	ND		1.0		ppb v/v			05/29/18 13:32	1
Vinyl acetate	ND		1.0		ppb v/v			05/29/18 13:32	1
Vinyl chloride	ND		0.20		ppb v/v			05/29/18 13:32	1

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.1		ug/m3			05/29/18 13:32	1
1,1,2,2-Tetrachloroethane	ND		1.4		ug/m3			05/29/18 13:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5		ug/m3			05/29/18 13:32	1
1,1,2-Trichloroethane	ND		1.1		ug/m3			05/29/18 13:32	1
1,1-Dichloroethane	ND		0.81		ug/m3			05/29/18 13:32	1
1,1-Dichloroethene	ND		0.79		ug/m3			05/29/18 13:32	1
1,2,4-Trichlorobenzene	ND		7.4		ug/m3			05/29/18 13:32	1
1,2,4-Trimethylbenzene	ND		0.98		ug/m3			05/29/18 13:32	1
1,2-Dibromoethane (EDB)	ND		1.5		ug/m3			05/29/18 13:32	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		1.4		ug/m3			05/29/18 13:32	1
1,2-Dichlorobenzene	ND		1.2		ug/m3			05/29/18 13:32	1
1,2-Dichloroethane	ND		0.81		ug/m3			05/29/18 13:32	1
1,2-Dichloropropane	ND		0.92		ug/m3			05/29/18 13:32	1
1,3,5-Trimethylbenzene	ND		0.98		ug/m3			05/29/18 13:32	1
1,3-Butadiene	ND		0.88		ug/m3			05/29/18 13:32	1
1,3-Dichlorobenzene	ND		1.2		ug/m3			05/29/18 13:32	1
1,4-Dichlorobenzene	ND		1.2		ug/m3			05/29/18 13:32	1
2-Butanone (MEK)	ND		2.9		ug/m3			05/29/18 13:32	1
2-Hexanone	ND		2.0		ug/m3			05/29/18 13:32	1
3-Chloropropene	ND		0.63		ug/m3			05/29/18 13:32	1
4-Methyl-2-pentanone (MIBK)	ND		2.0		ug/m3			05/29/18 13:32	1
Acetone	ND		12		ug/m3			05/29/18 13:32	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-11634-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-20618/9
Matrix: Air
Analysis Batch: 20618

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			05/29/18 13:32	1
Acrolein	ND		2.3		ug/m3			05/29/18 13:32	1
Acrylonitrile	ND		4.3		ug/m3			05/29/18 13:32	1
Alpha Methyl Styrene	ND		1.9		ug/m3			05/29/18 13:32	1
Benzene	ND		0.64		ug/m3			05/29/18 13:32	1
Benzyl chloride	ND		2.1		ug/m3			05/29/18 13:32	1
Bromodichloromethane	ND		1.3		ug/m3			05/29/18 13:32	1
Bromoform	ND		2.1		ug/m3			05/29/18 13:32	1
Bromomethane	ND		0.78		ug/m3			05/29/18 13:32	1
Butane	ND		0.95		ug/m3			05/29/18 13:32	1
Carbon disulfide	ND		1.6		ug/m3			05/29/18 13:32	1
Carbon tetrachloride	ND		1.3		ug/m3			05/29/18 13:32	1
Chlorobenzene	ND		0.92		ug/m3			05/29/18 13:32	1
Chlorodifluoromethane	ND		0.71		ug/m3			05/29/18 13:32	1
Chloroethane	ND		0.53		ug/m3			05/29/18 13:32	1
Chloroform	ND		0.98		ug/m3			05/29/18 13:32	1
Chloromethane	ND		1.0		ug/m3			05/29/18 13:32	1
cis-1,2-Dichloroethene	ND		0.79		ug/m3			05/29/18 13:32	1
cis-1,3-Dichloropropene	ND		0.91		ug/m3			05/29/18 13:32	1
Cumene	ND		2.0		ug/m3			05/29/18 13:32	1
Cyclohexane	ND		1.7		ug/m3			05/29/18 13:32	1
Decane	ND		5.8		ug/m3			05/29/18 13:32	1
Dibromochloromethane	ND		1.7		ug/m3			05/29/18 13:32	1
Dibromomethane	ND		2.8		ug/m3			05/29/18 13:32	1
Dichlorodifluoromethane	ND		0.99		ug/m3			05/29/18 13:32	1
Dodecane	ND		7.0		ug/m3			05/29/18 13:32	1
Ethyl ether	ND		6.1		ug/m3			05/29/18 13:32	1
Ethylbenzene	ND		0.87		ug/m3			05/29/18 13:32	1
Heptane	ND		2.0		ug/m3			05/29/18 13:32	1
Hexachlorobutadiene	ND		11		ug/m3			05/29/18 13:32	1
Hexane	ND		1.8		ug/m3			05/29/18 13:32	1
Methyl tert-butyl ether	ND		3.6		ug/m3			05/29/18 13:32	1
Methylene Chloride	ND		1.7		ug/m3			05/29/18 13:32	1
m-Xylene & p-Xylene	ND		0.87		ug/m3			05/29/18 13:32	1
Naphthalene	ND		2.6		ug/m3			05/29/18 13:32	1
Nonane	ND		2.6		ug/m3			05/29/18 13:32	1
Octane	ND		1.9		ug/m3			05/29/18 13:32	1
o-Xylene	ND		0.87		ug/m3			05/29/18 13:32	1
Pentane	ND		3.0		ug/m3			05/29/18 13:32	1
Propylbenzene	ND		2.0		ug/m3			05/29/18 13:32	1
Styrene	ND		0.85		ug/m3			05/29/18 13:32	1
Tetrachloroethene	ND		1.4		ug/m3			05/29/18 13:32	1
Toluene	ND		0.75		ug/m3			05/29/18 13:32	1
trans-1,2-Dichloroethene	ND		0.79		ug/m3			05/29/18 13:32	1
trans-1,3-Dichloropropene	ND		0.91		ug/m3			05/29/18 13:32	1
Trichloroethene	ND		1.1		ug/m3			05/29/18 13:32	1
Trichlorofluoromethane	ND		1.1		ug/m3			05/29/18 13:32	1
Undecane	ND		6.4		ug/m3			05/29/18 13:32	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-11634-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-20618/9
Matrix: Air
Analysis Batch: 20618

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			05/29/18 13:32	1
Vinyl chloride	ND		0.51		ug/m3			05/29/18 13:32	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		60 - 140					05/29/18 13:32	1

Lab Sample ID: LCS 140-20618/1006
Matrix: Air
Analysis Batch: 20618

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	1.82		ppb v/v		91	70 - 130
1,1,2,2-Tetrachloroethane	2.00	1.95		ppb v/v		98	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	2.00	1.85		ppb v/v		93	70 - 130
1,1,2-Trichloroethane	2.00	1.93		ppb v/v		97	70 - 130
1,1-Dichloroethane	2.00	1.95		ppb v/v		97	70 - 130
1,1-Dichloroethene	2.00	1.80		ppb v/v		90	70 - 130
1,2,4-Trichlorobenzene	2.00	1.89		ppb v/v		94	60 - 140
1,2,4-Trimethylbenzene	2.00	1.92		ppb v/v		96	70 - 130
1,2-Dibromoethane (EDB)	2.00	2.01		ppb v/v		100	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.00	1.90		ppb v/v		95	60 - 140
1,2-Dichlorobenzene	2.00	1.94		ppb v/v		97	70 - 130
1,2-Dichloroethane	2.00	1.92		ppb v/v		96	70 - 130
1,2-Dichloropropane	2.00	1.98		ppb v/v		99	70 - 130
1,3,5-Trimethylbenzene	2.00	2.15		ppb v/v		108	70 - 130
1,3-Butadiene	2.00	1.99		ppb v/v		99	60 - 140
1,3-Dichlorobenzene	2.00	1.94		ppb v/v		97	70 - 130
1,4-Dichlorobenzene	2.00	1.93		ppb v/v		96	70 - 130
2-Butanone (MEK)	2.00	1.65		ppb v/v		83	60 - 140
2-Hexanone	2.00	1.59		ppb v/v		80	60 - 140
3-Chloropropene	2.00	2.01		ppb v/v		101	60 - 140
4-Methyl-2-pentanone (MIBK)	2.00	1.60		ppb v/v		80	60 - 140
Acetone	2.00	1.86	J	ppb v/v		93	60 - 140
Acetonitrile	2.00	1.93		ppb v/v		97	60 - 140
Acrolein	2.00	2.64		ppb v/v		132	60 - 140
Acrylonitrile	2.00	2.10		ppb v/v		105	60 - 140
Alpha Methyl Styrene	2.00	1.97		ppb v/v		98	60 - 140
Benzene	2.00	1.97		ppb v/v		98	70 - 130
Benzyl chloride	2.00	1.99		ppb v/v		99	70 - 130
Bromodichloromethane	2.00	1.89		ppb v/v		94	70 - 130
Bromoform	2.00	1.92		ppb v/v		96	60 - 140
Bromomethane	2.00	1.90		ppb v/v		95	70 - 130
Butane	2.00	1.97		ppb v/v		98	60 - 140
Carbon disulfide	2.00	1.84		ppb v/v		92	70 - 130
Carbon tetrachloride	2.00	1.79		ppb v/v		90	70 - 130
Chlorobenzene	2.00	2.05		ppb v/v		103	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-11634-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-20618/1006

Matrix: Air

Analysis Batch: 20618

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	1.81		ppb v/v		91	60 - 140
Chloroethane	2.00	1.98		ppb v/v		99	70 - 130
Chloroform	2.00	1.90		ppb v/v		95	70 - 130
Chloromethane	2.00	1.94		ppb v/v		97	60 - 140
cis-1,2-Dichloroethene	2.00	1.95		ppb v/v		98	70 - 130
cis-1,3-Dichloropropene	2.00	2.00		ppb v/v		100	70 - 130
Cumene	2.00	1.94		ppb v/v		97	70 - 130
Cyclohexane	2.00	1.88		ppb v/v		94	70 - 130
Decane	2.00	2.08		ppb v/v		104	60 - 140
Dibromochloromethane	2.00	1.98		ppb v/v		99	70 - 130
Dibromomethane	2.00	1.87		ppb v/v		93	70 - 130
Dichlorodifluoromethane	2.00	1.84		ppb v/v		92	60 - 140
Dodecane	2.00	1.87		ppb v/v		93	60 - 140
Ethyl ether	2.00	2.19		ppb v/v		110	60 - 140
Ethylbenzene	2.00	1.96		ppb v/v		98	70 - 130
Heptane	2.00	1.86		ppb v/v		93	70 - 130
Hexachlorobutadiene	2.00	1.95		ppb v/v		97	60 - 140
Hexane	2.00	1.89		ppb v/v		95	70 - 130
Methyl tert-butyl ether	2.00	1.89		ppb v/v		95	60 - 140
Methylene Chloride	2.00	1.70		ppb v/v		85	70 - 130
m-Xylene & p-Xylene	4.00	4.05		ppb v/v		101	70 - 130
Naphthalene	2.00	1.83		ppb v/v		91	60 - 140
Nonane	2.00	2.11		ppb v/v		106	60 - 140
Octane	2.00	1.95		ppb v/v		97	70 - 130
o-Xylene	2.00	1.96		ppb v/v		98	70 - 130
Pentane	2.00	1.94		ppb v/v		97	70 - 130
Propylbenzene	2.00	1.98		ppb v/v		99	70 - 130
Styrene	2.00	2.01		ppb v/v		100	70 - 130
Tetrachloroethene	2.00	1.87		ppb v/v		93	70 - 130
Toluene	2.00	1.95		ppb v/v		98	70 - 130
trans-1,2-Dichloroethene	2.00	1.86		ppb v/v		93	70 - 130
trans-1,3-Dichloropropene	2.00	2.05		ppb v/v		103	70 - 130
Trichloroethene	2.00	1.77		ppb v/v		88	70 - 130
Trichlorofluoromethane	2.00	1.86		ppb v/v		93	60 - 140
Undecane	2.00	2.00		ppb v/v		100	60 - 140
Vinyl acetate	2.00	2.08		ppb v/v		104	60 - 140
Vinyl chloride	2.00	2.03		ppb v/v		101	70 - 130
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	11	9.94		ug/m3		91	70 - 130
1,1,2,2-Tetrachloroethane	14	13.4		ug/m3		98	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	15	14.2		ug/m3		93	70 - 130
1,1,2-Trichloroethane	11	10.5		ug/m3		97	70 - 130
1,1-Dichloroethane	8.1	7.87		ug/m3		97	70 - 130
1,1-Dichloroethene	7.9	7.15		ug/m3		90	70 - 130
1,2,4-Trichlorobenzene	15	14.0		ug/m3		94	60 - 140
1,2,4-Trimethylbenzene	9.8	9.43		ug/m3		96	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-11634-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-20618/1006

Matrix: Air

Analysis Batch: 20618

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	15.4		ug/m3		100	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	14	13.3		ug/m3		95	60 - 140
1,2-Dichlorobenzene	12	11.7		ug/m3		97	70 - 130
1,2-Dichloroethane	8.1	7.76		ug/m3		96	70 - 130
1,2-Dichloropropane	9.2	9.13		ug/m3		99	70 - 130
1,3,5-Trimethylbenzene	9.8	10.6		ug/m3		108	70 - 130
1,3-Butadiene	4.4	4.39		ug/m3		99	60 - 140
1,3-Dichlorobenzene	12	11.7		ug/m3		97	70 - 130
1,4-Dichlorobenzene	12	11.6		ug/m3		96	70 - 130
2-Butanone (MEK)	5.9	4.88		ug/m3		83	60 - 140
2-Hexanone	8.2	6.52		ug/m3		80	60 - 140
3-Chloropropene	6.3	6.30		ug/m3		101	60 - 140
4-Methyl-2-pentanone (MIBK)	8.2	6.56		ug/m3		80	60 - 140
Acetone	4.8	4.41	J	ug/m3		93	60 - 140
Acetonitrile	3.4	3.24		ug/m3		97	60 - 140
Acrolein	4.6	6.05		ug/m3		132	60 - 140
Acrylonitrile	4.3	4.55		ug/m3		105	60 - 140
Alpha Methyl Styrene	9.7	9.52		ug/m3		98	60 - 140
Benzene	6.4	6.29		ug/m3		98	70 - 130
Benzyl chloride	10	10.3		ug/m3		99	70 - 130
Bromodichloromethane	13	12.6		ug/m3		94	70 - 130
Bromoform	21	19.8		ug/m3		96	60 - 140
Bromomethane	7.8	7.37		ug/m3		95	70 - 130
Butane	4.8	4.68		ug/m3		98	60 - 140
Carbon disulfide	6.2	5.73		ug/m3		92	70 - 130
Carbon tetrachloride	13	11.3		ug/m3		90	70 - 130
Chlorobenzene	9.2	9.44		ug/m3		103	70 - 130
Chlorodifluoromethane	7.1	6.41		ug/m3		91	60 - 140
Chloroethane	5.3	5.22		ug/m3		99	70 - 130
Chloroform	9.8	9.28		ug/m3		95	70 - 130
Chloromethane	4.1	4.01		ug/m3		97	60 - 140
cis-1,2-Dichloroethene	7.9	7.75		ug/m3		98	70 - 130
cis-1,3-Dichloropropene	9.1	9.08		ug/m3		100	70 - 130
Cumene	9.8	9.54		ug/m3		97	70 - 130
Cyclohexane	6.9	6.46		ug/m3		94	70 - 130
Decane	12	12.1		ug/m3		104	60 - 140
Dibromochloromethane	17	16.9		ug/m3		99	70 - 130
Dibromomethane	14	13.3		ug/m3		93	70 - 130
Dichlorodifluoromethane	9.9	9.12		ug/m3		92	60 - 140
Dodecane	14	13.0		ug/m3		93	60 - 140
Ethyl ether	6.1	6.65		ug/m3		110	60 - 140
Ethylbenzene	8.7	8.52		ug/m3		98	70 - 130
Heptane	8.2	7.61		ug/m3		93	70 - 130
Hexachlorobutadiene	21	20.8		ug/m3		97	60 - 140
Hexane	7.0	6.67		ug/m3		95	70 - 130
Methyl tert-butyl ether	7.2	6.82		ug/m3		95	60 - 140
Methylene Chloride	6.9	5.89		ug/m3		85	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-11634-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-20618/1006

Matrix: Air

Analysis Batch: 20618

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	17.6		ug/m3		101	70 - 130
Naphthalene	10	9.57		ug/m3		91	60 - 140
Nonane	10	11.1		ug/m3		106	60 - 140
Octane	9.3	9.10		ug/m3		97	70 - 130
o-Xylene	8.7	8.50		ug/m3		98	70 - 130
Pentane	5.9	5.72		ug/m3		97	70 - 130
Propylbenzene	9.8	9.73		ug/m3		99	70 - 130
Styrene	8.5	8.55		ug/m3		100	70 - 130
Tetrachloroethene	14	12.7		ug/m3		93	70 - 130
Toluene	7.5	7.35		ug/m3		98	70 - 130
trans-1,2-Dichloroethene	7.9	7.39		ug/m3		93	70 - 130
trans-1,3-Dichloropropene	9.1	9.32		ug/m3		103	70 - 130
Trichloroethene	11	9.49		ug/m3		88	70 - 130
Trichlorofluoromethane	11	10.5		ug/m3		93	60 - 140
Undecane	13	12.8		ug/m3		100	60 - 140
Vinyl acetate	7.0	7.31		ug/m3		104	60 - 140
Vinyl chloride	5.1	5.18		ug/m3		101	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		60 - 140

QC Association Summary

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

TestAmerica Job ID: 140-11634-1

Air - GC/MS VOA

Analysis Batch: 20618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-11634-1	G-180522-JH-01	Total/NA	Air	TO-15	
MB 140-20618/9	Method Blank	Total/NA	Air	TO-15	
LCS 140-20618/1006	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: 140-11634-1

Client Sample ID: G-180522-JH-01

Lab Sample ID: 140-11634-1

Date Collected: 05/22/18 08:32

Matrix: Air

Date Received: 05/25/18 10:00

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	20618	05/29/18 16:49	P1P	TAL KNX
Instrument ID: MJ										

Client Sample ID: Method Blank

Lab Sample ID: MB 140-20618/9

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	20618	05/29/18 13:32	P1P	TAL KNX
Instrument ID: MJ										

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-20618/1006

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	20618	05/29/18 11:18	P1P	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: 140-11634-1

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: 140-11634-1

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: 140-11634-1

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: 140-11634-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-11634-1	G-180522-JH-01	Air	05/22/18 08:32	05/25/18 10:00

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TAL Knoxville

5815 Middlebrook Pike
 Knoxville, TN 37921
 phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.



THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information		Project Manager: Tom Hobday		Sampled By: Johan Hedblom		1 of 1 COCs	
Company: GHD Services Inc.		Phone: 651-639-0913					
Address: 1801 Old Hwy 8 NW		Site Contact:					
City/State/Zip: St. Paul, MN, 55112		TAL Contact:					
Phone: 651-639-0913							
FAX: 651-639-0923							
Project Name: New Richmond Landfill		Analysis Turnaround Time					
Site/location: New Richmond, WI		Standard (Specify) X					
PO # 048038-70-05		Rush (Specify)					

Sample Identification		Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
G-180522-JH-01		5/22/18	8:31	8:32	-28	-4		10761	X											X

Sampled by: Johan Hedblom	Temperature (Fahrenheit)		Received @ ambient, 1 box Fedex Morning 2 day Trk# 7723 0176 3084 Custody seal intact KW 5/25/18
	Interior	Ambient	
	Start		
	Stop		
Pressure (inches of Hg)	Interior	Ambient	
	Start		
	Stop		

Special Instructions/QC Requirements & Comments:
 Call Grant Anderson w/ questions : 651-639-0913
 Report to grant.anderson@ghd.com

Canisters Shipped by: FedEx	Date/Time: 5/23/18 16:00	Canisters Received by:	1 can 1 gauge
Samples Relinquished by: Johan Hedblom/GHD	Date/Time: 5/23/18 16:00	Received by: [Signature] 5/25/18 10:00 AM	
Relinquished by:	Date/Time:	Received by:	

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5/31/2018

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number: **11634** Loc: 140

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: Ke W Date: 5/25/18

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

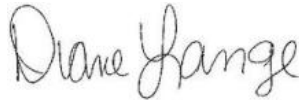
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

TestAmerica Job ID: 140-13415-1
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:
11/28/2018 2:50:25 PM
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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Definitions/Glossary

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

TestAmerica Job ID: 140-13415-1

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: 140-13415-1

Job ID: 140-13415-1

Laboratory: TestAmerica Knoxville

Narrative

**Job Narrative
140-13415-1**

Comments

No additional comments.

Receipt

The samples were received on 11/20/2018 9:45 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 LL, TO-15: Although the BFB is flagged as outside control limits for TO-14 on batch 140-25588, the results are within limits for TO-15, which is required for this project.

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: 140-13415-1

Client Sample ID: G-111618-JH-01

Lab Sample ID: 140-13415-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	95		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	230		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	19		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	10		2.0		ppb v/v	1		TO-15	Total/NA
Butane	43		10		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	14		2.0		ppb v/v	1		TO-15	Total/NA
Chloroethane	23		2.0		ppb v/v	1		TO-15	Total/NA
Chloroform	8.1		2.0		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	34		2.0		ppb v/v	1		TO-15	Total/NA
Cyclohexane	13		4.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	21		2.0		ppb v/v	1		TO-15	Total/NA
Heptane	4.3		4.0		ppb v/v	1		TO-15	Total/NA
Hexane	7.6		4.0		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	24		2.0		ppb v/v	1		TO-15	Total/NA
Trichloroethene	6.3		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	7.3		2.0		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	250		4.0		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	520		11		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	930		8.1		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	76		7.9		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	73		14		ug/m3	1		TO-15	Total/NA
Butane	100		24		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	48		7.1		ug/m3	1		TO-15	Total/NA
Chloroethane	61		5.3		ug/m3	1		TO-15	Total/NA
Chloroform	40		9.8		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	140		7.9		ug/m3	1		TO-15	Total/NA
Cyclohexane	44		14		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	100		9.9		ug/m3	1		TO-15	Total/NA
Heptane	18		16		ug/m3	1		TO-15	Total/NA
Hexane	27		14		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	160		14		ug/m3	1		TO-15	Total/NA
Trichloroethene	34		11		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	41		11		ug/m3	1		TO-15	Total/NA
Vinyl chloride	640		10		ug/m3	1		TO-15	Total/NA

Client Sample ID: G-111618-JH-02

Lab Sample ID: 140-13415-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	96		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	130		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	18		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	9.1		2.0		ppb v/v	1		TO-15	Total/NA
Benzene	2.6		2.0		ppb v/v	1		TO-15	Total/NA
Butane	31		10		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	20		2.0		ppb v/v	1		TO-15	Total/NA
Chloroethane	120		2.0		ppb v/v	1		TO-15	Total/NA
Chloroform	7.4		2.0		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	9.5		2.0		ppb v/v	1		TO-15	Total/NA
Cyclohexane	12		4.0		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: 140-13415-1

Client Sample ID: G-111618-JH-02 (Continued)

Lab Sample ID: 140-13415-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dichlorodifluoromethane	21		2.0		ppb v/v	1		TO-15	Total/NA
Heptane	4.5		4.0		ppb v/v	1		TO-15	Total/NA
Hexane	27		4.0		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	11		2.0		ppb v/v	1		TO-15	Total/NA
Trichloroethene	2.3		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	4.6		2.0		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	38		4.0		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	530		11		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	530		8.1		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	73		7.9		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	63		14		ug/m3	1		TO-15	Total/NA
Benzene	8.2		6.4		ug/m3	1		TO-15	Total/NA
Butane	75		24		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	70		7.1		ug/m3	1		TO-15	Total/NA
Chloroethane	310		5.3		ug/m3	1		TO-15	Total/NA
Chloroform	36		9.8		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	38		7.9		ug/m3	1		TO-15	Total/NA
Cyclohexane	40		14		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	110		9.9		ug/m3	1		TO-15	Total/NA
Heptane	19		16		ug/m3	1		TO-15	Total/NA
Hexane	94		14		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	75		14		ug/m3	1		TO-15	Total/NA
Trichloroethene	12		11		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	26		11		ug/m3	1		TO-15	Total/NA
Vinyl chloride	97		10		ug/m3	1		TO-15	Total/NA

Client Sample ID: G-111618-JH-03

Lab Sample ID: 140-13415-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	170		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	81		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	40		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	4.4		2.0		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	3.3		2.0		ppb v/v	1		TO-15	Total/NA
Chloroform	7.7		2.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	13		2.0		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	12		2.0		ppb v/v	1		TO-15	Total/NA
Trichloroethene	2.3		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	3.9		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	940		11		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	330		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	31		14		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	12		7.1		ug/m3	1		TO-15	Total/NA
Chloroform	38		9.8		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	67		9.9		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	79		14		ug/m3	1		TO-15	Total/NA
Trichloroethene	13		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: 140-13415-1

Client Sample ID: G-111618-JH-03 (Continued)

Lab Sample ID: 140-13415-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichlorofluoromethane	22		11		ug/m3	1		TO-15	Total/NA

Client Sample ID: G-111618-JH-04

Lab Sample ID: 140-13415-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	110		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	86		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	22		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	5.0		2.0		ppb v/v	1		TO-15	Total/NA
Butane	19		10		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	9.1		2.0		ppb v/v	1		TO-15	Total/NA
Chloroethane	16		2.0		ppb v/v	1		TO-15	Total/NA
Chloroform	23		2.0		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	9.1		2.0		ppb v/v	1		TO-15	Total/NA
Cyclohexane	8.0		4.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	19		2.0		ppb v/v	1		TO-15	Total/NA
Heptane	6.1		4.0		ppb v/v	1		TO-15	Total/NA
Hexane	5.1		4.0		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	7.3		2.0		ppb v/v	1		TO-15	Total/NA
Trichloroethene	2.0		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	3.8		2.0		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	270		4.0		ppb v/v	1		TO-15	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	580		11		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	350		8.1		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	88		7.9		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	35		14		ug/m3	1		TO-15	Total/NA
Butane	45		24		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	32		7.1		ug/m3	1		TO-15	Total/NA
Chloroethane	43		5.3		ug/m3	1		TO-15	Total/NA
Chloroform	110		9.8		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	36		7.9		ug/m3	1		TO-15	Total/NA
Cyclohexane	27		14		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	95		9.9		ug/m3	1		TO-15	Total/NA
Heptane	25		16		ug/m3	1		TO-15	Total/NA
Hexane	18		14		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	50		14		ug/m3	1		TO-15	Total/NA
Trichloroethene	11		11		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	21		11		ug/m3	1		TO-15	Total/NA
Vinyl chloride	700		10		ug/m3	1		TO-15	Total/NA

Client Sample ID: G-111618-JH-05

Lab Sample ID: 140-13415-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	36		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	13		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	5.6		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	7.8		2.0		ppb v/v	1		TO-15	Total/NA
Benzene	2.8		2.0		ppb v/v	1		TO-15	Total/NA
Butane	52		10		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: 140-13415-1

Client Sample ID: G-111618-JH-05 (Continued)

Lab Sample ID: 140-13415-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	2.6		2.0		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	38		2.0		ppb v/v	1		TO-15	Total/NA
Chloroethane	41		2.0		ppb v/v	1		TO-15	Total/NA
Chloroform	22		2.0		ppb v/v	1		TO-15	Total/NA
Cyclohexane	10		4.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	94		2.0		ppb v/v	1		TO-15	Total/NA
Heptane	4.6		4.0		ppb v/v	1		TO-15	Total/NA
Hexane	8.8		4.0		ppb v/v	1		TO-15	Total/NA
Methylene Chloride	12		10		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	4.1		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	23		2.0		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	26		4.0		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	200		11		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	53		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	8.9		6.4		ug/m3	1		TO-15	Total/NA
Butane	120		24		ug/m3	1		TO-15	Total/NA
Chlorobenzene	12		9.2		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	130		7.1		ug/m3	1		TO-15	Total/NA
Chloroethane	110		5.3		ug/m3	1		TO-15	Total/NA
Chloroform	110		9.8		ug/m3	1		TO-15	Total/NA
Cyclohexane	36		14		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	470		9.9		ug/m3	1		TO-15	Total/NA
Heptane	19		16		ug/m3	1		TO-15	Total/NA
Hexane	31		14		ug/m3	1		TO-15	Total/NA
Methylene Chloride	41		35		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	28		14		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	130		11		ug/m3	1		TO-15	Total/NA
Vinyl chloride	66		10		ug/m3	1		TO-15	Total/NA

Client Sample ID: G-111618-JH-06

Lab Sample ID: 140-13415-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	94		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethane	110		2.0		ppb v/v	1		TO-15	Total/NA
1,1-Dichloroethene	14		2.0		ppb v/v	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	8.5		2.0		ppb v/v	1		TO-15	Total/NA
Benzene	2.0		2.0		ppb v/v	1		TO-15	Total/NA
Butane	31		10		ppb v/v	1		TO-15	Total/NA
Chlorobenzene	2.9		2.0		ppb v/v	1		TO-15	Total/NA
Chlorodifluoromethane	17		2.0		ppb v/v	1		TO-15	Total/NA
Chloroethane	38		2.0		ppb v/v	1		TO-15	Total/NA
Chloroform	9.9		2.0		ppb v/v	1		TO-15	Total/NA
cis-1,2-Dichloroethene	8.2		2.0		ppb v/v	1		TO-15	Total/NA
Cyclohexane	10		4.0		ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	49		2.0		ppb v/v	1		TO-15	Total/NA
Heptane	6.9		4.0		ppb v/v	1		TO-15	Total/NA
Hexane	11		4.0		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: 140-13415-1

Client Sample ID: G-111618-JH-06 (Continued)

Lab Sample ID: 140-13415-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
m-Xylene & p-Xylene	2.2		2.0		ppb v/v	1		TO-15	Total/NA
Tetrachloroethene	23		2.0		ppb v/v	1		TO-15	Total/NA
Trichloroethene	2.7		2.0		ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	24		2.0		ppb v/v	1		TO-15	Total/NA
Vinyl chloride	63		4.0		ppb v/v	1		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	510		11		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethane	450		8.1		ug/m3	1		TO-15	Total/NA
1,1-Dichloroethene	54		7.9		ug/m3	1		TO-15	Total/NA
1,2-Dichloro-1,1,2,2-tetrafluoroethane	60		14		ug/m3	1		TO-15	Total/NA
Benzene	6.3		6.4		ug/m3	1		TO-15	Total/NA
Butane	75		24		ug/m3	1		TO-15	Total/NA
Chlorobenzene	13		9.2		ug/m3	1		TO-15	Total/NA
Chlorodifluoromethane	59		7.1		ug/m3	1		TO-15	Total/NA
Chloroethane	100		5.3		ug/m3	1		TO-15	Total/NA
Chloroform	48		9.8		ug/m3	1		TO-15	Total/NA
cis-1,2-Dichloroethene	32		7.9		ug/m3	1		TO-15	Total/NA
Cyclohexane	34		14		ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	240		9.9		ug/m3	1		TO-15	Total/NA
Heptane	28		16		ug/m3	1		TO-15	Total/NA
Hexane	38		14		ug/m3	1		TO-15	Total/NA
m-Xylene & p-Xylene	9.7		8.7		ug/m3	1		TO-15	Total/NA
Tetrachloroethene	150		14		ug/m3	1		TO-15	Total/NA
Trichloroethene	15		11		ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	140		11		ug/m3	1		TO-15	Total/NA
Vinyl chloride	160		10		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: 140-13415-1

Client Sample ID: G-111618-JH-01

Lab Sample ID: 140-13415-1

Date Collected: 11/16/18 14:53

Matrix: Air

Date Received: 11/20/18 09:45

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	95		2.0		ppb v/v			11/21/18 14:58	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/21/18 14:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/21/18 14:58	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/21/18 14:58	1
1,1-Dichloroethane	230		2.0		ppb v/v			11/21/18 14:58	1
1,1-Dichloroethene	19		2.0		ppb v/v			11/21/18 14:58	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/21/18 14:58	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 14:58	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/21/18 14:58	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	10		2.0		ppb v/v			11/21/18 14:58	1
1,2-Dichlorobenzene	ND		4.0		ppb v/v			11/21/18 14:58	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/21/18 14:58	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/21/18 14:58	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 14:58	1
1,3-Butadiene	ND		4.0		ppb v/v			11/21/18 14:58	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 14:58	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 14:58	1
2-Butanone (MEK)	ND		10		ppb v/v			11/21/18 14:58	1
2-Hexanone	ND		4.0		ppb v/v			11/21/18 14:58	1
3-Chloropropene	ND		2.0		ppb v/v			11/21/18 14:58	1
4-Methyl-2-pentanone (MIBK)	ND		10		ppb v/v			11/21/18 14:58	1
Acetone	ND		75		ppb v/v			11/21/18 14:58	1
Acetonitrile	ND		10		ppb v/v			11/21/18 14:58	1
Acrolein	ND		10		ppb v/v			11/21/18 14:58	1
Acrylonitrile	ND		20		ppb v/v			11/21/18 14:58	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/21/18 14:58	1
Benzene	ND		2.0		ppb v/v			11/21/18 14:58	1
Benzyl chloride	ND		4.0		ppb v/v			11/21/18 14:58	1
Bromodichloromethane	ND		2.0		ppb v/v			11/21/18 14:58	1
Bromoform	ND		2.0		ppb v/v			11/21/18 14:58	1
Bromomethane	ND		2.0		ppb v/v			11/21/18 14:58	1
Butane	43		10		ppb v/v			11/21/18 14:58	1
Carbon disulfide	ND		4.0		ppb v/v			11/21/18 14:58	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/21/18 14:58	1
Chlorobenzene	ND		2.0		ppb v/v			11/21/18 14:58	1
Chlorodifluoromethane	14		2.0		ppb v/v			11/21/18 14:58	1
Chloroethane	23		2.0		ppb v/v			11/21/18 14:58	1
Chloroform	8.1		2.0		ppb v/v			11/21/18 14:58	1
Chloromethane	ND		10		ppb v/v			11/21/18 14:58	1
cis-1,2-Dichloroethene	34		2.0		ppb v/v			11/21/18 14:58	1
cis-1,3-Dichloropropene	ND		4.0		ppb v/v			11/21/18 14:58	1
Cumene	ND		4.0		ppb v/v			11/21/18 14:58	1
Cyclohexane	13		4.0		ppb v/v			11/21/18 14:58	1
Decane	ND		10		ppb v/v			11/21/18 14:58	1
Dibromochloromethane	ND		2.0		ppb v/v			11/21/18 14:58	1
Dibromomethane	ND		4.0		ppb v/v			11/21/18 14:58	1
Dichlorodifluoromethane	21		2.0		ppb v/v			11/21/18 14:58	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-01

Lab Sample ID: 140-13415-1

Date Collected: 11/16/18 14:53

Matrix: Air

Date Received: 11/20/18 09:45

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			11/21/18 14:58	1
Ethyl ether	ND		20		ppb v/v			11/21/18 14:58	1
Ethylbenzene	ND		2.0		ppb v/v			11/21/18 14:58	1
Heptane	4.3		4.0		ppb v/v			11/21/18 14:58	1
Hexachlorobutadiene	ND		10		ppb v/v			11/21/18 14:58	1
Hexane	7.6		4.0		ppb v/v			11/21/18 14:58	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/21/18 14:58	1
Methylene Chloride	ND		10		ppb v/v			11/21/18 14:58	1
m-Xylene & p-Xylene	ND		2.0		ppb v/v			11/21/18 14:58	1
Naphthalene	ND		4.0		ppb v/v			11/21/18 14:58	1
Nonane	ND		4.0		ppb v/v			11/21/18 14:58	1
Octane	ND		4.0		ppb v/v			11/21/18 14:58	1
o-Xylene	ND		2.0		ppb v/v			11/21/18 14:58	1
Pentane	ND		25		ppb v/v			11/21/18 14:58	1
Propylbenzene	ND		4.0		ppb v/v			11/21/18 14:58	1
Styrene	ND		2.0		ppb v/v			11/21/18 14:58	1
Tetrachloroethene	24		2.0		ppb v/v			11/21/18 14:58	1
Toluene	ND		10		ppb v/v			11/21/18 14:58	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/21/18 14:58	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/21/18 14:58	1
Trichloroethene	6.3		2.0		ppb v/v			11/21/18 14:58	1
Trichlorofluoromethane	7.3		2.0		ppb v/v			11/21/18 14:58	1
Undecane	ND		10		ppb v/v			11/21/18 14:58	1
Vinyl acetate	ND		10		ppb v/v			11/21/18 14:58	1
Vinyl chloride	250		4.0		ppb v/v			11/21/18 14:58	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	520		11		ug/m3			11/21/18 14:58	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/21/18 14:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/21/18 14:58	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/21/18 14:58	1
1,1-Dichloroethane	930		8.1		ug/m3			11/21/18 14:58	1
1,1-Dichloroethene	76		7.9		ug/m3			11/21/18 14:58	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/21/18 14:58	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 14:58	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/21/18 14:58	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	73		14		ug/m3			11/21/18 14:58	1
1,2-Dichlorobenzene	ND		24		ug/m3			11/21/18 14:58	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/21/18 14:58	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/21/18 14:58	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 14:58	1
1,3-Butadiene	ND		8.8		ug/m3			11/21/18 14:58	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/21/18 14:58	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/21/18 14:58	1
2-Butanone (MEK)	ND		29		ug/m3			11/21/18 14:58	1
2-Hexanone	ND		16		ug/m3			11/21/18 14:58	1
3-Chloropropene	ND		6.3		ug/m3			11/21/18 14:58	1
4-Methyl-2-pentanone (MIBK)	ND		41		ug/m3			11/21/18 14:58	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-01

Lab Sample ID: 140-13415-1

Date Collected: 11/16/18 14:53

Matrix: Air

Date Received: 11/20/18 09:45

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		180		ug/m3			11/21/18 14:58	1
Acetonitrile	ND		17		ug/m3			11/21/18 14:58	1
Acrolein	ND		23		ug/m3			11/21/18 14:58	1
Acrylonitrile	ND		43		ug/m3			11/21/18 14:58	1
Alpha Methyl Styrene	ND		19		ug/m3			11/21/18 14:58	1
Benzene	ND		6.4		ug/m3			11/21/18 14:58	1
Benzyl chloride	ND		21		ug/m3			11/21/18 14:58	1
Bromodichloromethane	ND		13		ug/m3			11/21/18 14:58	1
Bromoform	ND		21		ug/m3			11/21/18 14:58	1
Bromomethane	ND		7.8		ug/m3			11/21/18 14:58	1
Butane	100		24		ug/m3			11/21/18 14:58	1
Carbon disulfide	ND		12		ug/m3			11/21/18 14:58	1
Carbon tetrachloride	ND		13		ug/m3			11/21/18 14:58	1
Chlorobenzene	ND		9.2		ug/m3			11/21/18 14:58	1
Chlorodifluoromethane	48		7.1		ug/m3			11/21/18 14:58	1
Chloroethane	61		5.3		ug/m3			11/21/18 14:58	1
Chloroform	40		9.8		ug/m3			11/21/18 14:58	1
Chloromethane	ND		21		ug/m3			11/21/18 14:58	1
cis-1,2-Dichloroethene	140		7.9		ug/m3			11/21/18 14:58	1
cis-1,3-Dichloropropene	ND		18		ug/m3			11/21/18 14:58	1
Cumene	ND		20		ug/m3			11/21/18 14:58	1
Cyclohexane	44		14		ug/m3			11/21/18 14:58	1
Decane	ND		58		ug/m3			11/21/18 14:58	1
Dibromochloromethane	ND		17		ug/m3			11/21/18 14:58	1
Dibromomethane	ND		28		ug/m3			11/21/18 14:58	1
Dichlorodifluoromethane	100		9.9		ug/m3			11/21/18 14:58	1
Dodecane	ND		70		ug/m3			11/21/18 14:58	1
Ethyl ether	ND		61		ug/m3			11/21/18 14:58	1
Ethylbenzene	ND		8.7		ug/m3			11/21/18 14:58	1
Heptane	18		16		ug/m3			11/21/18 14:58	1
Hexachlorobutadiene	ND		110		ug/m3			11/21/18 14:58	1
Hexane	27		14		ug/m3			11/21/18 14:58	1
Methyl tert-butyl ether	ND		36		ug/m3			11/21/18 14:58	1
Methylene Chloride	ND		35		ug/m3			11/21/18 14:58	1
m-Xylene & p-Xylene	ND		8.7		ug/m3			11/21/18 14:58	1
Naphthalene	ND		21		ug/m3			11/21/18 14:58	1
Nonane	ND		21		ug/m3			11/21/18 14:58	1
Octane	ND		19		ug/m3			11/21/18 14:58	1
o-Xylene	ND		8.7		ug/m3			11/21/18 14:58	1
Pentane	ND		74		ug/m3			11/21/18 14:58	1
Propylbenzene	ND		20		ug/m3			11/21/18 14:58	1
Styrene	ND		8.5		ug/m3			11/21/18 14:58	1
Tetrachloroethene	160		14		ug/m3			11/21/18 14:58	1
Toluene	ND		38		ug/m3			11/21/18 14:58	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/21/18 14:58	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/21/18 14:58	1
Trichloroethene	34		11		ug/m3			11/21/18 14:58	1
Trichlorofluoromethane	41		11		ug/m3			11/21/18 14:58	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-01

Lab Sample ID: 140-13415-1

Date Collected: 11/16/18 14:53

Matrix: Air

Date Received: 11/20/18 09:45

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			11/21/18 14:58	1
Vinyl acetate	ND		35		ug/m3			11/21/18 14:58	1
Vinyl chloride	640		10		ug/m3			11/21/18 14:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		60 - 140					11/21/18 14:58	1

Client Sample ID: G-111618-JH-02

Lab Sample ID: 140-13415-2

Date Collected: 11/16/18 14:59

Matrix: Air

Date Received: 11/20/18 09:45

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	96		2.0		ppb v/v			11/21/18 15:50	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/21/18 15:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/21/18 15:50	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/21/18 15:50	1
1,1-Dichloroethane	130		2.0		ppb v/v			11/21/18 15:50	1
1,1-Dichloroethene	18		2.0		ppb v/v			11/21/18 15:50	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/21/18 15:50	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 15:50	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/21/18 15:50	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	9.1		2.0		ppb v/v			11/21/18 15:50	1
1,2-Dichlorobenzene	ND		4.0		ppb v/v			11/21/18 15:50	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/21/18 15:50	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/21/18 15:50	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 15:50	1
1,3-Butadiene	ND		4.0		ppb v/v			11/21/18 15:50	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 15:50	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 15:50	1
2-Butanone (MEK)	ND		10		ppb v/v			11/21/18 15:50	1
2-Hexanone	ND		4.0		ppb v/v			11/21/18 15:50	1
3-Chloropropene	ND		2.0		ppb v/v			11/21/18 15:50	1
4-Methyl-2-pentanone (MIBK)	ND		10		ppb v/v			11/21/18 15:50	1
Acetone	ND		75		ppb v/v			11/21/18 15:50	1
Acetonitrile	ND		10		ppb v/v			11/21/18 15:50	1
Acrolein	ND		10		ppb v/v			11/21/18 15:50	1
Acrylonitrile	ND		20		ppb v/v			11/21/18 15:50	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/21/18 15:50	1
Benzene	2.6		2.0		ppb v/v			11/21/18 15:50	1
Benzyl chloride	ND		4.0		ppb v/v			11/21/18 15:50	1
Bromodichloromethane	ND		2.0		ppb v/v			11/21/18 15:50	1
Bromoform	ND		2.0		ppb v/v			11/21/18 15:50	1
Bromomethane	ND		2.0		ppb v/v			11/21/18 15:50	1
Butane	31		10		ppb v/v			11/21/18 15:50	1
Carbon disulfide	ND		4.0		ppb v/v			11/21/18 15:50	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/21/18 15:50	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-02

Lab Sample ID: 140-13415-2

Date Collected: 11/16/18 14:59

Matrix: Air

Date Received: 11/20/18 09:45

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			11/21/18 15:50	1
Chlorodifluoromethane	20		2.0		ppb v/v			11/21/18 15:50	1
Chloroethane	120		2.0		ppb v/v			11/21/18 15:50	1
Chloroform	7.4		2.0		ppb v/v			11/21/18 15:50	1
Chloromethane	ND		10		ppb v/v			11/21/18 15:50	1
cis-1,2-Dichloroethene	9.5		2.0		ppb v/v			11/21/18 15:50	1
cis-1,3-Dichloropropene	ND		4.0		ppb v/v			11/21/18 15:50	1
Cumene	ND		4.0		ppb v/v			11/21/18 15:50	1
Cyclohexane	12		4.0		ppb v/v			11/21/18 15:50	1
Decane	ND		10		ppb v/v			11/21/18 15:50	1
Dibromochloromethane	ND		2.0		ppb v/v			11/21/18 15:50	1
Dibromomethane	ND		4.0		ppb v/v			11/21/18 15:50	1
Dichlorodifluoromethane	21		2.0		ppb v/v			11/21/18 15:50	1
Dodecane	ND		10		ppb v/v			11/21/18 15:50	1
Ethyl ether	ND		20		ppb v/v			11/21/18 15:50	1
Ethylbenzene	ND		2.0		ppb v/v			11/21/18 15:50	1
Heptane	4.5		4.0		ppb v/v			11/21/18 15:50	1
Hexachlorobutadiene	ND		10		ppb v/v			11/21/18 15:50	1
Hexane	27		4.0		ppb v/v			11/21/18 15:50	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/21/18 15:50	1
Methylene Chloride	ND		10		ppb v/v			11/21/18 15:50	1
m-Xylene & p-Xylene	ND		2.0		ppb v/v			11/21/18 15:50	1
Naphthalene	ND		4.0		ppb v/v			11/21/18 15:50	1
Nonane	ND		4.0		ppb v/v			11/21/18 15:50	1
Octane	ND		4.0		ppb v/v			11/21/18 15:50	1
o-Xylene	ND		2.0		ppb v/v			11/21/18 15:50	1
Pentane	ND		25		ppb v/v			11/21/18 15:50	1
Propylbenzene	ND		4.0		ppb v/v			11/21/18 15:50	1
Styrene	ND		2.0		ppb v/v			11/21/18 15:50	1
Tetrachloroethene	11		2.0		ppb v/v			11/21/18 15:50	1
Toluene	ND		10		ppb v/v			11/21/18 15:50	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/21/18 15:50	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/21/18 15:50	1
Trichloroethene	2.3		2.0		ppb v/v			11/21/18 15:50	1
Trichlorofluoromethane	4.6		2.0		ppb v/v			11/21/18 15:50	1
Undecane	ND		10		ppb v/v			11/21/18 15:50	1
Vinyl acetate	ND		10		ppb v/v			11/21/18 15:50	1
Vinyl chloride	38		4.0		ppb v/v			11/21/18 15:50	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	530		11		ug/m3			11/21/18 15:50	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/21/18 15:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/21/18 15:50	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/21/18 15:50	1
1,1-Dichloroethane	530		8.1		ug/m3			11/21/18 15:50	1
1,1-Dichloroethene	73		7.9		ug/m3			11/21/18 15:50	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/21/18 15:50	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 15:50	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/21/18 15:50	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-02

Lab Sample ID: 140-13415-2

Date Collected: 11/16/18 14:59

Matrix: Air

Date Received: 11/20/18 09:45

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	63		14		ug/m3			11/21/18 15:50	1
1,2-Dichlorobenzene	ND		24		ug/m3			11/21/18 15:50	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/21/18 15:50	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/21/18 15:50	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 15:50	1
1,3-Butadiene	ND		8.8		ug/m3			11/21/18 15:50	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/21/18 15:50	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/21/18 15:50	1
2-Butanone (MEK)	ND		29		ug/m3			11/21/18 15:50	1
2-Hexanone	ND		16		ug/m3			11/21/18 15:50	1
3-Chloropropene	ND		6.3		ug/m3			11/21/18 15:50	1
4-Methyl-2-pentanone (MIBK)	ND		41		ug/m3			11/21/18 15:50	1
Acetone	ND		180		ug/m3			11/21/18 15:50	1
Acetonitrile	ND		17		ug/m3			11/21/18 15:50	1
Acrolein	ND		23		ug/m3			11/21/18 15:50	1
Acrylonitrile	ND		43		ug/m3			11/21/18 15:50	1
Alpha Methyl Styrene	ND		19		ug/m3			11/21/18 15:50	1
Benzene	8.2		6.4		ug/m3			11/21/18 15:50	1
Benzyl chloride	ND		21		ug/m3			11/21/18 15:50	1
Bromodichloromethane	ND		13		ug/m3			11/21/18 15:50	1
Bromoform	ND		21		ug/m3			11/21/18 15:50	1
Bromomethane	ND		7.8		ug/m3			11/21/18 15:50	1
Butane	75		24		ug/m3			11/21/18 15:50	1
Carbon disulfide	ND		12		ug/m3			11/21/18 15:50	1
Carbon tetrachloride	ND		13		ug/m3			11/21/18 15:50	1
Chlorobenzene	ND		9.2		ug/m3			11/21/18 15:50	1
Chlorodifluoromethane	70		7.1		ug/m3			11/21/18 15:50	1
Chloroethane	310		5.3		ug/m3			11/21/18 15:50	1
Chloroform	36		9.8		ug/m3			11/21/18 15:50	1
Chloromethane	ND		21		ug/m3			11/21/18 15:50	1
cis-1,2-Dichloroethene	38		7.9		ug/m3			11/21/18 15:50	1
cis-1,3-Dichloropropene	ND		18		ug/m3			11/21/18 15:50	1
Cumene	ND		20		ug/m3			11/21/18 15:50	1
Cyclohexane	40		14		ug/m3			11/21/18 15:50	1
Decane	ND		58		ug/m3			11/21/18 15:50	1
Dibromochloromethane	ND		17		ug/m3			11/21/18 15:50	1
Dibromomethane	ND		28		ug/m3			11/21/18 15:50	1
Dichlorodifluoromethane	110		9.9		ug/m3			11/21/18 15:50	1
Dodecane	ND		70		ug/m3			11/21/18 15:50	1
Ethyl ether	ND		61		ug/m3			11/21/18 15:50	1
Ethylbenzene	ND		8.7		ug/m3			11/21/18 15:50	1
Heptane	19		16		ug/m3			11/21/18 15:50	1
Hexachlorobutadiene	ND		110		ug/m3			11/21/18 15:50	1
Hexane	94		14		ug/m3			11/21/18 15:50	1
Methyl tert-butyl ether	ND		36		ug/m3			11/21/18 15:50	1
Methylene Chloride	ND		35		ug/m3			11/21/18 15:50	1
m-Xylene & p-Xylene	ND		8.7		ug/m3			11/21/18 15:50	1
Naphthalene	ND		21		ug/m3			11/21/18 15:50	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-02

Lab Sample ID: 140-13415-2

Date Collected: 11/16/18 14:59

Matrix: Air

Date Received: 11/20/18 09:45

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		21		ug/m3			11/21/18 15:50	1
Octane	ND		19		ug/m3			11/21/18 15:50	1
o-Xylene	ND		8.7		ug/m3			11/21/18 15:50	1
Pentane	ND		74		ug/m3			11/21/18 15:50	1
Propylbenzene	ND		20		ug/m3			11/21/18 15:50	1
Styrene	ND		8.5		ug/m3			11/21/18 15:50	1
Tetrachloroethene	75		14		ug/m3			11/21/18 15:50	1
Toluene	ND		38		ug/m3			11/21/18 15:50	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/21/18 15:50	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/21/18 15:50	1
Trichloroethene	12		11		ug/m3			11/21/18 15:50	1
Trichlorofluoromethane	26		11		ug/m3			11/21/18 15:50	1
Undecane	ND		64		ug/m3			11/21/18 15:50	1
Vinyl acetate	ND		35		ug/m3			11/21/18 15:50	1
Vinyl chloride	97		10		ug/m3			11/21/18 15:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		60 - 140					11/21/18 15:50	1

Client Sample ID: G-111618-JH-03

Lab Sample ID: 140-13415-3

Date Collected: 11/16/18 15:05

Matrix: Air

Date Received: 11/20/18 09:45

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	170		2.0		ppb v/v			11/21/18 16:42	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/21/18 16:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/21/18 16:42	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/21/18 16:42	1
1,1-Dichloroethane	81		2.0		ppb v/v			11/21/18 16:42	1
1,1-Dichloroethene	40		2.0		ppb v/v			11/21/18 16:42	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/21/18 16:42	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 16:42	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/21/18 16:42	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	4.4		2.0		ppb v/v			11/21/18 16:42	1
1,2-Dichlorobenzene	ND		4.0		ppb v/v			11/21/18 16:42	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/21/18 16:42	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/21/18 16:42	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 16:42	1
1,3-Butadiene	ND		4.0		ppb v/v			11/21/18 16:42	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 16:42	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 16:42	1
2-Butanone (MEK)	ND		10		ppb v/v			11/21/18 16:42	1
2-Hexanone	ND		4.0		ppb v/v			11/21/18 16:42	1
3-Chloropropene	ND		2.0		ppb v/v			11/21/18 16:42	1
4-Methyl-2-pentanone (MIBK)	ND		10		ppb v/v			11/21/18 16:42	1
Acetone	ND		75		ppb v/v			11/21/18 16:42	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-03

Lab Sample ID: 140-13415-3

Date Collected: 11/16/18 15:05

Matrix: Air

Date Received: 11/20/18 09:45

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			11/21/18 16:42	1
Acrolein	ND		10		ppb v/v			11/21/18 16:42	1
Acrylonitrile	ND		20		ppb v/v			11/21/18 16:42	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/21/18 16:42	1
Benzene	ND		2.0		ppb v/v			11/21/18 16:42	1
Benzyl chloride	ND		4.0		ppb v/v			11/21/18 16:42	1
Bromodichloromethane	ND		2.0		ppb v/v			11/21/18 16:42	1
Bromoform	ND		2.0		ppb v/v			11/21/18 16:42	1
Bromomethane	ND		2.0		ppb v/v			11/21/18 16:42	1
Butane	ND		10		ppb v/v			11/21/18 16:42	1
Carbon disulfide	ND		4.0		ppb v/v			11/21/18 16:42	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/21/18 16:42	1
Chlorobenzene	ND		2.0		ppb v/v			11/21/18 16:42	1
Chlorodifluoromethane	3.3		2.0		ppb v/v			11/21/18 16:42	1
Chloroethane	ND		2.0		ppb v/v			11/21/18 16:42	1
Chloroform	7.7		2.0		ppb v/v			11/21/18 16:42	1
Chloromethane	ND		10		ppb v/v			11/21/18 16:42	1
cis-1,2-Dichloroethene	ND		2.0		ppb v/v			11/21/18 16:42	1
cis-1,3-Dichloropropene	ND		4.0		ppb v/v			11/21/18 16:42	1
Cumene	ND		4.0		ppb v/v			11/21/18 16:42	1
Cyclohexane	ND		4.0		ppb v/v			11/21/18 16:42	1
Decane	ND		10		ppb v/v			11/21/18 16:42	1
Dibromochloromethane	ND		2.0		ppb v/v			11/21/18 16:42	1
Dibromomethane	ND		4.0		ppb v/v			11/21/18 16:42	1
Dichlorodifluoromethane	13		2.0		ppb v/v			11/21/18 16:42	1
Dodecane	ND		10		ppb v/v			11/21/18 16:42	1
Ethyl ether	ND		20		ppb v/v			11/21/18 16:42	1
Ethylbenzene	ND		2.0		ppb v/v			11/21/18 16:42	1
Heptane	ND		4.0		ppb v/v			11/21/18 16:42	1
Hexachlorobutadiene	ND		10		ppb v/v			11/21/18 16:42	1
Hexane	ND		4.0		ppb v/v			11/21/18 16:42	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/21/18 16:42	1
Methylene Chloride	ND		10		ppb v/v			11/21/18 16:42	1
m-Xylene & p-Xylene	ND		2.0		ppb v/v			11/21/18 16:42	1
Naphthalene	ND		4.0		ppb v/v			11/21/18 16:42	1
Nonane	ND		4.0		ppb v/v			11/21/18 16:42	1
Octane	ND		4.0		ppb v/v			11/21/18 16:42	1
o-Xylene	ND		2.0		ppb v/v			11/21/18 16:42	1
Pentane	ND		25		ppb v/v			11/21/18 16:42	1
Propylbenzene	ND		4.0		ppb v/v			11/21/18 16:42	1
Styrene	ND		2.0		ppb v/v			11/21/18 16:42	1
Tetrachloroethene	12		2.0		ppb v/v			11/21/18 16:42	1
Toluene	ND		10		ppb v/v			11/21/18 16:42	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/21/18 16:42	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/21/18 16:42	1
Trichloroethene	2.3		2.0		ppb v/v			11/21/18 16:42	1
Trichlorofluoromethane	3.9		2.0		ppb v/v			11/21/18 16:42	1
Undecane	ND		10		ppb v/v			11/21/18 16:42	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-03

Lab Sample ID: 140-13415-3

Date Collected: 11/16/18 15:05

Matrix: Air

Date Received: 11/20/18 09:45

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			11/21/18 16:42	1
Vinyl chloride	ND		4.0		ppb v/v			11/21/18 16:42	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	940		11		ug/m3			11/21/18 16:42	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/21/18 16:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/21/18 16:42	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/21/18 16:42	1
1,1-Dichloroethane	330		8.1		ug/m3			11/21/18 16:42	1
1,1-Dichloroethene	160		7.9		ug/m3			11/21/18 16:42	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/21/18 16:42	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 16:42	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/21/18 16:42	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	31		14		ug/m3			11/21/18 16:42	1
1,2-Dichlorobenzene	ND		24		ug/m3			11/21/18 16:42	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/21/18 16:42	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/21/18 16:42	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 16:42	1
1,3-Butadiene	ND		8.8		ug/m3			11/21/18 16:42	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/21/18 16:42	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/21/18 16:42	1
2-Butanone (MEK)	ND		29		ug/m3			11/21/18 16:42	1
2-Hexanone	ND		16		ug/m3			11/21/18 16:42	1
3-Chloropropene	ND		6.3		ug/m3			11/21/18 16:42	1
4-Methyl-2-pentanone (MIBK)	ND		41		ug/m3			11/21/18 16:42	1
Acetone	ND		180		ug/m3			11/21/18 16:42	1
Acetonitrile	ND		17		ug/m3			11/21/18 16:42	1
Acrolein	ND		23		ug/m3			11/21/18 16:42	1
Acrylonitrile	ND		43		ug/m3			11/21/18 16:42	1
Alpha Methyl Styrene	ND		19		ug/m3			11/21/18 16:42	1
Benzene	ND		6.4		ug/m3			11/21/18 16:42	1
Benzyl chloride	ND		21		ug/m3			11/21/18 16:42	1
Bromodichloromethane	ND		13		ug/m3			11/21/18 16:42	1
Bromoform	ND		21		ug/m3			11/21/18 16:42	1
Bromomethane	ND		7.8		ug/m3			11/21/18 16:42	1
Butane	ND		24		ug/m3			11/21/18 16:42	1
Carbon disulfide	ND		12		ug/m3			11/21/18 16:42	1
Carbon tetrachloride	ND		13		ug/m3			11/21/18 16:42	1
Chlorobenzene	ND		9.2		ug/m3			11/21/18 16:42	1
Chlorodifluoromethane	12		7.1		ug/m3			11/21/18 16:42	1
Chloroethane	ND		5.3		ug/m3			11/21/18 16:42	1
Chloroform	38		9.8		ug/m3			11/21/18 16:42	1
Chloromethane	ND		21		ug/m3			11/21/18 16:42	1
cis-1,2-Dichloroethene	ND		7.9		ug/m3			11/21/18 16:42	1
cis-1,3-Dichloropropene	ND		18		ug/m3			11/21/18 16:42	1
Cumene	ND		20		ug/m3			11/21/18 16:42	1
Cyclohexane	ND		14		ug/m3			11/21/18 16:42	1
Decane	ND		58		ug/m3			11/21/18 16:42	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-03

Lab Sample ID: 140-13415-3

Date Collected: 11/16/18 15:05

Matrix: Air

Date Received: 11/20/18 09:45

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			11/21/18 16:42	1
Dibromomethane	ND		28		ug/m3			11/21/18 16:42	1
Dichlorodifluoromethane	67		9.9		ug/m3			11/21/18 16:42	1
Dodecane	ND		70		ug/m3			11/21/18 16:42	1
Ethyl ether	ND		61		ug/m3			11/21/18 16:42	1
Ethylbenzene	ND		8.7		ug/m3			11/21/18 16:42	1
Heptane	ND		16		ug/m3			11/21/18 16:42	1
Hexachlorobutadiene	ND		110		ug/m3			11/21/18 16:42	1
Hexane	ND		14		ug/m3			11/21/18 16:42	1
Methyl tert-butyl ether	ND		36		ug/m3			11/21/18 16:42	1
Methylene Chloride	ND		35		ug/m3			11/21/18 16:42	1
m-Xylene & p-Xylene	ND		8.7		ug/m3			11/21/18 16:42	1
Naphthalene	ND		21		ug/m3			11/21/18 16:42	1
Nonane	ND		21		ug/m3			11/21/18 16:42	1
Octane	ND		19		ug/m3			11/21/18 16:42	1
o-Xylene	ND		8.7		ug/m3			11/21/18 16:42	1
Pentane	ND		74		ug/m3			11/21/18 16:42	1
Propylbenzene	ND		20		ug/m3			11/21/18 16:42	1
Styrene	ND		8.5		ug/m3			11/21/18 16:42	1
Tetrachloroethene	79		14		ug/m3			11/21/18 16:42	1
Toluene	ND		38		ug/m3			11/21/18 16:42	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/21/18 16:42	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/21/18 16:42	1
Trichloroethene	13		11		ug/m3			11/21/18 16:42	1
Trichlorofluoromethane	22		11		ug/m3			11/21/18 16:42	1
Undecane	ND		64		ug/m3			11/21/18 16:42	1
Vinyl acetate	ND		35		ug/m3			11/21/18 16:42	1
Vinyl chloride	ND		10		ug/m3			11/21/18 16:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		60 - 140					11/21/18 16:42	1

Client Sample ID: G-111618-JH-04

Lab Sample ID: 140-13415-4

Date Collected: 11/16/18 15:11

Matrix: Air

Date Received: 11/20/18 09:45

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	110		2.0		ppb v/v			11/21/18 17:34	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/21/18 17:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/21/18 17:34	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/21/18 17:34	1
1,1-Dichloroethane	86		2.0		ppb v/v			11/21/18 17:34	1
1,1-Dichloroethene	22		2.0		ppb v/v			11/21/18 17:34	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/21/18 17:34	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 17:34	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/21/18 17:34	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-04

Lab Sample ID: 140-13415-4

Date Collected: 11/16/18 15:11

Matrix: Air

Date Received: 11/20/18 09:45

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	5.0		2.0		ppb v/v			11/21/18 17:34	1
1,2-Dichlorobenzene	ND		4.0		ppb v/v			11/21/18 17:34	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/21/18 17:34	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/21/18 17:34	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 17:34	1
1,3-Butadiene	ND		4.0		ppb v/v			11/21/18 17:34	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 17:34	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 17:34	1
2-Butanone (MEK)	ND		10		ppb v/v			11/21/18 17:34	1
2-Hexanone	ND		4.0		ppb v/v			11/21/18 17:34	1
3-Chloropropene	ND		2.0		ppb v/v			11/21/18 17:34	1
4-Methyl-2-pentanone (MIBK)	ND		10		ppb v/v			11/21/18 17:34	1
Acetone	ND		75		ppb v/v			11/21/18 17:34	1
Acetonitrile	ND		10		ppb v/v			11/21/18 17:34	1
Acrolein	ND		10		ppb v/v			11/21/18 17:34	1
Acrylonitrile	ND		20		ppb v/v			11/21/18 17:34	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/21/18 17:34	1
Benzene	ND		2.0		ppb v/v			11/21/18 17:34	1
Benzyl chloride	ND		4.0		ppb v/v			11/21/18 17:34	1
Bromodichloromethane	ND		2.0		ppb v/v			11/21/18 17:34	1
Bromoform	ND		2.0		ppb v/v			11/21/18 17:34	1
Bromomethane	ND		2.0		ppb v/v			11/21/18 17:34	1
Butane	19		10		ppb v/v			11/21/18 17:34	1
Carbon disulfide	ND		4.0		ppb v/v			11/21/18 17:34	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/21/18 17:34	1
Chlorobenzene	ND		2.0		ppb v/v			11/21/18 17:34	1
Chlorodifluoromethane	9.1		2.0		ppb v/v			11/21/18 17:34	1
Chloroethane	16		2.0		ppb v/v			11/21/18 17:34	1
Chloroform	23		2.0		ppb v/v			11/21/18 17:34	1
Chloromethane	ND		10		ppb v/v			11/21/18 17:34	1
cis-1,2-Dichloroethene	9.1		2.0		ppb v/v			11/21/18 17:34	1
cis-1,3-Dichloropropene	ND		4.0		ppb v/v			11/21/18 17:34	1
Cumene	ND		4.0		ppb v/v			11/21/18 17:34	1
Cyclohexane	8.0		4.0		ppb v/v			11/21/18 17:34	1
Decane	ND		10		ppb v/v			11/21/18 17:34	1
Dibromochloromethane	ND		2.0		ppb v/v			11/21/18 17:34	1
Dibromomethane	ND		4.0		ppb v/v			11/21/18 17:34	1
Dichlorodifluoromethane	19		2.0		ppb v/v			11/21/18 17:34	1
Dodecane	ND		10		ppb v/v			11/21/18 17:34	1
Ethyl ether	ND		20		ppb v/v			11/21/18 17:34	1
Ethylbenzene	ND		2.0		ppb v/v			11/21/18 17:34	1
Heptane	6.1		4.0		ppb v/v			11/21/18 17:34	1
Hexachlorobutadiene	ND		10		ppb v/v			11/21/18 17:34	1
Hexane	5.1		4.0		ppb v/v			11/21/18 17:34	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/21/18 17:34	1
Methylene Chloride	ND		10		ppb v/v			11/21/18 17:34	1
m-Xylene & p-Xylene	ND		2.0		ppb v/v			11/21/18 17:34	1
Naphthalene	ND		4.0		ppb v/v			11/21/18 17:34	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-04

Lab Sample ID: 140-13415-4

Date Collected: 11/16/18 15:11

Matrix: Air

Date Received: 11/20/18 09:45

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		4.0		ppb v/v			11/21/18 17:34	1
Octane	ND		4.0		ppb v/v			11/21/18 17:34	1
o-Xylene	ND		2.0		ppb v/v			11/21/18 17:34	1
Pentane	ND		25		ppb v/v			11/21/18 17:34	1
Propylbenzene	ND		4.0		ppb v/v			11/21/18 17:34	1
Styrene	ND		2.0		ppb v/v			11/21/18 17:34	1
Tetrachloroethene	7.3		2.0		ppb v/v			11/21/18 17:34	1
Toluene	ND		10		ppb v/v			11/21/18 17:34	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/21/18 17:34	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/21/18 17:34	1
Trichloroethene	2.0		2.0		ppb v/v			11/21/18 17:34	1
Trichlorofluoromethane	3.8		2.0		ppb v/v			11/21/18 17:34	1
Undecane	ND		10		ppb v/v			11/21/18 17:34	1
Vinyl acetate	ND		10		ppb v/v			11/21/18 17:34	1
Vinyl chloride	270		4.0		ppb v/v			11/21/18 17:34	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	580		11		ug/m3			11/21/18 17:34	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/21/18 17:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/21/18 17:34	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/21/18 17:34	1
1,1-Dichloroethane	350		8.1		ug/m3			11/21/18 17:34	1
1,1-Dichloroethene	88		7.9		ug/m3			11/21/18 17:34	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/21/18 17:34	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 17:34	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/21/18 17:34	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	35		14		ug/m3			11/21/18 17:34	1
1,2-Dichlorobenzene	ND		24		ug/m3			11/21/18 17:34	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/21/18 17:34	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/21/18 17:34	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 17:34	1
1,3-Butadiene	ND		8.8		ug/m3			11/21/18 17:34	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/21/18 17:34	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/21/18 17:34	1
2-Butanone (MEK)	ND		29		ug/m3			11/21/18 17:34	1
2-Hexanone	ND		16		ug/m3			11/21/18 17:34	1
3-Chloropropene	ND		6.3		ug/m3			11/21/18 17:34	1
4-Methyl-2-pentanone (MIBK)	ND		41		ug/m3			11/21/18 17:34	1
Acetone	ND		180		ug/m3			11/21/18 17:34	1
Acetonitrile	ND		17		ug/m3			11/21/18 17:34	1
Acrolein	ND		23		ug/m3			11/21/18 17:34	1
Acrylonitrile	ND		43		ug/m3			11/21/18 17:34	1
Alpha Methyl Styrene	ND		19		ug/m3			11/21/18 17:34	1
Benzene	ND		6.4		ug/m3			11/21/18 17:34	1
Benzyl chloride	ND		21		ug/m3			11/21/18 17:34	1
Bromodichloromethane	ND		13		ug/m3			11/21/18 17:34	1
Bromoform	ND		21		ug/m3			11/21/18 17:34	1
Bromomethane	ND		7.8		ug/m3			11/21/18 17:34	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-04

Lab Sample ID: 140-13415-4

Date Collected: 11/16/18 15:11

Matrix: Air

Date Received: 11/20/18 09:45

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	45		24		ug/m3			11/21/18 17:34	1
Carbon disulfide	ND		12		ug/m3			11/21/18 17:34	1
Carbon tetrachloride	ND		13		ug/m3			11/21/18 17:34	1
Chlorobenzene	ND		9.2		ug/m3			11/21/18 17:34	1
Chlorodifluoromethane	32		7.1		ug/m3			11/21/18 17:34	1
Chloroethane	43		5.3		ug/m3			11/21/18 17:34	1
Chloroform	110		9.8		ug/m3			11/21/18 17:34	1
Chloromethane	ND		21		ug/m3			11/21/18 17:34	1
cis-1,2-Dichloroethene	36		7.9		ug/m3			11/21/18 17:34	1
cis-1,3-Dichloropropene	ND		18		ug/m3			11/21/18 17:34	1
Cumene	ND		20		ug/m3			11/21/18 17:34	1
Cyclohexane	27		14		ug/m3			11/21/18 17:34	1
Decane	ND		58		ug/m3			11/21/18 17:34	1
Dibromochloromethane	ND		17		ug/m3			11/21/18 17:34	1
Dibromomethane	ND		28		ug/m3			11/21/18 17:34	1
Dichlorodifluoromethane	95		9.9		ug/m3			11/21/18 17:34	1
Dodecane	ND		70		ug/m3			11/21/18 17:34	1
Ethyl ether	ND		61		ug/m3			11/21/18 17:34	1
Ethylbenzene	ND		8.7		ug/m3			11/21/18 17:34	1
Heptane	25		16		ug/m3			11/21/18 17:34	1
Hexachlorobutadiene	ND		110		ug/m3			11/21/18 17:34	1
Hexane	18		14		ug/m3			11/21/18 17:34	1
Methyl tert-butyl ether	ND		36		ug/m3			11/21/18 17:34	1
Methylene Chloride	ND		35		ug/m3			11/21/18 17:34	1
m-Xylene & p-Xylene	ND		8.7		ug/m3			11/21/18 17:34	1
Naphthalene	ND		21		ug/m3			11/21/18 17:34	1
Nonane	ND		21		ug/m3			11/21/18 17:34	1
Octane	ND		19		ug/m3			11/21/18 17:34	1
o-Xylene	ND		8.7		ug/m3			11/21/18 17:34	1
Pentane	ND		74		ug/m3			11/21/18 17:34	1
Propylbenzene	ND		20		ug/m3			11/21/18 17:34	1
Styrene	ND		8.5		ug/m3			11/21/18 17:34	1
Tetrachloroethene	50		14		ug/m3			11/21/18 17:34	1
Toluene	ND		38		ug/m3			11/21/18 17:34	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/21/18 17:34	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/21/18 17:34	1
Trichloroethene	11		11		ug/m3			11/21/18 17:34	1
Trichlorofluoromethane	21		11		ug/m3			11/21/18 17:34	1
Undecane	ND		64		ug/m3			11/21/18 17:34	1
Vinyl acetate	ND		35		ug/m3			11/21/18 17:34	1
Vinyl chloride	700		10		ug/m3			11/21/18 17:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		60 - 140					11/21/18 17:34	1

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-05

Lab Sample ID: 140-13415-5

Date Collected: 11/16/18 15:16

Matrix: Air

Date Received: 11/20/18 09:45

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	36		2.0		ppb v/v			11/21/18 18:26	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/21/18 18:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/21/18 18:26	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/21/18 18:26	1
1,1-Dichloroethane	13		2.0		ppb v/v			11/21/18 18:26	1
1,1-Dichloroethene	5.6		2.0		ppb v/v			11/21/18 18:26	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/21/18 18:26	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 18:26	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/21/18 18:26	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	7.8		2.0		ppb v/v			11/21/18 18:26	1
1,2-Dichlorobenzene	ND		4.0		ppb v/v			11/21/18 18:26	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/21/18 18:26	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/21/18 18:26	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 18:26	1
1,3-Butadiene	ND		4.0		ppb v/v			11/21/18 18:26	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 18:26	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 18:26	1
2-Butanone (MEK)	ND		10		ppb v/v			11/21/18 18:26	1
2-Hexanone	ND		4.0		ppb v/v			11/21/18 18:26	1
3-Chloropropene	ND		2.0		ppb v/v			11/21/18 18:26	1
4-Methyl-2-pentanone (MIBK)	ND		10		ppb v/v			11/21/18 18:26	1
Acetone	ND		75		ppb v/v			11/21/18 18:26	1
Acetonitrile	ND		10		ppb v/v			11/21/18 18:26	1
Acrolein	ND		10		ppb v/v			11/21/18 18:26	1
Acrylonitrile	ND		20		ppb v/v			11/21/18 18:26	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/21/18 18:26	1
Benzene	2.8		2.0		ppb v/v			11/21/18 18:26	1
Benzyl chloride	ND		4.0		ppb v/v			11/21/18 18:26	1
Bromodichloromethane	ND		2.0		ppb v/v			11/21/18 18:26	1
Bromoform	ND		2.0		ppb v/v			11/21/18 18:26	1
Bromomethane	ND		2.0		ppb v/v			11/21/18 18:26	1
Butane	52		10		ppb v/v			11/21/18 18:26	1
Carbon disulfide	ND		4.0		ppb v/v			11/21/18 18:26	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/21/18 18:26	1
Chlorobenzene	2.6		2.0		ppb v/v			11/21/18 18:26	1
Chlorodifluoromethane	38		2.0		ppb v/v			11/21/18 18:26	1
Chloroethane	41		2.0		ppb v/v			11/21/18 18:26	1
Chloroform	22		2.0		ppb v/v			11/21/18 18:26	1
Chloromethane	ND		10		ppb v/v			11/21/18 18:26	1
cis-1,2-Dichloroethene	ND		2.0		ppb v/v			11/21/18 18:26	1
cis-1,3-Dichloropropene	ND		4.0		ppb v/v			11/21/18 18:26	1
Cumene	ND		4.0		ppb v/v			11/21/18 18:26	1
Cyclohexane	10		4.0		ppb v/v			11/21/18 18:26	1
Decane	ND		10		ppb v/v			11/21/18 18:26	1
Dibromochloromethane	ND		2.0		ppb v/v			11/21/18 18:26	1
Dibromomethane	ND		4.0		ppb v/v			11/21/18 18:26	1
Dichlorodifluoromethane	94		2.0		ppb v/v			11/21/18 18:26	1
Dodecane	ND		10		ppb v/v			11/21/18 18:26	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-05

Lab Sample ID: 140-13415-5

Date Collected: 11/16/18 15:16

Matrix: Air

Date Received: 11/20/18 09:45

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			11/21/18 18:26	1
Ethylbenzene	ND		2.0		ppb v/v			11/21/18 18:26	1
Heptane	4.6		4.0		ppb v/v			11/21/18 18:26	1
Hexachlorobutadiene	ND		10		ppb v/v			11/21/18 18:26	1
Hexane	8.8		4.0		ppb v/v			11/21/18 18:26	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/21/18 18:26	1
Methylene Chloride	12		10		ppb v/v			11/21/18 18:26	1
m-Xylene & p-Xylene	ND		2.0		ppb v/v			11/21/18 18:26	1
Naphthalene	ND		4.0		ppb v/v			11/21/18 18:26	1
Nonane	ND		4.0		ppb v/v			11/21/18 18:26	1
Octane	ND		4.0		ppb v/v			11/21/18 18:26	1
o-Xylene	ND		2.0		ppb v/v			11/21/18 18:26	1
Pentane	ND		25		ppb v/v			11/21/18 18:26	1
Propylbenzene	ND		4.0		ppb v/v			11/21/18 18:26	1
Styrene	ND		2.0		ppb v/v			11/21/18 18:26	1
Tetrachloroethene	4.1		2.0		ppb v/v			11/21/18 18:26	1
Toluene	ND		10		ppb v/v			11/21/18 18:26	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/21/18 18:26	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/21/18 18:26	1
Trichloroethene	ND		2.0		ppb v/v			11/21/18 18:26	1
Trichlorofluoromethane	23		2.0		ppb v/v			11/21/18 18:26	1
Undecane	ND		10		ppb v/v			11/21/18 18:26	1
Vinyl acetate	ND		10		ppb v/v			11/21/18 18:26	1
Vinyl chloride	26		4.0		ppb v/v			11/21/18 18:26	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	200		11		ug/m3			11/21/18 18:26	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/21/18 18:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/21/18 18:26	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/21/18 18:26	1
1,1-Dichloroethane	53		8.1		ug/m3			11/21/18 18:26	1
1,1-Dichloroethene	22		7.9		ug/m3			11/21/18 18:26	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/21/18 18:26	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 18:26	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/21/18 18:26	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	54		14		ug/m3			11/21/18 18:26	1
1,2-Dichlorobenzene	ND		24		ug/m3			11/21/18 18:26	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/21/18 18:26	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/21/18 18:26	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 18:26	1
1,3-Butadiene	ND		8.8		ug/m3			11/21/18 18:26	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/21/18 18:26	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/21/18 18:26	1
2-Butanone (MEK)	ND		29		ug/m3			11/21/18 18:26	1
2-Hexanone	ND		16		ug/m3			11/21/18 18:26	1
3-Chloropropene	ND		6.3		ug/m3			11/21/18 18:26	1
4-Methyl-2-pentanone (MIBK)	ND		41		ug/m3			11/21/18 18:26	1
Acetone	ND		180		ug/m3			11/21/18 18:26	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-05

Lab Sample ID: 140-13415-5

Date Collected: 11/16/18 15:16

Matrix: Air

Date Received: 11/20/18 09:45

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		17		ug/m3			11/21/18 18:26	1
Acrolein	ND		23		ug/m3			11/21/18 18:26	1
Acrylonitrile	ND		43		ug/m3			11/21/18 18:26	1
Alpha Methyl Styrene	ND		19		ug/m3			11/21/18 18:26	1
Benzene	8.9		6.4		ug/m3			11/21/18 18:26	1
Benzyl chloride	ND		21		ug/m3			11/21/18 18:26	1
Bromodichloromethane	ND		13		ug/m3			11/21/18 18:26	1
Bromoform	ND		21		ug/m3			11/21/18 18:26	1
Bromomethane	ND		7.8		ug/m3			11/21/18 18:26	1
Butane	120		24		ug/m3			11/21/18 18:26	1
Carbon disulfide	ND		12		ug/m3			11/21/18 18:26	1
Carbon tetrachloride	ND		13		ug/m3			11/21/18 18:26	1
Chlorobenzene	12		9.2		ug/m3			11/21/18 18:26	1
Chlorodifluoromethane	130		7.1		ug/m3			11/21/18 18:26	1
Chloroethane	110		5.3		ug/m3			11/21/18 18:26	1
Chloroform	110		9.8		ug/m3			11/21/18 18:26	1
Chloromethane	ND		21		ug/m3			11/21/18 18:26	1
cis-1,2-Dichloroethene	ND		7.9		ug/m3			11/21/18 18:26	1
cis-1,3-Dichloropropene	ND		18		ug/m3			11/21/18 18:26	1
Cumene	ND		20		ug/m3			11/21/18 18:26	1
Cyclohexane	36		14		ug/m3			11/21/18 18:26	1
Decane	ND		58		ug/m3			11/21/18 18:26	1
Dibromochloromethane	ND		17		ug/m3			11/21/18 18:26	1
Dibromomethane	ND		28		ug/m3			11/21/18 18:26	1
Dichlorodifluoromethane	470		9.9		ug/m3			11/21/18 18:26	1
Dodecane	ND		70		ug/m3			11/21/18 18:26	1
Ethyl ether	ND		61		ug/m3			11/21/18 18:26	1
Ethylbenzene	ND		8.7		ug/m3			11/21/18 18:26	1
Heptane	19		16		ug/m3			11/21/18 18:26	1
Hexachlorobutadiene	ND		110		ug/m3			11/21/18 18:26	1
Hexane	31		14		ug/m3			11/21/18 18:26	1
Methyl tert-butyl ether	ND		36		ug/m3			11/21/18 18:26	1
Methylene Chloride	41		35		ug/m3			11/21/18 18:26	1
m-Xylene & p-Xylene	ND		8.7		ug/m3			11/21/18 18:26	1
Naphthalene	ND		21		ug/m3			11/21/18 18:26	1
Nonane	ND		21		ug/m3			11/21/18 18:26	1
Octane	ND		19		ug/m3			11/21/18 18:26	1
o-Xylene	ND		8.7		ug/m3			11/21/18 18:26	1
Pentane	ND		74		ug/m3			11/21/18 18:26	1
Propylbenzene	ND		20		ug/m3			11/21/18 18:26	1
Styrene	ND		8.5		ug/m3			11/21/18 18:26	1
Tetrachloroethene	28		14		ug/m3			11/21/18 18:26	1
Toluene	ND		38		ug/m3			11/21/18 18:26	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/21/18 18:26	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/21/18 18:26	1
Trichloroethene	ND		11		ug/m3			11/21/18 18:26	1
Trichlorofluoromethane	130		11		ug/m3			11/21/18 18:26	1
Undecane	ND		64		ug/m3			11/21/18 18:26	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-05

Lab Sample ID: 140-13415-5

Date Collected: 11/16/18 15:16

Matrix: Air

Date Received: 11/20/18 09:45

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		35		ug/m3			11/21/18 18:26	1
Vinyl chloride	66		10		ug/m3			11/21/18 18:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		60 - 140					11/21/18 18:26	1

Client Sample ID: G-111618-JH-06

Lab Sample ID: 140-13415-6

Date Collected: 11/16/18 15:59

Matrix: Air

Date Received: 11/20/18 09:45

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	94		2.0		ppb v/v			11/21/18 19:18	1
1,1,2,2-Tetrachloroethane	ND		2.0		ppb v/v			11/21/18 19:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ppb v/v			11/21/18 19:18	1
1,1,2-Trichloroethane	ND		2.0		ppb v/v			11/21/18 19:18	1
1,1-Dichloroethane	110		2.0		ppb v/v			11/21/18 19:18	1
1,1-Dichloroethene	14		2.0		ppb v/v			11/21/18 19:18	1
1,2,4-Trichlorobenzene	ND		10		ppb v/v			11/21/18 19:18	1
1,2,4-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 19:18	1
1,2-Dibromoethane (EDB)	ND		2.0		ppb v/v			11/21/18 19:18	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	8.5		2.0		ppb v/v			11/21/18 19:18	1
1,2-Dichlorobenzene	ND		4.0		ppb v/v			11/21/18 19:18	1
1,2-Dichloroethane	ND		2.0		ppb v/v			11/21/18 19:18	1
1,2-Dichloropropane	ND		2.0		ppb v/v			11/21/18 19:18	1
1,3,5-Trimethylbenzene	ND		2.0		ppb v/v			11/21/18 19:18	1
1,3-Butadiene	ND		4.0		ppb v/v			11/21/18 19:18	1
1,3-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 19:18	1
1,4-Dichlorobenzene	ND		2.0		ppb v/v			11/21/18 19:18	1
2-Butanone (MEK)	ND		10		ppb v/v			11/21/18 19:18	1
2-Hexanone	ND		4.0		ppb v/v			11/21/18 19:18	1
3-Chloropropene	ND		2.0		ppb v/v			11/21/18 19:18	1
4-Methyl-2-pentanone (MIBK)	ND		10		ppb v/v			11/21/18 19:18	1
Acetone	ND		75		ppb v/v			11/21/18 19:18	1
Acetonitrile	ND		10		ppb v/v			11/21/18 19:18	1
Acrolein	ND		10		ppb v/v			11/21/18 19:18	1
Acrylonitrile	ND		20		ppb v/v			11/21/18 19:18	1
Alpha Methyl Styrene	ND		4.0		ppb v/v			11/21/18 19:18	1
Benzene	2.0		2.0		ppb v/v			11/21/18 19:18	1
Benzyl chloride	ND		4.0		ppb v/v			11/21/18 19:18	1
Bromodichloromethane	ND		2.0		ppb v/v			11/21/18 19:18	1
Bromoform	ND		2.0		ppb v/v			11/21/18 19:18	1
Bromomethane	ND		2.0		ppb v/v			11/21/18 19:18	1
Butane	31		10		ppb v/v			11/21/18 19:18	1
Carbon disulfide	ND		4.0		ppb v/v			11/21/18 19:18	1
Carbon tetrachloride	ND		2.0		ppb v/v			11/21/18 19:18	1
Chlorobenzene	2.9		2.0		ppb v/v			11/21/18 19:18	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-06

Lab Sample ID: 140-13415-6

Date Collected: 11/16/18 15:59

Matrix: Air

Date Received: 11/20/18 09:45

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
Chlorodifluoromethane	17		2.0		ppb v/v			11/21/18 19:18	1
Chloroethane	38		2.0		ppb v/v			11/21/18 19:18	1
Chloroform	9.9		2.0		ppb v/v			11/21/18 19:18	1
Chloromethane	ND		10		ppb v/v			11/21/18 19:18	1
cis-1,2-Dichloroethene	8.2		2.0		ppb v/v			11/21/18 19:18	1
cis-1,3-Dichloropropene	ND		4.0		ppb v/v			11/21/18 19:18	1
Cumene	ND		4.0		ppb v/v			11/21/18 19:18	1
Cyclohexane	10		4.0		ppb v/v			11/21/18 19:18	1
Decane	ND		10		ppb v/v			11/21/18 19:18	1
Dibromochloromethane	ND		2.0		ppb v/v			11/21/18 19:18	1
Dibromomethane	ND		4.0		ppb v/v			11/21/18 19:18	1
Dichlorodifluoromethane	49		2.0		ppb v/v			11/21/18 19:18	1
Dodecane	ND		10		ppb v/v			11/21/18 19:18	1
Ethyl ether	ND		20		ppb v/v			11/21/18 19:18	1
Ethylbenzene	ND		2.0		ppb v/v			11/21/18 19:18	1
Heptane	6.9		4.0		ppb v/v			11/21/18 19:18	1
Hexachlorobutadiene	ND		10		ppb v/v			11/21/18 19:18	1
Hexane	11		4.0		ppb v/v			11/21/18 19:18	1
Methyl tert-butyl ether	ND		10		ppb v/v			11/21/18 19:18	1
Methylene Chloride	ND		10		ppb v/v			11/21/18 19:18	1
m-Xylene & p-Xylene	2.2		2.0		ppb v/v			11/21/18 19:18	1
Naphthalene	ND		4.0		ppb v/v			11/21/18 19:18	1
Nonane	ND		4.0		ppb v/v			11/21/18 19:18	1
Octane	ND		4.0		ppb v/v			11/21/18 19:18	1
o-Xylene	ND		2.0		ppb v/v			11/21/18 19:18	1
Pentane	ND		25		ppb v/v			11/21/18 19:18	1
Propylbenzene	ND		4.0		ppb v/v			11/21/18 19:18	1
Styrene	ND		2.0		ppb v/v			11/21/18 19:18	1
Tetrachloroethene	23		2.0		ppb v/v			11/21/18 19:18	1
Toluene	ND		10		ppb v/v			11/21/18 19:18	1
trans-1,2-Dichloroethene	ND		2.0		ppb v/v			11/21/18 19:18	1
trans-1,3-Dichloropropene	ND		2.0		ppb v/v			11/21/18 19:18	1
Trichloroethene	2.7		2.0		ppb v/v			11/21/18 19:18	1
Trichlorofluoromethane	24		2.0		ppb v/v			11/21/18 19:18	1
Undecane	ND		10		ppb v/v			11/21/18 19:18	1
Vinyl acetate	ND		10		ppb v/v			11/21/18 19:18	1
Vinyl chloride	63		4.0		ppb v/v			11/21/18 19:18	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	510		11		ug/m3			11/21/18 19:18	1
1,1,2,2-Tetrachloroethane	ND		14		ug/m3			11/21/18 19:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		15		ug/m3			11/21/18 19:18	1
1,1,2-Trichloroethane	ND		11		ug/m3			11/21/18 19:18	1
1,1-Dichloroethane	450		8.1		ug/m3			11/21/18 19:18	1
1,1-Dichloroethene	54		7.9		ug/m3			11/21/18 19:18	1
1,2,4-Trichlorobenzene	ND		74		ug/m3			11/21/18 19:18	1
1,2,4-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 19:18	1
1,2-Dibromoethane (EDB)	ND		15		ug/m3			11/21/18 19:18	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-06

Lab Sample ID: 140-13415-6

Date Collected: 11/16/18 15:59

Matrix: Air

Date Received: 11/20/18 09:45

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	60		14		ug/m3			11/21/18 19:18	1
1,2-Dichlorobenzene	ND		24		ug/m3			11/21/18 19:18	1
1,2-Dichloroethane	ND		8.1		ug/m3			11/21/18 19:18	1
1,2-Dichloropropane	ND		9.2		ug/m3			11/21/18 19:18	1
1,3,5-Trimethylbenzene	ND		9.8		ug/m3			11/21/18 19:18	1
1,3-Butadiene	ND		8.8		ug/m3			11/21/18 19:18	1
1,3-Dichlorobenzene	ND		12		ug/m3			11/21/18 19:18	1
1,4-Dichlorobenzene	ND		12		ug/m3			11/21/18 19:18	1
2-Butanone (MEK)	ND		29		ug/m3			11/21/18 19:18	1
2-Hexanone	ND		16		ug/m3			11/21/18 19:18	1
3-Chloropropene	ND		6.3		ug/m3			11/21/18 19:18	1
4-Methyl-2-pentanone (MIBK)	ND		41		ug/m3			11/21/18 19:18	1
Acetone	ND		180		ug/m3			11/21/18 19:18	1
Acetonitrile	ND		17		ug/m3			11/21/18 19:18	1
Acrolein	ND		23		ug/m3			11/21/18 19:18	1
Acrylonitrile	ND		43		ug/m3			11/21/18 19:18	1
Alpha Methyl Styrene	ND		19		ug/m3			11/21/18 19:18	1
Benzene	6.3		6.4		ug/m3			11/21/18 19:18	1
Benzyl chloride	ND		21		ug/m3			11/21/18 19:18	1
Bromodichloromethane	ND		13		ug/m3			11/21/18 19:18	1
Bromoform	ND		21		ug/m3			11/21/18 19:18	1
Bromomethane	ND		7.8		ug/m3			11/21/18 19:18	1
Butane	75		24		ug/m3			11/21/18 19:18	1
Carbon disulfide	ND		12		ug/m3			11/21/18 19:18	1
Carbon tetrachloride	ND		13		ug/m3			11/21/18 19:18	1
Chlorobenzene	13		9.2		ug/m3			11/21/18 19:18	1
Chlorodifluoromethane	59		7.1		ug/m3			11/21/18 19:18	1
Chloroethane	100		5.3		ug/m3			11/21/18 19:18	1
Chloroform	48		9.8		ug/m3			11/21/18 19:18	1
Chloromethane	ND		21		ug/m3			11/21/18 19:18	1
cis-1,2-Dichloroethene	32		7.9		ug/m3			11/21/18 19:18	1
cis-1,3-Dichloropropene	ND		18		ug/m3			11/21/18 19:18	1
Cumene	ND		20		ug/m3			11/21/18 19:18	1
Cyclohexane	34		14		ug/m3			11/21/18 19:18	1
Decane	ND		58		ug/m3			11/21/18 19:18	1
Dibromochloromethane	ND		17		ug/m3			11/21/18 19:18	1
Dibromomethane	ND		28		ug/m3			11/21/18 19:18	1
Dichlorodifluoromethane	240		9.9		ug/m3			11/21/18 19:18	1
Dodecane	ND		70		ug/m3			11/21/18 19:18	1
Ethyl ether	ND		61		ug/m3			11/21/18 19:18	1
Ethylbenzene	ND		8.7		ug/m3			11/21/18 19:18	1
Heptane	28		16		ug/m3			11/21/18 19:18	1
Hexachlorobutadiene	ND		110		ug/m3			11/21/18 19:18	1
Hexane	38		14		ug/m3			11/21/18 19:18	1
Methyl tert-butyl ether	ND		36		ug/m3			11/21/18 19:18	1
Methylene Chloride	ND		35		ug/m3			11/21/18 19:18	1
m-Xylene & p-Xylene	9.7		8.7		ug/m3			11/21/18 19:18	1
Naphthalene	ND		21		ug/m3			11/21/18 19:18	1

TestAmerica Knoxville

Client Sample Results

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-06

Lab Sample ID: 140-13415-6

Date Collected: 11/16/18 15:59

Matrix: Air

Date Received: 11/20/18 09:45

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		21		ug/m3			11/21/18 19:18	1
Octane	ND		19		ug/m3			11/21/18 19:18	1
o-Xylene	ND		8.7		ug/m3			11/21/18 19:18	1
Pentane	ND		74		ug/m3			11/21/18 19:18	1
Propylbenzene	ND		20		ug/m3			11/21/18 19:18	1
Styrene	ND		8.5		ug/m3			11/21/18 19:18	1
Tetrachloroethene	150		14		ug/m3			11/21/18 19:18	1
Toluene	ND		38		ug/m3			11/21/18 19:18	1
trans-1,2-Dichloroethene	ND		7.9		ug/m3			11/21/18 19:18	1
trans-1,3-Dichloropropene	ND		9.1		ug/m3			11/21/18 19:18	1
Trichloroethene	15		11		ug/m3			11/21/18 19:18	1
Trichlorofluoromethane	140		11		ug/m3			11/21/18 19:18	1
Undecane	ND		64		ug/m3			11/21/18 19:18	1
Vinyl acetate	ND		35		ug/m3			11/21/18 19:18	1
Vinyl chloride	160		10		ug/m3			11/21/18 19:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		60 - 140					11/21/18 19:18	1

Default Detection Limits

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

TestAmerica Job ID: 140-13415-1

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	0.052	ppb v/v	TO-15
1,1,2-Trichloroethane	1.1	0.28	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	0.40	0.070	ppb v/v	TO-15
1,2-Dichlorobenzene	2.4	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	0.40	0.058	ppb v/v	TO-15
2-Hexanone	1.6	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)	1.0	0.20	ppb v/v	TO-15
4-Methyl-2-pentanone (MIBK)	4.1	0.80	ug/m3	TO-15
Acetone	7.5	1.4	ppb v/v	TO-15
Acetone	18	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: 140-13415-1

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	1.0	0.073	ppb v/v	TO-15
Butane	2.4	0.17	ug/m3	TO-15
Carbon disulfide	0.40	0.031	ppb v/v	TO-15
Carbon disulfide	1.2	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	1.0	0.16	ppb v/v	TO-15
Chloromethane	2.1	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	0.40	0.074	ppb v/v	TO-15
cis-1,3-Dichloropropene	1.8	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	0.40	0.040	ppb v/v	TO-15
Cyclohexane	1.4	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	0.40	0.047	ppb v/v	TO-15
Heptane	1.6	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: 140-13415-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	RL	MDL	Units	Method
Hexane	0.40	0.032	ppb v/v	TO-15
Hexane	1.4	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	1.0	0.32	ppb v/v	TO-15
Methylene Chloride	3.5	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	0.40	0.090	ppb v/v	TO-15
Naphthalene	2.1	0.47	ug/m3	TO-15
Nonane	0.40	0.043	ppb v/v	TO-15
Nonane	2.1	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	2.5	0.40	ppb v/v	TO-15
Pentane	7.4	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	1.0	0.12	ppb v/v	TO-15
Toluene	3.8	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	0.025	ppb v/v	TO-15
Trichlorofluoromethane	1.1	0.14	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	0.40	0.071	ppb v/v	TO-15
Vinyl chloride	1.0	0.18	ug/m3	TO-15

Surrogate Summary

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

TestAmerica Job ID: 140-13415-1

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)
140-13415-1	G-111618-JH-01	102
140-13415-2	G-111618-JH-02	102
140-13415-3	G-111618-JH-03	102
140-13415-4	G-111618-JH-04	102
140-13415-5	G-111618-JH-05	103
140-13415-6	G-111618-JH-06	103
LCS 140-25588/1002	Lab Control Sample	111
MB 140-25588/5	Method Blank	103

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

QC Sample Results

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

TestAmerica Job ID: 140-13415-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 140-25588/5

Matrix: Air

Analysis Batch: 25588

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			11/21/18 13:06	1
1,1,2,2-Tetrachloroethane	ND		0.20		ppb v/v			11/21/18 13:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.20		ppb v/v			11/21/18 13:06	1
1,1,2-Trichloroethane	ND		0.20		ppb v/v			11/21/18 13:06	1
1,1-Dichloroethane	ND		0.20		ppb v/v			11/21/18 13:06	1
1,1-Dichloroethene	ND		0.20		ppb v/v			11/21/18 13:06	1
1,2,4-Trichlorobenzene	ND		1.0		ppb v/v			11/21/18 13:06	1
1,2,4-Trimethylbenzene	ND		0.20		ppb v/v			11/21/18 13:06	1
1,2-Dibromoethane (EDB)	ND		0.20		ppb v/v			11/21/18 13:06	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.20		ppb v/v			11/21/18 13:06	1
1,2-Dichlorobenzene	ND		0.40		ppb v/v			11/21/18 13:06	1
1,2-Dichloroethane	ND		0.20		ppb v/v			11/21/18 13:06	1
1,2-Dichloropropane	ND		0.20		ppb v/v			11/21/18 13:06	1
1,3,5-Trimethylbenzene	ND		0.20		ppb v/v			11/21/18 13:06	1
1,3-Butadiene	ND		0.40		ppb v/v			11/21/18 13:06	1
1,3-Dichlorobenzene	ND		0.20		ppb v/v			11/21/18 13:06	1
1,4-Dichlorobenzene	ND		0.20		ppb v/v			11/21/18 13:06	1
2-Butanone (MEK)	ND		1.0		ppb v/v			11/21/18 13:06	1
2-Hexanone	ND		0.40		ppb v/v			11/21/18 13:06	1
3-Chloropropene	ND		0.20		ppb v/v			11/21/18 13:06	1
4-Methyl-2-pentanone (MIBK)	ND		1.0		ppb v/v			11/21/18 13:06	1
Acetone	ND		7.5		ppb v/v			11/21/18 13:06	1
Acetonitrile	ND		1.0		ppb v/v			11/21/18 13:06	1
Acrolein	ND		1.0		ppb v/v			11/21/18 13:06	1
Acrylonitrile	ND		2.0		ppb v/v			11/21/18 13:06	1
Alpha Methyl Styrene	ND		0.40		ppb v/v			11/21/18 13:06	1
Benzene	ND		0.20		ppb v/v			11/21/18 13:06	1
Benzyl chloride	ND		0.40		ppb v/v			11/21/18 13:06	1
Bromodichloromethane	ND		0.20		ppb v/v			11/21/18 13:06	1
Bromoform	ND		0.20		ppb v/v			11/21/18 13:06	1
Bromomethane	ND		0.20		ppb v/v			11/21/18 13:06	1
Butane	ND		1.0		ppb v/v			11/21/18 13:06	1
Carbon disulfide	ND		0.40		ppb v/v			11/21/18 13:06	1
Carbon tetrachloride	ND		0.20		ppb v/v			11/21/18 13:06	1
Chlorobenzene	ND		0.20		ppb v/v			11/21/18 13:06	1
Chlorodifluoromethane	ND		0.20		ppb v/v			11/21/18 13:06	1
Chloroethane	ND		0.20		ppb v/v			11/21/18 13:06	1
Chloroform	ND		0.20		ppb v/v			11/21/18 13:06	1
Chloromethane	ND		1.0		ppb v/v			11/21/18 13:06	1
cis-1,2-Dichloroethene	ND		0.20		ppb v/v			11/21/18 13:06	1
cis-1,3-Dichloropropene	ND		0.40		ppb v/v			11/21/18 13:06	1
Cumene	ND		0.40		ppb v/v			11/21/18 13:06	1
Cyclohexane	ND		0.40		ppb v/v			11/21/18 13:06	1
Decane	ND		1.0		ppb v/v			11/21/18 13:06	1
Dibromochloromethane	ND		0.20		ppb v/v			11/21/18 13:06	1
Dibromomethane	ND		0.40		ppb v/v			11/21/18 13:06	1
Dichlorodifluoromethane	ND		0.20		ppb v/v			11/21/18 13:06	1
Dodecane	ND		1.0		ppb v/v			11/21/18 13:06	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-13415-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-25588/5
Matrix: Air
Analysis Batch: 25588

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			11/21/18 13:06	1
Ethylbenzene	ND		0.20		ppb v/v			11/21/18 13:06	1
Heptane	ND		0.40		ppb v/v			11/21/18 13:06	1
Hexachlorobutadiene	ND		1.0		ppb v/v			11/21/18 13:06	1
Hexane	ND		0.40		ppb v/v			11/21/18 13:06	1
Methyl tert-butyl ether	ND		1.0		ppb v/v			11/21/18 13:06	1
Methylene Chloride	ND		1.0		ppb v/v			11/21/18 13:06	1
m-Xylene & p-Xylene	ND		0.20		ppb v/v			11/21/18 13:06	1
Naphthalene	ND		0.40		ppb v/v			11/21/18 13:06	1
Nonane	ND		0.40		ppb v/v			11/21/18 13:06	1
Octane	ND		0.40		ppb v/v			11/21/18 13:06	1
o-Xylene	ND		0.20		ppb v/v			11/21/18 13:06	1
Pentane	ND		2.5		ppb v/v			11/21/18 13:06	1
Propylbenzene	ND		0.40		ppb v/v			11/21/18 13:06	1
Styrene	ND		0.20		ppb v/v			11/21/18 13:06	1
Tetrachloroethene	ND		0.20		ppb v/v			11/21/18 13:06	1
Toluene	ND		1.0		ppb v/v			11/21/18 13:06	1
trans-1,2-Dichloroethene	ND		0.20		ppb v/v			11/21/18 13:06	1
trans-1,3-Dichloropropene	ND		0.20		ppb v/v			11/21/18 13:06	1
Trichloroethene	ND		0.20		ppb v/v			11/21/18 13:06	1
Trichlorofluoromethane	ND		0.20		ppb v/v			11/21/18 13:06	1
Undecane	ND		1.0		ppb v/v			11/21/18 13:06	1
Vinyl acetate	ND		1.0		ppb v/v			11/21/18 13:06	1
Vinyl chloride	ND		0.40		ppb v/v			11/21/18 13:06	1

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.1		ug/m3			11/21/18 13:06	1
1,1,2,2-Tetrachloroethane	ND		1.4		ug/m3			11/21/18 13:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.5		ug/m3			11/21/18 13:06	1
1,1,2-Trichloroethane	ND		1.1		ug/m3			11/21/18 13:06	1
1,1-Dichloroethane	ND		0.81		ug/m3			11/21/18 13:06	1
1,1-Dichloroethene	ND		0.79		ug/m3			11/21/18 13:06	1
1,2,4-Trichlorobenzene	ND		7.4		ug/m3			11/21/18 13:06	1
1,2,4-Trimethylbenzene	ND		0.98		ug/m3			11/21/18 13:06	1
1,2-Dibromoethane (EDB)	ND		1.5		ug/m3			11/21/18 13:06	1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		1.4		ug/m3			11/21/18 13:06	1
1,2-Dichlorobenzene	ND		2.4		ug/m3			11/21/18 13:06	1
1,2-Dichloroethane	ND		0.81		ug/m3			11/21/18 13:06	1
1,2-Dichloropropane	ND		0.92		ug/m3			11/21/18 13:06	1
1,3,5-Trimethylbenzene	ND		0.98		ug/m3			11/21/18 13:06	1
1,3-Butadiene	ND		0.88		ug/m3			11/21/18 13:06	1
1,3-Dichlorobenzene	ND		1.2		ug/m3			11/21/18 13:06	1
1,4-Dichlorobenzene	ND		1.2		ug/m3			11/21/18 13:06	1
2-Butanone (MEK)	ND		2.9		ug/m3			11/21/18 13:06	1
2-Hexanone	ND		1.6		ug/m3			11/21/18 13:06	1
3-Chloropropene	ND		0.63		ug/m3			11/21/18 13:06	1
4-Methyl-2-pentanone (MIBK)	ND		4.1		ug/m3			11/21/18 13:06	1
Acetone	ND		18		ug/m3			11/21/18 13:06	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-13415-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-25588/5

Matrix: Air

Analysis Batch: 25588

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			11/21/18 13:06	1
Acrolein	ND		2.3		ug/m3			11/21/18 13:06	1
Acrylonitrile	ND		4.3		ug/m3			11/21/18 13:06	1
Alpha Methyl Styrene	ND		1.9		ug/m3			11/21/18 13:06	1
Benzene	ND		0.64		ug/m3			11/21/18 13:06	1
Benzyl chloride	ND		2.1		ug/m3			11/21/18 13:06	1
Bromodichloromethane	ND		1.3		ug/m3			11/21/18 13:06	1
Bromoform	ND		2.1		ug/m3			11/21/18 13:06	1
Bromomethane	ND		0.78		ug/m3			11/21/18 13:06	1
Butane	ND		2.4		ug/m3			11/21/18 13:06	1
Carbon disulfide	ND		1.2		ug/m3			11/21/18 13:06	1
Carbon tetrachloride	ND		1.3		ug/m3			11/21/18 13:06	1
Chlorobenzene	ND		0.92		ug/m3			11/21/18 13:06	1
Chlorodifluoromethane	ND		0.71		ug/m3			11/21/18 13:06	1
Chloroethane	ND		0.53		ug/m3			11/21/18 13:06	1
Chloroform	ND		0.98		ug/m3			11/21/18 13:06	1
Chloromethane	ND		2.1		ug/m3			11/21/18 13:06	1
cis-1,2-Dichloroethene	ND		0.79		ug/m3			11/21/18 13:06	1
cis-1,3-Dichloropropene	ND		1.8		ug/m3			11/21/18 13:06	1
Cumene	ND		2.0		ug/m3			11/21/18 13:06	1
Cyclohexane	ND		1.4		ug/m3			11/21/18 13:06	1
Decane	ND		5.8		ug/m3			11/21/18 13:06	1
Dibromochloromethane	ND		1.7		ug/m3			11/21/18 13:06	1
Dibromomethane	ND		2.8		ug/m3			11/21/18 13:06	1
Dichlorodifluoromethane	ND		0.99		ug/m3			11/21/18 13:06	1
Dodecane	ND		7.0		ug/m3			11/21/18 13:06	1
Ethyl ether	ND		6.1		ug/m3			11/21/18 13:06	1
Ethylbenzene	ND		0.87		ug/m3			11/21/18 13:06	1
Heptane	ND		1.6		ug/m3			11/21/18 13:06	1
Hexachlorobutadiene	ND		11		ug/m3			11/21/18 13:06	1
Hexane	ND		1.4		ug/m3			11/21/18 13:06	1
Methyl tert-butyl ether	ND		3.6		ug/m3			11/21/18 13:06	1
Methylene Chloride	ND		3.5		ug/m3			11/21/18 13:06	1
m-Xylene & p-Xylene	ND		0.87		ug/m3			11/21/18 13:06	1
Naphthalene	ND		2.1		ug/m3			11/21/18 13:06	1
Nonane	ND		2.1		ug/m3			11/21/18 13:06	1
Octane	ND		1.9		ug/m3			11/21/18 13:06	1
o-Xylene	ND		0.87		ug/m3			11/21/18 13:06	1
Pentane	ND		7.4		ug/m3			11/21/18 13:06	1
Propylbenzene	ND		2.0		ug/m3			11/21/18 13:06	1
Styrene	ND		0.85		ug/m3			11/21/18 13:06	1
Tetrachloroethene	ND		1.4		ug/m3			11/21/18 13:06	1
Toluene	ND		3.8		ug/m3			11/21/18 13:06	1
trans-1,2-Dichloroethene	ND		0.79		ug/m3			11/21/18 13:06	1
trans-1,3-Dichloropropene	ND		0.91		ug/m3			11/21/18 13:06	1
Trichloroethene	ND		1.1		ug/m3			11/21/18 13:06	1
Trichlorofluoromethane	ND		1.1		ug/m3			11/21/18 13:06	1
Undecane	ND		6.4		ug/m3			11/21/18 13:06	1

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-13415-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 140-25588/5

Matrix: Air

Analysis Batch: 25588

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			11/21/18 13:06	1
Vinyl chloride	ND		1.0		ug/m3			11/21/18 13:06	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		60 - 140					11/21/18 13:06	1

Lab Sample ID: LCS 140-25588/1002

Matrix: Air

Analysis Batch: 25588

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	2.27		ppb v/v		114	70 - 130
1,1,2,2-Tetrachloroethane	2.00	2.25		ppb v/v		112	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	2.00	2.00		ppb v/v		100	70 - 130
1,1,2-Trichloroethane	2.00	2.07		ppb v/v		104	70 - 130
1,1-Dichloroethane	2.00	1.97		ppb v/v		99	70 - 130
1,1-Dichloroethene	2.00	1.78		ppb v/v		89	70 - 130
1,2,4-Trichlorobenzene	2.00	2.29		ppb v/v		114	60 - 140
1,2,4-Trimethylbenzene	2.00	2.27		ppb v/v		114	70 - 130
1,2-Dibromoethane (EDB)	2.00	2.14		ppb v/v		107	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	2.00	1.93		ppb v/v		96	60 - 140
1,2-Dichlorobenzene	2.00	2.15		ppb v/v		107	70 - 130
1,2-Dichloroethane	2.00	2.16		ppb v/v		108	70 - 130
1,2-Dichloropropane	2.00	2.02		ppb v/v		101	70 - 130
1,3,5-Trimethylbenzene	2.00	2.15		ppb v/v		108	70 - 130
1,3-Butadiene	2.00	1.76		ppb v/v		88	60 - 140
1,3-Dichlorobenzene	2.00	2.19		ppb v/v		109	70 - 130
1,4-Dichlorobenzene	2.00	2.17		ppb v/v		109	70 - 130
2-Butanone (MEK)	2.00	1.83		ppb v/v		92	60 - 140
2-Hexanone	2.00	2.10		ppb v/v		105	60 - 140
3-Chloropropene	2.00	2.27		ppb v/v		113	60 - 140
4-Methyl-2-pentanone (MIBK)	2.00	2.23		ppb v/v		112	60 - 140
Acetone	6.00	6.22		ppb v/v		104	60 - 140
Acetonitrile	2.00	2.12		ppb v/v		106	60 - 140
Acrolein	2.00	2.41		ppb v/v		121	60 - 140
Acrylonitrile	2.00	1.77		ppb v/v		88	60 - 140
Alpha Methyl Styrene	2.00	2.22		ppb v/v		111	60 - 140
Benzene	2.00	1.91		ppb v/v		95	70 - 130
Benzyl chloride	2.00	2.37		ppb v/v		119	70 - 130
Bromodichloromethane	2.00	2.26		ppb v/v		113	70 - 130
Bromoform	2.00	2.44		ppb v/v		122	60 - 140
Bromomethane	2.00	2.15		ppb v/v		107	70 - 130
Butane	2.00	1.78		ppb v/v		89	60 - 140
Carbon disulfide	2.00	1.88		ppb v/v		94	70 - 130
Carbon tetrachloride	2.00	2.40		ppb v/v		120	70 - 130
Chlorobenzene	2.00	2.06		ppb v/v		103	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-13415-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-25588/1002

Matrix: Air

Analysis Batch: 25588

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	2.17		ppb v/v		109	60 - 140
Chloroethane	2.00	2.19		ppb v/v		109	70 - 130
Chloroform	2.00	2.11		ppb v/v		106	70 - 130
Chloromethane	2.00	1.73		ppb v/v		87	60 - 140
cis-1,2-Dichloroethene	2.00	1.93		ppb v/v		96	70 - 130
cis-1,3-Dichloropropene	2.00	2.25		ppb v/v		112	70 - 130
Cumene	2.00	2.17		ppb v/v		109	70 - 130
Cyclohexane	2.00	2.10		ppb v/v		105	70 - 130
Decane	2.00	2.14		ppb v/v		107	60 - 140
Dibromochloromethane	2.00	2.38		ppb v/v		119	70 - 130
Dibromomethane	2.00	2.15		ppb v/v		108	70 - 130
Dichlorodifluoromethane	2.00	2.26		ppb v/v		113	60 - 140
Dodecane	2.00	2.38		ppb v/v		119	60 - 140
Ethyl ether	2.00	1.98		ppb v/v		99	60 - 140
Ethylbenzene	2.00	2.13		ppb v/v		106	70 - 130
Heptane	2.00	2.07		ppb v/v		103	70 - 130
Hexachlorobutadiene	2.00	2.39		ppb v/v		119	60 - 140
Hexane	2.00	1.97		ppb v/v		99	70 - 130
Methyl tert-butyl ether	2.00	2.11		ppb v/v		105	60 - 140
Methylene Chloride	2.00	1.67		ppb v/v		83	70 - 130
m-Xylene & p-Xylene	4.00	4.37		ppb v/v		109	70 - 130
Naphthalene	2.00	2.11		ppb v/v		105	60 - 140
Nonane	2.00	2.17		ppb v/v		109	60 - 140
Octane	2.00	2.07		ppb v/v		103	70 - 130
o-Xylene	2.00	2.19		ppb v/v		110	70 - 130
Pentane	2.00	2.30		ppb v/v		115	70 - 130
Propylbenzene	2.00	2.19		ppb v/v		110	70 - 130
Styrene	2.00	2.23		ppb v/v		112	70 - 130
Tetrachloroethene	2.00	2.11		ppb v/v		105	70 - 130
Toluene	2.00	2.02		ppb v/v		101	70 - 130
trans-1,2-Dichloroethene	2.00	1.89		ppb v/v		94	70 - 130
trans-1,3-Dichloropropene	2.00	2.27		ppb v/v		113	70 - 130
Trichloroethene	2.00	2.06		ppb v/v		103	70 - 130
Trichlorofluoromethane	2.00	2.47		ppb v/v		124	60 - 140
Undecane	2.00	2.25		ppb v/v		112	60 - 140
Vinyl acetate	2.00	2.19		ppb v/v		109	60 - 140
Vinyl chloride	2.00	1.66		ppb v/v		83	70 - 130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	11	12.4		ug/m3		114	70 - 130
1,1,2,2-Tetrachloroethane	14	15.4		ug/m3		112	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	15	15.3		ug/m3		100	70 - 130
1,1,2-Trichloroethane	11	11.3		ug/m3		104	70 - 130
1,1-Dichloroethane	8.1	7.98		ug/m3		99	70 - 130
1,1-Dichloroethene	7.9	7.06		ug/m3		89	70 - 130
1,2,4-Trichlorobenzene	15	17.0		ug/m3		114	60 - 140
1,2,4-Trimethylbenzene	9.8	11.2		ug/m3		114	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-13415-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-25588/1002

Matrix: Air

Analysis Batch: 25588

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	16.4		ug/m3		107	70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	14	13.5		ug/m3		96	60 - 140
1,2-Dichlorobenzene	12	12.9		ug/m3		107	70 - 130
1,2-Dichloroethane	8.1	8.75		ug/m3		108	70 - 130
1,2-Dichloropropane	9.2	9.32		ug/m3		101	70 - 130
1,3,5-Trimethylbenzene	9.8	10.6		ug/m3		108	70 - 130
1,3-Butadiene	4.4	3.88		ug/m3		88	60 - 140
1,3-Dichlorobenzene	12	13.1		ug/m3		109	70 - 130
1,4-Dichlorobenzene	12	13.1		ug/m3		109	70 - 130
2-Butanone (MEK)	5.9	5.41		ug/m3		92	60 - 140
2-Hexanone	8.2	8.61		ug/m3		105	60 - 140
3-Chloropropene	6.3	7.10		ug/m3		113	60 - 140
4-Methyl-2-pentanone (MIBK)	8.2	9.14		ug/m3		112	60 - 140
Acetone	14	14.8		ug/m3		104	60 - 140
Acetonitrile	3.4	3.57		ug/m3		106	60 - 140
Acrolein	4.6	5.54		ug/m3		121	60 - 140
Acrylonitrile	4.3	3.83		ug/m3		88	60 - 140
Alpha Methyl Styrene	9.7	10.7		ug/m3		111	60 - 140
Benzene	6.4	6.10		ug/m3		95	70 - 130
Benzyl chloride	10	12.3		ug/m3		119	70 - 130
Bromodichloromethane	13	15.1		ug/m3		113	70 - 130
Bromoform	21	25.2		ug/m3		122	60 - 140
Bromomethane	7.8	8.35		ug/m3		107	70 - 130
Butane	4.8	4.24		ug/m3		89	60 - 140
Carbon disulfide	6.2	5.87		ug/m3		94	70 - 130
Carbon tetrachloride	13	15.1		ug/m3		120	70 - 130
Chlorobenzene	9.2	9.46		ug/m3		103	70 - 130
Chlorodifluoromethane	7.1	7.69		ug/m3		109	60 - 140
Chloroethane	5.3	5.78		ug/m3		109	70 - 130
Chloroform	9.8	10.3		ug/m3		106	70 - 130
Chloromethane	4.1	3.58		ug/m3		87	60 - 140
cis-1,2-Dichloroethene	7.9	7.64		ug/m3		96	70 - 130
cis-1,3-Dichloropropene	9.1	10.2		ug/m3		112	70 - 130
Cumene	9.8	10.7		ug/m3		109	70 - 130
Cyclohexane	6.9	7.21		ug/m3		105	70 - 130
Decane	12	12.5		ug/m3		107	60 - 140
Dibromochloromethane	17	20.3		ug/m3		119	70 - 130
Dibromomethane	14	15.3		ug/m3		108	70 - 130
Dichlorodifluoromethane	9.9	11.2		ug/m3		113	60 - 140
Dodecane	14	16.6		ug/m3		119	60 - 140
Ethyl ether	6.1	6.01		ug/m3		99	60 - 140
Ethylbenzene	8.7	9.23		ug/m3		106	70 - 130
Heptane	8.2	8.47		ug/m3		103	70 - 130
Hexachlorobutadiene	21	25.4		ug/m3		119	60 - 140
Hexane	7.0	6.95		ug/m3		99	70 - 130
Methyl tert-butyl ether	7.2	7.60		ug/m3		105	60 - 140
Methylene Chloride	6.9	5.79		ug/m3		83	70 - 130

TestAmerica Knoxville

QC Sample Results

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

TestAmerica Job ID: 140-13415-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 140-25588/1002

Matrix: Air

Analysis Batch: 25588

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	19.0		ug/m3		109	70 - 130
Naphthalene	10	11.1		ug/m3		105	60 - 140
Nonane	10	11.4		ug/m3		109	60 - 140
Octane	9.3	9.65		ug/m3		103	70 - 130
o-Xylene	8.7	9.53		ug/m3		110	70 - 130
Pentane	5.9	6.79		ug/m3		115	70 - 130
Propylbenzene	9.8	10.8		ug/m3		110	70 - 130
Styrene	8.5	9.52		ug/m3		112	70 - 130
Tetrachloroethene	14	14.3		ug/m3		105	70 - 130
Toluene	7.5	7.62		ug/m3		101	70 - 130
trans-1,2-Dichloroethene	7.9	7.48		ug/m3		94	70 - 130
trans-1,3-Dichloropropene	9.1	10.3		ug/m3		113	70 - 130
Trichloroethene	11	11.1		ug/m3		103	70 - 130
Trichlorofluoromethane	11	13.9		ug/m3		124	60 - 140
Undecane	13	14.4		ug/m3		112	60 - 140
Vinyl acetate	7.0	7.71		ug/m3		109	60 - 140
Vinyl chloride	5.1	4.23		ug/m3		83	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	111		60 - 140

QC Association Summary

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

TestAmerica Job ID: 140-13415-1

Air - GC/MS VOA

Analysis Batch: 25588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-13415-1	G-111618-JH-01	Total/NA	Air	TO-15	
140-13415-2	G-111618-JH-02	Total/NA	Air	TO-15	
140-13415-3	G-111618-JH-03	Total/NA	Air	TO-15	
140-13415-4	G-111618-JH-04	Total/NA	Air	TO-15	
140-13415-5	G-111618-JH-05	Total/NA	Air	TO-15	
140-13415-6	G-111618-JH-06	Total/NA	Air	TO-15	
MB 140-25588/5	Method Blank	Total/NA	Air	TO-15	
LCS 140-25588/1002	Lab Control Sample	Total/NA	Air	TO-15	

Lab Chronicle

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: G-111618-JH-01

Lab Sample ID: 140-13415-1

Date Collected: 11/16/18 14:53

Matrix: Air

Date Received: 11/20/18 09:45

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	25588	11/21/18 14:58	S1K	TAL KNX
Instrument ID: MR										

Client Sample ID: G-111618-JH-02

Lab Sample ID: 140-13415-2

Date Collected: 11/16/18 14:59

Matrix: Air

Date Received: 11/20/18 09:45

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	25588	11/21/18 15:50	S1K	TAL KNX
Instrument ID: MR										

Client Sample ID: G-111618-JH-03

Lab Sample ID: 140-13415-3

Date Collected: 11/16/18 15:05

Matrix: Air

Date Received: 11/20/18 09:45

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	25588	11/21/18 16:42	S1K	TAL KNX
Instrument ID: MR										

Client Sample ID: G-111618-JH-04

Lab Sample ID: 140-13415-4

Date Collected: 11/16/18 15:11

Matrix: Air

Date Received: 11/20/18 09:45

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	25588	11/21/18 17:34	S1K	TAL KNX
Instrument ID: MR										

Client Sample ID: G-111618-JH-05

Lab Sample ID: 140-13415-5

Date Collected: 11/16/18 15:16

Matrix: Air

Date Received: 11/20/18 09:45

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	25588	11/21/18 18:26	S1K	TAL KNX
Instrument ID: MR										

Client Sample ID: G-111618-JH-06

Lab Sample ID: 140-13415-6

Date Collected: 11/16/18 15:59

Matrix: Air

Date Received: 11/20/18 09:45

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	25588	11/21/18 19:18	S1K	TAL KNX
Instrument ID: MR										

TestAmerica Knoxville

Lab Chronicle

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

TestAmerica Job ID: 140-13415-1

Client Sample ID: Method Blank

Lab Sample ID: MB 140-25588/5

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	25588	11/21/18 13:06	S1K	TAL KNX
Instrument ID: MR										

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-25588/1002

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	25588	11/21/18 10:44	S1K	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: 140-13415-1

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	08-31-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 140-13415-1

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	08-31-19
TO-15	Air		Dibromomethane	
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: 140-13415-1

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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Sample Summary

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

TestAmerica Job ID: 140-13415-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-13415-1	G-111618-JH-01	Air	11/16/18 14:53	11/20/18 09:45
140-13415-2	G-111618-JH-02	Air	11/16/18 14:59	11/20/18 09:45
140-13415-3	G-111618-JH-03	Air	11/16/18 15:05	11/20/18 09:45
140-13415-4	G-111618-JH-04	Air	11/16/18 15:11	11/20/18 09:45
140-13415-5	G-111618-JH-05	Air	11/16/18 15:16	11/20/18 09:45
140-13415-6	G-111618-JH-06	Air	11/16/18 15:59	11/20/18 09:45

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TAL Knoxville

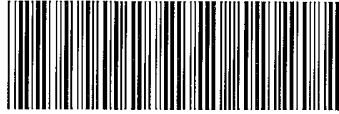
5815 Middlebrook Pike
 Knoxville, TN 37921
 phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.



THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information		Project Manager: Tom Hobday		Sampled By: J. Hedblom		1 of 1 COCs	
Company: G HD Services Inc		Phone: 651-639-0913		 140-13415 Chain of Custody			
Address: 1801 Old Hwy 8 NW, Suite 114		Site Contact: Johan Hedblom					
City/State/Zip: St. Paul, MN, 55112		TAL Contact: Jamie McKinney					
Phone: 651-639-0913							
FAX: 651-639-0923							
Project Name: New Richmond Landfill		Analysis Turnaround Time					
Site/location: New Richmond, WI		Standard (Specify) <input checked="" type="checkbox"/>					
PO # 048038		Rush (Specify)					

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, 'Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
G-111618-JH-01	11/16/18	14:53		-28.4			09782	X										X	
G-111618-JH-02	11/16/18	14:59		-28.5			16367	X										X	
G-111618-JH-03	11/16/18	15:05		-28.6			11219	X										X	
G-111618-JH-04	11/16/18	15:11		-28.5			16403	X										X	
G-111618-JH-05	11/16/18	15:16		-28.6			11082	X										X	
G-111618-JH-06	11/16/18	15:59		-28.6			10979	X										X	

Sampled by: J. Hedblom	Temperature (Fahrenheit)		Received @ ambient, 1 box FedEx PO, No Custody seal Trk # 7737 6275 & 279 KW 11/20/18
	Interior	Ambient	
	Start		
Stop			
Pressure (inches of Hg)			
Interior	Ambient		
Start			
Stop			

Special Instructions/QC Requirements & Comments:
 Report to: **grant.anderson@ghd.com**
tom.hobday@ghd.com

Canisters Shipped by: Fed Ex	Date/Time: 11/19/18 16:00	Canisters Received by:	6 cans No flow
Samples Relinquished by: John Hedblom / GHD	Date/Time: 11/19/18 16:00	Received by: John 11/20/18 0945	
Relinquished by:	Date/Time:	Received by:	

Lab Use Only Shipper Name: _____ Opened by: _____ Condition: _____

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11/28/2018



TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number: **13415** Loc: 140

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: Ke Ak Date: 11/20/18

QA026R30.doc, 080916



TestAmerica Knoxville - Air Canister Initial Pressure Check

Gauge ID: G5
Date: 11/20/2018

Analyst	Sample ID	Asset #	Cleaning Job	Cert	Size (L)	Pressure @ Receipt (-in Hg or +psig)	Time	Comments
afb	140-13415-A-1	09782	13044	b	6	-2.2	1735	
afb	140-13415-A-2	10367	13044	b	6	-1.9	1736	
afb	140-13415-A-3	11219	13047	b	6	-2.2	1737	
afb	140-13415-A-4	10403	13044	b	6	-1.3	1738	
afb	140-13415-A-5	11082	13044	b	6	-4.5	1739	
afb	140-13415-A-6	10979	13044	b	6	-2.9	1740	
<input type="checkbox"/> Receiving –Air Can –Calve Open (NCM # _____) <input type="checkbox"/> Air - Can P -24 to -25 " - Flow Contr. Works (NCM# _____) <input type="checkbox"/> Air - Can P -24 to -25 " - Flow Contr. Faulty (NCM# _____) <input type="checkbox"/> Air - Can P Out -26" - Flow Contr. Works (NCM# _____)						<input type="checkbox"/> Air - Can P Out -26" - Flow Contr. Faulty (NCM# _____) <input type="checkbox"/> Air - Can P Low -24 to -25 " - Grab Sample (NCM# _____) <input type="checkbox"/> Air - Can P Low -26 " - Grab Sample (NCM# _____)		






Memorandum

July 18, 2018

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

From:  Grant Anderson/sb/33 Tel: 651-639-0913

**Subject: Analytical Results and Reduced Validation
Groundwater and Residential Well Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
May 2018**

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 2018. 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 form, finished report forms, method blank data, recovery data from surrogate spikes, laboratory control samples (LCS), matrix spikes (MS), and field QA/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. With the exception of 1,1,2,2-tetrachloroethene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene, the LCS recoveries were within the laboratory control limits. The LCS recoveries for 1,1,2,2-tetrachloroethene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene were above the control limits. However in all cases the associated sample data were reported to be non-detect; therefore, no qualification of data was necessary based on outlying LCS results.

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 rinsate 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 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, a rinsate blank was submitted for analysis, as identified in Table 1. All results were non-detect for the compounds 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.

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 2018**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters	Comments
W-180503-RA-01	MW16A	water	05/03/2018	10:13	VOC	
W-180503-RA-02	MW16	water	05/03/2018	10:50	VOC	
W-180503-RA-03	MW17	water	05/03/2018	12:09	VOC	
W-180503-RA-04	MW17	water	05/03/2018	12:09	VOC	duplicate (RA-03)
W-180503-RA-05	2055 Cty Rd C	water	05/03/2018	13:32	VOC	
W-180503-RA-06	2056 Cty Rd C	water	05/03/2018	13:59	VOC	
W-180504-RA-07	MW17A	water	05/04/2018	09:05	VOC	
W-180504-RA-08	MW18	water	05/04/2018	09:46	VOC	
W-180504-RA-09	MW18	water	05/04/2018	09:55	VOC	rinsate blank
W-180504-RA-10	MW10	water	05/04/2018	10:15	VOC	
W-180504-RA-11	MW10A	water	05/04/2018	10:38	VOC	MS/MSD
W-180504-RA-12	MW1	water	05/04/2018	11:07	VOC	
Trip Blank	Lab	water	05/03/2018	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 2018**

Location ID:	2055 Cty Rd C	2056 Cty Rd C	MW1	MW10	MW10A
Sample Name:	W-180503-RA-05	W-180503-RA-06	W-180504-RA-12	W-180504-RA-10	W-180504-RA-11
Sample Date:	05/03/2018	05/03/2018	05/04/2018	05/04/2018	05/04/2018

Parameters**Unit****Volatile Organic Compounds**

Parameters	Unit	2055 Cty Rd C	2056 Cty Rd C	MW1	MW10	MW10A
1,1,1-Trichloroethane	µg/L	1.9	1.0 U	5.7	2.4	20
1,1,2,2-Tetrachloroethane	µg/L	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
1,1-Dichloroethane	µg/L	2.3	1.0 U	6.6	1.0 U	20
1,1-Dichloroethene	µg/L	2.1	1.0 U	1.0 U	1.0 U	4.2
1,2,3-Trichlorobenzene	µg/L	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
1,2,4-Trimethylbenzene	µg/L	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
1,2-Dibromoethane (Ethylene dibromide)	µg/L	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
1,2-Dichloroethane	µg/L	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
1,3,5-Trimethylbenzene	µg/L	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
1,4-Dichlorobenzene	µg/L	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
2-Hexanone	µg/L	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
Acetone	µg/L	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
Bromodichloromethane	µg/L	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
Bromomethane (Methyl bromide)	µg/L	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
Carbon tetrachloride	µg/L	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
Chlorobromomethane	µg/L	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 2018**

Location ID:	2055 Cty Rd C	2056 Cty Rd C	MW1	MW10	MW10A
Sample Name:	W-180503-RA-05	W-180503-RA-06	W-180504-RA-12	W-180504-RA-10	W-180504-RA-11
Sample Date:	05/03/2018	05/03/2018	05/04/2018	05/04/2018	05/04/2018

Parameters**Unit****Volatile Organic Compounds**

Parameters	Unit	2055 Cty Rd C	2056 Cty Rd C	MW1	MW10	MW10A
Chloroethane	µg/L	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	1.8 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
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.6
cis-1,3-Dichloropropene	µg/L	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
Dichlorodifluoromethane (CFC-12)	µg/L	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
Isopropyl benzene	µg/L	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
Methyl tert butyl ether (MTBE)	µg/L	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
o-Xylene	µg/L	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
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	3.8
Tetrahydrofuran	µg/L	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
trans-1,2-Dichloroethene	µg/L	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
Trichloroethene	µg/L	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
Trifluorotrchloroethane (CFC-113)	µg/L	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

Note:

U - Not detected at the associated reporting limit

J - Estimated concentration

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
May 2018**

Location ID:	MW16	MW16A	MW17	MW17	MW17A
Sample Name:	W-180503-RA-02	W-180503-RA-01	W-180503-RA-03	W-180503-RA-04	W-180504-RA-07
Sample Date:	05/03/2018	05/03/2018	05/03/2018	05/03/2018 Duplicate	05/04/2018

Parameters**Unit****Volatile Organic Compounds**

Parameters	Unit	MW16	MW16A	MW17	MW17	MW17A
1,1,1-Trichloroethane	µg/L	13	1.0 U	11	11	8.4
1,1,2,2-Tetrachloroethane	µg/L	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
1,1-Dichloroethane	µg/L	16	1.0 U	15	16	10
1,1-Dichloroethene	µg/L	3.6	1.0 U	3.4	3.5	1.0 U
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	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
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	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
1,2-Dichlorobenzene	µg/L	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
1,2-Dichloropropane	µg/L	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
1,3-Dichlorobenzene	µg/L	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
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	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
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
Acetone	µg/L	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
Bromodichloromethane	µg/L	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
Bromomethane (Methyl bromide)	µg/L	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
Carbon tetrachloride	µg/L	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
Chlorobromomethane	µg/L	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 2018**

Location ID:	MW16	MW16A	MW17	MW17	MW17A
Sample Name:	W-180503-RA-02	W-180503-RA-01	W-180503-RA-03	W-180503-RA-04	W-180504-RA-07
Sample Date:	05/03/2018	05/03/2018	05/03/2018	05/03/2018 Duplicate	05/04/2018

Parameters**Unit****Volatile Organic Compounds**

Parameters	Unit	MW16	MW16A	MW17	MW17	MW17A
Chloroethane	µg/L	1.0 U	1.0 U	1.0	0.99 J	1.0 U
Chloroform (Trichloromethane)	µg/L	1.1 J	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
cis-1,2-Dichloroethene	µg/L	1.2	1.0 U	0.95 J	1.0	1.0 U
cis-1,3-Dichloropropene	µg/L	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
Dichlorodifluoromethane (CFC-12)	µg/L	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
Isopropyl benzene	µg/L	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
Methyl tert butyl ether (MTBE)	µg/L	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
o-Xylene	µg/L	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
Tetrachloroethene	µg/L	1.8	1.0 U	1.9	1.8	1.3
Tetrahydrofuran	µg/L	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
trans-1,2-Dichloroethene	µg/L	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
Trichloroethene	µg/L	0.30 J	0.50 U	0.25 J	0.29 J	0.50 U
Trichlorofluoromethane (CFC-11)	µg/L	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
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Note:

U - Not detected at the associated reporting limit

J - Estimated concentration

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
May 2018**

Location ID:	MW18	MW18
Sample Name:	W-180504-RA-08	W-180504-RA-09
Sample Date:	05/04/2018	05/04/2018

Parameters	Unit		
Volatile Organic Compounds			
1,1,1-Trichloroethane	µg/L	13	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	2.5	1.0 U
1,1-Dichloroethene	µg/L	3.7	1.0 U
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	5.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U
2-Hexanone	µg/L	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	5.0 U	5.0 U
Acetone	µg/L	5.0 U	5.0 U
Benzene	µg/L	0.50 U	0.50 U
Bromodichloromethane	µg/L	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	2.0 U	2.0 U
Carbon disulfide	µg/L	2.0 U	2.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U
Chlorobromomethane	µg/L	1.0 U	1.0 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
May 2018**

Location ID:	MW18	MW18
Sample Name:	W-180504-RA-08	W-180504-RA-09
Sample Date:	05/04/2018	05/04/2018

Parameters	Unit		
Volatile Organic Compounds			
Chloroethane	µg/L	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	2.0 U	2.0 U
Ethylbenzene	µg/L	0.50 U	0.50 U
Isopropyl benzene	µg/L	1.0 U	1.0 U
m&p-Xylenes	µg/L	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U
Methylene chloride	µg/L	5.0 U	5.0 U
o-Xylene	µg/L	0.50 U	0.50 U
Styrene	µg/L	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U
Tetrahydrofuran	µg/L	10 U	10 U
Toluene	µg/L	0.50 U	0.50 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U
Trichloroethene	µg/L	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U
Trifluorotrchloroethane (CFC-113)	µg/L	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 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
May 2018**

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



Memorandum

January 17, 2019

To: Ryan Aamot, GHD

Ref. No.: 048038-70-01

From:  Grant Anderson/sb/36

Tel: 651-639-0913

**Subject: Analytical Results and Reduced Validation
Groundwater and Residential Well Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018**

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 November 2018. 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 QA/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 documents 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.

With the exception of 1,2,4-trichlorobenzene and methylene chloride, all method blank results were non-detect. Associated sample results were non-detect for 1,2,4-trichlorobenzene; therefore, no qualification of data was necessary for 1,2,4-trichlorobenzene. Table 4 lists the methylene chloride detection. Associated sample data are qualified as noted in the table.

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. With the exception of chloroethane and 1,2-dichloroethane, the LCS recoveries were within the laboratory control limits. The LCS recoveries for chloroethane and 1,2-dichloroethane were above the control limits. However in all cases the associated sample data were reported to be non-detect; therefore, no qualification of data was necessary based on outlying LCS results.



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. With the exception of bromomethane, chloroethane (RA-15) and 1,2-dichloroethane (RA-21) all percent recoveries and RPD values were within the laboratory control limits. The MS and MSD recoveries for bromomethane, chloroethane, and 1,2-dichloroethane were above the control limits. However in all cases the associated sample data were reported to be non-detect; therefore, no qualification of data was necessary based on outlying MS/MSD results

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. Table 5 lists trip blank detections that required qualification. Associated sample data are qualified as noted in the table.

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. Table 6 lists rinsate blank detections that required qualification. Associated sample data are qualified as noted in the table.

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.

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
November 2018**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters	Comments
W-181112-RA-01	MW19A	water	11/12/2018	11:35	VOC	
W-181112-RA-02	MW19A	water	11/12/2018	11:35	VOC	duplicate (RA-01)
W-181112-RA-03	MW19	water	11/12/2018	11:50	VOC	
W-181112-RA-04	MW18	water	11/12/2018	12:25	VOC	
W-181112-RA-05	2055 Cty Rd C	water	11/12/2018	12:20	VOC	
W-181112-RA-06	MW11A	water	11/12/2018	13:00	VOC	
W-181112-RA-07	MW10	water	11/12/2018	13:30	VOC	
W-181112-RA-08	MW15A	water	11/12/2018	14:25	VOC	
W-181114-RA-09	MW14	water	11/14/2018	09:40	VOC	
W-181114-RA-10	MW14	water	11/14/2018	09:40	VOC	duplicate (RA-09)
W-181114-RA-11	MW13	water	11/14/2018	10:40	VOC	
W-181114-RA-12	MW16A	water	11/14/2018	11:45	VOC	
W-181114-RA-13	MW16	water	11/14/2018	12:15	VOC	
W-181114-RA-14	MW1	water	11/14/2018	12:40	VOC	
W-181114-RA-15	MW10A	water	11/14/2018	13:20	VOC	MS/MSD
W-181115-RA-16	MW2R	water	11/15/2018	09:43	VOC	
W-181115-RA-17	MW9	water	11/15/2018	10:43	VOC	
W-181115-RA-18	MW9	water	11/15/2018	10:43	VOC	rinsate blank
W-181115-RA-19	MW17	water	11/15/2018	12:25	VOC	
W-181115-RA-20	MW17	water	11/15/2018	12:25	VOC	rinsate blank
W-181115-RA-21	MW17A	water	11/15/2018	12:53	VOC	
Trip Blank	Lab	water	11/12/2018	14:00	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
November 2018**

Location ID:	2055 Cty Rd C	MW1	MW10	MW10A	MW11A
Sample Name:	W-181112-RA-05	W-181114-RA-14	W-181112-RA-07	W-181114-RA-15	W-181112-RA-06
Sample Date:	11/12/2018	11/14/2018	11/12/2018	11/14/2018	11/12/2018

Parameters	Unit					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	1.6	4.5	2.5	15	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
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	2.5	15	2.5	18	1.0 U
1,1-Dichloroethene	µg/L	1.7	1.0	0.49 J	3.8	1.0 U
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	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
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	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
1,2-Dichlorobenzene	µg/L	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
1,2-Dichloropropane	µg/L	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
1,3-Dichlorobenzene	µg/L	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
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	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
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
Acetone	µg/L	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
Bromodichloromethane	µg/L	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
Bromomethane (Methyl bromide)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	µg/L	3.5	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
Chlorobenzene	µg/L	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
Chloroethane	µg/L	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
November 2018**

Location ID:	2055 Cty Rd C	MW1	MW10	MW10A	MW11A
Sample Name:	W-181112-RA-05	W-181114-RA-14	W-181112-RA-07	W-181114-RA-15	W-181112-RA-06
Sample Date:	11/12/2018	11/14/2018	11/12/2018	11/14/2018	11/12/2018

Parameters	Unit					
Volatile Organic Compounds						
Chloroform (Trichloromethane)	µg/L	2.0 U	1.7 J	2.0 U	0.49 J	2.0 U
Chloromethane (Methyl chloride)	µg/L	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	1.6	1.0 U
cis-1,3-Dichloropropene	µg/L	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
Dichlorodifluoromethane (CFC-12)	µg/L	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
Isopropyl benzene	µg/L	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
Methyl tert butyl ether (MTBE)	µg/L	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
o-Xylene	µg/L	0.50 U	0.26 J	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
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	3.4 U	1.0 U
Tetrahydrofuran	µg/L	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
trans-1,2-Dichloroethene	µg/L	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
Trichloroethene	µg/L	0.50 U	0.48 J	0.50 U	0.37 J	0.50 U
Trichlorofluoromethane (CFC-11)	µg/L	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
Vinyl chloride	µg/L	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
November 2018**

Location ID:	MW13	MW14	MW14	MW15A	MW16
Sample Name:	W-181114-RA-11	W-181114-RA-09	W-181114-RA-10	W-181112-RA-08	W-181114-RA-13
Sample Date:	11/14/2018	11/14/2018	11/14/2018 Duplicate	11/12/2018	11/14/2018

Parameters	Unit					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	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
1,1,2-Trichloroethane	µg/L	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	16
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	3.5
1,2,3-Trichlorobenzene	µg/L	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
1,2,4-Trimethylbenzene	µg/L	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
1,2-Dibromoethane (Ethylene dibromide)	µg/L	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
1,2-Dichloroethane	µg/L	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
1,3,5-Trimethylbenzene	µg/L	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
1,4-Dichlorobenzene	µg/L	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
2-Hexanone	µg/L	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
Acetone	µg/L	5.0 U	5.5 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
Bromodichloromethane	µg/L	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
Bromomethane (Methyl bromide)	µg/L	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
Carbon tetrachloride	µg/L	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
Chlorobromomethane	µg/L	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

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018**

Location ID:	MW13	MW14	MW14	MW15A	MW16
Sample Name:	W-181114-RA-11	W-181114-RA-09	W-181114-RA-10	W-181112-RA-08	W-181114-RA-13
Sample Date:	11/14/2018	11/14/2018	11/14/2018 Duplicate	11/12/2018	11/14/2018

Parameters	Unit					
Volatile Organic Compounds						
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	0.84 J
Chloromethane (Methyl chloride)	µg/L	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	1.1
cis-1,3-Dichloropropene	µg/L	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
Dichlorodifluoromethane (CFC-12)	µg/L	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
Isopropyl benzene	µg/L	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	0.27 J	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
Methylene chloride	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
o-Xylene	µg/L	0.30 J	0.30 J	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
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	2.1 U
Tetrahydrofuran	µg/L	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
trans-1,2-Dichloroethene	µg/L	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
Trichloroethene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.34 J
Trichlorofluoromethane (CFC-11)	µg/L	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
Vinyl chloride	µg/L	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
November 2018**

Location ID:	MW16A	MW17	MW17A	MW18	MW19
Sample Name:	W-181114-RA-12	W-181115-RA-19	W-181115-RA-21	W-181112-RA-04	W-181112-RA-03
Sample Date:	11/14/2018	11/15/2018	11/15/2018	11/12/2018	11/12/2018

Parameters	Unit					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	1.0 U	12	11	14	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
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	16	11	3.8	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	3.1	1.5	3.3	1.0 U
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	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
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	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
1,2-Dichlorobenzene	µg/L	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
1,2-Dichloropropane	µg/L	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
1,3-Dichlorobenzene	µg/L	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
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	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
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
Acetone	µg/L	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
Bromodichloromethane	µg/L	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
Bromomethane (Methyl bromide)	µg/L	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	4.6	2.0 U
Carbon tetrachloride	µg/L	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
Chlorobromomethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.2	0.67 J	1.0 U	1.0 U

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018**

Location ID:	MW16A	MW17	MW17A	MW18	MW19
Sample Name:	W-181114-RA-12	W-181115-RA-19	W-181115-RA-21	W-181112-RA-04	W-181112-RA-03
Sample Date:	11/14/2018	11/15/2018	11/15/2018	11/12/2018	11/12/2018

Parameters	Unit					
Volatile Organic Compounds						
Chloroform (Trichloromethane)	µg/L	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
cis-1,2-Dichloroethene	µg/L	1.0 U	0.87 J	0.45 J	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
Dibromochloromethane	µg/L	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
Ethylbenzene	µg/L	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
m&p-Xylenes	µg/L	1.0 U	1.0 U	0.29 J	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
Methylene chloride	µg/L	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
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	2.1 U	1.9 U	1.0 U	1.0 U
Tetrahydrofuran	µg/L	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
trans-1,2-Dichloroethene	µg/L	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
Trichloroethene	µg/L	0.50 U	0.37 J	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
Trifluorotrchloroethane (CFC-113)	µg/L	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

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018**

Location ID:	MW19A	MW19A	MW2R	MW9	
Sample Name:	W-181112-RA-01	W-181112-RA-02	W-181115-RA-16	W-181115-RA-17	
Sample Date:	11/12/2018	11/12/2018 Duplicate	11/15/2018	11/15/2018	
Parameters	Unit				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.3	11
1,1,2,2-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	2.5	17
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	0.43 J	2.9
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	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
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

**Validated Analytical Results Summary
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018**

Location ID:	MW19A	MW19A	MW2R	MW9	
Sample Name:	W-181112-RA-01	W-181112-RA-02	W-181115-RA-16	W-181115-RA-17	
Sample Date:	11/12/2018	11/12/2018 Duplicate	11/15/2018	11/15/2018	
Parameters	Unit				
Volatile Organic Compounds					
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	0.77 J	2.0
Chloromethane (Methyl chloride)	µg/L	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
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	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
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	2.3 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	0.27 J	0.32 J
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	1.0 U	1.0 U	1.0 U	1.0 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
November 2018**

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Volatile Organic Compounds (VOC)	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 Results Due to Analyte Concentrations in the Method Blanks
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018**

Parameter	Analyte	Analysis Batch	Blank Result *	Sample ID	Original Result	Qualified Result	Units
VOC	W-181114-RA-15	461974	1.96J	W-181114-RA-15	1.8 J	5.00 U	ug/L

Notes:

VOC - Volatile Organic Compounds

* - Blank result adjusted for sample factors where applicable

U - Not detected at the associated reporting limit

J - Estimated concentration

Table 5

**Qualified Sample Data Due to Analyte Concentrations in the Trip Blank
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018**

Parameter	Blank Date (mm/dd/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
VOC	11/12/2018	Acetone	2.5J	W-181114-RA-10	3.7 J	5.0 U	ug/L
				W-181114-RA-11	3.3 J	5.0 U	ug/L
				W-181114-RA-12	3.8 J	5.0 U	ug/L
				W-181114-RA-13	4.2 J	5.0 U	ug/L
				W-181114-RA-14	2.6 J	5.0 U	ug/L
				W-181115-RA-16	3.0 J	5.0 U	ug/L
				W-181115-RA-17	4.7 J	5.0 U	ug/L
				W-181115-RA-19	3.2 J	5.0 U	ug/L
				W-181112-RA-02	3.7 J	5.0 U	ug/L
				W-181115-RA-21	3.4 J	5.0 U	ug/L
				W-181112-RA-03	4.3 J	5.0 U	ug/L
				W-181112-RA-04	4.3 J	5.0 U	ug/L
				W-181112-RA-06	3.2 J	5.0 U	ug/L
				W-181112-RA-07	2.4 J	5.0 U	ug/L
				W-181114-RA-09	5.5	5.5 U	ug/L
VOC	11/12/2018	Tetrachloroethene	0.91J	W-181114-RA-10	2.1	2.1 U	ug/L
				0.54 J	1.0 U	ug/L	
				3.4	3.4 U	ug/L	
				2.3	2.3 U	ug/L	
				2.1	2.1 U	ug/L	
				1.9	1.9 U	ug/L	
0.42 J	1.0 U	ug/L					

Notes:

VOC - Volatile Organic Compounds

U - Not detected at the associated reporting limit

J - Estimated concentration

Table 6

**Qualified Sample Data Due to Analyte Concentrations in the Rinsate Blanks
Groundwater and Residential Sampling Event
New Richmond Landfill Site
New Richmond, Wisconsin
November 2018**

Parameter	Rinse Blank ID	Blank Date (dd/mm/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
VOC	W-181115-RA-20	11/15/2018	m&p-Xylenes	0.26J	W-181115-RA-19	0.26 J	1.0 U	ug/L

Notes:

VOC - Volatile Organic Compounds

U - Not detected at the associated reporting limit

J - Estimated concentration

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ANALYTICAL REPORT

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

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Case Narrative

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

TestAmerica Job ID: 500-145000-1

Job ID: 500-145000-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-145000-1

Comments

No additional comments.

Receipt

The samples were received on 5/5/2018 10:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7° C.

GC/MS VOA

Method(s) 8260B: The laboratory control sample (LCS) for 432557 recovered outside control limits for the following analytes: 1,1,2,2-Trichloroethane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene. 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 LF 048038

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-01

Lab Sample ID: 500-145000-1

No Detections.

Client Sample ID: W-180503-RA-02

Lab Sample ID: 500-145000-2

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	16		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	3.6		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroform	1.1	J	2.0	0.37	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.2		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	1.8		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.30	J	0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-180503-RA-03

Lab Sample ID: 500-145000-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	11		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	3.4		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	1.0		1.0	0.51	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.95	J	1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	1.9		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.25	J	0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-180503-RA-04

Lab Sample ID: 500-145000-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	11		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	16		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	3.5		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	0.99	J	1.0	0.51	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.0		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	1.8		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.29	J	0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-180503-RA-05

Lab Sample ID: 500-145000-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	1.9		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	2.3		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	2.1		1.0	0.39	ug/L	1		8260B	Total/NA

Client Sample ID: W-180503-RA-06

Lab Sample ID: 500-145000-6

No Detections.

Client Sample ID: W-180504-RA-07

Lab Sample ID: 500-145000-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	8.4		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	10		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	1.3		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: 500-145000-1

Client Sample ID: W-180504-RA-08

Lab Sample ID: 500-145000-8

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	2.5		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	3.7		1.0	0.39	ug/L	1		8260B	Total/NA

Client Sample ID: W-180504-RA-09

Lab Sample ID: 500-145000-9

No Detections.

Client Sample ID: W-180504-RA-10

Lab Sample ID: 500-145000-10

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	2.4		1.0	0.38	ug/L	1		8260B	Total/NA

Client Sample ID: W-180504-RA-11

Lab Sample ID: 500-145000-11

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	20		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	20		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
cis-1,2-Dichloroethene	1.6		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	3.8		1.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: W-180504-RA-12

Lab Sample ID: 500-145000-12

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	5.7		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	6.6		1.0	0.41	ug/L	1		8260B	Total/NA
Chloroform	1.8	J	2.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-145000-13

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: 500-145000-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
5030B	Purge and Trap	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



Sample Summary

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

TestAmerica Job ID: 500-145000-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-145000-1	W-180503-RA-01	Water	05/03/18 10:13	05/05/18 10:30
500-145000-2	W-180503-RA-02	Water	05/03/18 10:50	05/05/18 10:30
500-145000-3	W-180503-RA-03	Water	05/03/18 12:09	05/05/18 10:30
500-145000-4	W-180503-RA-04	Water	05/03/18 12:09	05/05/18 10:30
500-145000-5	W-180503-RA-05	Water	05/03/18 13:32	05/05/18 10:30
500-145000-6	W-180503-RA-06	Water	05/03/18 13:59	05/05/18 10:30
500-145000-7	W-180504-RA-07	Water	05/04/18 09:05	05/05/18 10:30
500-145000-8	W-180504-RA-08	Water	05/04/18 09:46	05/05/18 10:30
500-145000-9	W-180504-RA-09	Water	05/04/18 09:55	05/05/18 10:30
500-145000-10	W-180504-RA-10	Water	05/04/18 10:15	05/05/18 10:30
500-145000-11	W-180504-RA-11	Water	05/04/18 10:38	05/05/18 10:30
500-145000-12	W-180504-RA-12	Water	05/04/18 11:07	05/05/18 10:30
500-145000-13	Trip Blank	Water	05/03/18 00:00	05/05/18 10:30

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-01

Lab Sample ID: 500-145000-1

Date Collected: 05/03/18 10:13

Matrix: Water

Date Received: 05/05/18 10:30

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			05/17/18 01:36	1
1,1,2,2-Tetrachloroethane	<0.40	*	1.0	0.40	ug/L			05/17/18 01:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 01:36	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 01:36	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			05/17/18 01:36	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			05/17/18 01:36	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 01:36	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 01:36	1
1,2,4-Trimethylbenzene	<0.36	*	1.0	0.36	ug/L			05/17/18 01:36	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 01:36	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 01:36	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 01:36	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 01:36	1
1,3,5-Trimethylbenzene	<0.25	*	1.0	0.25	ug/L			05/17/18 01:36	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 01:36	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 01:36	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 01:36	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 01:36	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 01:36	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 01:36	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 01:36	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 01:36	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 01:36	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 01:36	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 01:36	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 01:36	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 01:36	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 01:36	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/17/18 01:36	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 01:36	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 01:36	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 01:36	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 01:36	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 01:36	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 01:36	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 01:36	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 01:36	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 01:36	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 01:36	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 01:36	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 01:36	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 01:36	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/17/18 01:36	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 01:36	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 01:36	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 01:36	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 01:36	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/17/18 01:36	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 01:36	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-01

Lab Sample ID: 500-145000-1

Date Collected: 05/03/18 10:13

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 01:36	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 01:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126					05/17/18 01:36	1
4-Bromofluorobenzene (Surr)	112		72 - 124					05/17/18 01:36	1
Toluene-d8 (Surr)	101		75 - 120					05/17/18 01:36	1
Dibromofluoromethane	96		75 - 120					05/17/18 01:36	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-02

Lab Sample ID: 500-145000-2

Date Collected: 05/03/18 10:50

Matrix: Water

Date Received: 05/05/18 10:30

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			05/17/18 02:05	1
1,1,2,2-Tetrachloroethane	<0.40	*	1.0	0.40	ug/L			05/17/18 02:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 02:05	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 02:05	1
1,1-Dichloroethane	16		1.0	0.41	ug/L			05/17/18 02:05	1
1,1-Dichloroethene	3.6		1.0	0.39	ug/L			05/17/18 02:05	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 02:05	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 02:05	1
1,2,4-Trimethylbenzene	<0.36	*	1.0	0.36	ug/L			05/17/18 02:05	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 02:05	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 02:05	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 02:05	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 02:05	1
1,3,5-Trimethylbenzene	<0.25	*	1.0	0.25	ug/L			05/17/18 02:05	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 02:05	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 02:05	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 02:05	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 02:05	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 02:05	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 02:05	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 02:05	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 02:05	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 02:05	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 02:05	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 02:05	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 02:05	1
Chloroform	1.1	J	2.0	0.37	ug/L			05/17/18 02:05	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 02:05	1
cis-1,2-Dichloroethene	1.2		1.0	0.41	ug/L			05/17/18 02:05	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 02:05	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 02:05	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 02:05	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 02:05	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 02:05	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 02:05	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 02:05	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 02:05	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 02:05	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 02:05	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 02:05	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 02:05	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 02:05	1
Tetrachloroethene	1.8		1.0	0.37	ug/L			05/17/18 02:05	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 02:05	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 02:05	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 02:05	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 02:05	1
Trichloroethene	0.30	J	0.50	0.16	ug/L			05/17/18 02:05	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 02:05	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-02

Lab Sample ID: 500-145000-2

Date Collected: 05/03/18 10:50

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 02:05	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 02:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126		05/17/18 02:05	1
4-Bromofluorobenzene (Surr)	112		72 - 124		05/17/18 02:05	1
Toluene-d8 (Surr)	102		75 - 120		05/17/18 02:05	1
Dibromofluoromethane	94		75 - 120		05/17/18 02:05	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-03

Lab Sample ID: 500-145000-3

Date Collected: 05/03/18 12:09

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	11		1.0	0.38	ug/L			05/17/18 02:34	1
1,1,2,2-Tetrachloroethane	<0.40	*	1.0	0.40	ug/L			05/17/18 02:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 02:34	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 02:34	1
1,1-Dichloroethane	15		1.0	0.41	ug/L			05/17/18 02:34	1
1,1-Dichloroethene	3.4		1.0	0.39	ug/L			05/17/18 02:34	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 02:34	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 02:34	1
1,2,4-Trimethylbenzene	<0.36	*	1.0	0.36	ug/L			05/17/18 02:34	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 02:34	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 02:34	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 02:34	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 02:34	1
1,3,5-Trimethylbenzene	<0.25	*	1.0	0.25	ug/L			05/17/18 02:34	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 02:34	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 02:34	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 02:34	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 02:34	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 02:34	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 02:34	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 02:34	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 02:34	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 02:34	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 02:34	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 02:34	1
Chloroethane	1.0		1.0	0.51	ug/L			05/17/18 02:34	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 02:34	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 02:34	1
cis-1,2-Dichloroethene	0.95 J		1.0	0.41	ug/L			05/17/18 02:34	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 02:34	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 02:34	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 02:34	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 02:34	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 02:34	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 02:34	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 02:34	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 02:34	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 02:34	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 02:34	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 02:34	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 02:34	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 02:34	1
Tetrachloroethene	1.9		1.0	0.37	ug/L			05/17/18 02:34	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 02:34	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 02:34	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 02:34	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 02:34	1
Trichloroethene	0.25 J		0.50	0.16	ug/L			05/17/18 02:34	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 02:34	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-03

Lab Sample ID: 500-145000-3

Date Collected: 05/03/18 12:09

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 02:34	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 02:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126					05/17/18 02:34	1
4-Bromofluorobenzene (Surr)	113		72 - 124					05/17/18 02:34	1
Toluene-d8 (Surr)	102		75 - 120					05/17/18 02:34	1
Dibromofluoromethane	96		75 - 120					05/17/18 02:34	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-04

Lab Sample ID: 500-145000-4

Date Collected: 05/03/18 12:09

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	11		1.0	0.38	ug/L			05/17/18 03:03	1
1,1,2,2-Tetrachloroethane	<0.40	*	1.0	0.40	ug/L			05/17/18 03:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 03:03	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 03:03	1
1,1-Dichloroethane	16		1.0	0.41	ug/L			05/17/18 03:03	1
1,1-Dichloroethene	3.5		1.0	0.39	ug/L			05/17/18 03:03	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 03:03	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 03:03	1
1,2,4-Trimethylbenzene	<0.36	*	1.0	0.36	ug/L			05/17/18 03:03	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 03:03	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 03:03	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 03:03	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 03:03	1
1,3,5-Trimethylbenzene	<0.25	*	1.0	0.25	ug/L			05/17/18 03:03	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 03:03	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 03:03	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 03:03	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 03:03	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 03:03	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 03:03	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 03:03	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 03:03	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 03:03	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 03:03	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 03:03	1
Chloroethane	0.99	J	1.0	0.51	ug/L			05/17/18 03:03	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 03:03	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 03:03	1
cis-1,2-Dichloroethene	1.0		1.0	0.41	ug/L			05/17/18 03:03	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 03:03	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 03:03	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 03:03	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 03:03	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 03:03	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 03:03	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 03:03	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 03:03	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 03:03	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 03:03	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 03:03	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 03:03	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 03:03	1
Tetrachloroethene	1.8		1.0	0.37	ug/L			05/17/18 03:03	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 03:03	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 03:03	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 03:03	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 03:03	1
Trichloroethene	0.29	J	0.50	0.16	ug/L			05/17/18 03:03	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 03:03	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-04

Lab Sample ID: 500-145000-4

Date Collected: 05/03/18 12:09

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 03:03	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 03:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 126					05/17/18 03:03	1
4-Bromofluorobenzene (Surr)	111		72 - 124					05/17/18 03:03	1
Toluene-d8 (Surr)	101		75 - 120					05/17/18 03:03	1
Dibromofluoromethane	96		75 - 120					05/17/18 03:03	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-05

Lab Sample ID: 500-145000-5

Date Collected: 05/03/18 13:32

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.9		1.0	0.38	ug/L			05/17/18 03:33	1
1,1,2,2-Tetrachloroethane	<0.40	*	1.0	0.40	ug/L			05/17/18 03:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 03:33	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 03:33	1
1,1-Dichloroethane	2.3		1.0	0.41	ug/L			05/17/18 03:33	1
1,1-Dichloroethene	2.1		1.0	0.39	ug/L			05/17/18 03:33	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 03:33	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 03:33	1
1,2,4-Trimethylbenzene	<0.36	*	1.0	0.36	ug/L			05/17/18 03:33	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 03:33	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 03:33	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 03:33	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 03:33	1
1,3,5-Trimethylbenzene	<0.25	*	1.0	0.25	ug/L			05/17/18 03:33	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 03:33	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 03:33	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 03:33	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 03:33	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 03:33	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 03:33	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 03:33	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 03:33	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 03:33	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 03:33	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 03:33	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 03:33	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 03:33	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 03:33	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/17/18 03:33	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 03:33	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 03:33	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 03:33	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 03:33	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 03:33	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 03:33	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 03:33	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 03:33	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 03:33	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 03:33	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 03:33	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 03:33	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 03:33	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/17/18 03:33	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 03:33	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 03:33	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 03:33	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 03:33	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/17/18 03:33	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 03:33	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-05

Lab Sample ID: 500-145000-5

Date Collected: 05/03/18 13:32

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 03:33	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 03:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126					05/17/18 03:33	1
4-Bromofluorobenzene (Surr)	112		72 - 124					05/17/18 03:33	1
Toluene-d8 (Surr)	102		75 - 120					05/17/18 03:33	1
Dibromofluoromethane	97		75 - 120					05/17/18 03:33	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-06

Lab Sample ID: 500-145000-6

Date Collected: 05/03/18 13:59

Matrix: Water

Date Received: 05/05/18 10:30

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			05/17/18 04:02	1
1,1,2,2-Tetrachloroethane	<0.40	*	1.0	0.40	ug/L			05/17/18 04:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 04:02	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 04:02	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			05/17/18 04:02	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			05/17/18 04:02	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 04:02	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 04:02	1
1,2,4-Trimethylbenzene	<0.36	*	1.0	0.36	ug/L			05/17/18 04:02	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 04:02	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 04:02	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 04:02	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 04:02	1
1,3,5-Trimethylbenzene	<0.25	*	1.0	0.25	ug/L			05/17/18 04:02	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 04:02	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 04:02	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 04:02	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 04:02	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 04:02	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 04:02	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 04:02	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 04:02	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 04:02	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 04:02	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 04:02	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 04:02	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 04:02	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 04:02	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/17/18 04:02	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 04:02	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 04:02	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 04:02	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 04:02	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 04:02	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 04:02	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 04:02	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 04:02	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 04:02	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 04:02	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 04:02	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 04:02	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 04:02	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/17/18 04:02	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 04:02	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 04:02	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 04:02	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 04:02	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/17/18 04:02	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 04:02	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-06

Lab Sample ID: 500-145000-6

Date Collected: 05/03/18 13:59

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 04:02	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 04:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		75 - 126					05/17/18 04:02	1
4-Bromofluorobenzene (Surr)	112		72 - 124					05/17/18 04:02	1
Toluene-d8 (Surr)	102		75 - 120					05/17/18 04:02	1
Dibromofluoromethane	95		75 - 120					05/17/18 04:02	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-07

Lab Sample ID: 500-145000-7

Date Collected: 05/04/18 09:05

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	8.4		1.0	0.38	ug/L			05/18/18 12:21	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			05/18/18 12:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/18/18 12:21	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/18/18 12:21	1
1,1-Dichloroethane	10		1.0	0.41	ug/L			05/18/18 12:21	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			05/18/18 12:21	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/18/18 12:21	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/18/18 12:21	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			05/18/18 12:21	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/18/18 12:21	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/18/18 12:21	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/18/18 12:21	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/18/18 12:21	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			05/18/18 12:21	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/18/18 12:21	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/18/18 12:21	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/18/18 12:21	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/18/18 12:21	1
Acetone	<1.7		5.0	1.7	ug/L			05/18/18 12:21	1
Benzene	<0.15		0.50	0.15	ug/L			05/18/18 12:21	1
Bromoform	<0.48		1.0	0.48	ug/L			05/18/18 12:21	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/18/18 12:21	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/18/18 12:21	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/18/18 12:21	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/18/18 12:21	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/18/18 12:21	1
Chloroform	<0.37		2.0	0.37	ug/L			05/18/18 12:21	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/18/18 12:21	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/18/18 12:21	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/18/18 12:21	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/18/18 12:21	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/18/18 12:21	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/18/18 12:21	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/18/18 12:21	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/18/18 12:21	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/18/18 12:21	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/18/18 12:21	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/18/18 12:21	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/18/18 12:21	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/18/18 12:21	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/18/18 12:21	1
Styrene	<0.39		1.0	0.39	ug/L			05/18/18 12:21	1
Tetrachloroethene	1.3		1.0	0.37	ug/L			05/18/18 12:21	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/18/18 12:21	1
Toluene	<0.15		0.50	0.15	ug/L			05/18/18 12:21	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/18/18 12:21	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/18/18 12:21	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/18/18 12:21	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/18/18 12:21	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-07

Lab Sample ID: 500-145000-7

Date Collected: 05/04/18 09:05

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/18/18 12:21	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/18/18 12:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 126					05/18/18 12:21	1
4-Bromofluorobenzene (Surr)	87		72 - 124					05/18/18 12:21	1
Toluene-d8 (Surr)	94		75 - 120					05/18/18 12:21	1
Dibromofluoromethane	91		75 - 120					05/18/18 12:21	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-08

Lab Sample ID: 500-145000-8

Date Collected: 05/04/18 09:46

Matrix: Water

Date Received: 05/05/18 10:30

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			05/17/18 17:17	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			05/17/18 17:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 17:17	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 17:17	1
1,1-Dichloroethane	2.5		1.0	0.41	ug/L			05/17/18 17:17	1
1,1-Dichloroethene	3.7		1.0	0.39	ug/L			05/17/18 17:17	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 17:17	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 17:17	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			05/17/18 17:17	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 17:17	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 17:17	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 17:17	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 17:17	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			05/17/18 17:17	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 17:17	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 17:17	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 17:17	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 17:17	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 17:17	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 17:17	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 17:17	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 17:17	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 17:17	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 17:17	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 17:17	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 17:17	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 17:17	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 17:17	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/17/18 17:17	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 17:17	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 17:17	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 17:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 17:17	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 17:17	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 17:17	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 17:17	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 17:17	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 17:17	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 17:17	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 17:17	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 17:17	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 17:17	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/17/18 17:17	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 17:17	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 17:17	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 17:17	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 17:17	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/17/18 17:17	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 17:17	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-08

Lab Sample ID: 500-145000-8

Date Collected: 05/04/18 09:46

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 17:17	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 17:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 126					05/17/18 17:17	1
4-Bromofluorobenzene (Surr)	86		72 - 124					05/17/18 17:17	1
Toluene-d8 (Surr)	93		75 - 120					05/17/18 17:17	1
Dibromofluoromethane	92		75 - 120					05/17/18 17:17	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-09

Lab Sample ID: 500-145000-9

Date Collected: 05/04/18 09:55

Matrix: Water

Date Received: 05/05/18 10:30

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			05/17/18 17:46	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			05/17/18 17:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 17:46	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 17:46	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			05/17/18 17:46	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			05/17/18 17:46	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 17:46	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 17:46	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			05/17/18 17:46	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 17:46	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 17:46	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 17:46	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 17:46	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			05/17/18 17:46	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 17:46	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 17:46	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 17:46	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 17:46	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 17:46	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 17:46	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 17:46	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 17:46	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 17:46	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 17:46	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 17:46	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 17:46	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 17:46	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 17:46	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/17/18 17:46	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 17:46	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 17:46	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 17:46	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 17:46	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 17:46	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 17:46	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 17:46	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 17:46	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 17:46	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 17:46	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 17:46	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 17:46	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 17:46	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/17/18 17:46	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 17:46	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 17:46	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 17:46	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 17:46	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/17/18 17:46	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 17:46	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-09

Lab Sample ID: 500-145000-9

Date Collected: 05/04/18 09:55

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 17:46	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 17:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 126					05/17/18 17:46	1
4-Bromofluorobenzene (Surr)	85		72 - 124					05/17/18 17:46	1
Toluene-d8 (Surr)	93		75 - 120					05/17/18 17:46	1
Dibromofluoromethane	95		75 - 120					05/17/18 17:46	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-10

Lab Sample ID: 500-145000-10

Date Collected: 05/04/18 10:15

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	2.4		1.0	0.38	ug/L			05/17/18 18:14	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			05/17/18 18:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 18:14	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 18:14	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			05/17/18 18:14	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			05/17/18 18:14	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 18:14	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 18:14	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			05/17/18 18:14	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 18:14	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 18:14	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 18:14	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 18:14	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			05/17/18 18:14	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 18:14	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 18:14	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 18:14	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 18:14	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 18:14	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 18:14	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 18:14	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 18:14	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 18:14	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 18:14	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 18:14	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 18:14	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 18:14	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 18:14	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/17/18 18:14	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 18:14	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 18:14	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 18:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 18:14	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 18:14	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 18:14	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 18:14	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 18:14	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 18:14	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 18:14	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 18:14	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 18:14	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 18:14	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/17/18 18:14	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 18:14	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 18:14	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 18:14	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 18:14	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/17/18 18:14	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 18:14	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-10

Lab Sample ID: 500-145000-10

Date Collected: 05/04/18 10:15

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 18:14	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 18:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 126		05/17/18 18:14	1
4-Bromofluorobenzene (Surr)	87		72 - 124		05/17/18 18:14	1
Toluene-d8 (Surr)	92		75 - 120		05/17/18 18:14	1
Dibromofluoromethane	94		75 - 120		05/17/18 18:14	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-11

Lab Sample ID: 500-145000-11

Date Collected: 05/04/18 10:38

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	20		1.0	0.38	ug/L			05/17/18 18:42	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			05/17/18 18:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 18:42	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 18:42	1
1,1-Dichloroethane	20		1.0	0.41	ug/L			05/17/18 18:42	1
1,1-Dichloroethene	4.2		1.0	0.39	ug/L			05/17/18 18:42	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 18:42	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 18:42	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			05/17/18 18:42	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 18:42	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 18:42	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 18:42	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 18:42	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			05/17/18 18:42	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 18:42	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 18:42	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 18:42	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 18:42	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 18:42	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 18:42	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 18:42	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 18:42	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 18:42	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 18:42	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 18:42	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 18:42	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 18:42	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 18:42	1
cis-1,2-Dichloroethene	1.6		1.0	0.41	ug/L			05/17/18 18:42	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 18:42	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 18:42	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 18:42	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 18:42	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 18:42	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 18:42	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 18:42	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 18:42	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 18:42	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 18:42	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 18:42	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 18:42	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 18:42	1
Tetrachloroethene	3.8		1.0	0.37	ug/L			05/17/18 18:42	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 18:42	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 18:42	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 18:42	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 18:42	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/17/18 18:42	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 18:42	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-11

Lab Sample ID: 500-145000-11

Date Collected: 05/04/18 10:38

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 18:42	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 18:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 126					05/17/18 18:42	1
4-Bromofluorobenzene (Surr)	89		72 - 124					05/17/18 18:42	1
Toluene-d8 (Surr)	93		75 - 120					05/17/18 18:42	1
Dibromofluoromethane	93		75 - 120					05/17/18 18:42	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-12

Lab Sample ID: 500-145000-12

Date Collected: 05/04/18 11:07

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	5.7		1.0	0.38	ug/L			05/17/18 19:11	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			05/17/18 19:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 19:11	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 19:11	1
1,1-Dichloroethane	6.6		1.0	0.41	ug/L			05/17/18 19:11	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			05/17/18 19:11	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 19:11	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 19:11	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			05/17/18 19:11	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 19:11	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 19:11	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 19:11	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 19:11	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			05/17/18 19:11	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 19:11	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 19:11	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 19:11	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 19:11	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 19:11	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 19:11	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 19:11	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 19:11	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 19:11	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 19:11	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 19:11	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 19:11	1
Chloroform	1.8 J		2.0	0.37	ug/L			05/17/18 19:11	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 19:11	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/17/18 19:11	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 19:11	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 19:11	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 19:11	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 19:11	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 19:11	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 19:11	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 19:11	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 19:11	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 19:11	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 19:11	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 19:11	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 19:11	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 19:11	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/17/18 19:11	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 19:11	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 19:11	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 19:11	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 19:11	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/17/18 19:11	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 19:11	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-12

Lab Sample ID: 500-145000-12

Date Collected: 05/04/18 11:07

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 19:11	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 19:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 126					05/17/18 19:11	1
4-Bromofluorobenzene (Surr)	86		72 - 124					05/17/18 19:11	1
Toluene-d8 (Surr)	93		75 - 120					05/17/18 19:11	1
Dibromofluoromethane	93		75 - 120					05/17/18 19:11	1

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-145000-13

Date Collected: 05/03/18 00:00

Matrix: Water

Date Received: 05/05/18 10:30

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			05/17/18 01:06	1
1,1,2,2-Tetrachloroethane	<0.40	*	1.0	0.40	ug/L			05/17/18 01:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 01:06	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 01:06	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			05/17/18 01:06	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			05/17/18 01:06	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 01:06	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 01:06	1
1,2,4-Trimethylbenzene	<0.36	*	1.0	0.36	ug/L			05/17/18 01:06	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 01:06	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 01:06	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 01:06	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 01:06	1
1,3,5-Trimethylbenzene	<0.25	*	1.0	0.25	ug/L			05/17/18 01:06	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 01:06	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 01:06	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 01:06	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 01:06	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 01:06	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 01:06	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 01:06	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 01:06	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 01:06	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 01:06	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 01:06	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 01:06	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 01:06	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 01:06	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/17/18 01:06	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 01:06	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 01:06	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 01:06	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 01:06	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 01:06	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 01:06	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 01:06	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 01:06	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 01:06	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 01:06	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 01:06	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 01:06	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 01:06	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/17/18 01:06	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 01:06	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 01:06	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 01:06	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 01:06	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/17/18 01:06	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 01:06	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-145000-13

Date Collected: 05/03/18 00:00

Matrix: Water

Date Received: 05/05/18 10:30

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 01:06	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 01:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		75 - 126					05/17/18 01:06	1
4-Bromofluorobenzene (Surr)	111		72 - 124					05/17/18 01:06	1
Toluene-d8 (Surr)	102		75 - 120					05/17/18 01:06	1
Dibromofluoromethane	96		75 - 120					05/17/18 01:06	1

Definitions/Glossary

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

TestAmerica Job ID: 500-145000-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Reported value was between the limit of detection and the limit of quantitation.

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: 500-145000-1

GC/MS VOA

Analysis Batch: 432557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-145000-1	W-180503-RA-01	Total/NA	Water	8260B	
500-145000-2	W-180503-RA-02	Total/NA	Water	8260B	
500-145000-3	W-180503-RA-03	Total/NA	Water	8260B	
500-145000-4	W-180503-RA-04	Total/NA	Water	8260B	
500-145000-5	W-180503-RA-05	Total/NA	Water	8260B	
500-145000-6	W-180503-RA-06	Total/NA	Water	8260B	
500-145000-13	Trip Blank	Total/NA	Water	8260B	
MB 500-432557/29	Method Blank	Total/NA	Water	8260B	
LCS 500-432557/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 432705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-145000-8	W-180504-RA-08	Total/NA	Water	8260B	
500-145000-9	W-180504-RA-09	Total/NA	Water	8260B	
500-145000-10	W-180504-RA-10	Total/NA	Water	8260B	
500-145000-11	W-180504-RA-11	Total/NA	Water	8260B	
500-145000-12	W-180504-RA-12	Total/NA	Water	8260B	
MB 500-432705/7	Method Blank	Total/NA	Water	8260B	
LCS 500-432705/5	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 432909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-145000-7	W-180504-RA-07	Total/NA	Water	8260B	
MB 500-432909/6	Method Blank	Total/NA	Water	8260B	
LCS 500-432909/4	Lab Control Sample	Total/NA	Water	8260B	
500-145000-11 MS	W-180504-RA-11	Total/NA	Water	8260B	
500-145000-11 MSD	W-180504-RA-11	Total/NA	Water	8260B	

Surrogate Summary

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

TestAmerica Job ID: 500-145000-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	BFB (72-124)	TOL (75-120)	DBFM (75-120)
500-145000-1	W-180503-RA-01	85	112	101	96
500-145000-2	W-180503-RA-02	85	112	102	94
500-145000-3	W-180503-RA-03	85	113	102	96
500-145000-4	W-180503-RA-04	84	111	101	96
500-145000-5	W-180503-RA-05	85	112	102	97
500-145000-6	W-180503-RA-06	82	112	102	95
500-145000-7	W-180504-RA-07	92	87	94	91
500-145000-8	W-180504-RA-08	93	86	93	92
500-145000-9	W-180504-RA-09	98	85	93	95
500-145000-10	W-180504-RA-10	97	87	92	94
500-145000-11	W-180504-RA-11	96	89	93	93
500-145000-11 MS	W-180504-RA-11	93	87	93	93
500-145000-11 MSD	W-180504-RA-11	94	87	92	94
500-145000-12	W-180504-RA-12	97	86	93	93
500-145000-13	Trip Blank	85	111	102	96
LCS 500-432557/4	Lab Control Sample	76	107	103	88
LCS 500-432705/5	Lab Control Sample	86	87	96	88
LCS 500-432909/4	Lab Control Sample	93	89	93	93
MB 500-432557/29	Method Blank	81	106	101	93
MB 500-432705/7	Method Blank	95	88	92	94
MB 500-432909/6	Method Blank	93	88	91	93

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane

QC Sample Results

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

TestAmerica Job ID: 500-145000-1

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

Lab Sample ID: MB 500-432557/29

Matrix: Water

Analysis Batch: 432557

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			05/17/18 00:36	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			05/17/18 00:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 00:36	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 00:36	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			05/17/18 00:36	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			05/17/18 00:36	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 00:36	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 00:36	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			05/17/18 00:36	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 00:36	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 00:36	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 00:36	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 00:36	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			05/17/18 00:36	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 00:36	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 00:36	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 00:36	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 00:36	1
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 00:36	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 00:36	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 00:36	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 00:36	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 00:36	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 00:36	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 00:36	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 00:36	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 00:36	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 00:36	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/17/18 00:36	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 00:36	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 00:36	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 00:36	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 00:36	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 00:36	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 00:36	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 00:36	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 00:36	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 00:36	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 00:36	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 00:36	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 00:36	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 00:36	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/17/18 00:36	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 00:36	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 00:36	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 00:36	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 00:36	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/17/18 00:36	1

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-145000-1

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

Lab Sample ID: MB 500-432557/29
Matrix: Water
Analysis Batch: 432557

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			05/17/18 00:36	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 00:36	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 00:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		75 - 126		05/17/18 00:36	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/17/18 00:36	1
Toluene-d8 (Surr)	101		75 - 120		05/17/18 00:36	1
Dibromofluoromethane	93		75 - 120		05/17/18 00:36	1

Lab Sample ID: LCS 500-432557/4
Matrix: Water
Analysis Batch: 432557

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	45.3		ug/L		91	70 - 125
1,1,2,2-Tetrachloroethane	50.0	64.0	*	ug/L		128	67 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	50.1		ug/L		100	70 - 123
1,1,2-Trichloroethane	50.0	56.3		ug/L		113	70 - 122
1,1-Dichloroethane	50.0	44.6		ug/L		89	70 - 125
1,1-Dichloroethene	50.0	52.6		ug/L		105	67 - 122
1,2,3-Trichlorobenzene	50.0	52.6		ug/L		105	55 - 140
1,2,4-Trichlorobenzene	50.0	51.5		ug/L		103	66 - 127
1,2,4-Trimethylbenzene	50.0	61.9	*	ug/L		124	70 - 123
1,2-Dibromo-3-Chloropropane	50.0	54.0		ug/L		108	56 - 123
1,2-Dichlorobenzene	50.0	54.3		ug/L		109	70 - 125
1,2-Dichloroethane	50.0	41.2		ug/L		82	68 - 127
1,2-Dichloropropane	50.0	45.3		ug/L		91	67 - 130
1,3,5-Trimethylbenzene	50.0	62.7	*	ug/L		125	70 - 123
1,3-Dichlorobenzene	50.0	54.2		ug/L		108	70 - 125
1,4-Dichlorobenzene	50.0	52.6		ug/L		105	70 - 120
2-Hexanone	50.0	44.3		ug/L		89	56 - 135
Bromochloromethane	50.0	46.7		ug/L		93	65 - 122
Acetone	50.0	50.6		ug/L		101	40 - 143
Benzene	50.0	50.3		ug/L		101	70 - 120
Bromoform	50.0	44.1		ug/L		88	56 - 132
Bromomethane	50.0	56.4		ug/L		113	40 - 130
Carbon disulfide	50.0	52.6		ug/L		105	66 - 120
Carbon tetrachloride	50.0	43.0		ug/L		86	65 - 122
Chlorobenzene	50.0	53.6		ug/L		107	70 - 120
Chloroethane	50.0	35.2		ug/L		70	45 - 127
Chloroform	50.0	46.3		ug/L		93	70 - 120
Chloromethane	50.0	37.9		ug/L		76	54 - 147
cis-1,2-Dichloroethene	50.0	51.8		ug/L		104	70 - 125
cis-1,3-Dichloropropene	50.0	55.6		ug/L		111	64 - 127
Dichlorobromomethane	50.0	47.7		ug/L		95	69 - 120
Dichlorodifluoromethane	50.0	45.4		ug/L		91	40 - 150

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-145000-1

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

Lab Sample ID: LCS 500-432557/4
Matrix: Water
Analysis Batch: 432557

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	50.0	57.9		ug/L		116	70 - 120
Ethylene Dibromide	50.0	56.0		ug/L		112	70 - 125
m-Xylene & p-Xylene	50.0	56.7		ug/L		113	70 - 125
Isopropylbenzene	50.0	62.1		ug/L		124	70 - 126
2-Butanone (MEK)	50.0	43.6		ug/L		87	53 - 141
4-Methyl-2-pentanone (MIBK)	50.0	43.9		ug/L		88	56 - 133
Methyl tert-butyl ether	50.0	45.6		ug/L		91	70 - 120
Methylene Chloride	50.0	52.0		ug/L		104	69 - 125
o-Xylene	50.0	57.1		ug/L		114	70 - 120
Styrene	50.0	56.4		ug/L		113	70 - 120
Tetrachloroethene	50.0	47.4		ug/L		95	70 - 128
Toluene	50.0	57.6		ug/L		115	70 - 125
trans-1,2-Dichloroethene	50.0	51.6		ug/L		103	70 - 125
trans-1,3-Dichloropropene	50.0	53.4		ug/L		107	62 - 128
Trichloroethene	50.0	46.9		ug/L		94	70 - 125
Trichlorofluoromethane	50.0	36.4		ug/L		73	70 - 126
Vinyl chloride	50.0	41.6		ug/L		83	64 - 126
Chlorodibromomethane	50.0	49.3		ug/L		99	68 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	76		75 - 126
4-Bromofluorobenzene (Surr)	107		72 - 124
Toluene-d8 (Surr)	103		75 - 120
Dibromofluoromethane	88		75 - 120

Lab Sample ID: MB 500-432705/7
Matrix: Water
Analysis Batch: 432705

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			05/17/18 11:29	1
1,1,1,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			05/17/18 11:29	1
1,1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/17/18 11:29	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/17/18 11:29	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			05/17/18 11:29	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			05/17/18 11:29	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/17/18 11:29	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/17/18 11:29	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			05/17/18 11:29	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/17/18 11:29	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/17/18 11:29	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/17/18 11:29	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/17/18 11:29	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			05/17/18 11:29	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/17/18 11:29	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/17/18 11:29	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/17/18 11:29	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/17/18 11:29	1

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-145000-1

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

Lab Sample ID: MB 500-432705/7
Matrix: Water
Analysis Batch: 432705

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

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	<1.7		5.0	1.7	ug/L			05/17/18 11:29	1
Benzene	<0.15		0.50	0.15	ug/L			05/17/18 11:29	1
Bromoform	<0.48		1.0	0.48	ug/L			05/17/18 11:29	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/17/18 11:29	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/17/18 11:29	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/17/18 11:29	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/17/18 11:29	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/17/18 11:29	1
Chloroform	<0.37		2.0	0.37	ug/L			05/17/18 11:29	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/17/18 11:29	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/17/18 11:29	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/17/18 11:29	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/17/18 11:29	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/17/18 11:29	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/17/18 11:29	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/17/18 11:29	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/17/18 11:29	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/17/18 11:29	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/17/18 11:29	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/17/18 11:29	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/17/18 11:29	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/17/18 11:29	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/17/18 11:29	1
Styrene	<0.39		1.0	0.39	ug/L			05/17/18 11:29	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/17/18 11:29	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/17/18 11:29	1
Toluene	<0.15		0.50	0.15	ug/L			05/17/18 11:29	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/17/18 11:29	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/17/18 11:29	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/17/18 11:29	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/17/18 11:29	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/17/18 11:29	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/17/18 11:29	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	95		75 - 126		05/17/18 11:29	1
4-Bromofluorobenzene (Surr)	88		72 - 124		05/17/18 11:29	1
Toluene-d8 (Surr)	92		75 - 120		05/17/18 11:29	1
Dibromofluoromethane	94		75 - 120		05/17/18 11:29	1

Lab Sample ID: LCS 500-432705/5
Matrix: Water
Analysis Batch: 432705

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1,1-Trichloroethane	50.0	52.2		ug/L		104	70 - 125
1,1,1,2-Tetrachloroethane	50.0	43.8		ug/L		88	67 - 127

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-145000-1

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

Lab Sample ID: LCS 500-432705/5
Matrix: Water
Analysis Batch: 432705

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	57.2		ug/L		114	70 - 123
1,1,2-Trichloroethane	50.0	44.0		ug/L		88	70 - 122
1,1-Dichloroethane	50.0	47.4		ug/L		95	70 - 125
1,1-Dichloroethene	50.0	52.6		ug/L		105	67 - 122
1,2,3-Trichlorobenzene	50.0	44.6		ug/L		89	55 - 140
1,2,4-Trichlorobenzene	50.0	45.6		ug/L		91	66 - 127
1,2,4-Trimethylbenzene	50.0	46.6		ug/L		93	70 - 123
1,2-Dibromo-3-Chloropropane	50.0	49.1		ug/L		98	56 - 123
1,2-Dichlorobenzene	50.0	45.1		ug/L		90	70 - 125
1,2-Dichloroethane	50.0	43.8		ug/L		88	68 - 127
1,2-Dichloropropane	50.0	44.5		ug/L		89	67 - 130
1,3,5-Trimethylbenzene	50.0	49.0		ug/L		98	70 - 123
1,3-Dichlorobenzene	50.0	45.6		ug/L		91	70 - 125
1,4-Dichlorobenzene	50.0	45.0		ug/L		90	70 - 120
2-Hexanone	50.0	47.7		ug/L		95	56 - 135
Bromochloromethane	50.0	45.4		ug/L		91	65 - 122
Acetone	50.0	45.0		ug/L		90	40 - 143
Benzene	50.0	46.0		ug/L		92	70 - 120
Bromoform	50.0	47.0		ug/L		94	56 - 132
Bromomethane	50.0	47.5		ug/L		95	40 - 130
Carbon disulfide	50.0	51.4		ug/L		103	66 - 120
Carbon tetrachloride	50.0	56.8		ug/L		114	65 - 122
Chlorobenzene	50.0	45.6		ug/L		91	70 - 120
Chloroethane	50.0	54.8		ug/L		110	45 - 127
Chloroform	50.0	45.4		ug/L		91	70 - 120
Chloromethane	50.0	45.3		ug/L		91	54 - 147
cis-1,2-Dichloroethene	50.0	47.2		ug/L		94	70 - 125
cis-1,3-Dichloropropene	50.0	46.7		ug/L		93	64 - 127
Dichlorobromomethane	50.0	44.5		ug/L		89	69 - 120
Dichlorodifluoromethane	50.0	50.4		ug/L		101	40 - 150
Ethylbenzene	50.0	50.3		ug/L		101	70 - 120
Ethylene Dibromide	50.0	43.9		ug/L		88	70 - 125
m-Xylene & p-Xylene	50.0	48.9		ug/L		98	70 - 125
Isopropylbenzene	50.0	50.3		ug/L		101	70 - 126
2-Butanone (MEK)	50.0	44.4		ug/L		89	53 - 141
4-Methyl-2-pentanone (MIBK)	50.0	46.2		ug/L		92	56 - 133
Methyl tert-butyl ether	50.0	44.0		ug/L		88	70 - 120
Methylene Chloride	50.0	43.2		ug/L		86	69 - 125
o-Xylene	50.0	47.7		ug/L		95	70 - 120
Styrene	50.0	45.8		ug/L		92	70 - 120
Tetrachloroethene	50.0	52.9		ug/L		106	70 - 128
Toluene	50.0	48.3		ug/L		97	70 - 125
trans-1,2-Dichloroethene	50.0	50.5		ug/L		101	70 - 125
trans-1,3-Dichloropropene	50.0	47.6		ug/L		95	62 - 128
Trichloroethene	50.0	51.2		ug/L		102	70 - 125
Trichlorofluoromethane	50.0	53.6		ug/L		107	70 - 126
Vinyl chloride	50.0	51.9		ug/L		104	64 - 126

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-145000-1

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

Lab Sample ID: LCS 500-432705/5
Matrix: Water
Analysis Batch: 432705

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorodibromomethane	50.0	46.4		ug/L		93	68 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		75 - 126
4-Bromofluorobenzene (Surr)	87		72 - 124
Toluene-d8 (Surr)	96		75 - 120
Dibromofluoromethane	88		75 - 120

Lab Sample ID: MB 500-432909/6
Matrix: Water
Analysis Batch: 432909

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			05/18/18 11:12	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			05/18/18 11:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			05/18/18 11:12	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/18/18 11:12	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			05/18/18 11:12	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			05/18/18 11:12	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			05/18/18 11:12	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			05/18/18 11:12	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			05/18/18 11:12	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			05/18/18 11:12	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			05/18/18 11:12	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			05/18/18 11:12	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			05/18/18 11:12	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			05/18/18 11:12	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			05/18/18 11:12	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			05/18/18 11:12	1
2-Hexanone	<1.6		5.0	1.6	ug/L			05/18/18 11:12	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			05/18/18 11:12	1
Acetone	<1.7		5.0	1.7	ug/L			05/18/18 11:12	1
Benzene	<0.15		0.50	0.15	ug/L			05/18/18 11:12	1
Bromoform	<0.48		1.0	0.48	ug/L			05/18/18 11:12	1
Bromomethane	<0.80		2.0	0.80	ug/L			05/18/18 11:12	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			05/18/18 11:12	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			05/18/18 11:12	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			05/18/18 11:12	1
Chloroethane	<0.51		1.0	0.51	ug/L			05/18/18 11:12	1
Chloroform	<0.37		2.0	0.37	ug/L			05/18/18 11:12	1
Chloromethane	<0.32		1.0	0.32	ug/L			05/18/18 11:12	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			05/18/18 11:12	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			05/18/18 11:12	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			05/18/18 11:12	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			05/18/18 11:12	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/18/18 11:12	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			05/18/18 11:12	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			05/18/18 11:12	1

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-145000-1

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

Lab Sample ID: MB 500-432909/6
Matrix: Water
Analysis Batch: 432909

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	<0.39		1.0	0.39	ug/L			05/18/18 11:12	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			05/18/18 11:12	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			05/18/18 11:12	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			05/18/18 11:12	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			05/18/18 11:12	1
o-Xylene	<0.22		0.50	0.22	ug/L			05/18/18 11:12	1
Styrene	<0.39		1.0	0.39	ug/L			05/18/18 11:12	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/18/18 11:12	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			05/18/18 11:12	1
Toluene	<0.15		0.50	0.15	ug/L			05/18/18 11:12	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			05/18/18 11:12	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			05/18/18 11:12	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/18/18 11:12	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			05/18/18 11:12	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/18/18 11:12	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			05/18/18 11:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 126		05/18/18 11:12	1
4-Bromofluorobenzene (Surr)	88		72 - 124		05/18/18 11:12	1
Toluene-d8 (Surr)	91		75 - 120		05/18/18 11:12	1
Dibromofluoromethane	93		75 - 120		05/18/18 11:12	1

Lab Sample ID: LCS 500-432909/4
Matrix: Water
Analysis Batch: 432909

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	54.3		ug/L		109	70 - 125
1,1,2,2-Tetrachloroethane	50.0	46.7		ug/L		93	67 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	58.9		ug/L		118	70 - 123
1,1,2-Trichloroethane	50.0	47.5		ug/L		95	70 - 122
1,1-Dichloroethane	50.0	49.6		ug/L		99	70 - 125
1,1-Dichloroethene	50.0	54.7		ug/L		109	67 - 122
1,2,3-Trichlorobenzene	50.0	47.0		ug/L		94	55 - 140
1,2,4-Trichlorobenzene	50.0	48.0		ug/L		96	66 - 127
1,2,4-Trimethylbenzene	50.0	48.1		ug/L		96	70 - 123
1,2-Dibromo-3-Chloropropane	50.0	53.0		ug/L		106	56 - 123
1,2-Dichlorobenzene	50.0	47.1		ug/L		94	70 - 125
1,2-Dichloroethane	50.0	49.4		ug/L		99	68 - 127
1,2-Dichloropropane	50.0	48.4		ug/L		97	67 - 130
1,3,5-Trimethylbenzene	50.0	49.1		ug/L		98	70 - 123
1,3-Dichlorobenzene	50.0	48.0		ug/L		96	70 - 125
1,4-Dichlorobenzene	50.0	47.2		ug/L		94	70 - 120
2-Hexanone	50.0	51.4		ug/L		103	56 - 135
Bromochloromethane	50.0	51.0		ug/L		102	65 - 122
Acetone	50.0	50.8		ug/L		102	40 - 143

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-145000-1

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

Lab Sample ID: LCS 500-432909/4
Matrix: Water
Analysis Batch: 432909

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	49.2		ug/L		98	70 - 120
Bromoform	50.0	51.7		ug/L		103	56 - 132
Bromomethane	50.0	50.4		ug/L		101	40 - 130
Carbon disulfide	50.0	52.8		ug/L		106	66 - 120
Carbon tetrachloride	50.0	59.5		ug/L		119	65 - 122
Chlorobenzene	50.0	47.7		ug/L		95	70 - 120
Chloroethane	50.0	57.6		ug/L		115	45 - 127
Chloroform	50.0	48.9		ug/L		98	70 - 120
Chloromethane	50.0	42.7		ug/L		85	54 - 147
cis-1,2-Dichloroethene	50.0	50.7		ug/L		101	70 - 125
cis-1,3-Dichloropropene	50.0	49.7		ug/L		99	64 - 127
Dichlorobromomethane	50.0	49.0		ug/L		98	69 - 120
Dichlorodifluoromethane	50.0	42.6		ug/L		85	40 - 150
Ethylbenzene	50.0	50.6		ug/L		101	70 - 120
Ethylene Dibromide	50.0	47.4		ug/L		95	70 - 125
m-Xylene & p-Xylene	50.0	49.0		ug/L		98	70 - 125
Isopropylbenzene	50.0	49.3		ug/L		99	70 - 126
2-Butanone (MEK)	50.0	50.9		ug/L		102	53 - 141
4-Methyl-2-pentanone (MIBK)	50.0	49.0		ug/L		98	56 - 133
Methyl tert-butyl ether	50.0	49.7		ug/L		99	70 - 120
Methylene Chloride	50.0	48.4		ug/L		97	69 - 125
o-Xylene	50.0	49.0		ug/L		98	70 - 120
Styrene	50.0	48.0		ug/L		96	70 - 120
Tetrachloroethene	50.0	52.2		ug/L		104	70 - 128
Toluene	50.0	49.6		ug/L		99	70 - 125
trans-1,2-Dichloroethene	50.0	53.9		ug/L		108	70 - 125
trans-1,3-Dichloropropene	50.0	51.3		ug/L		103	62 - 128
Trichloroethene	50.0	53.5		ug/L		107	70 - 125
Trichlorofluoromethane	50.0	57.4		ug/L		115	70 - 126
Vinyl chloride	50.0	49.7		ug/L		99	64 - 126
Chlorodibromomethane	50.0	51.2		ug/L		102	68 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		75 - 126
4-Bromofluorobenzene (Surr)	89		72 - 124
Toluene-d8 (Surr)	93		75 - 120
Dibromofluoromethane	93		75 - 120

Lab Sample ID: 500-145000-11 MS
Matrix: Water
Analysis Batch: 432909

Client Sample ID: W-180504-RA-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20		50.0	70.3		ug/L		102	70 - 125
1,1,2,2-Tetrachloroethane	<0.40		50.0	45.0		ug/L		90	67 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		50.0	53.3		ug/L		107	70 - 123
1,1,2-Trichloroethane	<0.35		50.0	46.5		ug/L		93	70 - 122

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-145000-1

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

Lab Sample ID: 500-145000-11 MS

Matrix: Water

Analysis Batch: 432909

Client Sample ID: W-180504-RA-11

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	20		50.0	68.8		ug/L		97	70 - 125
1,1-Dichloroethene	4.2		50.0	55.3		ug/L		102	67 - 122
1,2,3-Trichlorobenzene	<0.46		50.0	44.9		ug/L		90	55 - 140
1,2,4-Trichlorobenzene	<0.34		50.0	45.6		ug/L		91	66 - 127
1,2,4-Trimethylbenzene	<0.36		50.0	45.4		ug/L		91	70 - 123
1,2-Dibromo-3-Chloropropane	<2.0		50.0	47.8		ug/L		96	56 - 123
1,2-Dichlorobenzene	<0.33		50.0	45.2		ug/L		90	70 - 125
1,2-Dichloroethane	<0.39		50.0	48.0		ug/L		96	68 - 127
1,2-Dichloropropane	<0.43		50.0	48.2		ug/L		96	67 - 130
1,3,5-Trimethylbenzene	<0.25		50.0	46.3		ug/L		93	70 - 123
1,3-Dichlorobenzene	<0.40		50.0	45.2		ug/L		90	70 - 125
1,4-Dichlorobenzene	<0.36		50.0	44.8		ug/L		90	70 - 120
2-Hexanone	<1.6		50.0	48.8		ug/L		98	56 - 135
Bromochloromethane	<0.43		50.0	49.4		ug/L		99	65 - 122
Acetone	<1.7		50.0	52.5		ug/L		105	40 - 143
Benzene	<0.15		50.0	47.7		ug/L		95	70 - 120
Bromoform	<0.48		50.0	49.8		ug/L		100	56 - 132
Bromomethane	<0.80		50.0	47.2		ug/L		94	40 - 130
Carbon disulfide	<0.45		50.0	49.1		ug/L		98	66 - 120
Carbon tetrachloride	<0.38		50.0	54.0		ug/L		108	65 - 122
Chlorobenzene	<0.39		50.0	45.9		ug/L		92	70 - 120
Chloroethane	<0.51		50.0	49.9		ug/L		100	45 - 127
Chloroform	<0.37		50.0	48.2		ug/L		96	70 - 120
Chloromethane	<0.32		50.0	37.4		ug/L		75	54 - 147
cis-1,2-Dichloroethene	1.6		50.0	51.3		ug/L		99	70 - 125
cis-1,3-Dichloropropene	<0.42		50.0	48.4		ug/L		97	64 - 127
Dichlorobromomethane	<0.37		50.0	48.6		ug/L		97	69 - 120
Dichlorodifluoromethane	<0.67		50.0	36.8		ug/L		74	40 - 150
Ethylbenzene	<0.18		50.0	48.5		ug/L		97	70 - 120
Ethylene Dibromide	<0.39		50.0	46.7		ug/L		93	70 - 125
m-Xylene & p-Xylene	<0.18		50.0	47.2		ug/L		94	70 - 125
Isopropylbenzene	<0.39		50.0	46.6		ug/L		93	70 - 126
2-Butanone (MEK)	<2.1		50.0	49.4		ug/L		99	53 - 141
4-Methyl-2-pentanone (MIBK)	<2.2		50.0	48.4		ug/L		97	56 - 133
Methyl tert-butyl ether	<0.39		50.0	49.1		ug/L		98	70 - 120
Methylene Chloride	<1.6		50.0	46.9		ug/L		94	69 - 125
o-Xylene	<0.22		50.0	47.2		ug/L		94	70 - 120
Styrene	<0.39		50.0	46.7		ug/L		93	70 - 120
Tetrachloroethene	3.8		50.0	53.5		ug/L		99	70 - 128
Toluene	<0.15		50.0	47.4		ug/L		95	70 - 125
trans-1,2-Dichloroethene	<0.35		50.0	50.8		ug/L		102	70 - 125
trans-1,3-Dichloropropene	<0.36		50.0	49.5		ug/L		99	62 - 128
Trichloroethene	<0.16		50.0	52.7		ug/L		105	70 - 125
Trichlorofluoromethane	<0.43		50.0	50.9		ug/L		102	70 - 126
Vinyl chloride	<0.20		50.0	43.4		ug/L		87	64 - 126
Chlorodibromomethane	<0.49		50.0	49.0		ug/L		98	68 - 125

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-145000-1

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

Lab Sample ID: 500-145000-11 MS

Matrix: Water

Analysis Batch: 432909

Client Sample ID: W-180504-RA-11

Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		75 - 126
4-Bromofluorobenzene (Surr)	87		72 - 124
Toluene-d8 (Surr)	93		75 - 120
Dibromofluoromethane	93		75 - 120

Lab Sample ID: 500-145000-11 MSD

Matrix: Water

Analysis Batch: 432909

Client Sample ID: W-180504-RA-11

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	20		50.0	71.8		ug/L		105	70 - 125	2	20
1,1,2,2-Tetrachloroethane	<0.40		50.0	45.6		ug/L		91	67 - 127	1	20
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		50.0	52.4		ug/L		105	70 - 123	2	20
1,1,2-Trichloroethane	<0.35		50.0	47.8		ug/L		96	70 - 122	3	20
1,1-Dichloroethane	20		50.0	70.1		ug/L		100	70 - 125	2	20
1,1-Dichloroethene	4.2		50.0	55.4		ug/L		102	67 - 122	0	20
1,2,3-Trichlorobenzene	<0.46		50.0	46.1		ug/L		92	55 - 140	3	20
1,2,4-Trichlorobenzene	<0.34		50.0	45.6		ug/L		91	66 - 127	0	20
1,2,4-Trimethylbenzene	<0.36		50.0	45.1		ug/L		90	70 - 123	1	20
1,2-Dibromo-3-Chloropropane	<2.0		50.0	50.0		ug/L		100	56 - 123	4	20
1,2-Dichlorobenzene	<0.33		50.0	45.5		ug/L		91	70 - 125	1	20
1,2-Dichloroethane	<0.39		50.0	50.8		ug/L		102	68 - 127	6	20
1,2-Dichloropropane	<0.43		50.0	49.1		ug/L		98	67 - 130	2	20
1,3,5-Trimethylbenzene	<0.25		50.0	46.2		ug/L		92	70 - 123	0	20
1,3-Dichlorobenzene	<0.40		50.0	45.5		ug/L		91	70 - 125	1	20
1,4-Dichlorobenzene	<0.36		50.0	45.9		ug/L		92	70 - 120	2	20
2-Hexanone	<1.6		50.0	49.1		ug/L		98	56 - 135	1	20
Bromochloromethane	<0.43		50.0	51.2		ug/L		102	65 - 122	4	20
Acetone	<1.7		50.0	50.8		ug/L		102	40 - 143	3	20
Benzene	<0.15		50.0	48.4		ug/L		97	70 - 120	1	20
Bromoform	<0.48		50.0	50.5		ug/L		101	56 - 132	1	20
Bromomethane	<0.80		50.0	47.0		ug/L		94	40 - 130	0	20
Carbon disulfide	<0.45		50.0	48.8		ug/L		98	66 - 120	1	20
Carbon tetrachloride	<0.38		50.0	54.5		ug/L		109	65 - 122	1	20
Chlorobenzene	<0.39		50.0	46.6		ug/L		93	70 - 120	1	20
Chloroethane	<0.51		50.0	47.8		ug/L		96	45 - 127	4	20
Chloroform	<0.37		50.0	49.8		ug/L		100	70 - 120	3	20
Chloromethane	<0.32		50.0	36.6		ug/L		73	54 - 147	2	20
cis-1,2-Dichloroethene	1.6		50.0	52.6		ug/L		102	70 - 125	3	20
cis-1,3-Dichloropropene	<0.42		50.0	48.6		ug/L		97	64 - 127	1	20
Dichlorobromomethane	<0.37		50.0	49.9		ug/L		100	69 - 120	3	20
Dichlorodifluoromethane	<0.67		50.0	34.6		ug/L		69	40 - 150	6	20
Ethylbenzene	<0.18		50.0	48.6		ug/L		97	70 - 120	0	20
Ethylene Dibromide	<0.39		50.0	47.7		ug/L		95	70 - 125	2	20
m-Xylene & p-Xylene	<0.18		50.0	47.3		ug/L		95	70 - 125	0	20
Isopropylbenzene	<0.39		50.0	46.1		ug/L		92	70 - 126	1	20
2-Butanone (MEK)	<2.1		50.0	50.1		ug/L		100	53 - 141	2	20

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-145000-1

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

Lab Sample ID: 500-145000-11 MSD

Matrix: Water

Analysis Batch: 432909

Client Sample ID: W-180504-RA-11

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Methyl-2-pentanone (MIBK)	<2.2		50.0	48.7		ug/L		97	56 - 133	1	20
Methyl tert-butyl ether	<0.39		50.0	51.0		ug/L		102	70 - 120	4	20
Methylene Chloride	<1.6		50.0	47.3		ug/L		95	69 - 125	1	20
o-Xylene	<0.22		50.0	47.5		ug/L		95	70 - 120	1	20
Styrene	<0.39		50.0	47.6		ug/L		95	70 - 120	2	20
Tetrachloroethene	3.8		50.0	52.4		ug/L		97	70 - 128	2	20
Toluene	<0.15		50.0	47.8		ug/L		96	70 - 125	1	20
trans-1,2-Dichloroethene	<0.35		50.0	52.0		ug/L		104	70 - 125	2	20
trans-1,3-Dichloropropene	<0.36		50.0	50.4		ug/L		101	62 - 128	2	20
Trichloroethene	<0.16		50.0	52.4		ug/L		105	70 - 125	1	20
Trichlorofluoromethane	<0.43		50.0	48.4		ug/L		97	70 - 126	5	20
Vinyl chloride	<0.20		50.0	43.3		ug/L		87	64 - 126	0	20
Chlorodibromomethane	<0.49		50.0	50.6		ug/L		101	68 - 125	3	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	94		75 - 126
4-Bromofluorobenzene (Surr)	87		72 - 124
Toluene-d8 (Surr)	92		75 - 120
Dibromofluoromethane	94		75 - 120

Lab Chronicle

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180503-RA-01

Date Collected: 05/03/18 10:13

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432557	05/17/18 01:36	PMF	TAL CHI

Client Sample ID: W-180503-RA-02

Date Collected: 05/03/18 10:50

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432557	05/17/18 02:05	PMF	TAL CHI

Client Sample ID: W-180503-RA-03

Date Collected: 05/03/18 12:09

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432557	05/17/18 02:34	PMF	TAL CHI

Client Sample ID: W-180503-RA-04

Date Collected: 05/03/18 12:09

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432557	05/17/18 03:03	PMF	TAL CHI

Client Sample ID: W-180503-RA-05

Date Collected: 05/03/18 13:32

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432557	05/17/18 03:33	PMF	TAL CHI

Client Sample ID: W-180503-RA-06

Date Collected: 05/03/18 13:59

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432557	05/17/18 04:02	PMF	TAL CHI

TestAmerica Chicago

Lab Chronicle

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: W-180504-RA-07

Date Collected: 05/04/18 09:05

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432909	05/18/18 12:21	EMA	TAL CHI

Client Sample ID: W-180504-RA-08

Date Collected: 05/04/18 09:46

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432705	05/17/18 17:17	EMA	TAL CHI

Client Sample ID: W-180504-RA-09

Date Collected: 05/04/18 09:55

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432705	05/17/18 17:46	EMA	TAL CHI

Client Sample ID: W-180504-RA-10

Date Collected: 05/04/18 10:15

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432705	05/17/18 18:14	EMA	TAL CHI

Client Sample ID: W-180504-RA-11

Date Collected: 05/04/18 10:38

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432705	05/17/18 18:42	EMA	TAL CHI

Client Sample ID: W-180504-RA-12

Date Collected: 05/04/18 11:07

Date Received: 05/05/18 10:30

Lab Sample ID: 500-145000-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432705	05/17/18 19:11	EMA	TAL CHI

TestAmerica Chicago

Lab Chronicle

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

TestAmerica Job ID: 500-145000-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-145000-13

Date Collected: 05/03/18 00:00

Matrix: Water

Date Received: 05/05/18 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	432557	05/17/18 01:06	PMF	TAL CHI

Laboratory References:

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

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Accreditation/Certification Summary

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

TestAmerica Job ID: 500-145000-1

Laboratory: TestAmerica Chicago

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	999580010	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
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane



CONESTOGA-ROVERS & ASSOCIATES

CHAIN OF CUSTODY RECORD

1801 Old Highway 8 Northwest, Suite 114
St. Paul, Minnesota 55112 United States

500-145000

Phone: (651) 639-0913 Fax: (651) 639-0923

COC NO.: **SP-02614**

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/Phase/Task Code: 48038				Laboratory Name: Test America				Lab Location:				SSOW ID:																	
Project Name: New Richmond LRF				Lab Contact:				Lab Quote No:				Cooler No:																	
Project Location: New Richmond				SAMPLE TYPE				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)																	
Chemistry Contact: G. Anderson				Matrix Code (see back of COC)				Grab (G) or Comp (C)				Carrier:																	
Sampler(s): RAamo																													
SAMPLER IDENTIFICATION (Containers for each sample may be combined on one line)				DATE (mm/dd/yy)		TIME (hh:mm)		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		MIS/MSD Request			
1	1	W-180503-RA-01		5/3/18	1013	VC	6	3																					
2	2	W-180503-RA-02			1030			3																					
3	3	W-180503-RA-03			1209			3																					
4	4	W-180503-RA-04			1209			3																					
5	5	W-180503-RA-05			1332			3																					
6	6	W-180503-RA-06			1359			3																					
7	7	W-180504-RA-07		5/4/18	905			3																					
8	8	W-180504-RA-08			946			3																					
9	9	W-180504-RA-09			955			3																					
10	10	W-180504-RA-10			1015			3																					
11	11	W-180504-RA-11			1038			9																					
12	12	W-180504-RA-12			1107			3																					
13	13	trip blank						1																					
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:								Total Number of Containers: 43				Notes/ Special Requirements: 3-7																	
All Samples in Cooler must be on COC																													
RELINQUISHED BY		COMPANY		DATE		TIME		RECEIVED BY		COMPANY		DATE		TIME															
1.		CRA		5/4/18		1600		1.		TA		05/05/18		1030															
2.								2.																					
3.								3.																					



500-145000 COC

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

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-145000-1

Login Number: 145000

List Source: TestAmerica Chicago

List Number: 1

Creator: Kelsey, Shawn 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	3.7c
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	

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: 500-154927-1

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:

11/30/2018 8:31:51 AM

Richard Wright, Senior Project Manager

(708)534-5200

richard.wright@testamericainc.com

LINKS

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. 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.

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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Case Narrative

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

TestAmerica Job ID: 500-154927-1

Job ID: 500-154927-1

Laboratory: TestAmerica Chicago

Narrative

**Job Narrative
500-154927-1**

Receipt

The samples were received on 11/16/2018 9:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9° C.

GC/MS VOA

Method(s) 8260B: The laboratory control sample (LCS) for 461394 recovered outside control limits for the following analytes: Chloroethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 8260B: The laboratory control sample (LCS) for 462045 recovered outside control limits for the following analytes: 1,2-Dichloroethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 8260B: The MSD (matrix spike duplicate) in batch 462045 was analyzed 24 minutes outside the method specified 12 hour tune time.

W-181115-RA-21 (500-154927-21)

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: 500-154927-1

Client Sample ID: W-181112-RA-01

Lab Sample ID: 500-154927-1

No Detections.

Client Sample ID: W-181112-RA-02

Lab Sample ID: 500-154927-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.7	J	5.0	1.7	ug/L	1		8260B	Total/NA

Client Sample ID: W-181112-RA-03

Lab Sample ID: 500-154927-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	4.3	J	5.0	1.7	ug/L	1		8260B	Total/NA

Client Sample ID: W-181112-RA-04

Lab Sample ID: 500-154927-4

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	3.8		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
Acetone	4.3	J	5.0	1.7	ug/L	1		8260B	Total/NA
Carbon disulfide	4.6		2.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: W-181112-RA-05

Lab Sample ID: 500-154927-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	1.6		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
1,1-Dichloroethene	1.7		1.0	0.39	ug/L	1		8260B	Total/NA
Carbon disulfide	3.5		2.0	0.45	ug/L	1		8260B	Total/NA

Client Sample ID: W-181112-RA-06

Lab Sample ID: 500-154927-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.2	J	5.0	1.7	ug/L	1		8260B	Total/NA

Client Sample ID: W-181112-RA-07

Lab Sample ID: 500-154927-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	2.5		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
1,1-Dichloroethene	0.49	J	1.0	0.39	ug/L	1		8260B	Total/NA
Acetone	2.4	J	5.0	1.7	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.42	J	1.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: W-181112-RA-08

Lab Sample ID: 500-154927-8

No Detections.

Client Sample ID: W-181114-RA-09

Lab Sample ID: 500-154927-9

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.5		5.0	1.7	ug/L	1		8260B	Total/NA
o-Xylene	0.30	J	0.50	0.22	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: 500-154927-1

Client Sample ID: W-181114-RA-10

Lab Sample ID: 500-154927-10

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.7	J	5.0	1.7	ug/L	1		8260B	Total/NA
m-Xylene & p-Xylene	0.27	J	1.0	0.18	ug/L	1		8260B	Total/NA

Client Sample ID: W-181114-RA-11

Lab Sample ID: 500-154927-11

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.3	J	5.0	1.7	ug/L	1		8260B	Total/NA
o-Xylene	0.30	J	0.50	0.22	ug/L	1		8260B	Total/NA

Client Sample ID: W-181114-RA-12

Lab Sample ID: 500-154927-12

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.8	J	5.0	1.7	ug/L	1		8260B	Total/NA

Client Sample ID: W-181114-RA-13

Lab Sample ID: 500-154927-13

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	16		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	3.5		1.0	0.39	ug/L	1		8260B	Total/NA
Acetone	4.2	J	5.0	1.7	ug/L	1		8260B	Total/NA
Chloroform	0.84	J	2.0	0.37	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.1		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	2.1		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.34	J	0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-181114-RA-14

Lab Sample ID: 500-154927-14

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	4.5		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	1.0		1.0	0.39	ug/L	1		8260B	Total/NA
Acetone	2.6	J	5.0	1.7	ug/L	1		8260B	Total/NA
Chloroform	1.7	J	2.0	0.37	ug/L	1		8260B	Total/NA
o-Xylene	0.26	J	0.50	0.22	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.54	J	1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.48	J	0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-181114-RA-15

Lab Sample ID: 500-154927-15

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	18		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	3.8		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroform	0.49	J	2.0	0.37	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.6		1.0	0.41	ug/L	1		8260B	Total/NA
Methylene Chloride	1.8	J B	5.0	1.6	ug/L	1		8260B	Total/NA
Tetrachloroethene	3.4		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.37	J	0.50	0.16	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: 500-154927-1

Client Sample ID: W-181115-RA-16

Lab Sample ID: 500-154927-16

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	1.3		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
1,1-Dichloroethene	0.43	J	1.0	0.39	ug/L	1		8260B	Total/NA
Acetone	3.0	J	5.0	1.7	ug/L	1		8260B	Total/NA
Chloroform	0.77	J	2.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.27	J	0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-181115-RA-17

Lab Sample ID: 500-154927-17

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	11		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	17		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	2.9		1.0	0.39	ug/L	1		8260B	Total/NA
Acetone	4.7	J	5.0	1.7	ug/L	1		8260B	Total/NA
Chloroform	2.0		2.0	0.37	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.0		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	2.3		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.32	J	0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-181115-RA-18

Lab Sample ID: 500-154927-18

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	7.0		5.0	1.7	ug/L	1		8260B	Total/NA
m-Xylene & p-Xylene	0.24	J	1.0	0.18	ug/L	1		8260B	Total/NA

Client Sample ID: W-181115-RA-19

Lab Sample ID: 500-154927-19

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	12		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	16		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	3.1		1.0	0.39	ug/L	1		8260B	Total/NA
Acetone	3.2	J	5.0	1.7	ug/L	1		8260B	Total/NA
Chloroethane	1.2		1.0	0.51	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.87	J	1.0	0.41	ug/L	1		8260B	Total/NA
m-Xylene & p-Xylene	0.26	J	1.0	0.18	ug/L	1		8260B	Total/NA
Tetrachloroethene	2.1		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.37	J	0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: W-181115-RA-20

Lab Sample ID: 500-154927-20

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.5		5.0	1.7	ug/L	1		8260B	Total/NA
m-Xylene & p-Xylene	0.26	J	1.0	0.18	ug/L	1		8260B	Total/NA
Toluene	0.19	J	0.50	0.15	ug/L	1		8260B	Total/NA

Client Sample ID: W-181115-RA-21

Lab Sample ID: 500-154927-21

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	11		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	11		1.0	0.41	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: 500-154927-1

Client Sample ID: W-181115-RA-21 (Continued)

Lab Sample ID: 500-154927-21

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.5		1.0	0.39	ug/L	1		8260B	Total/NA
Acetone	3.4	J	5.0	1.7	ug/L	1		8260B	Total/NA
Chloroethane	0.67	J	1.0	0.51	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.45	J	1.0	0.41	ug/L	1		8260B	Total/NA
m-Xylene & p-Xylene	0.29	J	1.0	0.18	ug/L	1		8260B	Total/NA
Tetrachloroethene	1.9		1.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-154927-22

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Acetone	2.5	J	5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	0.26	J	0.50	0.15	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.91	J	1.0	0.37	ug/L	1		8260B	Total/NA
Toluene	0.35	J	0.50	0.15	ug/L	1		8260B	Total/NA

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: 500-154927-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
5030B	Purge and Trap	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



Sample Summary

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

TestAmerica Job ID: 500-154927-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-154927-1	W-181112-RA-01	Water	11/12/18 11:35	11/16/18 09:55
500-154927-2	W-181112-RA-02	Water	11/12/18 11:35	11/16/18 09:55
500-154927-3	W-181112-RA-03	Water	11/12/18 11:50	11/16/18 09:55
500-154927-4	W-181112-RA-04	Water	11/12/18 12:25	11/16/18 09:55
500-154927-5	W-181112-RA-05	Water	11/12/18 12:20	11/16/18 09:55
500-154927-6	W-181112-RA-06	Water	11/12/18 13:00	11/16/18 09:55
500-154927-7	W-181112-RA-07	Water	11/12/18 13:30	11/16/18 09:55
500-154927-8	W-181112-RA-08	Water	11/12/18 14:25	11/16/18 09:55
500-154927-9	W-181114-RA-09	Water	11/14/18 09:40	11/16/18 09:55
500-154927-10	W-181114-RA-10	Water	11/14/18 09:40	11/16/18 09:55
500-154927-11	W-181114-RA-11	Water	11/14/18 10:40	11/16/18 09:55
500-154927-12	W-181114-RA-12	Water	11/14/18 11:45	11/16/18 09:55
500-154927-13	W-181114-RA-13	Water	11/14/18 12:15	11/16/18 09:55
500-154927-14	W-181114-RA-14	Water	11/14/18 12:40	11/16/18 09:55
500-154927-15	W-181114-RA-15	Water	11/14/18 13:20	11/16/18 09:55
500-154927-16	W-181115-RA-16	Water	11/15/18 09:43	11/16/18 09:55
500-154927-17	W-181115-RA-17	Water	11/15/18 10:43	11/16/18 09:55
500-154927-18	W-181115-RA-18	Water	11/15/18 10:43	11/16/18 09:55
500-154927-19	W-181115-RA-19	Water	11/15/18 12:25	11/16/18 09:55
500-154927-20	W-181115-RA-20	Water	11/15/18 12:25	11/16/18 09:55
500-154927-21	W-181115-RA-21	Water	11/15/18 12:53	11/16/18 09:55
500-154927-22	Trip Blank	Water	11/12/18 14:00	11/16/18 09:55

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-01

Lab Sample ID: 500-154927-1

Date Collected: 11/12/18 11:35

Matrix: Water

Date Received: 11/16/18 09:55

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			11/22/18 03:49	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/22/18 03:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/22/18 03:49	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/22/18 03:49	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/22/18 03:49	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/22/18 03:49	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/22/18 03:49	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/22/18 03:49	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/22/18 03:49	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/22/18 03:49	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/22/18 03:49	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/22/18 03:49	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/22/18 03:49	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/22/18 03:49	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/22/18 03:49	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/22/18 03:49	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/22/18 03:49	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/22/18 03:49	1
Acetone	<1.7		5.0	1.7	ug/L			11/22/18 03:49	1
Benzene	<0.15		0.50	0.15	ug/L			11/22/18 03:49	1
Bromoform	<0.48		1.0	0.48	ug/L			11/22/18 03:49	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/22/18 03:49	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/22/18 03:49	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/22/18 03:49	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/22/18 03:49	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/22/18 03:49	1
Chloroform	<0.37		2.0	0.37	ug/L			11/22/18 03:49	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/22/18 03:49	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/22/18 03:49	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/22/18 03:49	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/22/18 03:49	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/22/18 03:49	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/22/18 03:49	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/22/18 03:49	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/22/18 03:49	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/22/18 03:49	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/22/18 03:49	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/22/18 03:49	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/22/18 03:49	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/22/18 03:49	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/22/18 03:49	1
Styrene	<0.39		1.0	0.39	ug/L			11/22/18 03:49	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/22/18 03:49	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/22/18 03:49	1
Toluene	<0.15		0.50	0.15	ug/L			11/22/18 03:49	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/22/18 03:49	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/22/18 03:49	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/22/18 03:49	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/22/18 03:49	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-01

Lab Sample ID: 500-154927-1

Date Collected: 11/12/18 11:35

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/22/18 03:49	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/22/18 03:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 126					11/22/18 03:49	1
4-Bromofluorobenzene (Surr)	103		72 - 124					11/22/18 03:49	1
Toluene-d8 (Surr)	94		75 - 120					11/22/18 03:49	1
Dibromofluoromethane	95		75 - 120					11/22/18 03:49	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-02

Lab Sample ID: 500-154927-2

Date Collected: 11/12/18 11:35

Matrix: Water

Date Received: 11/16/18 09:55

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			11/22/18 04:18	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/22/18 04:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/22/18 04:18	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/22/18 04:18	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/22/18 04:18	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/22/18 04:18	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/22/18 04:18	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/22/18 04:18	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/22/18 04:18	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/22/18 04:18	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/22/18 04:18	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/22/18 04:18	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/22/18 04:18	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/22/18 04:18	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/22/18 04:18	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/22/18 04:18	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/22/18 04:18	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/22/18 04:18	1
Acetone	3.7 J		5.0	1.7	ug/L			11/22/18 04:18	1
Benzene	<0.15		0.50	0.15	ug/L			11/22/18 04:18	1
Bromoform	<0.48		1.0	0.48	ug/L			11/22/18 04:18	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/22/18 04:18	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/22/18 04:18	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/22/18 04:18	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/22/18 04:18	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/22/18 04:18	1
Chloroform	<0.37		2.0	0.37	ug/L			11/22/18 04:18	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/22/18 04:18	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/22/18 04:18	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/22/18 04:18	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/22/18 04:18	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/22/18 04:18	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/22/18 04:18	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/22/18 04:18	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/22/18 04:18	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/22/18 04:18	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/22/18 04:18	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/22/18 04:18	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/22/18 04:18	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/22/18 04:18	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/22/18 04:18	1
Styrene	<0.39		1.0	0.39	ug/L			11/22/18 04:18	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/22/18 04:18	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/22/18 04:18	1
Toluene	<0.15		0.50	0.15	ug/L			11/22/18 04:18	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/22/18 04:18	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/22/18 04:18	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/22/18 04:18	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/22/18 04:18	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-02

Lab Sample ID: 500-154927-2

Date Collected: 11/12/18 11:35

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/22/18 04:18	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/22/18 04:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 126					11/22/18 04:18	1
4-Bromofluorobenzene (Surr)	103		72 - 124					11/22/18 04:18	1
Toluene-d8 (Surr)	94		75 - 120					11/22/18 04:18	1
Dibromofluoromethane	95		75 - 120					11/22/18 04:18	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-03

Lab Sample ID: 500-154927-3

Date Collected: 11/12/18 11:50

Matrix: Water

Date Received: 11/16/18 09:55

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			11/22/18 04:48	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/22/18 04:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/22/18 04:48	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/22/18 04:48	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/22/18 04:48	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/22/18 04:48	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/22/18 04:48	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/22/18 04:48	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/22/18 04:48	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/22/18 04:48	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/22/18 04:48	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/22/18 04:48	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/22/18 04:48	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/22/18 04:48	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/22/18 04:48	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/22/18 04:48	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/22/18 04:48	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/22/18 04:48	1
Acetone	4.3 J		5.0	1.7	ug/L			11/22/18 04:48	1
Benzene	<0.15		0.50	0.15	ug/L			11/22/18 04:48	1
Bromoform	<0.48		1.0	0.48	ug/L			11/22/18 04:48	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/22/18 04:48	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/22/18 04:48	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/22/18 04:48	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/22/18 04:48	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/22/18 04:48	1
Chloroform	<0.37		2.0	0.37	ug/L			11/22/18 04:48	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/22/18 04:48	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/22/18 04:48	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/22/18 04:48	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/22/18 04:48	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/22/18 04:48	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/22/18 04:48	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/22/18 04:48	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/22/18 04:48	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/22/18 04:48	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/22/18 04:48	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/22/18 04:48	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/22/18 04:48	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/22/18 04:48	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/22/18 04:48	1
Styrene	<0.39		1.0	0.39	ug/L			11/22/18 04:48	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/22/18 04:48	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/22/18 04:48	1
Toluene	<0.15		0.50	0.15	ug/L			11/22/18 04:48	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/22/18 04:48	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/22/18 04:48	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/22/18 04:48	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/22/18 04:48	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-03

Lab Sample ID: 500-154927-3

Date Collected: 11/12/18 11:50

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/22/18 04:48	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/22/18 04:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 126					11/22/18 04:48	1
4-Bromofluorobenzene (Surr)	101		72 - 124					11/22/18 04:48	1
Toluene-d8 (Surr)	93		75 - 120					11/22/18 04:48	1
Dibromofluoromethane	96		75 - 120					11/22/18 04:48	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-04

Lab Sample ID: 500-154927-4

Date Collected: 11/12/18 12:25

Matrix: Water

Date Received: 11/16/18 09:55

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			11/22/18 05:17	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/22/18 05:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/22/18 05:17	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/22/18 05:17	1
1,1-Dichloroethane	3.8		1.0	0.41	ug/L			11/22/18 05:17	1
1,1-Dichloroethene	3.3		1.0	0.39	ug/L			11/22/18 05:17	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/22/18 05:17	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/22/18 05:17	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/22/18 05:17	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/22/18 05:17	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/22/18 05:17	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/22/18 05:17	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/22/18 05:17	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/22/18 05:17	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/22/18 05:17	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/22/18 05:17	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/22/18 05:17	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/22/18 05:17	1
Acetone	4.3 J		5.0	1.7	ug/L			11/22/18 05:17	1
Benzene	<0.15		0.50	0.15	ug/L			11/22/18 05:17	1
Bromoform	<0.48		1.0	0.48	ug/L			11/22/18 05:17	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/22/18 05:17	1
Carbon disulfide	4.6		2.0	0.45	ug/L			11/22/18 05:17	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/22/18 05:17	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/22/18 05:17	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/22/18 05:17	1
Chloroform	<0.37		2.0	0.37	ug/L			11/22/18 05:17	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/22/18 05:17	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/22/18 05:17	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/22/18 05:17	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/22/18 05:17	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/22/18 05:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/22/18 05:17	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/22/18 05:17	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/22/18 05:17	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/22/18 05:17	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/22/18 05:17	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/22/18 05:17	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/22/18 05:17	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/22/18 05:17	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/22/18 05:17	1
Styrene	<0.39		1.0	0.39	ug/L			11/22/18 05:17	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/22/18 05:17	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/22/18 05:17	1
Toluene	<0.15		0.50	0.15	ug/L			11/22/18 05:17	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/22/18 05:17	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/22/18 05:17	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/22/18 05:17	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/22/18 05:17	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-04

Lab Sample ID: 500-154927-4

Date Collected: 11/12/18 12:25

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/22/18 05:17	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/22/18 05:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 126					11/22/18 05:17	1
4-Bromofluorobenzene (Surr)	102		72 - 124					11/22/18 05:17	1
Toluene-d8 (Surr)	92		75 - 120					11/22/18 05:17	1
Dibromofluoromethane	96		75 - 120					11/22/18 05:17	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-05

Lab Sample ID: 500-154927-5

Date Collected: 11/12/18 12:20

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.6		1.0	0.38	ug/L			11/22/18 05:46	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/22/18 05:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/22/18 05:46	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/22/18 05:46	1
1,1-Dichloroethane	2.5		1.0	0.41	ug/L			11/22/18 05:46	1
1,1-Dichloroethene	1.7		1.0	0.39	ug/L			11/22/18 05:46	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/22/18 05:46	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/22/18 05:46	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/22/18 05:46	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/22/18 05:46	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/22/18 05:46	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/22/18 05:46	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/22/18 05:46	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/22/18 05:46	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/22/18 05:46	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/22/18 05:46	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/22/18 05:46	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/22/18 05:46	1
Acetone	<1.7		5.0	1.7	ug/L			11/22/18 05:46	1
Benzene	<0.15		0.50	0.15	ug/L			11/22/18 05:46	1
Bromoform	<0.48		1.0	0.48	ug/L			11/22/18 05:46	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/22/18 05:46	1
Carbon disulfide	3.5		2.0	0.45	ug/L			11/22/18 05:46	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/22/18 05:46	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/22/18 05:46	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/22/18 05:46	1
Chloroform	<0.37		2.0	0.37	ug/L			11/22/18 05:46	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/22/18 05:46	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/22/18 05:46	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/22/18 05:46	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/22/18 05:46	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/22/18 05:46	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/22/18 05:46	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/22/18 05:46	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/22/18 05:46	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/22/18 05:46	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/22/18 05:46	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/22/18 05:46	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/22/18 05:46	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/22/18 05:46	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/22/18 05:46	1
Styrene	<0.39		1.0	0.39	ug/L			11/22/18 05:46	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/22/18 05:46	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/22/18 05:46	1
Toluene	<0.15		0.50	0.15	ug/L			11/22/18 05:46	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/22/18 05:46	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/22/18 05:46	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/22/18 05:46	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/22/18 05:46	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-05

Lab Sample ID: 500-154927-5

Date Collected: 11/12/18 12:20

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/22/18 05:46	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/22/18 05:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 126					11/22/18 05:46	1
4-Bromofluorobenzene (Surr)	102		72 - 124					11/22/18 05:46	1
Toluene-d8 (Surr)	92		75 - 120					11/22/18 05:46	1
Dibromofluoromethane	98		75 - 120					11/22/18 05:46	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-06

Lab Sample ID: 500-154927-6

Date Collected: 11/12/18 13:00

Matrix: Water

Date Received: 11/16/18 09:55

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			11/22/18 06:16	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/22/18 06:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/22/18 06:16	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/22/18 06:16	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/22/18 06:16	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/22/18 06:16	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/22/18 06:16	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/22/18 06:16	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/22/18 06:16	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/22/18 06:16	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/22/18 06:16	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/22/18 06:16	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/22/18 06:16	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/22/18 06:16	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/22/18 06:16	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/22/18 06:16	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/22/18 06:16	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/22/18 06:16	1
Acetone	3.2 J		5.0	1.7	ug/L			11/22/18 06:16	1
Benzene	<0.15		0.50	0.15	ug/L			11/22/18 06:16	1
Bromoform	<0.48		1.0	0.48	ug/L			11/22/18 06:16	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/22/18 06:16	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/22/18 06:16	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/22/18 06:16	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/22/18 06:16	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/22/18 06:16	1
Chloroform	<0.37		2.0	0.37	ug/L			11/22/18 06:16	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/22/18 06:16	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/22/18 06:16	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/22/18 06:16	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/22/18 06:16	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/22/18 06:16	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/22/18 06:16	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/22/18 06:16	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/22/18 06:16	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/22/18 06:16	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/22/18 06:16	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/22/18 06:16	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/22/18 06:16	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/22/18 06:16	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/22/18 06:16	1
Styrene	<0.39		1.0	0.39	ug/L			11/22/18 06:16	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/22/18 06:16	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/22/18 06:16	1
Toluene	<0.15		0.50	0.15	ug/L			11/22/18 06:16	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/22/18 06:16	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/22/18 06:16	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/22/18 06:16	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/22/18 06:16	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-06

Lab Sample ID: 500-154927-6

Date Collected: 11/12/18 13:00

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/22/18 06:16	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/22/18 06:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 126					11/22/18 06:16	1
4-Bromofluorobenzene (Surr)	101		72 - 124					11/22/18 06:16	1
Toluene-d8 (Surr)	93		75 - 120					11/22/18 06:16	1
Dibromofluoromethane	96		75 - 120					11/22/18 06:16	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-07

Lab Sample ID: 500-154927-7

Date Collected: 11/12/18 13:30

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	2.5		1.0	0.38	ug/L			11/22/18 06:45	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/22/18 06:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/22/18 06:45	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/22/18 06:45	1
1,1-Dichloroethane	2.5		1.0	0.41	ug/L			11/22/18 06:45	1
1,1-Dichloroethene	0.49 J		1.0	0.39	ug/L			11/22/18 06:45	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/22/18 06:45	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/22/18 06:45	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/22/18 06:45	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/22/18 06:45	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/22/18 06:45	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/22/18 06:45	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/22/18 06:45	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/22/18 06:45	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/22/18 06:45	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/22/18 06:45	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/22/18 06:45	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/22/18 06:45	1
Acetone	2.4 J		5.0	1.7	ug/L			11/22/18 06:45	1
Benzene	<0.15		0.50	0.15	ug/L			11/22/18 06:45	1
Bromoform	<0.48		1.0	0.48	ug/L			11/22/18 06:45	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/22/18 06:45	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/22/18 06:45	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/22/18 06:45	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/22/18 06:45	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/22/18 06:45	1
Chloroform	<0.37		2.0	0.37	ug/L			11/22/18 06:45	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/22/18 06:45	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/22/18 06:45	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/22/18 06:45	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/22/18 06:45	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/22/18 06:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/22/18 06:45	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/22/18 06:45	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/22/18 06:45	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/22/18 06:45	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/22/18 06:45	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/22/18 06:45	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/22/18 06:45	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/22/18 06:45	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/22/18 06:45	1
Styrene	<0.39		1.0	0.39	ug/L			11/22/18 06:45	1
Tetrachloroethene	0.42 J		1.0	0.37	ug/L			11/22/18 06:45	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/22/18 06:45	1
Toluene	<0.15		0.50	0.15	ug/L			11/22/18 06:45	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/22/18 06:45	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/22/18 06:45	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/22/18 06:45	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/22/18 06:45	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-07

Lab Sample ID: 500-154927-7

Date Collected: 11/12/18 13:30

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/22/18 06:45	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/22/18 06:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 126					11/22/18 06:45	1
4-Bromofluorobenzene (Surr)	101		72 - 124					11/22/18 06:45	1
Toluene-d8 (Surr)	94		75 - 120					11/22/18 06:45	1
Dibromofluoromethane	96		75 - 120					11/22/18 06:45	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-08

Lab Sample ID: 500-154927-8

Date Collected: 11/12/18 14:25

Matrix: Water

Date Received: 11/16/18 09:55

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			11/22/18 02:45	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/22/18 02:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/22/18 02:45	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/22/18 02:45	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/22/18 02:45	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/22/18 02:45	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/22/18 02:45	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/22/18 02:45	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/22/18 02:45	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/22/18 02:45	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/22/18 02:45	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/22/18 02:45	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/22/18 02:45	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/22/18 02:45	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/22/18 02:45	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/22/18 02:45	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/22/18 02:45	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/22/18 02:45	1
Acetone	<1.7		5.0	1.7	ug/L			11/22/18 02:45	1
Benzene	<0.15		0.50	0.15	ug/L			11/22/18 02:45	1
Bromoform	<0.48		1.0	0.48	ug/L			11/22/18 02:45	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/22/18 02:45	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/22/18 02:45	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/22/18 02:45	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/22/18 02:45	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/22/18 02:45	1
Chloroform	<0.37		2.0	0.37	ug/L			11/22/18 02:45	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/22/18 02:45	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/22/18 02:45	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/22/18 02:45	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/22/18 02:45	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/22/18 02:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/22/18 02:45	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/22/18 02:45	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/22/18 02:45	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/22/18 02:45	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/22/18 02:45	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/22/18 02:45	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/22/18 02:45	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/22/18 02:45	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/22/18 02:45	1
Styrene	<0.39		1.0	0.39	ug/L			11/22/18 02:45	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/22/18 02:45	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/22/18 02:45	1
Toluene	<0.15		0.50	0.15	ug/L			11/22/18 02:45	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/22/18 02:45	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/22/18 02:45	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/22/18 02:45	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/22/18 02:45	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-08

Lab Sample ID: 500-154927-8

Date Collected: 11/12/18 14:25

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/22/18 02:45	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/22/18 02:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 126					11/22/18 02:45	1
4-Bromofluorobenzene (Surr)	89		72 - 124					11/22/18 02:45	1
Toluene-d8 (Surr)	105		75 - 120					11/22/18 02:45	1
Dibromofluoromethane	88		75 - 120					11/22/18 02:45	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-09

Lab Sample ID: 500-154927-9

Date Collected: 11/14/18 09:40

Matrix: Water

Date Received: 11/16/18 09:55

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			11/28/18 15:33	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 15:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 15:33	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 15:33	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/28/18 15:33	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/28/18 15:33	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 15:33	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 15:33	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 15:33	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 15:33	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 15:33	1
1,2-Dichloroethane	<0.39 *		1.0	0.39	ug/L			11/28/18 15:33	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 15:33	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 15:33	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 15:33	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 15:33	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 15:33	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 15:33	1
Acetone	5.5		5.0	1.7	ug/L			11/28/18 15:33	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 15:33	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 15:33	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 15:33	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 15:33	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 15:33	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 15:33	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 15:33	1
Chloroform	<0.37		2.0	0.37	ug/L			11/28/18 15:33	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 15:33	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/28/18 15:33	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 15:33	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 15:33	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 15:33	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 15:33	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 15:33	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/28/18 15:33	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 15:33	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 15:33	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 15:33	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 15:33	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 15:33	1
o-Xylene	0.30 J		0.50	0.22	ug/L			11/28/18 15:33	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 15:33	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/28/18 15:33	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 15:33	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 15:33	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 15:33	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 15:33	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/28/18 15:33	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 15:33	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-09

Lab Sample ID: 500-154927-9

Date Collected: 11/14/18 09:40

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 15:33	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 15:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		75 - 126					11/28/18 15:33	1
4-Bromofluorobenzene (Surr)	107		72 - 124					11/28/18 15:33	1
Toluene-d8 (Surr)	100		75 - 120					11/28/18 15:33	1
Dibromofluoromethane	89		75 - 120					11/28/18 15:33	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-10

Lab Sample ID: 500-154927-10

Date Collected: 11/14/18 09:40

Matrix: Water

Date Received: 11/16/18 09:55

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			11/28/18 15:58	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 15:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 15:58	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 15:58	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/28/18 15:58	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/28/18 15:58	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 15:58	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 15:58	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 15:58	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 15:58	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 15:58	1
1,2-Dichloroethane	<0.39	*	1.0	0.39	ug/L			11/28/18 15:58	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 15:58	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 15:58	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 15:58	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 15:58	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 15:58	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 15:58	1
Acetone	3.7	J	5.0	1.7	ug/L			11/28/18 15:58	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 15:58	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 15:58	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 15:58	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 15:58	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 15:58	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 15:58	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 15:58	1
Chloroform	<0.37		2.0	0.37	ug/L			11/28/18 15:58	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 15:58	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/28/18 15:58	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 15:58	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 15:58	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 15:58	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 15:58	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 15:58	1
m-Xylene & p-Xylene	0.27	J	1.0	0.18	ug/L			11/28/18 15:58	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 15:58	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 15:58	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 15:58	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 15:58	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 15:58	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 15:58	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 15:58	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/28/18 15:58	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 15:58	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 15:58	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 15:58	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 15:58	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/28/18 15:58	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 15:58	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-10

Lab Sample ID: 500-154927-10

Date Collected: 11/14/18 09:40

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 15:58	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 15:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		75 - 126					11/28/18 15:58	1
4-Bromofluorobenzene (Surr)	108		72 - 124					11/28/18 15:58	1
Toluene-d8 (Surr)	100		75 - 120					11/28/18 15:58	1
Dibromofluoromethane	89		75 - 120					11/28/18 15:58	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-11

Lab Sample ID: 500-154927-11

Date Collected: 11/14/18 10:40

Matrix: Water

Date Received: 11/16/18 09:55

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			11/28/18 16:23	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 16:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 16:23	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 16:23	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/28/18 16:23	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/28/18 16:23	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 16:23	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 16:23	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 16:23	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 16:23	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 16:23	1
1,2-Dichloroethane	<0.39 *		1.0	0.39	ug/L			11/28/18 16:23	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 16:23	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 16:23	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 16:23	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 16:23	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 16:23	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 16:23	1
Acetone	3.3 J		5.0	1.7	ug/L			11/28/18 16:23	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 16:23	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 16:23	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 16:23	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 16:23	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 16:23	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 16:23	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 16:23	1
Chloroform	<0.37		2.0	0.37	ug/L			11/28/18 16:23	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 16:23	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/28/18 16:23	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 16:23	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 16:23	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 16:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 16:23	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 16:23	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/28/18 16:23	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 16:23	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 16:23	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 16:23	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 16:23	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 16:23	1
o-Xylene	0.30 J		0.50	0.22	ug/L			11/28/18 16:23	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 16:23	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/28/18 16:23	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 16:23	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 16:23	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 16:23	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 16:23	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/28/18 16:23	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 16:23	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-11

Lab Sample ID: 500-154927-11

Date Collected: 11/14/18 10:40

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 16:23	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 16:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		75 - 126					11/28/18 16:23	1
4-Bromofluorobenzene (Surr)	110		72 - 124					11/28/18 16:23	1
Toluene-d8 (Surr)	101		75 - 120					11/28/18 16:23	1
Dibromofluoromethane	89		75 - 120					11/28/18 16:23	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-12

Lab Sample ID: 500-154927-12

Date Collected: 11/14/18 11:45

Matrix: Water

Date Received: 11/16/18 09:55

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			11/28/18 16:48	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 16:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 16:48	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 16:48	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/28/18 16:48	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/28/18 16:48	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 16:48	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 16:48	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 16:48	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 16:48	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 16:48	1
1,2-Dichloroethane	<0.39 *		1.0	0.39	ug/L			11/28/18 16:48	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 16:48	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 16:48	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 16:48	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 16:48	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 16:48	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 16:48	1
Acetone	3.8 J		5.0	1.7	ug/L			11/28/18 16:48	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 16:48	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 16:48	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 16:48	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 16:48	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 16:48	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 16:48	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 16:48	1
Chloroform	<0.37		2.0	0.37	ug/L			11/28/18 16:48	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 16:48	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/28/18 16:48	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 16:48	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 16:48	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 16:48	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 16:48	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 16:48	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/28/18 16:48	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 16:48	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 16:48	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 16:48	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 16:48	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 16:48	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 16:48	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 16:48	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/28/18 16:48	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 16:48	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 16:48	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 16:48	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 16:48	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/28/18 16:48	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 16:48	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-12

Lab Sample ID: 500-154927-12

Date Collected: 11/14/18 11:45

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 16:48	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 16:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		75 - 126					11/28/18 16:48	1
4-Bromofluorobenzene (Surr)	109		72 - 124					11/28/18 16:48	1
Toluene-d8 (Surr)	98		75 - 120					11/28/18 16:48	1
Dibromofluoromethane	89		75 - 120					11/28/18 16:48	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-13

Lab Sample ID: 500-154927-13

Date Collected: 11/14/18 12:15

Matrix: Water

Date Received: 11/16/18 09:55

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			11/28/18 17:13	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 17:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 17:13	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 17:13	1
1,1-Dichloroethane	16		1.0	0.41	ug/L			11/28/18 17:13	1
1,1-Dichloroethene	3.5		1.0	0.39	ug/L			11/28/18 17:13	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 17:13	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 17:13	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 17:13	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 17:13	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 17:13	1
1,2-Dichloroethane	<0.39 *		1.0	0.39	ug/L			11/28/18 17:13	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 17:13	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 17:13	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 17:13	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 17:13	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 17:13	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 17:13	1
Acetone	4.2 J		5.0	1.7	ug/L			11/28/18 17:13	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 17:13	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 17:13	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 17:13	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 17:13	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 17:13	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 17:13	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 17:13	1
Chloroform	0.84 J		2.0	0.37	ug/L			11/28/18 17:13	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 17:13	1
cis-1,2-Dichloroethene	1.1		1.0	0.41	ug/L			11/28/18 17:13	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 17:13	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 17:13	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 17:13	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 17:13	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 17:13	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/28/18 17:13	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 17:13	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 17:13	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 17:13	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 17:13	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 17:13	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 17:13	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 17:13	1
Tetrachloroethene	2.1		1.0	0.37	ug/L			11/28/18 17:13	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 17:13	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 17:13	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 17:13	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 17:13	1
Trichloroethene	0.34 J		0.50	0.16	ug/L			11/28/18 17:13	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 17:13	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-13

Lab Sample ID: 500-154927-13

Date Collected: 11/14/18 12:15

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 17:13	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 17:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		75 - 126					11/28/18 17:13	1
4-Bromofluorobenzene (Surr)	113		72 - 124					11/28/18 17:13	1
Toluene-d8 (Surr)	99		75 - 120					11/28/18 17:13	1
Dibromofluoromethane	88		75 - 120					11/28/18 17:13	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-14

Lab Sample ID: 500-154927-14

Date Collected: 11/14/18 12:40

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	4.5		1.0	0.38	ug/L			11/28/18 17:38	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 17:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 17:38	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 17:38	1
1,1-Dichloroethane	15		1.0	0.41	ug/L			11/28/18 17:38	1
1,1-Dichloroethene	1.0		1.0	0.39	ug/L			11/28/18 17:38	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 17:38	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 17:38	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 17:38	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 17:38	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 17:38	1
1,2-Dichloroethane	<0.39 *		1.0	0.39	ug/L			11/28/18 17:38	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 17:38	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 17:38	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 17:38	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 17:38	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 17:38	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 17:38	1
Acetone	2.6 J		5.0	1.7	ug/L			11/28/18 17:38	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 17:38	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 17:38	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 17:38	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 17:38	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 17:38	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 17:38	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 17:38	1
Chloroform	1.7 J		2.0	0.37	ug/L			11/28/18 17:38	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 17:38	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/28/18 17:38	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 17:38	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 17:38	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 17:38	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 17:38	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 17:38	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/28/18 17:38	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 17:38	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 17:38	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 17:38	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 17:38	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 17:38	1
o-Xylene	0.26 J		0.50	0.22	ug/L			11/28/18 17:38	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 17:38	1
Tetrachloroethene	0.54 J		1.0	0.37	ug/L			11/28/18 17:38	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 17:38	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 17:38	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 17:38	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 17:38	1
Trichloroethene	0.48 J		0.50	0.16	ug/L			11/28/18 17:38	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 17:38	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-14

Lab Sample ID: 500-154927-14

Date Collected: 11/14/18 12:40

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 17:38	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 17:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		75 - 126					11/28/18 17:38	1
4-Bromofluorobenzene (Surr)	109		72 - 124					11/28/18 17:38	1
Toluene-d8 (Surr)	100		75 - 120					11/28/18 17:38	1
Dibromofluoromethane	88		75 - 120					11/28/18 17:38	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-15

Lab Sample ID: 500-154927-15

Date Collected: 11/14/18 13:20

Matrix: Water

Date Received: 11/16/18 09:55

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			11/28/18 06:14	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 06:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 06:14	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 06:14	1
1,1-Dichloroethane	18		1.0	0.41	ug/L			11/28/18 06:14	1
1,1-Dichloroethene	3.8		1.0	0.39	ug/L			11/28/18 06:14	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 06:14	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 06:14	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 06:14	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 06:14	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 06:14	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/28/18 06:14	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 06:14	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 06:14	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 06:14	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 06:14	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 06:14	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 06:14	1
Acetone	<1.7		5.0	1.7	ug/L			11/28/18 06:14	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 06:14	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 06:14	1
Bromomethane	<0.80	F1	2.0	0.80	ug/L			11/28/18 06:14	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 06:14	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 06:14	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 06:14	1
Chloroethane	<0.51	F1	1.0	0.51	ug/L			11/28/18 06:14	1
Chloroform	0.49	J	2.0	0.37	ug/L			11/28/18 06:14	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 06:14	1
cis-1,2-Dichloroethene	1.6		1.0	0.41	ug/L			11/28/18 06:14	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 06:14	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 06:14	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 06:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 06:14	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 06:14	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/28/18 06:14	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 06:14	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 06:14	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 06:14	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 06:14	1
Methylene Chloride	1.8	J B	5.0	1.6	ug/L			11/28/18 06:14	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 06:14	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 06:14	1
Tetrachloroethene	3.4		1.0	0.37	ug/L			11/28/18 06:14	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 06:14	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 06:14	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 06:14	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 06:14	1
Trichloroethene	0.37	J	0.50	0.16	ug/L			11/28/18 06:14	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 06:14	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-15

Lab Sample ID: 500-154927-15

Date Collected: 11/14/18 13:20

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 06:14	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 06:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 126					11/28/18 06:14	1
4-Bromofluorobenzene (Surr)	94		72 - 124					11/28/18 06:14	1
Toluene-d8 (Surr)	97		75 - 120					11/28/18 06:14	1
Dibromofluoromethane	90		75 - 120					11/28/18 06:14	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-16

Lab Sample ID: 500-154927-16

Date Collected: 11/15/18 09:43

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.3		1.0	0.38	ug/L			11/28/18 19:44	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 19:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 19:44	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 19:44	1
1,1-Dichloroethane	2.5		1.0	0.41	ug/L			11/28/18 19:44	1
1,1-Dichloroethene	0.43 J		1.0	0.39	ug/L			11/28/18 19:44	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 19:44	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 19:44	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 19:44	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 19:44	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 19:44	1
1,2-Dichloroethane	<0.39 *		1.0	0.39	ug/L			11/28/18 19:44	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 19:44	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 19:44	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 19:44	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 19:44	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 19:44	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 19:44	1
Acetone	3.0 J		5.0	1.7	ug/L			11/28/18 19:44	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 19:44	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 19:44	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 19:44	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 19:44	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 19:44	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 19:44	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 19:44	1
Chloroform	0.77 J		2.0	0.37	ug/L			11/28/18 19:44	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 19:44	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/28/18 19:44	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 19:44	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 19:44	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 19:44	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 19:44	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 19:44	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/28/18 19:44	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 19:44	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 19:44	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 19:44	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 19:44	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 19:44	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 19:44	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 19:44	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/28/18 19:44	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 19:44	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 19:44	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 19:44	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 19:44	1
Trichloroethene	0.27 J		0.50	0.16	ug/L			11/28/18 19:44	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 19:44	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-16

Lab Sample ID: 500-154927-16

Date Collected: 11/15/18 09:43

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 19:44	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 19:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		75 - 126					11/28/18 19:44	1
4-Bromofluorobenzene (Surr)	107		72 - 124					11/28/18 19:44	1
Toluene-d8 (Surr)	100		75 - 120					11/28/18 19:44	1
Dibromofluoromethane	88		75 - 120					11/28/18 19:44	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-17

Lab Sample ID: 500-154927-17

Date Collected: 11/15/18 10:43

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	11		1.0	0.38	ug/L			11/28/18 20:09	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 20:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 20:09	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 20:09	1
1,1-Dichloroethane	17		1.0	0.41	ug/L			11/28/18 20:09	1
1,1-Dichloroethene	2.9		1.0	0.39	ug/L			11/28/18 20:09	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 20:09	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 20:09	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 20:09	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 20:09	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 20:09	1
1,2-Dichloroethane	<0.39 *		1.0	0.39	ug/L			11/28/18 20:09	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 20:09	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 20:09	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 20:09	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 20:09	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 20:09	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 20:09	1
Acetone	4.7 J		5.0	1.7	ug/L			11/28/18 20:09	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 20:09	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 20:09	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 20:09	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 20:09	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 20:09	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 20:09	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 20:09	1
Chloroform	2.0		2.0	0.37	ug/L			11/28/18 20:09	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 20:09	1
cis-1,2-Dichloroethene	1.0		1.0	0.41	ug/L			11/28/18 20:09	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 20:09	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 20:09	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 20:09	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 20:09	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 20:09	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/28/18 20:09	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 20:09	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 20:09	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 20:09	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 20:09	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 20:09	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 20:09	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 20:09	1
Tetrachloroethene	2.3		1.0	0.37	ug/L			11/28/18 20:09	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 20:09	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 20:09	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 20:09	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 20:09	1
Trichloroethene	0.32 J		0.50	0.16	ug/L			11/28/18 20:09	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 20:09	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-17

Lab Sample ID: 500-154927-17

Date Collected: 11/15/18 10:43

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 20:09	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 20:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		75 - 126					11/28/18 20:09	1
4-Bromofluorobenzene (Surr)	112		72 - 124					11/28/18 20:09	1
Toluene-d8 (Surr)	98		75 - 120					11/28/18 20:09	1
Dibromofluoromethane	90		75 - 120					11/28/18 20:09	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-18

Lab Sample ID: 500-154927-18

Date Collected: 11/15/18 10:43

Matrix: Water

Date Received: 11/16/18 09:55

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			11/28/18 20:34	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 20:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 20:34	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 20:34	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/28/18 20:34	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/28/18 20:34	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 20:34	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 20:34	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 20:34	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 20:34	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 20:34	1
1,2-Dichloroethane	<0.39 *		1.0	0.39	ug/L			11/28/18 20:34	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 20:34	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 20:34	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 20:34	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 20:34	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 20:34	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 20:34	1
Acetone	7.0		5.0	1.7	ug/L			11/28/18 20:34	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 20:34	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 20:34	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 20:34	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 20:34	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 20:34	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 20:34	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 20:34	1
Chloroform	<0.37		2.0	0.37	ug/L			11/28/18 20:34	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 20:34	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/28/18 20:34	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 20:34	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 20:34	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 20:34	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 20:34	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 20:34	1
m-Xylene & p-Xylene	0.24 J		1.0	0.18	ug/L			11/28/18 20:34	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 20:34	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 20:34	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 20:34	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 20:34	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 20:34	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 20:34	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 20:34	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/28/18 20:34	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 20:34	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 20:34	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 20:34	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 20:34	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/28/18 20:34	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 20:34	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-18

Lab Sample ID: 500-154927-18

Date Collected: 11/15/18 10:43

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 20:34	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 20:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		75 - 126					11/28/18 20:34	1
4-Bromofluorobenzene (Surr)	107		72 - 124					11/28/18 20:34	1
Toluene-d8 (Surr)	98		75 - 120					11/28/18 20:34	1
Dibromofluoromethane	88		75 - 120					11/28/18 20:34	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-19

Lab Sample ID: 500-154927-19

Date Collected: 11/15/18 12:25

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	12		1.0	0.38	ug/L			11/28/18 20:59	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 20:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 20:59	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 20:59	1
1,1-Dichloroethane	16		1.0	0.41	ug/L			11/28/18 20:59	1
1,1-Dichloroethene	3.1		1.0	0.39	ug/L			11/28/18 20:59	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 20:59	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 20:59	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 20:59	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 20:59	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 20:59	1
1,2-Dichloroethane	<0.39 *		1.0	0.39	ug/L			11/28/18 20:59	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 20:59	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 20:59	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 20:59	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 20:59	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 20:59	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 20:59	1
Acetone	3.2 J		5.0	1.7	ug/L			11/28/18 20:59	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 20:59	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 20:59	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 20:59	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 20:59	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 20:59	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 20:59	1
Chloroethane	1.2		1.0	0.51	ug/L			11/28/18 20:59	1
Chloroform	<0.37		2.0	0.37	ug/L			11/28/18 20:59	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 20:59	1
cis-1,2-Dichloroethene	0.87 J		1.0	0.41	ug/L			11/28/18 20:59	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 20:59	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 20:59	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 20:59	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 20:59	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 20:59	1
m-Xylene & p-Xylene	0.26 J		1.0	0.18	ug/L			11/28/18 20:59	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 20:59	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 20:59	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 20:59	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 20:59	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 20:59	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 20:59	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 20:59	1
Tetrachloroethene	2.1		1.0	0.37	ug/L			11/28/18 20:59	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 20:59	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 20:59	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 20:59	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 20:59	1
Trichloroethene	0.37 J		0.50	0.16	ug/L			11/28/18 20:59	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 20:59	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-19

Lab Sample ID: 500-154927-19

Date Collected: 11/15/18 12:25

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 20:59	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 20:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		75 - 126					11/28/18 20:59	1
4-Bromofluorobenzene (Surr)	110		72 - 124					11/28/18 20:59	1
Toluene-d8 (Surr)	98		75 - 120					11/28/18 20:59	1
Dibromofluoromethane	90		75 - 120					11/28/18 20:59	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-20

Lab Sample ID: 500-154927-20

Date Collected: 11/15/18 12:25

Matrix: Water

Date Received: 11/16/18 09:55

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			11/28/18 21:24	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 21:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 21:24	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 21:24	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/28/18 21:24	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/28/18 21:24	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 21:24	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 21:24	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 21:24	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 21:24	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 21:24	1
1,2-Dichloroethane	<0.39 *		1.0	0.39	ug/L			11/28/18 21:24	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 21:24	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 21:24	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 21:24	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 21:24	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 21:24	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 21:24	1
Acetone	6.5		5.0	1.7	ug/L			11/28/18 21:24	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 21:24	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 21:24	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 21:24	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 21:24	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 21:24	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 21:24	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 21:24	1
Chloroform	<0.37		2.0	0.37	ug/L			11/28/18 21:24	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 21:24	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/28/18 21:24	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 21:24	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 21:24	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 21:24	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 21:24	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 21:24	1
m-Xylene & p-Xylene	0.26 J		1.0	0.18	ug/L			11/28/18 21:24	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 21:24	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 21:24	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 21:24	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 21:24	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 21:24	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 21:24	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 21:24	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/28/18 21:24	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 21:24	1
Toluene	0.19 J		0.50	0.15	ug/L			11/28/18 21:24	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 21:24	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 21:24	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/28/18 21:24	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 21:24	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-20

Lab Sample ID: 500-154927-20

Date Collected: 11/15/18 12:25

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 21:24	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 21:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		75 - 126					11/28/18 21:24	1
4-Bromofluorobenzene (Surr)	108		72 - 124					11/28/18 21:24	1
Toluene-d8 (Surr)	96		75 - 120					11/28/18 21:24	1
Dibromofluoromethane	88		75 - 120					11/28/18 21:24	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-21

Lab Sample ID: 500-154927-21

Date Collected: 11/15/18 12:53

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	11		1.0	0.38	ug/L			11/28/18 21:49	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 21:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 21:49	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 21:49	1
1,1-Dichloroethane	11		1.0	0.41	ug/L			11/28/18 21:49	1
1,1-Dichloroethene	1.5		1.0	0.39	ug/L			11/28/18 21:49	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 21:49	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 21:49	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 21:49	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 21:49	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 21:49	1
1,2-Dichloroethane	<0.39	F1 *	1.0	0.39	ug/L			11/28/18 21:49	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 21:49	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 21:49	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 21:49	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 21:49	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 21:49	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 21:49	1
Acetone	3.4 J		5.0	1.7	ug/L			11/28/18 21:49	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 21:49	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 21:49	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 21:49	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 21:49	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 21:49	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 21:49	1
Chloroethane	0.67 J		1.0	0.51	ug/L			11/28/18 21:49	1
Chloroform	<0.37		2.0	0.37	ug/L			11/28/18 21:49	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 21:49	1
cis-1,2-Dichloroethene	0.45 J		1.0	0.41	ug/L			11/28/18 21:49	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 21:49	1
Dichlorobromomethane	<0.37	F1	1.0	0.37	ug/L			11/28/18 21:49	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 21:49	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 21:49	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 21:49	1
m-Xylene & p-Xylene	0.29 J		1.0	0.18	ug/L			11/28/18 21:49	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 21:49	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 21:49	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 21:49	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 21:49	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 21:49	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 21:49	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 21:49	1
Tetrachloroethene	1.9		1.0	0.37	ug/L			11/28/18 21:49	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 21:49	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 21:49	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 21:49	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 21:49	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/28/18 21:49	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 21:49	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-21

Lab Sample ID: 500-154927-21

Date Collected: 11/15/18 12:53

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 21:49	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 21:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		75 - 126					11/28/18 21:49	1
4-Bromofluorobenzene (Surr)	110		72 - 124					11/28/18 21:49	1
Toluene-d8 (Surr)	99		75 - 120					11/28/18 21:49	1
Dibromofluoromethane	89		75 - 120					11/28/18 21:49	1

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-154927-22

Date Collected: 11/12/18 14:00

Matrix: Water

Date Received: 11/16/18 09:55

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			11/23/18 13:13	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/23/18 13:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/23/18 13:13	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/23/18 13:13	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/23/18 13:13	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/23/18 13:13	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/23/18 13:13	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/23/18 13:13	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/23/18 13:13	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/23/18 13:13	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/23/18 13:13	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/23/18 13:13	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/23/18 13:13	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/23/18 13:13	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/23/18 13:13	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/23/18 13:13	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/23/18 13:13	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/23/18 13:13	1
Acetone	2.5	J	5.0	1.7	ug/L			11/23/18 13:13	1
Benzene	0.26	J	0.50	0.15	ug/L			11/23/18 13:13	1
Bromoform	<0.48		1.0	0.48	ug/L			11/23/18 13:13	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/23/18 13:13	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/23/18 13:13	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/23/18 13:13	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/23/18 13:13	1
Chloroethane	<0.51	*	1.0	0.51	ug/L			11/23/18 13:13	1
Chloroform	<0.37		2.0	0.37	ug/L			11/23/18 13:13	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/23/18 13:13	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/23/18 13:13	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/23/18 13:13	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/23/18 13:13	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/23/18 13:13	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/23/18 13:13	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/23/18 13:13	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/23/18 13:13	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/23/18 13:13	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/23/18 13:13	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/23/18 13:13	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/23/18 13:13	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/23/18 13:13	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/23/18 13:13	1
Styrene	<0.39		1.0	0.39	ug/L			11/23/18 13:13	1
Tetrachloroethene	0.91	J	1.0	0.37	ug/L			11/23/18 13:13	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/23/18 13:13	1
Toluene	0.35	J	0.50	0.15	ug/L			11/23/18 13:13	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/23/18 13:13	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/23/18 13:13	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/23/18 13:13	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/23/18 13:13	1

TestAmerica Chicago

Client Sample Results

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-154927-22

Date Collected: 11/12/18 14:00

Matrix: Water

Date Received: 11/16/18 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/23/18 13:13	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/23/18 13:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 126					11/23/18 13:13	1
4-Bromofluorobenzene (Surr)	89		72 - 124					11/23/18 13:13	1
Toluene-d8 (Surr)	105		75 - 120					11/23/18 13:13	1
Dibromofluoromethane	90		75 - 120					11/23/18 13:13	1

Definitions/Glossary

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

TestAmerica Job ID: 500-154927-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Reported value was between the limit of detection and the limit of quantitation.
F1	MS and/or MSD Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.
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: 500-154927-1

GC/MS VOA

Analysis Batch: 461361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-154927-1	W-181112-RA-01	Total/NA	Water	8260B	
500-154927-2	W-181112-RA-02	Total/NA	Water	8260B	
500-154927-3	W-181112-RA-03	Total/NA	Water	8260B	
500-154927-4	W-181112-RA-04	Total/NA	Water	8260B	
500-154927-5	W-181112-RA-05	Total/NA	Water	8260B	
500-154927-6	W-181112-RA-06	Total/NA	Water	8260B	
500-154927-7	W-181112-RA-07	Total/NA	Water	8260B	
MB 500-461361/6	Method Blank	Total/NA	Water	8260B	
LCS 500-461361/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 461364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-154927-8	W-181112-RA-08	Total/NA	Water	8260B	
MB 500-461364/7	Method Blank	Total/NA	Water	8260B	
LCS 500-461364/5	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 461394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-154927-22	Trip Blank	Total/NA	Water	8260B	
MB 500-461394/7	Method Blank	Total/NA	Water	8260B	
LCS 500-461394/5	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 461974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-154927-15	W-181114-RA-15	Total/NA	Water	8260B	
MB 500-461974/6	Method Blank	Total/NA	Water	8260B	
LCS 500-461974/4	Lab Control Sample	Total/NA	Water	8260B	
500-154927-15 MS	W-181114-RA-15	Total/NA	Water	8260B	
500-154927-15 MSD	W-181114-RA-15	Total/NA	Water	8260B	

Analysis Batch: 462045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-154927-9	W-181114-RA-09	Total/NA	Water	8260B	
500-154927-10	W-181114-RA-10	Total/NA	Water	8260B	
500-154927-11	W-181114-RA-11	Total/NA	Water	8260B	
500-154927-12	W-181114-RA-12	Total/NA	Water	8260B	
500-154927-13	W-181114-RA-13	Total/NA	Water	8260B	
500-154927-14	W-181114-RA-14	Total/NA	Water	8260B	
500-154927-16	W-181115-RA-16	Total/NA	Water	8260B	
500-154927-17	W-181115-RA-17	Total/NA	Water	8260B	
500-154927-18	W-181115-RA-18	Total/NA	Water	8260B	
500-154927-19	W-181115-RA-19	Total/NA	Water	8260B	
500-154927-20	W-181115-RA-20	Total/NA	Water	8260B	
500-154927-21	W-181115-RA-21	Total/NA	Water	8260B	
MB 500-462045/6	Method Blank	Total/NA	Water	8260B	
LCS 500-462045/4	Lab Control Sample	Total/NA	Water	8260B	
500-154927-21 MS	W-181115-RA-21	Total/NA	Water	8260B	
500-154927-21 MSD	W-181115-RA-21	Total/NA	Water	8260B	

Surrogate Summary

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

TestAmerica Job ID: 500-154927-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	BFB (72-124)	TOL (75-120)	DBFM (75-120)
500-154927-1	W-181112-RA-01	98	103	94	95
500-154927-2	W-181112-RA-02	99	103	94	95
500-154927-3	W-181112-RA-03	99	101	93	96
500-154927-4	W-181112-RA-04	100	102	92	96
500-154927-5	W-181112-RA-05	102	102	92	98
500-154927-6	W-181112-RA-06	98	101	93	96
500-154927-7	W-181112-RA-07	100	101	94	96
500-154927-8	W-181112-RA-08	91	89	105	88
500-154927-9	W-181114-RA-09	116	107	100	89
500-154927-10	W-181114-RA-10	114	108	100	89
500-154927-11	W-181114-RA-11	116	110	101	89
500-154927-12	W-181114-RA-12	115	109	98	89
500-154927-13	W-181114-RA-13	114	113	99	88
500-154927-14	W-181114-RA-14	117	109	100	88
500-154927-15	W-181114-RA-15	95	94	97	90
500-154927-15 MS	W-181114-RA-15	94	94	96	97
500-154927-15 MSD	W-181114-RA-15	95	96	95	98
500-154927-16	W-181115-RA-16	116	107	100	88
500-154927-17	W-181115-RA-17	115	112	98	90
500-154927-18	W-181115-RA-18	115	107	98	88
500-154927-19	W-181115-RA-19	118	110	98	90
500-154927-20	W-181115-RA-20	117	108	96	88
500-154927-21	W-181115-RA-21	115	110	99	89
500-154927-21 MS	W-181115-RA-21	115	103	105	92
500-154927-21 MSD	W-181115-RA-21	115	102	104	90
500-154927-22	Trip Blank	94	89	105	90
LCS 500-461361/4	Lab Control Sample	91	101	96	89
LCS 500-461364/5	Lab Control Sample	94	93	103	94
LCS 500-461394/5	Lab Control Sample	93	96	103	91
LCS 500-461974/4	Lab Control Sample	94	97	96	94
LCS 500-462045/4	Lab Control Sample	108	101	103	90
MB 500-461361/6	Method Blank	93	104	95	93
MB 500-461364/7	Method Blank	98	90	101	96
MB 500-461394/7	Method Blank	101	91	101	94
MB 500-461974/6	Method Blank	96	94	96	95
MB 500-462045/6	Method Blank	116	110	96	90

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: MB 500-461361/6

Matrix: Water

Analysis Batch: 461361

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			11/22/18 01:21	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/22/18 01:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/22/18 01:21	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/22/18 01:21	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/22/18 01:21	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/22/18 01:21	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/22/18 01:21	1
1,2,4-Trichlorobenzene	0.342	J	1.0	0.34	ug/L			11/22/18 01:21	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/22/18 01:21	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/22/18 01:21	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/22/18 01:21	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/22/18 01:21	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/22/18 01:21	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/22/18 01:21	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/22/18 01:21	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/22/18 01:21	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/22/18 01:21	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/22/18 01:21	1
Acetone	<1.7		5.0	1.7	ug/L			11/22/18 01:21	1
Benzene	<0.15		0.50	0.15	ug/L			11/22/18 01:21	1
Bromoform	<0.48		1.0	0.48	ug/L			11/22/18 01:21	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/22/18 01:21	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/22/18 01:21	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/22/18 01:21	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/22/18 01:21	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/22/18 01:21	1
Chloroform	<0.37		2.0	0.37	ug/L			11/22/18 01:21	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/22/18 01:21	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/22/18 01:21	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/22/18 01:21	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/22/18 01:21	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/22/18 01:21	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/22/18 01:21	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/22/18 01:21	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/22/18 01:21	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/22/18 01:21	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/22/18 01:21	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/22/18 01:21	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/22/18 01:21	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/22/18 01:21	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/22/18 01:21	1
Styrene	<0.39		1.0	0.39	ug/L			11/22/18 01:21	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/22/18 01:21	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/22/18 01:21	1
Toluene	<0.15		0.50	0.15	ug/L			11/22/18 01:21	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/22/18 01:21	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/22/18 01:21	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/22/18 01:21	1

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: MB 500-461361/6
Matrix: Water
Analysis Batch: 461361

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			11/22/18 01:21	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/22/18 01:21	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/22/18 01:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 126		11/22/18 01:21	1
4-Bromofluorobenzene (Surr)	104		72 - 124		11/22/18 01:21	1
Toluene-d8 (Surr)	95		75 - 120		11/22/18 01:21	1
Dibromofluoromethane	93		75 - 120		11/22/18 01:21	1

Lab Sample ID: LCS 500-461361/4
Matrix: Water
Analysis Batch: 461361

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
1,1,2,2-Tetrachloroethane	50.0	44.6		ug/L		89	62 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	42.4		ug/L		85	70 - 123
1,1,2-Trichloroethane	50.0	45.4		ug/L		91	71 - 130
1,1-Dichloroethane	50.0	48.5		ug/L		97	70 - 125
1,1-Dichloroethene	50.0	42.0		ug/L		84	67 - 122
1,2,3-Trichlorobenzene	50.0	49.7		ug/L		99	51 - 145
1,2,4-Trichlorobenzene	50.0	49.7		ug/L		99	57 - 137
1,2,4-Trimethylbenzene	50.0	50.4		ug/L		101	70 - 123
1,2-Dibromo-3-Chloropropane	50.0	43.6		ug/L		87	56 - 123
1,2-Dichlorobenzene	50.0	46.8		ug/L		94	70 - 125
1,2-Dichloroethane	50.0	47.4		ug/L		95	68 - 127
1,2-Dichloropropane	50.0	51.5		ug/L		103	67 - 130
1,3,5-Trimethylbenzene	50.0	50.2		ug/L		100	70 - 123
1,3-Dichlorobenzene	50.0	49.4		ug/L		99	70 - 125
1,4-Dichlorobenzene	50.0	47.5		ug/L		95	70 - 120
2-Hexanone	50.0	48.9		ug/L		98	54 - 146
Bromochloromethane	50.0	44.1		ug/L		88	65 - 122
Acetone	50.0	58.4		ug/L		117	40 - 143
Benzene	50.0	45.2		ug/L		90	70 - 120
Bromoform	50.0	51.8		ug/L		104	56 - 132
Bromomethane	50.0	31.0		ug/L		62	40 - 152
Carbon disulfide	50.0	43.8		ug/L		88	66 - 120
Carbon tetrachloride	50.0	46.0		ug/L		92	59 - 133
Chlorobenzene	50.0	49.5		ug/L		99	70 - 120
Chloroethane	50.0	44.1		ug/L		88	48 - 136
Chloroform	50.0	46.7		ug/L		93	70 - 120
Chloromethane	50.0	55.2		ug/L		110	56 - 152
cis-1,2-Dichloroethene	50.0	42.8		ug/L		86	70 - 125
cis-1,3-Dichloropropene	50.0	43.8		ug/L		88	64 - 127
Dichlorobromomethane	50.0	47.4		ug/L		95	69 - 120
Dichlorodifluoromethane	50.0	48.1		ug/L		96	40 - 159

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: LCS 500-461361/4
Matrix: Water
Analysis Batch: 461361

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	50.0	49.4		ug/L		99	70 - 123
Ethylene Dibromide	50.0	44.1		ug/L		88	70 - 125
m-Xylene & p-Xylene	50.0	49.5		ug/L		99	70 - 125
Isopropylbenzene	50.0	50.1		ug/L		100	70 - 126
2-Butanone (MEK)	50.0	58.5		ug/L		117	46 - 144
4-Methyl-2-pentanone (MIBK)	50.0	50.3		ug/L		101	55 - 139
Methyl tert-butyl ether	50.0	37.4		ug/L		75	55 - 123
Methylene Chloride	50.0	42.9		ug/L		86	69 - 125
o-Xylene	50.0	48.1		ug/L		96	70 - 120
Styrene	50.0	50.9		ug/L		102	70 - 120
Tetrachloroethene	50.0	51.8		ug/L		104	70 - 128
Toluene	50.0	48.5		ug/L		97	70 - 125
trans-1,2-Dichloroethene	50.0	43.7		ug/L		87	70 - 125
trans-1,3-Dichloropropene	50.0	43.2		ug/L		86	62 - 128
Trichloroethene	50.0	47.5		ug/L		95	70 - 125
Trichlorofluoromethane	50.0	41.2		ug/L		82	55 - 128
Vinyl chloride	50.0	55.1		ug/L		110	64 - 126
Chlorodibromomethane	50.0	47.3		ug/L		95	68 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		75 - 126
4-Bromofluorobenzene (Surr)	101		72 - 124
Toluene-d8 (Surr)	96		75 - 120
Dibromofluoromethane	89		75 - 120

Lab Sample ID: MB 500-461364/7
Matrix: Water
Analysis Batch: 461364

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			11/22/18 01:29	1
1,1,1,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/22/18 01:29	1
1,1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/22/18 01:29	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/22/18 01:29	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/22/18 01:29	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/22/18 01:29	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/22/18 01:29	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/22/18 01:29	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/22/18 01:29	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/22/18 01:29	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/22/18 01:29	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/22/18 01:29	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/22/18 01:29	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/22/18 01:29	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/22/18 01:29	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/22/18 01:29	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/22/18 01:29	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/22/18 01:29	1

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: MB 500-461364/7
Matrix: Water
Analysis Batch: 461364

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

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	<1.7		5.0	1.7	ug/L			11/22/18 01:29	1
Benzene	<0.15		0.50	0.15	ug/L			11/22/18 01:29	1
Bromoform	<0.48		1.0	0.48	ug/L			11/22/18 01:29	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/22/18 01:29	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/22/18 01:29	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/22/18 01:29	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/22/18 01:29	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/22/18 01:29	1
Chloroform	<0.37		2.0	0.37	ug/L			11/22/18 01:29	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/22/18 01:29	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/22/18 01:29	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/22/18 01:29	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/22/18 01:29	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/22/18 01:29	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/22/18 01:29	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/22/18 01:29	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/22/18 01:29	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/22/18 01:29	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/22/18 01:29	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/22/18 01:29	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/22/18 01:29	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/22/18 01:29	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/22/18 01:29	1
Styrene	<0.39		1.0	0.39	ug/L			11/22/18 01:29	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/22/18 01:29	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/22/18 01:29	1
Toluene	<0.15		0.50	0.15	ug/L			11/22/18 01:29	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/22/18 01:29	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/22/18 01:29	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/22/18 01:29	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/22/18 01:29	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/22/18 01:29	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/22/18 01:29	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	98		75 - 126		11/22/18 01:29	1
4-Bromofluorobenzene (Surr)	90		72 - 124		11/22/18 01:29	1
Toluene-d8 (Surr)	101		75 - 120		11/22/18 01:29	1
Dibromofluoromethane	96		75 - 120		11/22/18 01:29	1

Lab Sample ID: LCS 500-461364/5
Matrix: Water
Analysis Batch: 461364

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1,1-Trichloroethane	50.0	41.8		ug/L		84	70 - 125
1,1,1,2-Tetrachloroethane	50.0	41.4		ug/L		83	62 - 140

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: LCS 500-461364/5

Matrix: Water

Analysis Batch: 461364

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	44.2		ug/L		88	70 - 123
1,1,2-Trichloroethane	50.0	44.4		ug/L		89	71 - 130
1,1-Dichloroethane	50.0	43.1		ug/L		86	70 - 125
1,1-Dichloroethene	50.0	43.8		ug/L		88	67 - 122
1,2,3-Trichlorobenzene	50.0	44.6		ug/L		89	51 - 145
1,2,4-Trichlorobenzene	50.0	44.4		ug/L		89	57 - 137
1,2,4-Trimethylbenzene	50.0	44.1		ug/L		88	70 - 123
1,2-Dibromo-3-Chloropropane	50.0	32.4		ug/L		65	56 - 123
1,2-Dichlorobenzene	50.0	44.9		ug/L		90	70 - 125
1,2-Dichloroethane	50.0	42.6		ug/L		85	68 - 127
1,2-Dichloropropane	50.0	45.7		ug/L		91	67 - 130
1,3,5-Trimethylbenzene	50.0	45.0		ug/L		90	70 - 123
1,3-Dichlorobenzene	50.0	44.8		ug/L		90	70 - 125
1,4-Dichlorobenzene	50.0	44.6		ug/L		89	70 - 120
2-Hexanone	50.0	37.6		ug/L		75	54 - 146
Bromochloromethane	50.0	43.6		ug/L		87	65 - 122
Acetone	50.0	35.1		ug/L		70	40 - 143
Benzene	50.0	44.2		ug/L		88	70 - 120
Bromoform	50.0	37.9		ug/L		76	56 - 132
Bromomethane	50.0	47.8		ug/L		96	40 - 152
Carbon disulfide	50.0	39.3		ug/L		79	66 - 120
Carbon tetrachloride	50.0	42.3		ug/L		85	59 - 133
Chlorobenzene	50.0	45.5		ug/L		91	70 - 120
Chloroethane	50.0	62.1		ug/L		124	48 - 136
Chloroform	50.0	42.1		ug/L		84	70 - 120
Chloromethane	50.0	44.4		ug/L		89	56 - 152
cis-1,2-Dichloroethene	50.0	43.5		ug/L		87	70 - 125
cis-1,3-Dichloropropene	50.0	43.4		ug/L		87	64 - 127
Dichlorobromomethane	50.0	40.2		ug/L		80	69 - 120
Dichlorodifluoromethane	50.0	39.2		ug/L		78	40 - 159
Ethylbenzene	50.0	44.5		ug/L		89	70 - 123
Ethylene Dibromide	50.0	42.9		ug/L		86	70 - 125
m-Xylene & p-Xylene	50.0	47.6		ug/L		95	70 - 125
Isopropylbenzene	50.0	45.2		ug/L		90	70 - 126
2-Butanone (MEK)	50.0	36.5		ug/L		73	46 - 144
4-Methyl-2-pentanone (MIBK)	50.0	38.2		ug/L		76	55 - 139
Methyl tert-butyl ether	50.0	41.1		ug/L		82	55 - 123
Methylene Chloride	50.0	42.1		ug/L		84	69 - 125
o-Xylene	50.0	47.5		ug/L		95	70 - 120
Styrene	50.0	43.7		ug/L		87	70 - 120
Tetrachloroethene	50.0	48.5		ug/L		97	70 - 128
Toluene	50.0	43.4		ug/L		87	70 - 125
trans-1,2-Dichloroethene	50.0	43.3		ug/L		87	70 - 125
trans-1,3-Dichloropropene	50.0	41.8		ug/L		84	62 - 128
Trichloroethene	50.0	45.2		ug/L		90	70 - 125
Trichlorofluoromethane	50.0	41.4		ug/L		83	55 - 128
Vinyl chloride	50.0	41.3		ug/L		83	64 - 126

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: LCS 500-461364/5

Matrix: Water

Analysis Batch: 461364

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorodibromomethane	50.0	39.3		ug/L		79	68 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		75 - 126
4-Bromofluorobenzene (Surr)	93		72 - 124
Toluene-d8 (Surr)	103		75 - 120
Dibromofluoromethane	94		75 - 120

Lab Sample ID: MB 500-461394/7

Matrix: Water

Analysis Batch: 461394

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			11/23/18 10:15	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/23/18 10:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/23/18 10:15	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/23/18 10:15	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/23/18 10:15	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/23/18 10:15	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/23/18 10:15	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/23/18 10:15	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/23/18 10:15	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/23/18 10:15	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/23/18 10:15	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/23/18 10:15	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/23/18 10:15	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/23/18 10:15	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/23/18 10:15	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/23/18 10:15	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/23/18 10:15	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/23/18 10:15	1
Acetone	<1.7		5.0	1.7	ug/L			11/23/18 10:15	1
Benzene	<0.15		0.50	0.15	ug/L			11/23/18 10:15	1
Bromoform	<0.48		1.0	0.48	ug/L			11/23/18 10:15	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/23/18 10:15	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/23/18 10:15	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/23/18 10:15	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/23/18 10:15	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/23/18 10:15	1
Chloroform	<0.37		2.0	0.37	ug/L			11/23/18 10:15	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/23/18 10:15	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/23/18 10:15	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/23/18 10:15	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/23/18 10:15	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/23/18 10:15	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/23/18 10:15	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/23/18 10:15	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/23/18 10:15	1

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: MB 500-461394/7
Matrix: Water
Analysis Batch: 461394

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/23/18 10:15	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/23/18 10:15	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/23/18 10:15	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/23/18 10:15	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/23/18 10:15	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/23/18 10:15	1
Styrene	<0.39		1.0	0.39	ug/L			11/23/18 10:15	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/23/18 10:15	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/23/18 10:15	1
Toluene	<0.15		0.50	0.15	ug/L			11/23/18 10:15	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/23/18 10:15	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/23/18 10:15	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/23/18 10:15	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/23/18 10:15	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/23/18 10:15	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/23/18 10:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 126		11/23/18 10:15	1
4-Bromofluorobenzene (Surr)	91		72 - 124		11/23/18 10:15	1
Toluene-d8 (Surr)	101		75 - 120		11/23/18 10:15	1
Dibromofluoromethane	94		75 - 120		11/23/18 10:15	1

Lab Sample ID: LCS 500-461394/5
Matrix: Water
Analysis Batch: 461394

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	44.5		ug/L		89	70 - 125
1,1,1,2-Tetrachloroethane	50.0	47.5		ug/L		95	62 - 140
1,1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	42.5		ug/L		85	70 - 123
1,1,2-Trichloroethane	50.0	47.9		ug/L		96	71 - 130
1,1-Dichloroethane	50.0	44.3		ug/L		89	70 - 125
1,1-Dichloroethene	50.0	41.4		ug/L		83	67 - 122
1,2,3-Trichlorobenzene	50.0	47.3		ug/L		95	51 - 145
1,2,4-Trichlorobenzene	50.0	47.7		ug/L		95	57 - 137
1,2,4-Trimethylbenzene	50.0	48.1		ug/L		96	70 - 123
1,2-Dibromo-3-Chloropropane	50.0	37.4		ug/L		75	56 - 123
1,2-Dichlorobenzene	50.0	48.2		ug/L		96	70 - 125
1,2-Dichloroethane	50.0	45.0		ug/L		90	68 - 127
1,2-Dichloropropane	50.0	48.8		ug/L		98	67 - 130
1,3,5-Trimethylbenzene	50.0	49.2		ug/L		98	70 - 123
1,3-Dichlorobenzene	50.0	49.5		ug/L		99	70 - 125
1,4-Dichlorobenzene	50.0	48.8		ug/L		98	70 - 120
2-Hexanone	50.0	47.6		ug/L		95	54 - 146
Bromochloromethane	50.0	44.1		ug/L		88	65 - 122
Acetone	50.0	41.4		ug/L		83	40 - 143

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: LCS 500-461394/5
Matrix: Water
Analysis Batch: 461394

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	45.8		ug/L		92	70 - 120
Bromoform	50.0	44.3		ug/L		89	56 - 132
Bromomethane	50.0	57.4		ug/L		115	40 - 152
Carbon disulfide	50.0	35.2		ug/L		70	66 - 120
Carbon tetrachloride	50.0	44.5		ug/L		89	59 - 133
Chlorobenzene	50.0	49.5		ug/L		99	70 - 120
Chloroethane	50.0	74.4	*	ug/L		149	48 - 136
Chloroform	50.0	43.8		ug/L		88	70 - 120
Chloromethane	50.0	57.0		ug/L		114	56 - 152
cis-1,2-Dichloroethene	50.0	43.5		ug/L		87	70 - 125
cis-1,3-Dichloropropene	50.0	47.6		ug/L		95	64 - 127
Dichlorobromomethane	50.0	43.9		ug/L		88	69 - 120
Dichlorodifluoromethane	50.0	58.4		ug/L		117	40 - 159
Ethylbenzene	50.0	48.9		ug/L		98	70 - 123
Ethylene Dibromide	50.0	48.4		ug/L		97	70 - 125
m-Xylene & p-Xylene	50.0	52.0		ug/L		104	70 - 125
Isopropylbenzene	50.0	50.0		ug/L		100	70 - 126
2-Butanone (MEK)	50.0	44.5		ug/L		89	46 - 144
4-Methyl-2-pentanone (MIBK)	50.0	46.0		ug/L		92	55 - 139
Methyl tert-butyl ether	50.0	41.4		ug/L		83	55 - 123
Methylene Chloride	50.0	41.2		ug/L		82	69 - 125
o-Xylene	50.0	51.0		ug/L		102	70 - 120
Styrene	50.0	47.7		ug/L		95	70 - 120
Tetrachloroethene	50.0	52.0		ug/L		104	70 - 128
Toluene	50.0	46.5		ug/L		93	70 - 125
trans-1,2-Dichloroethene	50.0	43.5		ug/L		87	70 - 125
trans-1,3-Dichloropropene	50.0	48.4		ug/L		97	62 - 128
Trichloroethene	50.0	48.0		ug/L		96	70 - 125
Trichlorofluoromethane	50.0	51.8		ug/L		104	55 - 128
Vinyl chloride	50.0	52.0		ug/L		104	64 - 126
Chlorodibromomethane	50.0	45.0		ug/L		90	68 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		75 - 126
4-Bromofluorobenzene (Surr)	96		72 - 124
Toluene-d8 (Surr)	103		75 - 120
Dibromofluoromethane	91		75 - 120

Lab Sample ID: MB 500-461974/6
Matrix: Water
Analysis Batch: 461974

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			11/28/18 01:35	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 01:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 01:35	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 01:35	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/28/18 01:35	1

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: MB 500-461974/6

Matrix: Water

Analysis Batch: 461974

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/28/18 01:35	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 01:35	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 01:35	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 01:35	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 01:35	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 01:35	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/28/18 01:35	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 01:35	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 01:35	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 01:35	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 01:35	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 01:35	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 01:35	1
Acetone	<1.7		5.0	1.7	ug/L			11/28/18 01:35	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 01:35	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 01:35	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 01:35	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 01:35	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 01:35	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 01:35	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 01:35	1
Chloroform	<0.37		2.0	0.37	ug/L			11/28/18 01:35	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 01:35	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/28/18 01:35	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 01:35	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 01:35	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 01:35	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 01:35	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 01:35	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/28/18 01:35	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 01:35	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 01:35	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 01:35	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 01:35	1
Methylene Chloride	1.96	J	5.0	1.6	ug/L			11/28/18 01:35	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 01:35	1
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 01:35	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/28/18 01:35	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 01:35	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 01:35	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 01:35	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 01:35	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/28/18 01:35	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 01:35	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 01:35	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 01:35	1

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: MB 500-461974/6
Matrix: Water
Analysis Batch: 461974

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		11/28/18 01:35	1
4-Bromofluorobenzene (Surr)	94		72 - 124		11/28/18 01:35	1
Toluene-d8 (Surr)	96		75 - 120		11/28/18 01:35	1
Dibromofluoromethane	95		75 - 120		11/28/18 01:35	1

Lab Sample ID: LCS 500-461974/4
Matrix: Water
Analysis Batch: 461974

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	38.7		ug/L		77	70 - 125
1,1,2,2-Tetrachloroethane	50.0	41.3		ug/L		83	62 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	41.4		ug/L		83	70 - 123
1,1,2-Trichloroethane	50.0	41.9		ug/L		84	71 - 130
1,1-Dichloroethane	50.0	40.2		ug/L		80	70 - 125
1,1-Dichloroethene	50.0	41.5		ug/L		83	67 - 122
1,2,3-Trichlorobenzene	50.0	43.7		ug/L		87	51 - 145
1,2,4-Trichlorobenzene	50.0	42.6		ug/L		85	57 - 137
1,2,4-Trimethylbenzene	50.0	41.5		ug/L		83	70 - 123
1,2-Dibromo-3-Chloropropane	50.0	31.0		ug/L		62	56 - 123
1,2-Dichlorobenzene	50.0	43.8		ug/L		88	70 - 125
1,2-Dichloroethane	50.0	40.8		ug/L		82	68 - 127
1,2-Dichloropropane	50.0	42.8		ug/L		86	67 - 130
1,3,5-Trimethylbenzene	50.0	41.6		ug/L		83	70 - 123
1,3-Dichlorobenzene	50.0	42.7		ug/L		85	70 - 125
1,4-Dichlorobenzene	50.0	42.8		ug/L		86	70 - 120
2-Hexanone	50.0	34.9		ug/L		70	54 - 146
Bromochloromethane	50.0	43.1		ug/L		86	65 - 122
Acetone	50.0	35.2		ug/L		70	40 - 143
Benzene	50.0	43.4		ug/L		87	70 - 120
Bromoform	50.0	33.5		ug/L		67	56 - 132
Bromomethane	50.0	45.0		ug/L		90	40 - 152
Carbon disulfide	50.0	38.1		ug/L		76	66 - 120
Carbon tetrachloride	50.0	37.2		ug/L		74	59 - 133
Chlorobenzene	50.0	41.9		ug/L		84	70 - 120
Chloroethane	50.0	56.2		ug/L		112	48 - 136
Chloroform	50.0	41.5		ug/L		83	70 - 120
Chloromethane	50.0	43.4		ug/L		87	56 - 152
cis-1,2-Dichloroethene	50.0	42.5		ug/L		85	70 - 125
cis-1,3-Dichloropropene	50.0	40.1		ug/L		80	64 - 127
Dichlorobromomethane	50.0	39.2		ug/L		78	69 - 120
Dichlorodifluoromethane	50.0	39.4		ug/L		79	40 - 159
Ethylbenzene	50.0	40.7		ug/L		81	70 - 123
Ethylene Dibromide	50.0	42.2		ug/L		84	70 - 125
m-Xylene & p-Xylene	50.0	43.1		ug/L		86	70 - 125
Isopropylbenzene	50.0	41.2		ug/L		82	70 - 126
2-Butanone (MEK)	50.0	37.3		ug/L		75	46 - 144

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: LCS 500-461974/4
Matrix: Water
Analysis Batch: 461974

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Methyl-2-pentanone (MIBK)	50.0	34.4		ug/L		69	55 - 139
Methyl tert-butyl ether	50.0	41.1		ug/L		82	55 - 123
Methylene Chloride	50.0	44.4		ug/L		89	69 - 125
o-Xylene	50.0	43.6		ug/L		87	70 - 120
Styrene	50.0	40.9		ug/L		82	70 - 120
Tetrachloroethene	50.0	40.1		ug/L		80	70 - 128
Toluene	50.0	40.1		ug/L		80	70 - 125
trans-1,2-Dichloroethene	50.0	41.8		ug/L		84	70 - 125
trans-1,3-Dichloropropene	50.0	39.3		ug/L		79	62 - 128
Trichloroethene	50.0	42.3		ug/L		85	70 - 125
Trichlorofluoromethane	50.0	40.2		ug/L		80	55 - 128
Vinyl chloride	50.0	40.0		ug/L		80	64 - 126
Chlorodibromomethane	50.0	36.5		ug/L		73	68 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		75 - 126
4-Bromofluorobenzene (Surr)	97		72 - 124
Toluene-d8 (Surr)	96		75 - 120
Dibromofluoromethane	94		75 - 120

Lab Sample ID: 500-154927-15 MS
Matrix: Water
Analysis Batch: 461974

Client Sample ID: W-181114-RA-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	15		50.0	60.6		ug/L		91	70 - 125
1,1,1,2-Tetrachloroethane	<0.40		50.0	48.4		ug/L		97	62 - 140
1,1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		50.0	47.0		ug/L		94	70 - 123
1,1,2-Trichloroethane	<0.35		50.0	47.7		ug/L		95	71 - 130
1,1-Dichloroethane	18		50.0	62.9		ug/L		89	70 - 125
1,1-Dichloroethene	3.8		50.0	51.1		ug/L		95	67 - 122
1,2,3-Trichlorobenzene	<0.46		50.0	48.5		ug/L		97	51 - 145
1,2,4-Trichlorobenzene	<0.34		50.0	46.8		ug/L		94	57 - 137
1,2,4-Trimethylbenzene	<0.36		50.0	46.2		ug/L		92	70 - 123
1,2-Dibromo-3-Chloropropane	<2.0		50.0	36.4		ug/L		73	56 - 123
1,2-Dichlorobenzene	<0.33		50.0	48.8		ug/L		98	70 - 125
1,2-Dichloroethane	<0.39		50.0	45.8		ug/L		92	68 - 127
1,2-Dichloropropane	<0.43		50.0	47.7		ug/L		95	67 - 130
1,3,5-Trimethylbenzene	<0.25		50.0	46.4		ug/L		93	70 - 123
1,3-Dichlorobenzene	<0.40		50.0	47.6		ug/L		95	70 - 125
1,4-Dichlorobenzene	<0.36		50.0	47.7		ug/L		95	70 - 120
2-Hexanone	<1.6		50.0	40.3		ug/L		81	54 - 146
Bromochloromethane	<0.43		50.0	49.2		ug/L		98	65 - 122
Acetone	<1.7		50.0	38.0		ug/L		76	40 - 143
Benzene	<0.15		50.0	48.4		ug/L		97	70 - 120
Bromoform	<0.48		50.0	41.2		ug/L		82	56 - 132
Bromomethane	<0.80	F1	50.0	102	F1	ug/L		204	40 - 152

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: 500-154927-15 MS

Matrix: Water

Analysis Batch: 461974

Client Sample ID: W-181114-RA-15

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbon disulfide	<0.45		50.0	43.0		ug/L		86	66 - 120
Carbon tetrachloride	<0.38		50.0	43.8		ug/L		88	59 - 133
Chlorobenzene	<0.39		50.0	46.4		ug/L		93	70 - 120
Chloroethane	<0.51	F1	50.0	90.8	F1	ug/L		182	48 - 136
Chloroform	0.49	J	50.0	47.1		ug/L		93	70 - 120
Chloromethane	<0.32		50.0	46.3		ug/L		93	56 - 152
cis-1,2-Dichloroethene	1.6		50.0	49.7		ug/L		96	70 - 125
cis-1,3-Dichloropropene	<0.42		50.0	44.6		ug/L		89	64 - 127
Dichlorobromomethane	<0.37		50.0	45.4		ug/L		91	69 - 120
Dichlorodifluoromethane	<0.67		50.0	46.6		ug/L		93	40 - 159
Ethylbenzene	<0.18		50.0	45.1		ug/L		90	70 - 123
Ethylene Dibromide	<0.39		50.0	49.1		ug/L		98	70 - 125
m-Xylene & p-Xylene	<0.18		50.0	48.1		ug/L		96	70 - 125
Isopropylbenzene	<0.39		50.0	46.1		ug/L		92	70 - 126
2-Butanone (MEK)	<2.1		50.0	41.8		ug/L		84	46 - 144
4-Methyl-2-pentanone (MIBK)	<2.2		50.0	39.3		ug/L		79	55 - 139
Methyl tert-butyl ether	<0.39		50.0	46.4		ug/L		93	55 - 123
Methylene Chloride	1.8	J B	50.0	48.0		ug/L		92	69 - 125
o-Xylene	<0.22		50.0	48.8		ug/L		98	70 - 120
Styrene	<0.39		50.0	45.0		ug/L		90	70 - 120
Tetrachloroethene	3.4		50.0	50.0		ug/L		93	70 - 128
Toluene	<0.15		50.0	44.3		ug/L		89	70 - 125
trans-1,2-Dichloroethene	<0.35		50.0	47.0		ug/L		94	70 - 125
trans-1,3-Dichloropropene	<0.36		50.0	43.9		ug/L		88	62 - 128
Trichloroethene	0.37	J	50.0	49.0		ug/L		97	70 - 125
Trichlorofluoromethane	<0.43		50.0	48.5		ug/L		97	55 - 128
Vinyl chloride	<0.20		50.0	44.9		ug/L		90	64 - 126
Chlorodibromomethane	<0.49		50.0	42.9		ug/L		86	68 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		75 - 126
4-Bromofluorobenzene (Surr)	94		72 - 124
Toluene-d8 (Surr)	96		75 - 120
Dibromofluoromethane	97		75 - 120

Lab Sample ID: 500-154927-15 MSD

Matrix: Water

Analysis Batch: 461974

Client Sample ID: W-181114-RA-15

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	15		50.0	55.3		ug/L		80	70 - 125	9	20
1,1,2,2-Tetrachloroethane	<0.40		50.0	45.7		ug/L		91	62 - 140	6	20
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		50.0	41.9		ug/L		84	70 - 123	11	20
1,1,2-Trichloroethane	<0.35		50.0	45.8		ug/L		92	71 - 130	4	20
1,1-Dichloroethane	18		50.0	59.1		ug/L		81	70 - 125	6	20
1,1-Dichloroethene	3.8		50.0	46.5		ug/L		86	67 - 122	9	20
1,2,3-Trichlorobenzene	<0.46		50.0	45.9		ug/L		92	51 - 145	6	20

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QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: 500-154927-15 MSD

Matrix: Water

Analysis Batch: 461974

Client Sample ID: W-181114-RA-15

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	<0.34		50.0	43.9		ug/L		88	57 - 137	6	20
1,2,4-Trimethylbenzene	<0.36		50.0	43.1		ug/L		86	70 - 123	7	20
1,2-Dibromo-3-Chloropropane	<2.0		50.0	34.4		ug/L		69	56 - 123	6	20
1,2-Dichlorobenzene	<0.33		50.0	46.8		ug/L		94	70 - 125	4	20
1,2-Dichloroethane	<0.39		50.0	44.3		ug/L		89	68 - 127	3	20
1,2-Dichloropropane	<0.43		50.0	46.4		ug/L		93	67 - 130	3	20
1,3,5-Trimethylbenzene	<0.25		50.0	42.9		ug/L		86	70 - 123	8	20
1,3-Dichlorobenzene	<0.40		50.0	45.4		ug/L		91	70 - 125	5	20
1,4-Dichlorobenzene	<0.36		50.0	45.3		ug/L		91	70 - 120	5	20
2-Hexanone	<1.6		50.0	37.0		ug/L		74	54 - 146	8	20
Bromochloromethane	<0.43		50.0	46.9		ug/L		94	65 - 122	5	20
Acetone	<1.7		50.0	36.4		ug/L		73	40 - 143	4	20
Benzene	<0.15		50.0	46.2		ug/L		92	70 - 120	5	20
Bromoform	<0.48		50.0	40.5		ug/L		81	56 - 132	2	20
Bromomethane	<0.80	F1	50.0	86.3	F1	ug/L		173	40 - 152	16	20
Carbon disulfide	<0.45		50.0	40.8		ug/L		82	66 - 120	5	20
Carbon tetrachloride	<0.38		50.0	39.5		ug/L		79	59 - 133	10	20
Chlorobenzene	<0.39		50.0	44.3		ug/L		89	70 - 120	5	20
Chloroethane	<0.51	F1	50.0	77.2	F1	ug/L		154	48 - 136	16	20
Chloroform	0.49	J	50.0	44.8		ug/L		89	70 - 120	5	20
Chloromethane	<0.32		50.0	39.6		ug/L		79	56 - 152	16	20
cis-1,2-Dichloroethene	1.6		50.0	47.1		ug/L		91	70 - 125	5	20
cis-1,3-Dichloropropene	<0.42		50.0	42.4		ug/L		85	64 - 127	5	20
Dichlorobromomethane	<0.37		50.0	43.6		ug/L		87	69 - 120	4	20
Dichlorodifluoromethane	<0.67		50.0	37.2	F2	ug/L		74	40 - 159	22	20
Ethylbenzene	<0.18		50.0	42.0		ug/L		84	70 - 123	7	20
Ethylene Dibromide	<0.39		50.0	45.9		ug/L		92	70 - 125	7	20
m-Xylene & p-Xylene	<0.18		50.0	44.5		ug/L		89	70 - 125	8	20
Isopropylbenzene	<0.39		50.0	42.4		ug/L		85	70 - 126	8	20
2-Butanone (MEK)	<2.1		50.0	39.3		ug/L		79	46 - 144	6	20
4-Methyl-2-pentanone (MIBK)	<2.2		50.0	36.5		ug/L		73	55 - 139	8	20
Methyl tert-butyl ether	<0.39		50.0	45.3		ug/L		91	55 - 123	2	20
Methylene Chloride	1.8	J B	50.0	46.2		ug/L		89	69 - 125	4	20
o-Xylene	<0.22		50.0	45.7		ug/L		91	70 - 120	7	20
Styrene	<0.39		50.0	43.2		ug/L		86	70 - 120	4	20
Tetrachloroethene	3.4		50.0	44.8		ug/L		83	70 - 128	11	20
Toluene	<0.15		50.0	41.5		ug/L		83	70 - 125	6	20
trans-1,2-Dichloroethene	<0.35		50.0	44.0		ug/L		88	70 - 125	7	20
trans-1,3-Dichloropropene	<0.36		50.0	41.8		ug/L		84	62 - 128	5	20
Trichloroethene	0.37	J	50.0	46.3		ug/L		92	70 - 125	6	20
Trichlorofluoromethane	<0.43		50.0	39.8		ug/L		80	55 - 128	20	20
Vinyl chloride	<0.20		50.0	37.1		ug/L		74	64 - 126	19	20
Chlorodibromomethane	<0.49		50.0	41.5		ug/L		83	68 - 125	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		75 - 126
4-Bromofluorobenzene (Surr)	96		72 - 124
Toluene-d8 (Surr)	95		75 - 120

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: 500-154927-15 MSD
Matrix: Water
Analysis Batch: 461974

Client Sample ID: W-181114-RA-15
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Dibromofluoromethane	98		75 - 120

Lab Sample ID: MB 500-462045/6
Matrix: Water
Analysis Batch: 462045

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			11/28/18 12:37	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			11/28/18 12:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		1.0	0.46	ug/L			11/28/18 12:37	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 12:37	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			11/28/18 12:37	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			11/28/18 12:37	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			11/28/18 12:37	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			11/28/18 12:37	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			11/28/18 12:37	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			11/28/18 12:37	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			11/28/18 12:37	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			11/28/18 12:37	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			11/28/18 12:37	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			11/28/18 12:37	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			11/28/18 12:37	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			11/28/18 12:37	1
2-Hexanone	<1.6		5.0	1.6	ug/L			11/28/18 12:37	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			11/28/18 12:37	1
Acetone	<1.7		5.0	1.7	ug/L			11/28/18 12:37	1
Benzene	<0.15		0.50	0.15	ug/L			11/28/18 12:37	1
Bromoform	<0.48		1.0	0.48	ug/L			11/28/18 12:37	1
Bromomethane	<0.80		2.0	0.80	ug/L			11/28/18 12:37	1
Carbon disulfide	<0.45		2.0	0.45	ug/L			11/28/18 12:37	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			11/28/18 12:37	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			11/28/18 12:37	1
Chloroethane	<0.51		1.0	0.51	ug/L			11/28/18 12:37	1
Chloroform	<0.37		2.0	0.37	ug/L			11/28/18 12:37	1
Chloromethane	<0.32		1.0	0.32	ug/L			11/28/18 12:37	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			11/28/18 12:37	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			11/28/18 12:37	1
Dichlorobromomethane	<0.37		1.0	0.37	ug/L			11/28/18 12:37	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			11/28/18 12:37	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			11/28/18 12:37	1
Ethylene Dibromide	<0.39		1.0	0.39	ug/L			11/28/18 12:37	1
m-Xylene & p-Xylene	<0.18		1.0	0.18	ug/L			11/28/18 12:37	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			11/28/18 12:37	1
2-Butanone (MEK)	<2.1		5.0	2.1	ug/L			11/28/18 12:37	1
4-Methyl-2-pentanone (MIBK)	<2.2		5.0	2.2	ug/L			11/28/18 12:37	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			11/28/18 12:37	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			11/28/18 12:37	1
o-Xylene	<0.22		0.50	0.22	ug/L			11/28/18 12:37	1

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: MB 500-462045/6
Matrix: Water
Analysis Batch: 462045

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

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Styrene	<0.39		1.0	0.39	ug/L			11/28/18 12:37	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/28/18 12:37	1
Tetrahydrofuran	<1.9		10	1.9	ug/L			11/28/18 12:37	1
Toluene	<0.15		0.50	0.15	ug/L			11/28/18 12:37	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			11/28/18 12:37	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			11/28/18 12:37	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/28/18 12:37	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			11/28/18 12:37	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 12:37	1
Chlorodibromomethane	<0.49		1.0	0.49	ug/L			11/28/18 12:37	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	116		75 - 126		11/28/18 12:37	1
4-Bromofluorobenzene (Surr)	110		72 - 124		11/28/18 12:37	1
Toluene-d8 (Surr)	96		75 - 120		11/28/18 12:37	1
Dibromofluoromethane	90		75 - 120		11/28/18 12:37	1

Lab Sample ID: LCS 500-462045/4
Matrix: Water
Analysis Batch: 462045

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	56.3		ug/L		113	62 - 140
1,1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	50.3		ug/L		101	70 - 123
1,1,2-Trichloroethane	50.0	57.9		ug/L		116	71 - 130
1,1-Dichloroethane	50.0	56.8		ug/L		114	70 - 125
1,1-Dichloroethene	50.0	51.0		ug/L		102	67 - 122
1,2,3-Trichlorobenzene	50.0	60.3		ug/L		121	51 - 145
1,2,4-Trichlorobenzene	50.0	62.2		ug/L		124	57 - 137
1,2,4-Trimethylbenzene	50.0	57.8		ug/L		116	70 - 123
1,2-Dibromo-3-Chloropropane	50.0	60.0		ug/L		120	56 - 123
1,2-Dichlorobenzene	50.0	56.1		ug/L		112	70 - 125
1,2-Dichloroethane	50.0	64.2	*	ug/L		128	68 - 127
1,2-Dichloropropane	50.0	56.9		ug/L		114	67 - 130
1,3,5-Trimethylbenzene	50.0	56.9		ug/L		114	70 - 123
1,3-Dichlorobenzene	50.0	54.6		ug/L		109	70 - 125
1,4-Dichlorobenzene	50.0	55.8		ug/L		112	70 - 120
2-Hexanone	50.0	47.0		ug/L		94	54 - 146
Bromochloromethane	50.0	53.1		ug/L		106	65 - 122
Acetone	50.0	45.3		ug/L		91	40 - 143
Benzene	50.0	52.7		ug/L		105	70 - 120
Bromoform	50.0	59.4		ug/L		119	56 - 132
Bromomethane	50.0	67.7		ug/L		135	40 - 152
Carbon disulfide	50.0	48.3		ug/L		97	66 - 120
Carbon tetrachloride	50.0	53.0		ug/L		106	59 - 133
Chlorobenzene	50.0	54.4		ug/L		109	70 - 120

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: LCS 500-462045/4
Matrix: Water
Analysis Batch: 462045

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	59.9		ug/L		120	48 - 136
Chloroform	50.0	55.4		ug/L		111	70 - 120
Chloromethane	50.0	56.6		ug/L		113	56 - 152
cis-1,2-Dichloroethene	50.0	50.2		ug/L		100	70 - 125
cis-1,3-Dichloropropene	50.0	60.3		ug/L		121	64 - 127
Dichlorobromomethane	50.0	60.1		ug/L		120	69 - 120
Dichlorodifluoromethane	50.0	54.5		ug/L		109	40 - 159
Ethylbenzene	50.0	52.7		ug/L		105	70 - 123
Ethylene Dibromide	50.0	57.8		ug/L		116	70 - 125
m-Xylene & p-Xylene	50.0	55.0		ug/L		110	70 - 125
Isopropylbenzene	50.0	56.0		ug/L		112	70 - 126
2-Butanone (MEK)	50.0	45.7		ug/L		91	46 - 144
4-Methyl-2-pentanone (MIBK)	50.0	47.9		ug/L		96	55 - 139
Methyl tert-butyl ether	50.0	54.2		ug/L		108	55 - 123
Methylene Chloride	50.0	49.7		ug/L		99	69 - 125
o-Xylene	50.0	58.5		ug/L		117	70 - 120
Styrene	50.0	57.1		ug/L		114	70 - 120
Tetrachloroethene	50.0	60.5		ug/L		121	70 - 128
Toluene	50.0	57.0		ug/L		114	70 - 125
trans-1,2-Dichloroethene	50.0	49.7		ug/L		99	70 - 125
trans-1,3-Dichloropropene	50.0	60.8		ug/L		122	62 - 128
Trichloroethene	50.0	55.7		ug/L		111	70 - 125
Trichlorofluoromethane	50.0	51.2		ug/L		102	55 - 128
Vinyl chloride	50.0	56.1		ug/L		112	64 - 126
Chlorodibromomethane	50.0	60.2		ug/L		120	68 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	108		75 - 126
4-Bromofluorobenzene (Surr)	101		72 - 124
Toluene-d8 (Surr)	103		75 - 120
Dibromofluoromethane	90		75 - 120

Lab Sample ID: 500-154927-21 MS
Matrix: Water
Analysis Batch: 462045

Client Sample ID: W-181115-RA-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	11		50.0	68.8		ug/L		116	70 - 125
1,1,2,2-Tetrachloroethane	<0.40		50.0	56.3		ug/L		113	62 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		50.0	48.5		ug/L		97	70 - 123
1,1,2-Trichloroethane	<0.35		50.0	58.9		ug/L		118	71 - 130
1,1-Dichloroethane	11		50.0	67.1		ug/L		113	70 - 125
1,1-Dichloroethene	1.5		50.0	51.3		ug/L		99	67 - 122
1,2,3-Trichlorobenzene	<0.46		50.0	58.1		ug/L		116	51 - 145
1,2,4-Trichlorobenzene	<0.34		50.0	60.5		ug/L		121	57 - 137
1,2,4-Trimethylbenzene	<0.36		50.0	57.9		ug/L		116	70 - 123
1,2-Dibromo-3-Chloropropane	<2.0		50.0	59.8		ug/L		120	56 - 123

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: 500-154927-21 MS

Matrix: Water

Analysis Batch: 462045

Client Sample ID: W-181115-RA-21

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
1,2-Dichlorobenzene	<0.33		50.0	53.5		ug/L		107	70 - 125
1,2-Dichloroethane	<0.39	F1 *	50.0	65.2	F1	ug/L		130	68 - 127
1,2-Dichloropropane	<0.43		50.0	57.2		ug/L		114	67 - 130
1,3,5-Trimethylbenzene	<0.25		50.0	57.2		ug/L		114	70 - 123
1,3-Dichlorobenzene	<0.40		50.0	53.0		ug/L		106	70 - 125
1,4-Dichlorobenzene	<0.36		50.0	54.1		ug/L		108	70 - 120
2-Hexanone	<1.6		50.0	44.1		ug/L		88	54 - 146
Bromochloromethane	<0.43		50.0	51.0		ug/L		102	65 - 122
Acetone	3.4	J	50.0	51.1		ug/L		95	40 - 143
Benzene	<0.15		50.0	52.5		ug/L		105	70 - 120
Bromoform	<0.48		50.0	55.6		ug/L		111	56 - 132
Bromomethane	<0.80		50.0	64.5		ug/L		129	40 - 152
Carbon disulfide	<0.45		50.0	45.7		ug/L		91	66 - 120
Carbon tetrachloride	<0.38		50.0	54.8		ug/L		110	59 - 133
Chlorobenzene	<0.39		50.0	54.4		ug/L		109	70 - 120
Chloroethane	0.67	J	50.0	59.2		ug/L		117	48 - 136
Chloroform	<0.37		50.0	56.1		ug/L		112	70 - 120
Chloromethane	<0.32		50.0	53.3		ug/L		107	56 - 152
cis-1,2-Dichloroethene	0.45	J	50.0	51.6		ug/L		102	70 - 125
cis-1,3-Dichloropropene	<0.42		50.0	60.8		ug/L		122	64 - 127
Dichlorobromomethane	<0.37	F1	50.0	59.6		ug/L		119	69 - 120
Dichlorodifluoromethane	<0.67		50.0	51.7		ug/L		103	40 - 159
Ethylbenzene	<0.18		50.0	51.4		ug/L		103	70 - 123
Ethylene Dibromide	<0.39		50.0	57.5		ug/L		115	70 - 125
m-Xylene & p-Xylene	0.29	J	50.0	55.9		ug/L		111	70 - 125
Isopropylbenzene	<0.39		50.0	56.4		ug/L		113	70 - 126
2-Butanone (MEK)	<2.1		50.0	43.4		ug/L		87	46 - 144
4-Methyl-2-pentanone (MIBK)	<2.2		50.0	44.6		ug/L		89	55 - 139
Methyl tert-butyl ether	<0.39		50.0	53.6		ug/L		107	55 - 123
Methylene Chloride	<1.6		50.0	50.1		ug/L		100	69 - 125
o-Xylene	<0.22		50.0	58.8		ug/L		118	70 - 120
Styrene	<0.39		50.0	57.4		ug/L		115	70 - 120
Tetrachloroethene	1.9		50.0	61.6		ug/L		119	70 - 128
Toluene	<0.15		50.0	56.1		ug/L		112	70 - 125
trans-1,2-Dichloroethene	<0.35		50.0	49.7		ug/L		99	70 - 125
trans-1,3-Dichloropropene	<0.36		50.0	60.9		ug/L		122	62 - 128
Trichloroethene	<0.16		50.0	56.9		ug/L		114	70 - 125
Trichlorofluoromethane	<0.43		50.0	51.1		ug/L		102	55 - 128
Vinyl chloride	<0.20		50.0	52.4		ug/L		105	64 - 126
Chlorodibromomethane	<0.49		50.0	59.7		ug/L		119	68 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	115		75 - 126
4-Bromofluorobenzene (Surr)	103		72 - 124
Toluene-d8 (Surr)	105		75 - 120
Dibromofluoromethane	92		75 - 120

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: 500-154927-21 MSD

Matrix: Water

Analysis Batch: 462045

Client Sample ID: W-181115-RA-21

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	11		50.0	66.9		ug/L		113	70 - 125	3	20
1,1,1,2-Tetrachloroethane	<0.40		50.0	57.0		ug/L		114	62 - 140	1	20
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.46		50.0	50.8		ug/L		102	70 - 123	5	20
1,1,2-Trichloroethane	<0.35		50.0	58.7		ug/L		117	71 - 130	0	20
1,1-Dichloroethane	11		50.0	68.5		ug/L		116	70 - 125	2	20
1,1-Dichloroethene	1.5		50.0	52.3		ug/L		102	67 - 122	2	20
1,2,3-Trichlorobenzene	<0.46		50.0	60.5		ug/L		121	51 - 145	4	20
1,2,4-Trichlorobenzene	<0.34		50.0	62.5		ug/L		125	57 - 137	3	20
1,2,4-Trimethylbenzene	<0.36		50.0	58.3		ug/L		117	70 - 123	1	20
1,2-Dibromo-3-Chloropropane	<2.0		50.0	57.6		ug/L		115	56 - 123	4	20
1,2-Dichlorobenzene	<0.33		50.0	56.6		ug/L		113	70 - 125	6	20
1,2-Dichloroethane	<0.39	F1 *	50.0	65.7	F1	ug/L		131	68 - 127	1	20
1,2-Dichloropropane	<0.43		50.0	59.3		ug/L		119	67 - 130	4	20
1,3,5-Trimethylbenzene	<0.25		50.0	59.0		ug/L		118	70 - 123	3	20
1,3-Dichlorobenzene	<0.40		50.0	54.3		ug/L		109	70 - 125	2	20
1,4-Dichlorobenzene	<0.36		50.0	56.4		ug/L		113	70 - 120	4	20
2-Hexanone	<1.6		50.0	46.8		ug/L		94	54 - 146	6	20
Bromochloromethane	<0.43		50.0	55.4		ug/L		111	65 - 122	8	20
Acetone	3.4	J	50.0	51.3		ug/L		96	40 - 143	0	20
Benzene	<0.15		50.0	53.5		ug/L		107	70 - 120	2	20
Bromoform	<0.48		50.0	58.4		ug/L		117	56 - 132	5	20
Bromomethane	<0.80		50.0	66.2		ug/L		132	40 - 152	3	20
Carbon disulfide	<0.45		50.0	46.9		ug/L		94	66 - 120	3	20
Carbon tetrachloride	<0.38		50.0	54.5		ug/L		109	59 - 133	0	20
Chlorobenzene	<0.39		50.0	56.3		ug/L		113	70 - 120	4	20
Chloroethane	0.67	J	50.0	61.7		ug/L		122	48 - 136	4	20
Chloroform	<0.37		50.0	57.7		ug/L		115	70 - 120	3	20
Chloromethane	<0.32		50.0	52.4		ug/L		105	56 - 152	2	20
cis-1,2-Dichloroethene	0.45	J	50.0	51.8		ug/L		103	70 - 125	0	20
cis-1,3-Dichloropropene	<0.42		50.0	62.3		ug/L		125	64 - 127	2	20
Dichlorobromomethane	<0.37	F1	50.0	62.4	F1	ug/L		125	69 - 120	5	20
Dichlorodifluoromethane	<0.67		50.0	53.1		ug/L		106	40 - 159	3	20
Ethylbenzene	<0.18		50.0	52.5		ug/L		105	70 - 123	2	20
Ethylene Dibromide	<0.39		50.0	58.3		ug/L		117	70 - 125	1	20
m-Xylene & p-Xylene	0.29	J	50.0	57.1		ug/L		114	70 - 125	2	20
Isopropylbenzene	<0.39		50.0	58.6		ug/L		117	70 - 126	4	20
2-Butanone (MEK)	<2.1		50.0	46.3		ug/L		93	46 - 144	6	20
4-Methyl-2-pentanone (MIBK)	<2.2		50.0	47.1		ug/L		94	55 - 139	5	20
Methyl tert-butyl ether	<0.39		50.0	52.8		ug/L		106	55 - 123	1	20
Methylene Chloride	<1.6		50.0	49.0		ug/L		98	69 - 125	2	20
o-Xylene	<0.22		50.0	59.8		ug/L		120	70 - 120	2	20
Styrene	<0.39		50.0	57.8		ug/L		116	70 - 120	1	20
Tetrachloroethene	1.9		50.0	62.7		ug/L		122	70 - 128	2	20
Toluene	<0.15		50.0	58.6		ug/L		117	70 - 125	4	20
trans-1,2-Dichloroethene	<0.35		50.0	50.1		ug/L		100	70 - 125	1	20
trans-1,3-Dichloropropene	<0.36		50.0	62.8		ug/L		126	62 - 128	3	20
Trichloroethene	<0.16		50.0	58.0		ug/L		116	70 - 125	2	20

TestAmerica Chicago

QC Sample Results

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

TestAmerica Job ID: 500-154927-1

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

Lab Sample ID: 500-154927-21 MSD

Client Sample ID: W-181115-RA-21

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 462045

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichlorofluoromethane	<0.43		50.0	50.0		ug/L		100	55 - 128	2	20
Vinyl chloride	<0.20		50.0	51.3		ug/L		103	64 - 126	2	20
Chlorodibromomethane	<0.49		50.0	61.5		ug/L		123	68 - 125	3	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	115		75 - 126
4-Bromofluorobenzene (Surr)	102		72 - 124
Toluene-d8 (Surr)	104		75 - 120
Dibromofluoromethane	90		75 - 120

Lab Chronicle

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-01

Date Collected: 11/12/18 11:35

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461361	11/22/18 03:49	PMF	TAL CHI

Client Sample ID: W-181112-RA-02

Date Collected: 11/12/18 11:35

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461361	11/22/18 04:18	PMF	TAL CHI

Client Sample ID: W-181112-RA-03

Date Collected: 11/12/18 11:50

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461361	11/22/18 04:48	PMF	TAL CHI

Client Sample ID: W-181112-RA-04

Date Collected: 11/12/18 12:25

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461361	11/22/18 05:17	PMF	TAL CHI

Client Sample ID: W-181112-RA-05

Date Collected: 11/12/18 12:20

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461361	11/22/18 05:46	PMF	TAL CHI

Client Sample ID: W-181112-RA-06

Date Collected: 11/12/18 13:00

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461361	11/22/18 06:16	PMF	TAL CHI

TestAmerica Chicago

Lab Chronicle

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181112-RA-07

Date Collected: 11/12/18 13:30

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461361	11/22/18 06:45	PMF	TAL CHI

Client Sample ID: W-181112-RA-08

Date Collected: 11/12/18 14:25

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461364	11/22/18 02:45	PMF	TAL CHI

Client Sample ID: W-181114-RA-09

Date Collected: 11/14/18 09:40

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 15:33	JLC	TAL CHI

Client Sample ID: W-181114-RA-10

Date Collected: 11/14/18 09:40

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 15:58	JLC	TAL CHI

Client Sample ID: W-181114-RA-11

Date Collected: 11/14/18 10:40

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 16:23	JLC	TAL CHI

Client Sample ID: W-181114-RA-12

Date Collected: 11/14/18 11:45

Date Received: 11/16/18 09:55

Lab Sample ID: 500-154927-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 16:48	JLC	TAL CHI

TestAmerica Chicago

Lab Chronicle

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181114-RA-13

Lab Sample ID: 500-154927-13

Date Collected: 11/14/18 12:15

Matrix: Water

Date Received: 11/16/18 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 17:13	JLC	TAL CHI

Client Sample ID: W-181114-RA-14

Lab Sample ID: 500-154927-14

Date Collected: 11/14/18 12:40

Matrix: Water

Date Received: 11/16/18 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 17:38	JLC	TAL CHI

Client Sample ID: W-181114-RA-15

Lab Sample ID: 500-154927-15

Date Collected: 11/14/18 13:20

Matrix: Water

Date Received: 11/16/18 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461974	11/28/18 06:14	JJH	TAL CHI

Client Sample ID: W-181115-RA-16

Lab Sample ID: 500-154927-16

Date Collected: 11/15/18 09:43

Matrix: Water

Date Received: 11/16/18 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 19:44	JLC	TAL CHI

Client Sample ID: W-181115-RA-17

Lab Sample ID: 500-154927-17

Date Collected: 11/15/18 10:43

Matrix: Water

Date Received: 11/16/18 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 20:09	JLC	TAL CHI

Client Sample ID: W-181115-RA-18

Lab Sample ID: 500-154927-18

Date Collected: 11/15/18 10:43

Matrix: Water

Date Received: 11/16/18 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 20:34	JLC	TAL CHI

TestAmerica Chicago

Lab Chronicle

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

TestAmerica Job ID: 500-154927-1

Client Sample ID: W-181115-RA-19

Lab Sample ID: 500-154927-19

Date Collected: 11/15/18 12:25

Matrix: Water

Date Received: 11/16/18 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 20:59	JLC	TAL CHI

Client Sample ID: W-181115-RA-20

Lab Sample ID: 500-154927-20

Date Collected: 11/15/18 12:25

Matrix: Water

Date Received: 11/16/18 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 21:24	JLC	TAL CHI

Client Sample ID: W-181115-RA-21

Lab Sample ID: 500-154927-21

Date Collected: 11/15/18 12:53

Matrix: Water

Date Received: 11/16/18 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462045	11/28/18 21:49	JLC	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-154927-22

Date Collected: 11/12/18 14:00

Matrix: Water

Date Received: 11/16/18 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461394	11/23/18 13:13	PMF	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: 500-154927-1

Laboratory: TestAmerica Chicago

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	999580010	08-31-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



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-02758**

PAGE 1 OF 2

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 48038-70-01				Laboratory Name: Test America				Lab Location: University Park, IL				SSOW ID: 500-154927											
Project Name: New New Richmond LF				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 0260B  500-154927 COC MS/MSD Request											
Sampler(s): R. Amot, K. Jenkins, M. Hackenmueller																Carrier: Fed Ex				Airbill No:			
Item				SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)				DATE (mm/dd/yy)				TIME (hh:mm)											
1	W-18112-RA-01			11/12/18	11:35	W	G	X					3	X									
2	-02				11:35			X					3	X									
3	-03				11:50			X					3	X									
4	-04				12:25			X					3	X									
5	-05				12:20			X					3	X									
6	-06				13:00			X					3	X									
7	-07				13:30			X					3	X									
8	-08				14:25			X					3	X									
9	W-18114-RA-09			11/14/18	09:40			X					3	X									
10	-10				09:40			X					3	X									
11	-11				10:40			X					3	X									
12	-12				11:45			X					3	X									
13	-13				12:15			X					3	X									
14	-14				12:40			X					3	X									
15	-15				13:20			X					9	X								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 checked="" type="checkbox"/> Other: Standard											Total Number of Containers: 51		Notes/ Special Requirements: 2.9										
All Samples in Cooler must be on COC																							
RELINQUISHED BY			COMPANY			DATE			TIME			RECEIVED BY			COMPANY			DATE			TIME		
1. <i>Mark Anderson</i>			GHD			11/15/18			16:00			1. <i>Shawn Scott</i>			TA-CRT			11/16/18			09:55		
2.												2.											
3.												3.											

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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-02759**

PAGE 2 OF 2

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 48038-70-01				Laboratory Name: Test America				Lab Location: University, Park IL				SSOW ID: 508-154927																																																																																																																																																																																						
Project Name: New Richmond LF				Lab Contact:				Lab Quote No:				Cooler No:																																																																																																																																																																																						
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Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-154927-1

Login Number: 154927

List Source: TestAmerica Chicago

List Number: 1

Creator: Scott, Sherri L

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	2.9
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	



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	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromo-3-chloropropane	1,2-Dichloroethane	1,2-Dichloropropane	Benzene	Bromodichloromethane	Carbon Disulfide	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	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
MW1	4/26/99			170	< 6.1	1100	77	< 4.1	< 3.7	< 3.5	< 2.7	< 3	< 1	< 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	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 4.4	550	< 5.3	< 4.5	31	< 11	< 5.9	< 4.5	< 16	< 4.8	< 5.4	< 4.4
MW1	9/24/04			24	< 3.5	300	< 6	< 6.2	< 3.3	< 3.1	3.6	< 4.7	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	5/18/17			7	< 1	7.6	0.92	< 2	< 1	< 1	< 1	< 1	< 2	< 1	< 1	2.2	< 1	< 1	< 10	< 1	0.45 J	< 5	< 1	< 1	< 1
MW1	10/30/17			4.7	< 1	6	0.6 J	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	1.8 J	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW1	5/4/18			5.7	< 1	6.6	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	1.8 J	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1
MW1	11/14/18			4.5	< 1	15	1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	1.7 J	< 1	< 1	< 5	< 5	< 1	< 10	< 1	0.48 J	< 1
MW1A	12/4/03			4	< 1.4	110	< 2.6	< 2.1	2.1	< 1.9	< 2.3	< 1.9	< 1	< 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	< 1	< 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	< 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	< 1	< 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	< 1	< 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	< 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	< 1	< 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	< 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	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	< 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	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	< 1	< 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 UJ
MW1A	2/16/10			< 17	< 17	6.2 J	< 17	< 33	< 17	< 17	< 17	< 17	< 1	< 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	< 1	< 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	16	< 1	< 1	< 1	61	< 1	< 1	29	< 1	< 1	< 1
MW1A	5/11/11			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	0.75 J	< 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	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	< 1
MW1A	11/7/12			< 1	< 1	1.2	< 1	< 2	< 1	< 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	< 2	< 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	< 1	< 0.3	< 1.7	0.54	< 0.24	< 0.4	< 0.53	< 0.43	< 0.31	< 0.64	< 0.32	< 0.25	< 0.11

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 Disulfide 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
MW1B	10/21/03	166-170		< 0.57	< 0.34	< 0.54	< 0.66	< 0.52	< 0.5	< 0.48	< 0.56	< 0.48	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 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	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	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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW1B	5/9/12			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW1B	11/1/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	11/12/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1 UJ	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2A	2/17/10			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 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	< 1	< 0.44	< 2.5	< 0.53	< 0.45	< 0.54	< 1.1	< 0.59	0.66	< 1.6	< 0.58	< 0.54	< 0.44

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 Disulfide	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	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
MW2B	10/23/03	176-180		4.2	< 0.34	2.7	< 0.66	< 0.52	< 0.5	< 0.48	< 0.56	< 0.48	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	U	< 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	UJ	< 1
MW2B	2/17/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	5/5/10			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW2B	11/1/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW.2	4/26/99			460	< 3	82	33	12	< 1.8	< 1.7	< 1.4	< 1.5	< 1	< 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	< 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	< 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	< 1	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	< 1.8	< 1.3	8.1	< 0.88	< 0.92		< 0.76	30	< 0.52	1.6	< 0.34	
MW2R	6/16/05			25	< 2	110	< 1.9	< 3	< 1.9	< 1.5	< 1.4	< 1.4	< 1	< 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	< 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	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 2.5	19	< 2.5 U	< 2.5	0.77 J	< 25	< 2.5	< 2.5	22	< 2.5	< 2.5	< 2.5
MW2R	5/6/09			7	2.1	68	0.73	< 4	0.96	0.88	< 2	< 2	< 1	< 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	< 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	< 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	< 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	< 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	< 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 Disulfide	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	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	
MW2R	11/9/11			0.83 J	< 1	4.2	0.25 J	< 2	0.24 J	< 1	< 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	< 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	< 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	< 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	< 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	< 1	< 1	0.39 J	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW2R	11/1/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	1.1 J	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5	
MW2R	11/15/18			1.3	< 1	2.5	0.43 J	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	0.77 J	< 1	< 1	< 5	< 5	< 1	< 10	< 1	0.27 J	< 1	
MW3	4/26/99			68	< 0.61	49	3.4	< 0.41	< 0.37	2	< 0.27	< 0.3	< 1	< 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	< 1	< 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	< 1	< 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	< 1	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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 1	UJ	< 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 J	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1		
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	< 2	< 1	< 1	< 2	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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		

**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 Disulfide 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
MW4	5/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	11/11/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	UJ	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1
MW6	2/16/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	UJ	< 1
MW6	5/5/10			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW6	11/5/14			< 1	< 1	< 1	< 1	< 2	< 1	< 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	J	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1
MW6	11/7/16			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 2	< 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	< 1	< 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	< 1	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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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 Disulfide	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	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
MW8	7/18/07		D	< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 10	< 10 UJ	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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	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	1.8	< 1	1.7	< 10	< 1	4.7	0.66	< 1	0.49	< 1
MW9	11/6/12			27	< 1.4	38	5.6	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 2	< 1	< 1	1.2 J	< 1	0.6 J	< 5	< 5	1.4	< 10	< 1	< 0.5	< 0.5
MW9	11/15/18			11	< 1	17	2.9	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	2	< 1	1	< 5	< 5	< 2.3	< 10	< 1	0.32 J	< 1
MW9A	12/3/03			< 0.23	< 0.14	< 0.22	< 0.26	< 0.21	< 0.2	< 0.19	< 0.23	< 0.19	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	1,1,2-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 Disulfide 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
MW9A	5/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0.77 J	< 1	< 1	< 1	
MW9A	8/6/08			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1
MW9A	8/6/08		D	< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1
APPLE RIVER DOWN	5/4/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1
APPLE RIVER UP	5/4/10			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1
MW10	6/15/05			16	< 0.39	4	1.6	< 0.61	< 0.39	< 0.29	< 0.28	< 0.28	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 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	< 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	< 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	< 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	< 1	0.76 J	< 1	1.3	< 10	< 1	3.1	0.65 J	< 1	0.47 J	< 1
MW10	11/4/15			36	< 1	26	6.1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1 J	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	< 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	< 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	< 2	< 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	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW10	5/4/18			2.4	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1
MW10	11/12/18			2.5	< 1	2.5	0.49 J	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1
MW10A	6/15/05			35	< 0.98	6.1	4.7	< 1.5	< 0.97	< 0.73	< 0.71	< 0.71	< 1	< 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	< 1	< 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	< 1.1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 2	< 2	0.63 J	< 2	4.4	< 20	< 2	8.9	0.97 J	< 2	0.82 J	< 2

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 Disulfide	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	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
MW10A	11/11/09			67	< 2.5	31	14	< 5	< 2.5	< 2.5	< 2.5	< 2.5	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 1	< 2	< 2	0.72 J	< 2	3.8	< 20	< 2	6.3	< 10	< 2	0.71 J	< 2
MW10A	11/9/12			43	< 1.7	31	12	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 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	< 2	< 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	< 2	< 1	< 1	0.7 J	< 1	1.7	< 5	< 5	4.1	< 10	< 1	0.4 J	< 0.5
MW10A	5/4/18			20	< 1	20	4.2	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	1.6	< 5	< 5	3.8	< 10	< 1	< 0.5	< 1
MW10A	11/14/18			15	< 1	18	3.8	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	0.49 J	< 1	1.6	< 5	< 5	< 3.4	< 10	< 1	0.37 J	< 1
MW10B	5/20/05	190		98	< 0.2	36	6.3	< 0.3	< 0.19	0.21	< 0.14	< 0.14	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 1	< 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	< 1	< 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	< 1	< 0.22	< 1.5	< 0.17	< 0.47	< 0.26	< 0.15	0.2	< 0.26	< 0.86	< 0.19	< 0.38	< 0.18
MW11	7/17/07			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 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	< 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	< 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	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 1	< 1	0.36 J	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	2/17/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW11A	5/4/09			< 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	1,1,2-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 Disulfide 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	6/15/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	< 0.14	< 0.14	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW13	11/11/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 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	< 1	< 1	< 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	< 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
MW13	5/5/10			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW13	11/4/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 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	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW13	11/7/16			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW13	10/31/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW13	11/14/18			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 1	< 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	< 1	< 0.15	< 0.63	< 0.1	< 0.17	< 0.18	< 0.69	< 0.25	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	< 1	< 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	< 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	< 1	0.31 J	< 1	11	< 1	< 10	< 1	U	0.33 J	< 5	< 1	< 1
MW14	8/5/08			5.4	< 1	0.32 J	1.2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.43 J	< 5	< 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	< 1	< 10	< 1	0.4 J	< 5	< 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	< 1	< 10	< 1	0.37 J	< 5	< 1	< 1	
MW14	5/5/09			4.2	< 1	0.31	0.5	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.34	< 5	< 1	< 1	
MW14	8/11/09			3	< 1	0.23 J	0.3 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	0.29 J	< 5	< 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 Disulfide	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	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
MW14	11/11/09			2.3	< 1	< 1	0.29 J	< 2	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	11/5/15			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14	10/31/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 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	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW14	11/14/18			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1
MW14	11/14/18		D	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1
MW14A	6/16/05			< 0.13	< 0.2	< 0.15	< 0.19	< 0.3	< 0.19	< 0.15	0.2	< 0.14	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW14A	5/7/08			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 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	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	< 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	0.35 J	< 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	0.43 J	< 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	< 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	< 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	1,1,2-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 Disulfide 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	
MW15A	5/4/09		D	< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW15A	11/10/09			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	UJ	< 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	UJ	< 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	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1	
MW15A	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	
MW15A	11/8/16			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 2	< 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	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5	
MW15A	11/12/18			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 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	< 1	< 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	
MW16	8/6/08			150	< 6.7	150	19	< 13	< 6.7	< 6.7	< 6.7	< 6.7	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 1	< 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	< 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	< 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	< 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	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	< 2	< 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	< 2	< 1	< 1	1.1 J	< 1	< 1	< 5	< 5	1.5	< 10	< 1	< 0.5	< 0.5	

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 Disulfide 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	5/3/18			13	< 1	16	3.6	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	1.1 J	< 1	1.2	< 5	< 5	1.8	< 10	< 1	0.3 J	< 1
MW16	11/14/18			14	< 1	16	3.5	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	0.84 J	< 1	1.1	< 5	< 5	< 2.1	< 10	< 1	0.34 J	< 1
MW16A	5/8/08			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	UJ	< 1
MW16A	5/6/10			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	11/6/14			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	11/4/15			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	J	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW16A	5/18/17			< 1	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 2	< 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	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 0.5
MW16A	5/3/18			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1
MW16A	11/14/18			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1
MW17	5/8/08			55	< 1	32	7.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.1	< 1	< 1	2.7	< 10	< 1	4.7	1 J	< 1	0.42 J	< 1
MW17	8/5/08			48	< 1.7	32	11	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1	< 1.7	0.98 J	0.37 J	< 1.7	2.3	< 17	< 1.7	3.7	1.1 J	< 1.7	< 1.7	< 1.7
MW17	11/12/08			48	< 1.4	35	6	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1	< 1.4	1.3 J	0.41 J	< 1.4	2.6	< 14	< 1.4 U	3.2	< 7.2	< 1.4	< 1.4	< 1.4
MW17	2/18/09			44	< 1.7	32	8.7	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1	< 1.7	0.98 J	< 1.7 U	< 1.7	2.5	< 17	< 1.7	3.8	< 8.4	< 1.7	< 1.7	< 1.7
MW17	5/5/09			44	< 2	37	7	< 4	< 2	< 2	< 2	< 2	< 1	< 2	0.98	0.49	< 2	2.6	< 20	< 2	3.1	1.4	< 2	< 2	< 2
MW17	8/11/09			47	< 1.7	34	3.7	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1	< 1.7	1.3 J	0.46 J	< 1.7	2.6	< 17	< 1.7	3.5	1.2 J	< 1.7	< 1.7	< 1.7
MW17	11/10/09			43	< 1.7	29	6.4	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1	< 1.7	1.3 J	0.41 J	< 1.7	2.3	< 17	< 1.7	4.2 J	< 8.4	< 1.7	< 1.7	< 1.7
MW17	2/16/10			36	< 1.4	32	6.5	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1	< 1.4	1.4	0.4 J	< 1.4	2.3	< 14	< 1.4 U	3.5	< 7.2	< 1.4 UJ	0.41 J	< 1.4
MW17	5/6/10			41	< 2	37	6.1	< 4	< 2	< 2	< 2	< 2	< 1	< 2	1.8 J	0.45 J	< 2	2.4	< 20	< 2	3.2	1.9 J	< 2	< 2	< 2
MW17	11/17/10			34	< 1.4	30	6.8	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1	< 1.4	1.4	0.38 J	< 1.4	2.1	< 14	< 1.4	3.4	0.69 J	< 1.4	< 1.4	< 1.4
MW17	5/11/11			39	< 1.7	37	7.8	< 3.3	< 1.7	< 1.7	< 1.7	< 1.7	< 1	< 1.7	1.7	0.48 J	< 1.7	2.3	< 17	< 1.7	3.5	1.1 J	< 1.7	< 1.7	< 1.7
MW17	11/10/11			40	< 2	35	7.7	< 4	< 2	< 2	< 2	< 2	< 1	< 2	1.7 J	0.48 J	< 2	2.1	< 20	< 2 U	3.7	1.4 J	< 2	0.4 J	< 2
MW17	5/11/12			37	< 1.4	35	4.9	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1	< 1.4	1.2	0.43	< 1.4	2.2	< 14	< 1.4	3.2	1.1	< 1.4	0.43	< 1.4
MW17	11/9/12			36	< 1	33	7.3	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2.2	0.42 J	< 1	2	< 10	< 1	3.5	< 5	< 1	0.44 J	< 1
MW17	11/6/13			28	< 1	29	6.2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.4	0.38 J	< 1	1.8	< 10	< 1	3.6	1.1 J	< 1	0.42 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 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 Disulfide 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
MW17	11/6/14			32	< 1	30	5.6	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.2	0.43 J	< 1	1.7	< 10	< 1	3.2	1.2 J	< 1	0.43 J	< 1
MW17	11/4/15			24	< 1	23	3.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.54 J	0.35 J	< 1	1.4	< 10	< 1	3	< 5	< 1	0.43 J	< 1
MW17	5/10/16			17	< 1	23	3.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	2	0.32 J	< 1	1.2	< 10	< 1	2.4	< 5	< 1	0.32 J	< 1
MW17	11/8/16			17	< 1	19	3.1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.2	< 1	< 1	1	< 10	< 1	2.3	0.9 J	< 1	0.39 J	< 1
MW17	5/18/17			17	< 1	22	3.6	< 2	< 1	< 1	< 1	< 1	< 2	< 1	0.86 J	< 1	< 1	1.2	< 10	< 1	2.2	1 J	< 1	< 1	< 1
MW17	11/1/17			14	< 1	18	3.3	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	1.3	< 2	< 1	< 1	< 5	< 23	2.2	< 10	< 1	< 0.5	< 0.5
MW17	5/3/18			11	< 1	15	3.4	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	1	< 2	< 1	0.95 J	< 5	< 5	1.9	< 10	< 1	0.25 J	< 1
MW17	5/3/18		D	11	< 1	16	3.5	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	0.99 J	< 2	< 1	1	< 5	< 5	1.8	< 10	< 1	0.29 J	< 1
MW17	11/15/18			12	< 1	16	3.1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	1.2	< 2	< 1	0.87 J	< 5	< 5	< 2.1	< 10	< 1	0.37 J	< 1
MW17A	5/7/08			38	< 1	21	5.2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.55 J	< 1	< 1	1.5	< 10	< 1	3.1	0.62 J	< 1	< 1	< 1
MW17A	8/5/08			38	< 1.4	26	8.6	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1	< 1.4	0.8 J	0.31 J	< 1.4	1.6	< 14	< 1.4	2.3	< 7.2 U	< 1.4	< 1.4	< 1.4
MW17A	8/5/08		D	38	< 1.4	27	8.1	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1	< 1.4	0.86 J	0.29 J	< 1.4	1.6	< 14	< 1.4	2.5	< 7.2 U	< 1.4	< 1.4	< 1.4
MW17A	11/12/08			30	< 1.4	22	4.1	< 2.9	< 1.4	< 1.4	< 1.4	< 1.4	< 1	< 1.4	0.7 J	0.29 J	< 1.4	1.4	< 14	< 1.4 U	1.9	< 7.2 U	< 1.4	< 1.4	< 1.4
MW17A	2/18/09			36	< 1	23	6.1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.73 J	< 1 U	< 1	1.5	< 10	< 1	2.9	0.52 J	< 1	0.29 J	< 1
MW17A	5/5/09			37	< 1	29	5.9	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.74	0.33	< 1	1.5	< 10	< 1	2.5	0.8	< 1	< 1	< 1
MW17A	8/11/09			40	< 1	27	4.6	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.1	0.37 J	< 1	1.5	< 10	< 1	3	0.84 J	< 1	0.3 J	< 1
MW17A	11/11/09			34	< 1	23	5.6	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.53 J	0.31 J	< 1	1.6	< 10	< 1	3.2	< 5	< 1	0.31 J	< 1
MW17A	2/16/10			31	< 1	26	5.3	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.2	0.32 J	< 1	1.5	< 10	< 1 U	3	< 5	< 1 UJ	0.31 J	< 1
MW17A	5/6/10			39	< 1	27	4.6	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.2	0.36 J	< 1	1.5	< 10	0.33 J	2.9	< 5	< 1	0.33 J	< 1
MW17A	11/17/10			29	< 1	24	6.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	0.93 J	0.32 J	< 1	1.2	< 10	< 1	2.6	< 5 U	< 1	0.29 J	< 1
MW17A	5/11/11			30	< 1	27	7.4	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.4	0.37 J	< 1	1.4	< 10	< 1	2.5	0.83 J	< 1	0.33 J	< 1
MW17A	11/10/11			28	< 1	25	5.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	1.4	0.35 J	< 1	1.2	< 10	< 1	2.6	0.82 J	< 1	0.3 J	< 1
MW17A	5/11/12			26	< 1	24	2.1	< 2	< 1	< 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	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	1.1	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	< 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	< 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	< 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	< 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	< 2	< 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	< 2	< 1	0.85 J	< 2	< 1	< 1	< 5	< 23	1.8	< 10	< 1	< 0.5	< 0.5
MW17A	5/4/18			8.4	< 1	10	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	1.3	< 10	< 1	< 0.5	< 1
MW17A	11/15/18			11	< 1	11	1.5	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	0.67 J	< 2	< 1	0.45 J	< 5	< 5	< 1.9	< 10	< 1	< 0.5	< 1
MW18	10/2/07			2.5	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1
MW18	5/14/08			3.2	< 1	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1
MW18	8/12/09			7.5	< 1	< 1	0.66 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	4.2	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 1
MW18	10/21/09			6.6	< 1	< 1	0.7 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1 UJ	< 1	< 1
MW18	4/1/10			13	< 1	0.36 J	1.5	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	11/16/10			2.7	< 1	0.59 J	0.34 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	5/10/11			6.1	< 1	0.61 J	0.94 J	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	5/10/11		D	8	< 1	0.57 J	1.2	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	11/9/11			< 1	< 1	0.55 J	< 1	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	11/9/11		D	< 1	< 1	0.56 J	< 1	< 2	< 1	< 1	0.22 J	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	5/10/12			22	< 1	0.52	2.7	< 2	< 1	< 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 Disulfide	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	
MW18	11/9/12			20	< 1	0.56 J	3.9	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	6/6/13			24	< 1	0.78 J	3.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	6/6/13		D	26	< 1	0.76 J	3.9	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 10	< 1	< 1	0.42 J	< 1	< 1	< 1
MW18	11/5/13			25	< 1	0.96 J	3.6	< 2	< 1	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW18	5/19/17			31	< 1	3.8	6.8	< 2	< 1	< 1	< 1	< 1	< 2	< 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	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 23	< 1	< 10	< 1	< 0.5	< 0.5
MW18	5/4/18			13	< 1	2.5	3.7	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1
MW18	11/12/18			14	< 1	3.8	3.3	< 5	< 1	< 1	< 0.5	< 1	4.6	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1
MW19	5/13/14			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19	10/31/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 23	< 1	< 10	< 1	< 0.5	< 0.5
MW19	11/12/18			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1
MW19A	5/13/14			< 1	< 1	< 1	< 1	< 2	< 1	< 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	< 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	< 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	< 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	< 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	< 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	< 1	< 10	< 1	< 1	< 5	< 1	< 1	< 1
MW19A	11/1/17			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 22	< 1	< 10	< 1	< 0.5	< 0.5
MW19A	11/12/18			< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1
MW19A	11/12/18		D	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 0.5	< 1	< 2	< 1	< 1	< 2	< 1	< 1	< 5	< 5	< 1	< 10	< 1	< 0.5	< 1

Notes:

All results are in ug/L

D - Duplicate

J - Estimated concentration

Bold Lettering - Exceeds PAL

Greyed Out - 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	200 1,1,1-Trichloroethane 40 ug/L	850 1,1-Dichloroethane 85 ug/L	7 1,1-Dichloroethene 0.7 ug/L	Carbon disulfide ug/L	5 Tetrachloroethene 0.5 ug/L
985 198th St			7/2/13			< 1	< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/14/08			< 1	< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		8/12/09			< 1	< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/6/10			< 1	< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/9/11			< 1	< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/8/12			< 1	< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/14/13			< 1	< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/13/14			< 1	< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/13/15			< 1	< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/10/16			< 1	< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/18/17			< 1	< 1	< 1	< 1	< 1
1070 192nd Ave	Hegge		5/18/17	D		< 1	< 1	< 1	< 1	< 1
1085 Cty Rd C	Brotzler		5/14/08			< 1	< 1	< 1	< 1	< 1
1087 Cty Rd C	Franko S		5/14/08			< 1	< 1	< 1	< 1	< 1
1098 Cty Rd C	Penman		5/14/08			< 1	< 1	< 1	< 1	< 1
1098 Cty Rd C	Penman		5/14/08	D		< 1	< 1	< 1	< 1	< 1
1103 Cty Rd C	Deavy		10/2/07			< 1	< 1	< 1	< 1	< 1
1965 104th St	Wittstock		8/28/09			< 1	< 1	< 1	< 1	< 1
1965 110th St	Tamoshaitis		10/1/07			1.7	< 1	< 1	< 1	< 1
1968 115th St D	Karastes D	Eff	5/29/07			< 1	< 1	< 1	< 1	< 1
1968 115th St D	Karastes D	Inf	5/29/07			46	42	7.4	< 1	3.8

**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	Carbon disulfide ug/L	1,1,1,1-Tetrachloroethene 5 0.5 ug/L
1968 115th St D	Karastes D	Inter	5/29/07			< 1	6.8	< 1	< 1	< 1
1968 115th St D	Karastes D	Inter	6/27/07			< 1	< 1	< 1	< 1	< 1
1968 115th St J	Karastes J	Inf	5/29/07			0.2 J	< 1	< 1	< 1	< 1
1968 115th St J	Karastes J	Inter	5/29/07			< 1	< 1	< 1	< 1	< 1
1968 115th St J	Karastes J	Inter	6/27/07			< 1	< 1	< 1	< 1	< 1
1974 110th St	Backes		10/1/07			< 1	< 1	< 1	< 1	< 1
1982 115th St	FormerClement		10/2/07			< 1	< 1	< 1	< 1	< 1
1985 110th St	Potting	Inf	5/29/07			67	36	11	< 1	3.6
1985 110th St	Potting	Inter	5/29/07			< 1	< 1	< 1	< 1	< 1
1985 110th St	Potting	Inter	6/27/07			< 1	< 1	< 1	< 1	< 1
1985 115th St	Olson T	Inf	6/5/07			19	2.5	2.9	< 1	1.1
1985 115th St	Olson T	Inter	6/5/07			< 1	< 1	< 1	< 1	< 1
1985 115th St	Olson T	Inter	6/27/07			< 1	< 1	< 1	< 1	< 1
1987 115th St	Claassen	Eff	5/29/07			< 1	< 1	< 1	< 1	< 1
1987 115th St	Claassen	Inf	5/29/07			140	29	23	< 1	15
1987 115th St	Claassen	Inter	5/29/07			2.3	6.6	< 1	< 1	< 1
1987 115th St	Claassen	Inter	6/27/07			< 1	< 1	< 1	< 1	< 1
1988 115th St	Kunz		10/2/07			1.4	1.6	< 1	< 1	< 1
1988 115th St	Kunz		10/2/07	D		1	1.7	0.2 J	< 1	< 1
1989 110th St	Seim	Eff	5/29/07			< 1	< 1	< 1	< 1	< 1
1989 110th St	Seim	Inf	5/29/07			170	52	29	< 1	11

**Historical Residential Well Analytical Results (Detected Compounds)
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Name	Phase	Date	ES PAL Dup	Iron ug/L	200 1,1,1-Trichloroethane 40 ug/L	850 1,1-Dichloroethane 85 ug/L	7 1,1-Dichloroethene 0.7 ug/L	Carbon disulfide ug/L	5 Tetrachloroethene 0.5 ug/L
1989 110th St	Seim	Inter	5/29/07			< 1	< 1	< 1	< 1	< 1
1989 110th St	Seim	Inter	6/27/07			< 1	< 1	< 1	< 1	< 1
1989 110th St	Seim	Inter	6/27/07	D		< 1	< 1	< 1	< 1	< 1
1991 115th St	Mountain	Eff	5/29/07			< 1	< 1	< 1	< 1	< 1
1991 115th St	Mountain	Inf	5/29/07			73	28	14	< 1	6.4
1991 115th St	Mountain	Inter	5/29/07			< 1	< 1	< 1	< 1	< 1
1991 115th St	Mountain	Inter	6/27/07			< 1	< 1	< 1	< 1	< 1
1997 110th St	Lehner	Eff	5/29/07			< 1	< 1	< 1	< 1	< 1
1997 110th St	Lehner	Inf	5/29/07			34	17	4.8	< 1	1.9
1997 110th St	Lehner	Inter	5/29/07			< 1	< 1	< 1	< 1	< 1
1997 110th St	Lehner	Inter	6/27/07			< 1	< 1	< 1	< 1	< 1
2001 110th St	Barberine		7/17/07			9.3	3	1.4	< 1	0.5
2001 110th St	Barberine		10/1/07			8.2	2.6	0.8 J	< 1	0.6 J
2001 110th St	Barberine		1/18/08			6.2	2.6	1.5	< 1	0.6 J
2003 110th St	Wicklem	Eff	5/29/07			< 1	< 1	< 1	< 1	< 1
2003 110th St	Wicklem	Inf	5/29/07			56	42	9.1	< 1	3.6
2003 110th St	Wicklem	Inter	5/29/07			< 1	< 1	< 1	< 1	< 1
2003 110th St	Wicklem	Inter	6/27/07			< 1	< 1	< 1	< 1	< 1
2013 110th St	Heinecke	Eff	5/29/07			< 1	< 1	< 1	< 1	< 1
2013 110th St	Heinecke	Eff	5/29/07	D		< 1	< 1	< 1	< 1	< 1
2013 110th St	Heinecke	Eff	6/25/07			< 1	< 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-Trichloroethane 200 40 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	Carbon disulfide ug/L	1,1,1,1-Tetrachloroethene 5 0.5 ug/L
2013 110th St	Heinecke	Inf	5/29/07			87	26	14	< 1	7.6
2013 110th St	Heinecke	Inf	6/25/07			70	22	19	< 1	7.6
2013 110th St	Heinecke	Inter	5/29/07			< 1	< 1	< 1	< 1	< 1
2013 110th St	Heinecke	Inter	6/27/07			< 1	< 1	< 1	< 1	< 1
2025 110th St	Mondor	Eff	5/29/07			< 1	< 1	< 1	< 1	< 1
2025 110th St	Mondor	Inf	5/29/07			52	29	8.3	< 1	3.6
2025 110th St	Mondor	Inter	5/29/07			1.7	38	< 1	< 1	< 1
2025 110th St	Mondor	Inter	6/27/07			< 1	< 1	< 1	< 1	< 1
2025 110th St	Mondor	Inter	6/27/07	D		< 1	< 1	< 1	< 1	< 1
2040 110th St	Levy(new)		10/1/07			< 1	1.3	< 1	< 1	< 1
2040 110th St	Levy(new)		10/1/07	D		< 1	1.5	< 1	< 1	< 1
2054 County Road C			5/13/14			< 1	< 1	< 1	< 1	< 1
2055 Cty Rd C	Thommes (NEW)	Eff	4/1/10		< 100	< 1	< 1	< 1	< 1	< 1
2055 Cty Rd C	Thommes (NEW)	Inf	4/1/10		288	< 1	< 1	< 1	0.4 J	< 1
2055 Cty Rd C	Thommes (NEW)		5/9/11			< 1	< 1	< 1	< 1	< 1
2055 Cty Rd C	Thommes (NEW)		5/8/12			< 1	< 1	0.28	< 1	< 1
2055 Cty Rd C	Thommes (NEW)		5/14/13			< 1	0.5 J	0.26 J	< 1	< 1
2055 Cty Rd C	Thommes (NEW)		5/13/14			< 1	0.9 J	0.53 J	< 1	< 1
2055 Cty Rd C	Thommes (NEW)		5/13/15			< 1	1.3	0.76 J	< 1	< 1
2055 Cty Rd C	Thommes (NEW)		11/4/15			< 1	1.5	0.98 J	< 1	< 1
2055 Cty Rd C	Thommes (NEW)		5/10/16			1	1.9	1.3	< 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-Trichloroethane 200 40 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	Carbon disulfide ug/L	1,1,1,1-Tetrachloroethene 5 0.5 ug/L
2055 Cty Rd C	Thommes (NEW)		5/10/16			1 J	1.9	1.3	< 1	< 1
2055 Cty Rd C	Thommes (NEW)		11/9/16			1.7	2.1	1.4	< 1	< 1
2055 Cty Rd C	Thommes (NEW)		5/19/17			2.2	2.5	1.4	< 1	< 1
2055 Cty Rd C	Thommes (NEW)		10/31/17			2.1	2.4	1.2	< 2	< 1
2055 Cty Rd C	Thommes (NEW)		5/3/18			1.9	2.3	2.1	< 2	< 1
2055 Cty Rd C	Thommes (NEW)		11/12/18			1.6	2.5	1.7	3.5	< 1
2056 Cty Rd C	TNT Metals		5/14/08			< 1	< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		4/1/10			< 1	< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/9/11			< 1	< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/8/12			< 1	< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/14/13			< 1	< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/13/14			< 1	< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/13/15			< 1	< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/10/16			< 1	< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/10/16	D		< 1	< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/18/17			< 1	< 1	< 1	< 1	< 1
2056 Cty Rd C	TNT Metals		5/3/18			< 1	< 1	< 1	< 2	< 1
2061 Cty Rd C	Olson R (OLD)		10/2/07			< 1	< 1	< 1	< 1	< 1
2061 Cty Rd C	Olson R (OLD)		5/14/08			< 1	< 1	< 1	< 1	< 1
2061 Cty Rd C	Olson R (OLD)		8/12/09			< 1	< 1	< 1	< 1	< 1
2061 Cty Rd C	Olson R (OLD)		10/21/09			< 1	< 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-Trichloroethane 200 40 ug/L	1,1-Dichloroethane 850 85 ug/L	1,1-Dichloroethene 7 0.7 ug/L	Carbon disulfide ug/L	5 Tetrachloroethene 0.5 ug/L
2061 Cty Rd C	Olson R (NEW)		4/1/10			< 1	< 1	< 1	< 1	< 1
2062 Cty Rd C	Star Prairie		7/2/13			< 1	< 1	< 1	0.3 J	< 1
2072 110th St	Aldous		10/2/07			< 1	< 1	< 1	< 1	< 1
2072 Cty Rd C	Larson R		5/14/08			< 1	< 1	< 1	< 1	< 1
2073 Cty Rd C	Johnson D		5/14/08			< 1	< 1	< 1	< 1	< 1
2076 110th St	Hanson		10/1/07			< 1	< 1	< 1	< 1	< 1
2077 110th St	Olson C		10/1/07			< 1	< 1	< 1	< 1	< 1
2078 114th St	Rivard		10/1/07			< 1	< 1	< 1	< 1	< 1
2080 Asplund Rd	Deal		10/2/07			< 1	< 1	< 1	< 1	< 1
2082 110th St	Bryant		10/1/07			< 1	< 1	< 1	< 1	< 1
2082 Asplund Rd	Brown		10/2/07			1.2	0.7 J	< 1	< 1	< 1
2118 Cook Dr	Star Prairie Town Hall		5/14/08			< 1	< 1	< 1	< 1	< 1

Notes:

All results are in ug/L

D - Duplicate

J - Estimated concentration

Bold Lettering - Exceeds PAL

Grey Background - 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				Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)	Temperature (°F)		
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
Stack	1/24/18	1.7	14.8	0.2	37	535	NA ³
Stack	2/13/18	0.0	17.1	0.2	44	459	3,909
Stack	3/5/18	0.0	17.5	0.2	45	504	3,220
Stack	4/4/18	0.0	14.9	0.1	36	559	NA ³
Stack	5/17/18	0.2	13.7	1.0	56	300	-
Stack	7/3/18	0.0	16.7	0.8	68	300	-
Stack	7/31/18	0.0	14.9	0.3	69	300	-
Stack	8/30/18	0.4	15.4	0.6	64	300	-
Stack	9/28/18	0.0	16.3	1.6	56	300	2,257
Stack	11/16/18	0.1	16.8	0.1	50	446	> 4,194
Stack	12/13/18	0.5	15.9	0.1	42	622	> 5,745

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			Temperature (°F)	Flow Rate (CFM)	Target Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				
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

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	09/30/11	0.0	19.8	-43.3	-	0 ⁴	50	250
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

Appendix E.2

**Historical SVE 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)	Target Flow Rate (CFM)	by FID (ppm)
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
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-1	05/17/18	0.0	17.6	-8.0	56	0	-	-
SVE-1	11/16/18	0.0	16.4	-12.8	50	0	-	0
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

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	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
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

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	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
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-2	05/17/18	0.0	19.5	-6.5	56	0	-	-
SVE-2	11/16/18	0.0	17.1	-10.0	50	0	-	217
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

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	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
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

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	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
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-3	05/17/18	0.0	14.2	-9.0	56	0	-	-
SVE-3	11/16/18	0.2	13.2	-11.8	50	0	-	2,936
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	-

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
		Gas (%)	Oxygen (%)					by FID (ppm)
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
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

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	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
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

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	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
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-4	01/24/18	4.3	13.3	-11.6	37	0 ⁴	40-50	NA ⁶
SVE-4	02/13/18	1.1	15.8	-16.1	44	42	40-50	NA ⁶
SVE-4	03/05/18	1.6	15.7	-15.8	45	43	40-50	NA ⁶
SVE-4	04/04/18	1.9	14.8	-11.3	36	0 ⁴	40-50	NA ⁶
SVE-4	05/17/18	0.5	14.0	-9.1	56	0 ⁴	40-50	-
SVE-4	07/03/18	0.3	16.1	-8.0	68	0 ⁴	40-50	-
SVE-4	07/31/18	0.0	15.0	-10.1	69	0 ⁴	40-50	-
SVE-4	08/30/18	0.0	19.0	-9.6	64	0 ⁴	40-50	-
SVE-4	09/28/18	0.7	14.2	-12.4	56	0 ⁴	40-50	2,873
SVE-4	11/16/18	1.5	15.4	-12.8	50	72	40-50	> 4,194
SVE-4	12/13/18	0.2	14.6	-12.6	42	0 ⁴	40-50	5,038
SVE-5	08/27/08 ¹	5.5	14.8	0.3	-	-	-	-

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	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
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

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	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
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

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	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-5	05/17/18	0.0	19.2	-8.8	56	0	-	-
SVE-5	11/16/18	1.0	21.2	-12.6	50	0	-	0
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
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

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
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)				by FID (ppm)
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
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

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	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
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

Appendix E.2

**Historical SVE Well Monitoring Data
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-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-6	01/24/18	1.6	16.1	-11.7	37	0 ⁴	40-50	NA ⁶
SVE-6	02/13/18	0.0	16.9	-16.2	44	0 ⁴	40-50	811
SVE-6	03/05/18	0.1	16.9	-15.8	45	0 ⁴	40-50	1,208
SVE-6	04/04/18	0.4	15.1	-11.1	36	0 ⁴	40-50	NA ⁶
SVE-6	05/17/18	0.0	14.9	-9.3	56	0 ⁴	40-50	-
SVE-6	07/03/18	0.0	16.7	-8.4	68	0 ⁴	40-50	-
SVE-6	07/31/18	0.0	15.5	-10.1	69	0 ⁴	40-50	-
SVE-6	08/30/18	0.0	15.4	-9.4	64	0 ⁴	40-50	-
SVE-6	09/28/18	0.0	14.6	-12.0	56	0 ⁴	40-50	NA ⁶
SVE-6	11/16/18	0.1	16.0	-13.1	50	57	40-50	2,129
SVE-6	12/13/18	0.0	14.7	-12.7	42	0 ⁴	40-50	1,073
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

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-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
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

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**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-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
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

Appendix E.2

**Historical SVE Well Monitoring Data
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	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
SVE-7	01/24/18	4.1	14.8	-11.7	37	0 ⁴	40-50	NA ⁶
SVE-7	02/13/18	0.8	17.1	-16.1	44	0 ⁴	40-50	1,092
SVE-7	03/05/18	0.0	18.2	-15.9	45	38	40-50	981
SVE-7	04/04/18	0.0	17.6	-11.3	36	0 ⁴	40-50	1,208
SVE-7	05/17/18	0.0	13.8	-9.1	56	0 ⁴	40-50	-
SVE-7	07/03/18	0.0	16.0	-8.1	68	0 ⁴	40-50	-
SVE-7	07/31/18	0.0	14.7	-10.2	69	0 ⁴	40-50	-
SVE-7	08/30/18	0.0	14.7	-9.6	64	0 ⁴	40-50	-
SVE-7	09/28/18	0.7	13.5	-12.5	56	0 ⁴	40-50	> 4,293
SVE-7	11/16/18	2.6	14.8	-12.5	50	64	40-50	NA ⁶
SVE-7	12/13/18	0.5	14.2	-12.7	42	0 ⁴	40-50	> 5,745
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

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**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	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
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

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	10/23/13	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
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	0.0	19.6	-0.3	54	0	-	729
SVE-8	05/17/18	0.0	18.1	-8.9	56	0	-	-
SVE-8	11/16/18	0.0	21.0	-12.8	50	0	-	0
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

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
		Gas (%)	Oxygen (%)					by FID (ppm)
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
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

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-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
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-9	05/17/18	0.0	18.4	-9.0	56	0	-	-
SVE-9	11/16/18	0.0	20.5	-12.6	50	0	-	0

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	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
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

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**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	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
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

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	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-10	05/17/18	0.0	19.4	-9.1	56	0	-	-
SVE-10	11/16/18	0.0	20.0	-12.5	50	0	-	0
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
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

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	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
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

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	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-11	05/17/18	3.2	12.8	-8.8	56	0	-	-
SVE-11	11/16/18	1.2	16.4	-12.9	50	0	-	> 4,193
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
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

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**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	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
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

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**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	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
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

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	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-12	01/24/18	5.4	18.8	-7.2	37	0 ⁴	40-50	1,691
SVE-12	02/13/18	0.4	19.0	-10.4	44	44	40-50	1,725
SVE-12	03/05/18	0.0	19.6	-16.1	45	0 ⁴	40-50	1,449
SVE-12	04/04/18	0.0	18.9	-6.8	36	0 ⁴	40-50	1,911
SVE-12	05/17/18	0.1	19.1	-9.6	56	0 ⁴	40-50	-
SVE-12	07/03/18	0.0	18.3	-7.6	68	0 ⁴	40-50	-
SVE-12	07/31/18	0.0	18.2	-7.0	69	0 ⁴	40-50	-
SVE-12	08/30/18	0.0	18.1	-8.8	64	0 ⁴	40-50	-
SVE-12	09/28/18	0.3	18.6	-12.1	56	0 ⁴	40-50	NA ⁶
SVE-12	11/16/18	0.8	17.9	-11.7	50	0 ⁴	40-50	> 4,193
SVE-12	12/13/18	0.5	18.4	-11.8	42	0 ⁴	40-50	> 5,745
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

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	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
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

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	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
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

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	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
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-13	01/24/18	4.2	12.7	-11.9	37	0 ⁴	40-50	NA ⁶
SVE-13	02/13/18	0.0	14.9	-16.4	44	0 ⁴	40-50	NA ⁶
SVE-13	03/05/18	0.0	20.0	-15.9	45	52	40-50	727
SVE-13	04/04/18	0.0	19.5	-11.4	36	44	40-50	806
SVE-13	05/17/18	0.0	13.2	-9.1	56	0 ⁴	40-50	-
SVE-13	07/03/18	0.0	15.4	-8.2	68	0 ⁴	40-50	-
SVE-13	07/31/18	0.0	13.7	-10.3	69	0 ⁴	40-50	-
SVE-13	08/30/18	0.0	12.4	-9.7	64	0 ⁴	40-50	-
SVE-13	09/28/18	0.0	9.2	-12.8	56	0 ⁴	40-50	NA ⁶
SVE-13	11/16/18	0.6	11.4	-13.4	50	30	40-50	> 4,194
SVE-13	12/13/18	0.0	11.6	-12.6	42	0 ⁴	40-50	951
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

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	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
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

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	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
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

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	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
SVE-14	01/24/18	4.3	14.9	-11.3	37	0 ⁴	40-50	NA ⁶
SVE-14	02/13/18	0.2	15.4	-16.1	44	0 ⁴	40-50	NA ⁶
SVE-14	03/05/18	0.0	18.7	-15.9	45	0 ⁴	40-50	899
SVE-14	04/04/18	0.0	19.5	-11.3	36	47	40-50	1,007
SVE-14	05/17/18	0.4	11.1	-8.1	56	0 ⁴	40-50	-
SVE-14	07/03/18	0.0	13.2	-7.6	68	0 ⁴	40-50	-
SVE-14	07/31/18	0.0	12.9	-9.6	69	0 ⁴	40-50	-
SVE-14	08/30/18	0.0	20.6	-7.2	64	0 ⁴	40-50	-
SVE-14	09/28/18	0.8	11.6	-12.0	56	0 ⁴	40-50	NA ⁶
SVE-14	11/16/18	3.1	11.0	-12.8	50	37	40-50	NA ⁶
SVE-14	12/13/18	0.6	13.5	-12.4	42	0 ⁴	40-50	> 5,745
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

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	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
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

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	07/25/12	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
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

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	05/17/18	0.0	20.2	-11.9	56	0	-	-
SVE-15	11/16/18	0.0	19.6	-12.2	50	0	-	0
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
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

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-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
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

Appendix E.2

**Historical SVE 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)	Target Flow Rate (CFM)	by FID (ppm)
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-16	05/17/18	0.0	17.3	-9.0	56	0	-	-
SVE-16	11/16/18	0.0	21.0	-12.9	50	0	-	453
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
SVE-17	04/22/10	0.0	18.1	-43.7	-	0	50	20

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	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-17	05/17/18	0.0	19.3	-11.6	56	0	-	-
SVE-17	11/16/18	0.0	20.4	-12.8	50	0	-	123
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

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	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
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

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	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
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-18	05/17/18	0.0	14.8	-8.4	56	0	-	-
SVE-18	11/16/18	0.0	15.4	-8.9	50	0	-	0
SVE-19	08/27/08 ¹	8.8	2.1	0.2	-	-	-	-

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	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	-
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

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	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
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

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	10/22/15	0.0	19.9	-42.1	-	0 ¹⁵	50	30
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
SVE-19	05/17/18	0.0	19.7	-10.9	56	0	-	-
SVE-19	11/16/18	0.0	20.3	-13.2	50	0	-	226

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			Temperature (°F)	Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)			
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

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-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
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

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-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
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

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-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-1	01/24/18	3.1	9.7	-12.0	62	0 ⁸	NA ³
LFG-1	02/13/18	0.2	18.0	-16.5	64	9	744
LFG-1	03/05/18	0.0	17.6	-16.2	49	8	811
LFG-1	04/04/18	0.0	19.0	-12.0	43	9	1,139
LFG-1	05/17/18	2.4	1.9	-9.1	56	0 ⁸	-
LFG-1	07/03/18	0.8	8.4	-8.2	60	0 ⁸	-
LFG-1	07/31/18	0.6	5.9	-10.2	70	0 ⁸	-
LFG-1	08/30/18	12.0	0.1	-9.6	64	0 ⁸	-
LFG-1	09/28/18	3.8	2.3	-12.4	54	0 ⁸	NA ³
LFG-1	11/16/18	4.1	6.0	-12.6	50	6	NA ³
LFG-1	12/13/18	1.6	2.8	-12.7	48	5	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	-
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

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-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
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

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**Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)			by FID (ppm)
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
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

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**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-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-2	01/24/18	0.4	17.8	-12.1	49	0 ⁸	1,314
LFG-2	02/13/18	0.0	20.4	-16.4	55	0 ⁸	471
LFG-2	03/05/18	0.0	19.8	-16.1	52	0 ⁸	505
LFG-2	04/04/18	0.0	19.2	-11.9	48	0 ⁸	870
LFG-2	05/17/18	0.0	8.1	-9.2	56	0 ⁸	-
LFG-2	07/03/18	0.0	15.4	-8.2	58	0 ⁸	-
LFG-2	07/31/18	0.0	14.4	-10.2	68	0 ⁸	-
LFG-2	08/30/18	3.4	0.1	-9.2	61	0 ⁸	-
LFG-2	09/28/18	0.4	6.7	-11.7	54	0 ⁸	NA ³
LFG-2	11/16/18	0.0	16.7	-12.5	50	7	1,485
LFG-2	12/13/18	11.4	1.2	-13.0	52	6	NA ³
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	-
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	-

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-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
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

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**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-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			Temperature (°F)	Flow Rate (CFM)	VOC Concentration by FID (ppm)
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)			
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-3	01/24/18	7.9	11.9	-12.0	60	0 ⁸	NA ³
LFG-3	02/13/18	0.8	17.1	-16.6	59	5	1,480
LFG-3	03/05/18	0.1	19.2	-16.1	50	0 ⁸	1,277
LFG-3	04/04/18	0.5	18.7	-12.0	47	0 ⁸	1,413
LFG-3	05/17/18	0.6	11.8	-9.2	56	0 ⁸	-
LFG-3	07/03/18	0.0	14.5	-8.2	60	0 ⁸	-
LFG-3	07/31/18	0.0	13.8	-10.3	66	0 ⁸	-

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-3	08/30/18	2.4	5.5	-9.7	62	0 ⁸	-
LFG-3	09/28/18	1.2	12.1	-12.6	54	0 ⁸	> 4,293
LFG-3	11/16/18	3.3	15.0	-12.6	50	0 ⁸	NA ³
LFG-3	12/13/18	3.1	11.6	-12.6	46	5	NA ³
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	-
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

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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-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
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

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**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-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
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

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-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-4	01/24/18	11.2	12.0	-12.0	56	0 ⁸	NA ³
LFG-4	02/13/18	5.1	13.3	-16.5	60	0 ⁸	NA ³
LFG-4	03/05/18	2.1	14.8	-16.1	52	0 ⁸	NA ³
LFG-4	04/04/18	2.4	15.3	-11.9	41	0 ⁸	NA ³
LFG-4	05/17/18	0.7	9.3	-9.4	56	0 ⁸	-
LFG-4	07/03/18	0.0	16.6	-7.8	58	10	-
LFG-4	07/31/18	0.0	15.9	-10.1	62	0 ⁸	-
LFG-4	08/30/18	3.6	1.7	-9.3	60	0 ⁸	-
LFG-4	09/28/18	0.4	10.3	-12.1	58	0 ⁸	> 4,293
LFG-4	11/16/18	0.3	16.7	-12.6	56	14	3,838
LFG-4	12/13/18	8.8	8.1	-12.8	52	18	NA ³
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
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

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-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
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

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-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
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

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-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-5	01/24/18	10.3	15.6	-11.9	60	0 ⁸	NA ³
LFG-5	02/13/18	3.0	15.6	-16.4	62	0 ⁸	NA ³
LFG-5	03/05/18	0.8	18.4	-16.1	52	0 ⁸	1,340
LFG-5	04/04/18	0.7	17.7	-11.9	43	0 ⁸	986
LFG-5	05/17/18	3.3	4.7	-9.1	56	0 ⁸	-
LFG-5	07/03/18	0.5	12.3	-8.2	56	0 ⁸	-
LFG-5	07/31/18	0.6	11.0	-10.1	66	0 ⁸	-
LFG-5	08/30/18	11.1	1.0	-9.5	64	0 ⁸	-
LFG-5	09/28/18	2.1	6.2	-12.6	58	0 ⁸	1,123
LFG-5	11/16/18	0.0	17.3	-12.6	52	6	1,609
LFG-5	12/13/18	2.5	4.1	-12.6	48	8	NA ³
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	-

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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-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
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

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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-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
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

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**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-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
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-6	01/24/18	18.9	6.8	-11.9	67	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-6	02/13/18	3.1	15.2	-16.4	64	17	NA ³
LFG-6	03/05/18	1.2	15.0	-16.0	55	15	NA ³
LFG-6	04/04/18	1.0	14.6	-11.9	46	0 ⁸	NA ³
LFG-6	05/17/18	0.7	9.9	-11.7	56	14	-
LFG-6	07/03/18	0.1	16.4	-8.6	60	0 ⁸	-
LFG-6	07/31/18	0.0	15.9	-9.8	64	0 ⁸	-
LFG-6	08/30/18	4.2	5.5	-9.0	62	0 ⁸	-
LFG-6	09/28/18	1.0	9.7	-12.4	60	0 ⁸	NA ³
LFG-6	11/16/18	0.6	14.6	-11.7	58	14	> 4,193
LFG-6	12/13/18	2.1	8.5	-11.8	56	19	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
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

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-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
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

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-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
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

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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-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-7	01/24/18	12.9	8.0	-1.4	42	0 ⁸	NA ³
LFG-7	02/13/18	4.9	14.7	-16.5	48	0 ⁸	NA ³
LFG-7	03/05/18	3.2	15.7	-16.1	47	0 ⁸	NA ³
LFG-7	04/04/18	3.6	15.1	-2.3	42	0 ⁸	NA ³
LFG-7	05/17/18	0.3	10.7	-8.9	56	0 ⁸	-
LFG-7	07/03/18	0.0	15.2	-8.0	58	0 ⁸	-
LFG-7	07/31/18	0.0	13.8	-10.0	66	0 ⁸	-
LFG-7	08/30/18	1.6	6.1	-9.6	60	0 ⁸	-
LFG-7	09/28/18	1.5	11.0	-12.6	54	0 ⁸	NA ³
LFG-7	11/16/18	0.6	14.5	-12.7	44	0 ⁸	> 4,193
LFG-7	12/13/18	0.9	9.8	-12.4	44	5	3,178
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

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**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-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
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

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**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-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
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

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Historical LFG Well Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin

Location	Date	Combustible			Temperature (°F)	Flow Rate (CFM)	VOC Concentration
		Gas (%)	Oxygen (%)	Pressure (in H ₂ O)			by FID (ppm)
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
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-8	01/24/18	36.0	1.4	-12.0	52	0 ⁸	NA ³
LFG-8	02/13/18	12.3	11.0	-16.5	52	0 ⁸	NA ³
LFG-8	03/05/18	10.3	14.1	-16.0	48	14	NA ³
LFG-8	04/04/18	11.8	13.5	-12.0	39	16	NA ³
LFG-8	05/17/18	9.2	1.8	-11.7	56	0 ⁸	-
LFG-8	07/03/18	2.4	9.4	-8.5	63	0 ⁸	-
LFG-8	07/31/18	2.4	8.5	-10.0	68	0 ⁸	-
LFG-8	08/30/18	11.0	0.1	-9.2	60	0 ⁸	-
LFG-8	09/28/18	8.6	0.8	-12.6	50	0 ⁸	726
LFG-8	11/16/18	7.7	2.5	-12.2	38	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-8	12/13/18	26.5	0.0	-12.3	44	11	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
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

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	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
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

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	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
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

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	09/13/17	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
LFG-9	01/24/18	6.4	13.7	-12.0	50	0 ⁸	NA ³
LFG-9	02/13/18	1.8	17.4	-16.3	48	6	6,201
LFG-9	03/05/18	2.1	17.2	-16.0	44	7	2,056
LFG-9	04/04/18	2.2	16.7	-11.9	38	5	1,883
LFG-9	05/17/18	0.0	10.2	-11.8	56	0 ⁸	-
LFG-9	07/03/18	0.0	16.2	-8.1	60	0 ⁸	-
LFG-9	07/31/18	0.0	15.2	-0.1	62	0 ⁸	-
LFG-9	08/30/18	0.0	7.9	-9.2	59	0 ⁸	-
LFG-9	09/28/18	0.0	9.8	-12.5	52	0 ⁸	NA ³
LFG-9	11/16/18	0.0	10.6	-12.8	52	0 ⁸	0
LFG-9	12/13/18	0.0	14.7	-12.3	48	6	> 5,745

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.

Appendix E.4

**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
GP-01	02/07/14	0.0	20.2	0.0
GP-01	03/12/14	0.0	19.5	0.0

Appendix E.4

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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-01	01/24/18	0.0	20.1	0.0
GP-01	05/17/18	0.0	18.5	-0.1
GP-01	07/31/18	0.0	17.5	0.0
GP-01	11/16/18	0.0	20.8	0.0
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

Appendix E.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
GP-1A	10/26/16	0.0	19.2	-0.2
GP-1A	01/10/17	0.0	20.3	0.0

Appendix E.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	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-1A	01/24/18	0.0	20.6	0.0
GP-1A	05/17/18	0.0	19.1	-0.3
GP-1A	07/31/18	0.0	18.4	0.0
GP-1A	11/16/18	0.0	20.8	-0.1
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

Appendix E.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-02	01/24/18	0.0	20.4	-0.2
GP-02	05/17/18	0.0	18.3	-0.3
GP-02	07/31/18	0.0	15.4	0.0
GP-02	11/16/18	12.3	0.0	-0.1
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

Appendix E.4

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-2A	10/30/08	0.0	20.4	-3.7
GP-2A	11/13/08	0.0	20.5	-3.7
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

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**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-2A	01/24/18	0.0	20.0	-0.1
GP-2A	05/17/18	0.0	18.7	0.0
GP-2A	07/31/18	0.0	16.3	0.1
GP-2A	11/16/18	1.8	10.9	-0.9
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

Appendix E.4

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-2B	07/23/10	0.0	19.9	-2.7
GP-2B	10/22/10	0.0	20.8	-1.0
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
GP-2B	01/24/18	0.0	18.8	-0.1

Appendix E.4

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-2B	05/17/18	0.0	18.6	0.0
GP-2B	07/31/18	0.0	17.4	0.4
GP-2B	11/16/18	1.2	16.0	-1.2
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-03	10/23/13	0.0	20.7	0.0
GP-03	01/10/14	0.0	20.2	-0.2
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-03	01/24/18	0.0	20.5	0.0
GP-03	05/17/18	0.0	16.3	-0.3
GP-03	07/31/18	0.0	17.9	0.0
GP-03	11/16/18	0.0	20.4	0.0
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-3A	04/22/16	0.0	18.1	-0.6
GP-3A	07/27/16	0.0	17.3	0.2
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-3A	01/24/18	0.0	20.1	-0.1
GP-3A	05/17/18	0.0	17.6	-0.4
GP-3A	07/31/18	0.0	19.3	0.2
GP-3A	11/16/18	0.0	20.4	0.0
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
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-4A	01/24/18	0.0	20.7	-0.4
GP-4A	05/17/18	0.0	15.9	0.0
GP-4A	07/31/18	0.0	18.3	0.0
GP-4A	11/16/18	0.0	21.1	-0.2
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-8A	10/02/08	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
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

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New Richmond Landfill (#2492)
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Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
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-8A	01/24/18	0.0	20.9	-0.2
GP-8A	05/17/18	0.0	19.0	-0.1
GP-8A	07/31/18	0.0	19.3	0.0
GP-8A	11/16/18	0.0	20.1	-1.2
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
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Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-8B	01/24/18	0.0	20.8	-0.3
GP-8B	05/17/18	0.0	18.3	-0.4
GP-8B	07/31/18	0.0	19.2	0.0
GP-8B	11/16/18	0.0	20.3	-1.1
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
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
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-09	01/24/18	0.0	20.4	0.0
GP-09	05/17/18	0.0	18.7	0.0
GP-09	07/31/18	0.0	18.0	0.0
GP-09	11/16/18	0.0	20.1	0.0
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-9A	02/05/09	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
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
GP-9A	07/24/17	0.0	18.6	-0.2
GP-9A	10/30/17	0.0	18.3	1.0
GP-9A	01/24/18	0.0	19.8	-0.1
GP-9A	05/17/18	0.0	16.6	-0.1
GP-9A	07/31/18	0.0	17.9	0.0
GP-9A	11/16/18	0.0	19.5	0.0
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
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-10	01/24/18	0.0	20.7	0.0
GP-10	05/17/18	0.0	18.8	0.0
GP-10	07/31/18	0.0	18.3	0.0
GP-10	11/16/18	0.0	20.8	0.0
GP-10A	08/27/08 ¹	18.3	0.0	0.0
GP-10A	09/23/08	0.6	10.2	-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-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
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
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-10A	01/24/18	0.0	20.2	0.0
GP-10A	05/17/18	0.0	18.9	0.0
GP-10A	07/31/18	0.0	17.6	0.0
GP-10A	11/16/18	0.0	19.5	0.0
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
GP-11	10/30/17	0.0	18.2	0.9
GP-11	01/24/18	0.0	20.8	0.1
GP-11	05/17/18	0.0	17.0	0.0
GP-11	07/31/18	0.0	17.5	0.0
GP-11	11/16/18	0.0	21.1	0.0
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
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
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-11A	01/24/18	0.0	20.8	0.0
GP-11A	05/17/18	0.0	18.3	0.0
GP-11A	07/31/18	0.0	16.8	0.0
GP-11A	11/16/18	0.0	21.1	-0.1
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

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
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

Appendix E.4

**Historical Gas Probe Monitoring Data
New Richmond Landfill (#2492)
New Richmond, Wisconsin**

Location	Date	Combustible		Pressure (in H ₂ O)
		Gas (%)	Oxygen (%)	
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
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
GP-12	01/24/18	0.0	20.3	0.0
GP-12	05/17/18	0.0	18.7	0.0
GP-12	07/31/18	0.0	18.1	0.1
GP-12	11/16/18	0.0	20.9	-0.2

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 thirteen (13) unscheduled LFG/SVE system shutdowns during 2018 (January 1, 2018 to December 31, 2018). They were as follows:

- On December 28, 2017, the system shut down due to a tripped blower breaker. The system auto-dialer did not call out when the shutdown occurred. The breaker was reset, the sump and condensate tanks were pumped out, and the system was restarted on January 24, 2018.
- On February 16, 2018, 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 system was restarted on February 21, 2018.
- On March 13, 2018, 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 March 15, 2018.
- On March 21, 2018, 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 March 15, 2018.
- On April 7, 2018, 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 seized up. The knockout tank was drained, the sump and condensate tanks were pumped out, the pump was repaired, and the system was restarted on May 2, 2018.
- On May 8, 2018, 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 May 17, 2018.
- On August 9, 2018, the system lost power to one of the incoming power phases. The auto-dialer did not call out when the shutdown occurred due to the power loss. The incoming power was repaired by the utility company and the system was restarted on August 30, 2018.
- On September 3, 2018, the system shut down 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 September 24, 2018.
- On September 27, 2018, the system shut down due to a tripped blower breaker. The system auto-dialer did not call out when the shutdown occurred. The breaker was reset and the system was restarted on September 28, 2018.
- On October 4, 2018, the system shut down due to a vapor/liquid separator high level alarm, because the condensate collection pump failed. The system auto-dialer did not call out when the shutdown occurred. The knockout tank was drained, the sump and condensate tanks were pumped out, the pump was repaired, and the system was restarted on November 12, 2018.

- On November 16, 2018, 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 tubing failed. The knockout tank was drained, the pump tubing was replaced, and the system was restarted on November 16, 2018.
- On November 24, 2018, the system shut down due to a tripped blower breaker. The system auto-dialer did not call out when the shutdown occurred. The breaker was reset, the sump was pumped out, and the system was restarted on December 13, 2018.
- On December 28, 2018, 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 and condensate tanks were pumped out, and the system was restarted on January 8, 2019.



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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